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## A CROSS-SECTIONAL STUDY OF THE FINANCIAL COST OF TRAINING TO THE SURGICAL TRAINEE

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Page 2 ppf 49

## Abstract

## **Objectives:**

Applications for surgical training has declined over the last decade and anecdotally, the costs of training at the expense of the surgical trainee are rising. We aimed to quantify the costs surgical trainees are expected to cover for postgraduate training.

## Design:

Prospective, cross-sectional questionnaire based study.

## Setting/Participants:

A non-mandatory online questionnaire for UK-based trainees was distributed nationally. A similar national questionnaire was distributed for Ireland, taking into account differences between the healthcare systems. Only fully completed responses were included.

## **Results:**

There were 848 and 58 fully completed responses from doctors based in the UK and Ireland, respectively. Medical students in the UK reported a significant increase in debt on graduation by 55% from £17,892 (2000-2004) to £27,655 (2010-2014), p<0.01. 41% of specialty trainees in the UK indicated that some or all of their study budget was used to fund mandatory regional teaching. By the end of training, a surgical trainee in the UK spends on average £9,105 on courses, £5,411 on conferences and £4,185 on exams, that are not reimbursed. Irish trainees report similarly high costs. Most trainees undertake a higher degree during their postgraduate training. The cost of achieving the mandatory

#### **BMJ Open**

requirements for completion of training ranges between £20,000-£26,000 (dependent on specialty), except oral and maxillofacial surgery, which is considerably higher (£71,431).

#### **Conclusions:**

Medical students are graduating with significantly larger debt than before. Surgical trainees achieve their educational requirements at substantial personal expenditure. To encourage graduates to pursue and remain in surgical training, urgent action is required to fund the mandatory requirements and annual training costs for completion of training and provide greater transparency to inform doctors of what their postgraduate training costs will be. This is necessary to increase diversity in surgery, improve work-life balance and ensure surgery remains a popular career choice.

## Strengths and Limitations of this Study

- This national study provides a large cross-sectional data set on the experience of the costs of surgical training by surgical trainees across all ten surgical specialties in the UK and Ireland
- The costs analysed provided a comprehensive overview of the breadth and depth of financial costs incurred by trainees.
- The wide-distribution of the survey and breadth of responses increased the likelihood that it is representative of trainee experience.
- It is recognised that some costs could be subject to recall bias, however the figures reported are largely consistent with the calculations we have made using the current prices of exams, courses and society memberships to verify the results.
- The overall number of completed responses was higher than required to power the study

#### Introduction

The number of trainees applying for surgical training has declined over the last decade<sup>1</sup>. Many factors including low workforce morale, poor work-life balance and recent contractual issues may act as a deterrent to medical students considering a career in surgery<sup>2</sup>. The cost of completing the mandatory postgraduate requirements to secure a higher surgical training programme post has been estimated to be between £2,735 and £20,780, dependent on surgical specialty (average £3,360) compared with medicine £2,815 and anaesthetics £2,215<sup>3</sup>. Following entry to higher surgical training, there are considerable ongoing costs incurred by trainees in order to meet the requirements for completion of training as mandated by the Joint Committee on Surgical Training (JCST). These include educational courses, conference attendance, Royal College membership and fellowship examinations and annual subscriptions, and specialty society membership subscriptions. In addition, trainees pay annual expenses such as registration with the respective regulatory bodies, the UK General Medical Council (GMC) or Irish Medical Council (IMC), medical indemnity insurance costs, and the JCST fee (paid by trainees in the UK).

In 2007, The Association of Surgeons in Training (ASiT) conducted a survey of UK surgical trainees, to assess the financial costs to trainees in surgical training<sup>4</sup>. The results demonstrated that the mean debt on qualification from medical school was over £20,000. However, in recent years there have been many new challenges facing the current generation of surgical trainees, including increased student debt, secondary to a rise in annual university tuition fees of up to £9,000 per annum<sup>5</sup>. It has previously been calculated that medical students graduating currently are unlikely to repay their student loan debt before reaching the 30-year point at which it is written off<sup>6</sup>. The salaries of male and female medical graduates diverge such that by the age of 55, the average male medical school

graduate earns 35% more<sup>6</sup>. This means that the average female graduate repays more when debt is low, but a lower amount when debt is high, compared to male graduates<sup>6</sup>. The cost of living has also increased; in the ten years, preceding November 2016 the UK Consumer Price Index (CPI) rose a total of 23.8%<sup>7</sup>.

To assess the current situation, we repeated a refined study, with a broader remit and more in depth assessment of cost pressures on trainee surgeons in both the UK and Ireland. The main aim was to assess the true financial cost of training to the surgical trainee in each of the ten surgical specialties. 

#### Participants and setting

Postgraduate surgical training in the UK and Ireland consists of a minimum of 8 years of training (except for oral and maxillofacial surgery (OMFS) and urology which is a minimum of 7 years) following completion of the initial post-qualification two-year Foundation Programme (or intern year in Ireland) **Figure 1**. Competitive entry occurs prior to both Core and Higher specialist training levels, except for neurosurgery, cardiothoracic surgery and Oral and maxillofacial surgery (OMFS) in the UK (and trauma and orthopaedics in Scotland), where run-through training from Core level exists. Core surgical knowledge is assessed by the Intercollegiate Membership of the Royal College of Surgeons (MRCS) examination and specialty specific knowledge during the later phase of higher surgical training is assessed by the Intercollegiate Fellowship of the Royal College of Surgeons (FRCS) examination.

In the UK and Ireland, the Joint Committee on Surgical Training (JCST) are responsible for curriculum development and quality assurance of all the surgical training programmes in the ten defined surgical specialities (cardiothoracic surgery, general surgery, neurosurgery, OMFS, otolaryngology, paediatric surgery, plastic surgery, trauma and orthopaedics, urology and vascular surgery). All surgical trainees are required to register with the JCST and to pay an annual fee (£255 at time of submission) that has more than doubled between 2010 and 2016. This fee supports the running costs of the JCST to manage trainee enrolment and recommendation for certification; the work of each of the ten surgical specialties 'Specialty Advisory Committee' (SACs); curriculum review and development and website support. The JCST training fee is covered for trainees in Ireland directly by funding received by the RCSI from the Health Service Executive (HSE).

In the UK, Local Education Training Boards (LETBs) provide funding to Local Education Providers (essentially the hospital where a trainee is employed) to cover the direct costs of delivering education and training. This sum includes two components: firstly, salary support of 50% of each doctor's basic salary; the second component is a placement fee of £12,400 per year, per trainee, to fund all costs involved in delivering education and training needs. It is from this placement fee that trainees apply for study funding support towards courses and conferences essential to their training, often referred to as 'study leave budget', with a restricted amount available dependent on the LETB. Funding for military trainees in the UK regular Defence Medical Services (DMS) is overseen by External Education and Training Support (EETS) within the Defence Deanery. Funding for training courses for military trainees is therefore at the discretion of the Defence Consultant Advisor and Defence Deanerv<sup>8</sup>. In Ireland, the RCSI receives funding from HSE to provide surgical training, which covers the cost of the JCST fee, delivering the curriculum, human factors and operative skills training days. However, other elements essential for CCT are not directly provided. More details of funding for Irish trainees is given in Appendix 1.

At the time of survey distribution, there were 5,323 surgical trainees in the UK and 438 surgical trainees in Ireland<sup>9</sup>.

#### Questionnaire design and distribution

A novel 54-item, survey tool was developed, consisting of free-text, binomial and variable scale responses. The questionnaire was designed with reference to previously published guidelines on conducting questionnaire research<sup>10-12</sup>. The online platform *SurveyMonkey*<sup>®</sup> (Palo Alto, CA, USA, <u>www.surveymonkey.com</u>) was used to build the survey. All individual question items were compulsory. No individually identifiable information was collected;

#### **BMJ Open**

therefore, non-responders could not be identified for follow-up. No incentives were offered for participation. A link to the online survey was distributed to members of ASiT, surgical specialty associations, and local and national mailing lists of surgical trainees. All surgical trainees in the UK including foundation doctors were included, as appropriate to the level of analysis. A modified version of the survey was circulated to ASiT members and surgical trainees in Ireland, which reflected relevant differences in health systems and training. Interns were excluded from distribution of the survey in Ireland as contact details were only available for those registered as surgical trainees with RCSI. Data collection took place from 2<sup>nd</sup> December 2015 to 26<sup>th</sup> April 2016. The ethical dimensions of this non-mandatory, anonymous evaluation survey were considered and no concerns were identified. Participants consented to the use of the analysis, distribution and publication of anonymised grouped results.

This study was undertaken by ASiT (<u>http://www.asit.org</u>), a pan-surgical specialty professional body and registered charity in the UK (no: 274841) working to promote excellence in surgical training for the benefit of junior doctors and patients alike. ASiT is independent of the National Health Service (NHS), Surgical Royal Colleges, and specialty associations.

#### Data analysis

Only fully completed questionnaires were included in the analysis. Due to the differing healthcare structures and funding systems of postgraduate education and training in UK and Ireland, a modified version of the survey was used for Ireland and the results are presented separately. Military trainees were excluded due to low numbers and a separate training

funding structure. Data was graphed and analysed in *Excel®* (Microsoft, USA). Significance testing for continuous variables was conducted using Mann-Whitney U Test in *Stata®* (Statacorp, USA); statistical significance was accepted at p<0.05. Survey sample size calculations were based on standard published formulae and assuming a population of 6000 individuals, with alpha=0.01, 209 responses would be sufficient for margin of error of  $0.03^{13}$ . For readability, all values are presented to the nearest pound (£) or euro (€). We have used the exchange rate as accessed on  $13^{th}$  January 2017 of £0.87= €1.00 to provide comparisons between the two currencies<sup>14</sup>. The study results are reported in concordance with STROBE guidance on observational studies<sup>15</sup>. Results regarding costs are presented displaying trainees year of graduation in blocks of 5 years to show trends over time.

#### Costs of CCT to the trainee in each surgical specialty

Using guidance available from the JCST the total cost of achieving the mandatory and desirable requirements for CCT in each of the surgical specialties was also calculated. Where conference attendance was mandated, but no exact minimum number described, the cost of at least one attendance during the training period was calculated. For courses which required re-validation at the end of training, the reduced course cost of re-validation rather than a full attendance was used. Course costs from recognised bodies, such as the BMA and Surgical Royal Colleges, were used in all calculations, where applicable. Conference costs were calculated using the reduced rates available to society members or early registrations where possible.

## Results

Of 1603 surveys submitted, a total of 868 fully completed responses were included in the analysis from doctors based in the UK, and 58 fully completed responses from doctors based in the Republic of Ireland. Respondent demographics by country of work are detailed in **Table 1.** 

## **United Kingdom-specific responses**

For the purposes of monetary analysis UK military doctors (n=20) were excluded from the main analysis, however a summary of military doctors' survey findings can be found in **Appendix 2**. This resulted in a total of 848 respondents for analysis. Of 848 respondents, 751 (88%) graduated from medical school in the UK. 89% (672) of these UK medical school graduates graduated with debt, with a mean of £25,404. The average debt by year of graduation has increased by 55% from £17,892 to £27,655 comparing graduates in the most recent generation (2010-2014) with those graduating between 2000 and 2004 (p<0.01) **Figure 2**.

There were 659 specialty trainee respondents from the UK (grades CT/ST1 to ST8) **Table 2**. Of these, 93% (618) responded that they were currently entitled to a study leave budget. The median value was £600 per annum (range £500-£835). Three LETBs reported no defined budget limit (Yorkshire and Humber, South West and Thames Valley). 41% of all respondents in specialty training indicated that some (31% of respondents) or all (10% of respondents), of their study budget was used to fund mandatory regional teaching.

By the end of training, a surgical trainee in the UK can expect to have spent on average  $\pm 9,105$  on courses,  $\pm 5,411$  on conferences and  $\pm 4,185$  on exams ( $\pm 18,701$ ) that they have

not been reimbursed through any source. Expense per year on conferences has marginally increased from £331 to £414 comparing older graduates with the more recent generation (2000-2004 versus 2010-2014, p=0.28). However, course expenses per year have increased significantly; the most recent graduates from medical school, graduating in the years 2010-2014, have spent on average £1,311 per year. This is an increase of 121% on the annual amount spent by medical school graduates graduating between 2000 and 2004 (p<0.01)

Figure 3.

400 respondents (47%) from the UK have undertaken a postgraduate degree since graduating from medical school, with this proportion rising by the later stages of training (ST7-8 and post-CCT (Certificate of Completion of Training) fellow) to 68% (96/141). The average cost of the degree, including university fees and loss of earnings was estimated by respondents at £18,009; with an MD/PhD being the most popular higher degree completed (24.8%, mean cost £27,882), followed by MSc (21.3%, mean cost £11,090).

732 respondents from the UK (86%) and 340 of 349 trainees level ST3-ST8 (97%) pay an annual subscription to one of the four surgical royal colleges (mean £305 for all trainees, mean £386 for ST3-ST8). 700 respondents (82%) pay annually to their SAC-defined specialty society (mean £343) and 672 (79%) are members of the British Medical Association. Over the last year, the mean amount spent on journals was £72 and on textbooks was £212.

#### Ireland-specific responses

Of the 58 respondents, 57 were currently working in Ireland and one was on fellowship in the USA **Table 1**. 25 (43%) reported that they were currently entitled to a training fund **Appendix 1**. In the past year, trainees spent on average £1278 (€1469) on mandatory courses, including travel expenses to courses, many of which are outside of Ireland, of which

#### **BMJ Open**

a mean of £784 (€902) euros was not reimbursed. Trainees spent a mean of £1,977 (€2,321) on non-mandatory courses, of which a mean of £1,850 (€2,164) was not reimbursed. In the past year, respondents had spent a mean of £1,153 (€1,353) on attending conferences, of which a mean £1,005 (€1,183) was not reimbursed. Since graduation, across all grades trainees had spent a mean £4,829 (€5,669) on examinations, of which a mean £3,402 (€4,004) was not reimbursed. For senior trainees (ST8), an average £9,796 (€11,500) had been spent on exams, of which £5,396 (€6,351) was not reimbursed.

47 respondents (n=81%) from Ireland had undertaken a post-graduate degree since graduating from medical school. The MCh was the most popular post-graduate degree (n=15, 26%), followed by the MSc (n=13, 22%) and MD (n=11, 19%). The average estimated total monetary cost of undertaking a postgraduate degree to the trainee, including course fees and loss of income, was £22,093 (€25,936).

#### Estimated costs of training (UK and Ireland) using CCT essential and desirable criteria

The costs range between £20,000 ( $\pounds$ 23,479) to £26,000 ( $\pounds$ 30,523) depending on surgical specialty, except OMFS, which is considerably higher (£71,431 or  $\pounds$ 83,858) due to the dual qualification in medicine and dentistry as well as having significantly more mandatory training courses than other specialties **Appendix 3**.

Only the minority of the costs are tax deductible, add to this the estimated cost of a postgraduate degree (£18,009 or €21,142), which many surgical trainees will also undertake at their own expense, and the estimated costs to the trainee increase to approximately  $\pm$ 40,000 (€46,958, excluding OMFS).

#### Discussion

This study has shown that individual doctors incur many thousands of pounds in personal expense after graduating from medical school to pursue a career as a surgeon and to meet the requirements to complete surgical training. These costs are incurred in addition to the significant debt built up by most medical school graduates, a debt burden likely to rise further as a greater proportion of students graduate under increased student tuition fees in the UK. Many of the costs paid by the trainee towards their training are not recognised as tax deductible, yet are incurred to cover requirements that are essential to progress through training schemes, and therefore to maintain one's livelihood. Consultant surgeons-to-be now spend considerably more per year on courses than in the past, and these now represent the single largest training cost. Efforts to make surgery an attractive and inclusive career must include an equitable distribution of training costs to the trainee.

Individual trainees spend significant amounts on courses that are not actually mandatory as documented in CCT requirements. We speculate there are two reasons for this; firstly, surgical trainees will undertake courses above and beyond the minimum requirements to develop their skills. Gaps in knowledge and experience delivered in current training posts are likely to contribute to this, such that simulation courses are necessary to address training needs. As such, issues with training programmes failing to meet trainee's educational needs are instead transferred to trainees, who still obtain this necessary training at their own cost. Secondly, to be competitive for higher surgical training and for consultant posts, trainees may undertake additional courses and extracurricular activities.

We have identified a regional variation in what amount is available to trainees, despite the standardised placement fee from the LETB. Study budgets for specialty trainees were lower

#### **BMJ Open**

than the values released in response to the recent FOI request by Varley *et al* in 7 out of 10 LETBs (North Central, South and North West London, North West England, East of England, Kent Surrey and Sussex and North East England), and equal in three LETBs (East Midlands, Wales, West Midlands)<sup>16</sup>. It is desirable that study budgets are standardised across the UK, in both amount and that they should not be top-sliced to provide mandatory regional teaching, and in the longer term all items deemed essential for CCT (including the JCST fee), should be funded directly, without expense to the trainee. ASiT has previously highlighted this issue of uncontrolled geographical variation, calling for an equitable approach through national standardisation<sup>17</sup>.

Irish trainees bear similar high costs in surgical training to their UK counterparts, not surprisingly given that JCST requirements are the same. The higher cost of courses for Irish trainees may reflect increased travel and accommodation expenses, as many courses require travel outside of Ireland and the exclusion of Irish interns from the study, who are less likely to have undertaken expensive technical skills courses. The higher cost of exams may reflect in part a higher proportion of Irish trainees who undertake USMLE examinations to pursue a fellowship in the USA, as well as increased travel expenses to intercollegiate examinations often held in the UK. While funding is available to reimburse some of these expenses, it falls short of being sufficient to avoid trainees bearing the greatest burden of the cost. These costs are on top of annual mandatory costs such as membership or fellowship of RCSI. These are a significant additional cost- for example, the 2016/2017 subscription rate is £315 (€370) for fellows and £226 (€265) for members), and the annual Irish Medical Council(IMC) retention fee (£477 (€560) for those registered for less than 3 years and £515 (€605) for those registered for more than 3 years). Of note, the payment for

the Irish Medical Council (IMC) is an annual payment and cannot be split across the year which places a significant financial burden on trainees at the time of the year when they move jobs and incur considerable additional expenses.

Doctors need to be aware in advance of what their chosen pathway is likely to cost them, and this study has provided the most detailed assessment yet for both UK and Irish surgical trainees. It is difficult to compare the costs to other medical specialties as few similar studies have been undertaken in other disciplines. One calculation for the training costs towards the completion of CCT in Obstetrics and Gynaecology estimated slightly less than for surgical trainees, at £14,224<sup>18</sup>. Another calculation for only the early stages of training in other specialties was also slightly less for medicine and anaesthetics, than surgical specialties<sup>3</sup>. Comparisons to other professional careers, such as solicitors, are also difficult, but working in the private sector has additional benefits. After qualifying with a law degree, solicitors must complete a Legal Practice Course (LPC), which costs £8,500-£15,000 dependent on type of course and location<sup>19</sup>. It is however possible to have this cost covered by a law firm if obtaining a training contract in advance, and many law firms will also provide a living expense grant of several thousand pounds per year<sup>20</sup>.

Research by the University of Kent for the Department of Health has provided costestimates for the training of various doctor grades from the start of medical school onwards<sup>21</sup>. This work found that the total cost of training a consultant was £564,112, with some contributions that came largely from the individual (such as undergraduate university fees, lost earnings, and postgraduate training fees) and others that came predominantly from the state (clinical placement, tuition and replacement)<sup>21</sup>. It is not possible from the document to disentangle the values independently contributed by each party. Page 17 of 49

#### **BMJ Open**

An important consideration frequently overlooked in these analyses relates to the hospital activity performed by trainees generating hospital income. Doctors in training have a value as well as a cost, which should be taken into account to offset such cost-estimates. Two UK-based studies have sought to quantify this within surgical training<sup>22,23</sup>. In general surgery, an analysis of 1,184 out-patient clinic consultations demonstrated that trainees delivered a quarter of all out-patient related income, averaging £36,452 per trainee<sup>22</sup>. This was sufficient to offset 95% of the trainee's average basic salaries. Within ENT surgery, clinical activity undertaken by SHO grade doctors was calculated to generate an annual net income of £73,048 (4.3 times higher than their employment costs)<sup>23</sup>. Registrars generated an annual net income of £121,587 (5.4 times their employment cost). In total, 94% of trainees included in this analysis generated more hospital income than their employment costs. Given the benefit derived from hospitals from trainee-related clinical activity, it is reasonable that a proportionate amount of the associated costs of training should be borne by the employing hospitals.

The costs analysed in this study present a comprehensive overview of the breadth and depth of costs incurred by trainees. The survey was widely distributed across regions, specialties and grades, increasing the likelihood that it is representative of trainee experience. Future studies should seek to understand the balance of costs incurred by the health system in supporting training, which are poorly understood, the influence of training cost on career choice, and wider international comparisons on the costs of training in different health systems.

#### Conclusions

Medical students are graduating with increasing debt. Surgical trainees achieve their educational requirements through considerable personal expenditure, with a total estimated monetary cost to the trainee in the region of £40,000 (€47,000). The Certificate of Completion of Training in surgical specialties comes with significant costs, which until now have not been accurately estimated. The cost goes far beyond the national training fee paid to the JCST annually in the UK, and greater transparency is immediately necessary to inform doctors of what their postgraduate training costs will be across all specialties. We strongly believe that the costs of mandatory surgical training should be covered by the Local Education and Training Boards, including the JCST fee and the costs of achieving CCT mandatory requirements. Furthermore, funding should be made available for nonmandatory surgical educational activity deemed beneficial by the trainee's educational supervisor, to ensure surgeons are trained to the highest level to provide excellent care. This is necessary to increase diversity in surgery, improve work-life balance and make surgery a popular career choice again.

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#### Contributors

RLH and JEFF conceived the study. All authors designed the questionnaire. JMOC collected the data. JMOC, HMM and RLH analysed the data. All authors were responsible for compiling and editing the manuscript, and approving the final article.

#### **Competing interests**

The authors are either current or previous surgical trainees, and current or past elected members of the Council of the Association of Surgeons in Training (Registered Charity No. 274841). JEFF is an employee of KPMG Global Health Practice, Honorary Clinical Advisor to the Lifebox Foundation charity, and a Trustee of the SURG Foundation research charity. The authors have no other relevant financial or personal conflicts of interest to declare in relation to this paper.

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#### **Data sharing statement**

<text><text> Summary data is available from the corresponding author at president@asit.org. Consent to

Table 1. Basic Demographics. Respondents divided by country of work.

Demographic	United Kingdom	Ireland
Number	848	58
Male: Female (%)	518:327 (61.3:38.7, 3 NR)	35:23 (60:40)
Mean Age (years)	31.6 (range 23-55)	31.3 (range 25 to 41)
LTFT Trainees (%)	36 (4.3)	0
Academic Trainees (%)	69 (8.1)	N/A

NR= Not Reported, LTFT= Less than full time training

**Table 2.** Specialty, stage of training and LETB (Local Education and Training Board) for respondents from UK.

Which specialty do you intend to	What is your stage of training?	In which LETB/Deanery do you work?
pursue?		
Cardiothoracic Surgery: 32 (3.8%)	Foundation Year 1: 12 (1.4%)	Scotland: 70 (8.3%)
General Surgery: 296 (34.9%)	Foundation Year 2: 63 (7.4%)	Northern Ireland: 49 (5.8%)
Neurosurgery: 28 (3.3%)	ST1/CT1/SHO1: 148 (17.5%)	Wales: 51 (6.0%)
Oral and Maxillofacial: 19 (2.2%)	ST2/CT2/SHO2: 96 (11.3%)	North East: 42 (5.0%)
Otolaryngology: 75 (8.8%)	CT3/SHO3: 10 (1.2%)	North West: 80 (9.4%)
Paediatric Surgery: 29 (3.4%)	ST3/SPR1: 78 (9.2%)	Yorkshire and Humber: 55 (6.5%
Plastic Surgery: 66 (7.8%)	ST4/SPR2: 59 (7.0%)	East Midlands: 51 (6.0%)
Trauma and Orthopaedics: 172	ST5/SPR3: 77 (9.1%)	West Midlands: 70 (8.3%)
(20.3%)	ST6/SPR4: 59 (7.0%)	East of England: 61 (7.2%)
Vascular Surgery: 59 (5.4%)	ST7/SPR5: 60 (7.1%)	Thames Valley: 41 (4.8%)
Urology: 59 (7.0%)	ST8/SPR6: 67 (7.9%)	Kent, Surrey and Sussex: 41 (4.8%)
Other/Unsure: 26 (3.1%)	Post CCT: 17 (2.0%)	Wessex: 41 (4.8%)
	Clinical Fellow: 35 (4.1%)	South West: 61 (7.2%)
	Research Post:53 (6.3%)	North East and Central London: 43
	Other: 14 (1.7%)	(5.1%)
		North West London: 44 (5.2%)
		South London: 46 (5.4%)

CT= Core Training, NCE = North Central and East London, SPR= Specialist Registrar, ST= Specialist Training.

**Table 3.** Specialty and stage of training for respondents from Ireland.

Which specialty do you intend to pursue?	What is your stage of training?
Cardiothoracic Surgery: 2 (3%)	ST1/CT1/SHO1: 13 (22%)
General Surgery: 22 (38%)	ST2/CT2/SHO2: 10 (17%)
Neurosurgery: 1(2%)	ST3/SPR1: 12 (21%)
Oral and Maxillofacial: 0	ST4/SPR2: 5 (9%)
Otolaryngology: 2 (3%)	ST5/SPR3: 4 (7%)
Paediatric Surgery: 0	ST6/SPR4: 2 (3%)
Plastic Surgery: 3(5%)	ST7/SPR5: 1 (2%)
Trauma and Orthopaedics: 20(34%)	ST8/SPR6: 3 (5%)
Vascular Surgery: 2(3%)	Clinical Fellow: 1 (2%)
Urology: 6 (10%)	Research Post: 1 (2%)

CT= Core Training, SPR= Specialist Registrar, ST= Specialist Training.

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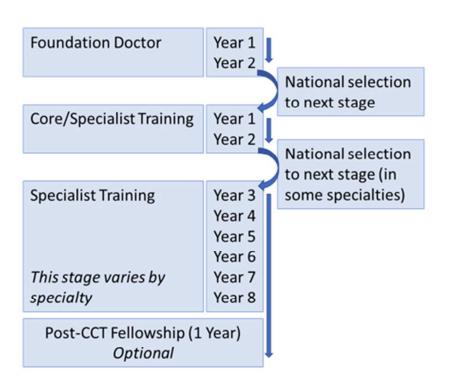


Figure 1. Stages and years of training for UK doctors training to be consultant surgeons. Foundation Doctor Year 1 is the first stage following graduation from university/medical school. In Ireland, the Intern Year is the equivalent of the Foundation Doctor stage in the UK.

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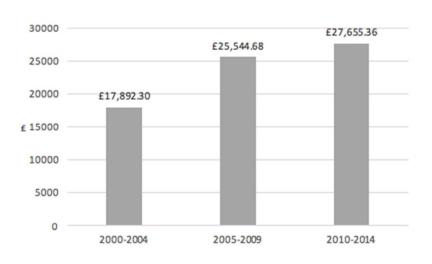


Figure 2. Mean debt on graduation from medical school, UK medical schools only. Debt has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01.

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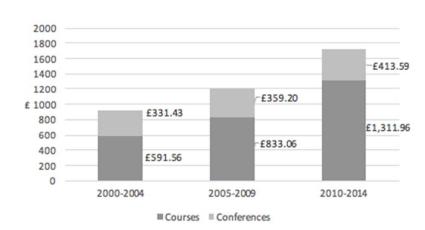


Figure 3. Mean expense per year on courses and conferences that trainees have not been reimbursed. Trainees grouped into 5- year generations by year of graduation. Expense on courses has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01. Expense on conferences has not significantly increased (p=0.28). UK medical school graduates only.

181x89mm (72 x 72 DPI) Χ.

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In Ireland, as the RCSI directly administers surgical training in Ireland, it receives funding from the HSE to provide surgical training. This includes covering the cost of the JCST fee and delivering the curriculum, including human factors and operative skills training days. However, other elements essential for CCT such as a leadership course, train the trainers course and good clinical practice are currently not directly provided. There are three funding streams available to trainees on higher specialist training, equivalent to the UK "study budget"- the current funding available to HST trainees are:

1. Mandatory Fund- this is provided by the HSE/NDTP and administered by RCSI. It provides funding of up to 1500 euros for approved mandatory

courses while in full-time training in Ireland. This fund does not carry forward year on year and cannot be used if for example, on an overseas

fellowship. However, its scope is limited as only approved mandatory courses are funded (1).

- 2. Specialist training fund- this is a fund of 500 euros per year, which accumulates over the course of HST. It can be used for course fees, equipment costs and books etc. It excludes time spent out of full time training, e.g. on an overseas fellowship (1).
- 3. There is an additional clinical courses and exams fund, where trainees can claim 450 euros for exams or courses on a definitive list of those deemed relevant to the speciality. This includes a narrow list, for example Advanced Trauma Life Support (ATLS). For exams undertaken outside of Ireland, 650 may be claimed. This is directly administered by the HSE/MET (2). The fund will only cover the cost once per trainee per examination.

At the time of this survey, many trainees would have spent time prior to commencing HST completing courses to make themselves competitive to apply for HST at considerable personal cost. In addition, the range of courses covered by the above list currently excludes many courses undertaking by trainees in their surgical training.

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It is worth noting that the fund does not adequately cover the cost of courses. For example, the clinical course and examination refund scheme will cover

ATLS if undertaken in Ireland. The current cost of ATLS is 875 euros, but the scheme will only cover 450 euros. This does not include travel and

accommodation costs to regional centres to complete the course. Similarly, for membership and intercollegiate examinations, this fund does not fully cover

the cost, and as these are often held in the UK there are additional travel and accommodation expenses.

References Appendix 1:

- 1. RCSI Training Funds for SpR Trainees. <u>http://rcsi.ie/files/surgery/docs/20161019040654\_Funding-Information-2016.pdf</u> Accessed 16th January 2017
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## Appendix Two: Results for military trainees

There were 20 military trainee respondents. All 20 graduated from medical school in the UK: 19 (90%) graduated with debt on graduation (mean £18,650). 16 (80%) had a military grant at medical school, 10 (50%) had a government student loan and 4 (20%) had a bank or other loan. The mean amount paid out, that was not reimbursed, for courses was £4250, for conferences £1643, and £2130 for exams. Mean costs per year included surgical royal college subscription (£317), specialty society membership (£336), journals (£79), text books (£245). 7 had completed an MSc (35%), 5 an MD (25%) and 1 (5%) had done both since graduating from medical school (mean cost £12822).

Which specialty do you intend to pursue?	What is your stage of training?
General Surgery: 6 (30%)	Foundation Year 1: 1 (5%)
Trauma and Orthopaedics: 6 (30%)	Foundation Year 2: 0 (0%)
Vascular Surgery: 2 (10%)	ST1/CT1/SHO1: 4 (20%)
	ST2/CT2/SHO2: 2 (10%)
	ST3/SPR1: 1 (5%)
	ST4/SPR2: 4 (20%)
	ST5/SPR3: 2 (10%)
	ST6/SPR4: 1 (5%)
	ST7/SPR5: 1 (5%)
	ST8/SPR6: 1 (5%)
	Post CCT: 1 (5%)
	Research Post: 2 (10%)

Demographic	Military Trainees
Number	20
Male: Female (%)	14:6 (70:30%)
Mean Age (years)	33.8 (range 27-41)
LTFT Trainees (%)	0 (0)
Academic Trainees (%)	1 (5%)

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## Appendix Three: Tables of costs to the trainee in each surgical specialty

Using the published requirements for progression through surgical training we have provided an estimated breakdown of the costs to the trainee in each surgical specialty. The following tables of costs assume straight progression through F1-ST8 without taking time out for LTFT, post-graduate degrees or other career breaks. These prices are correct as of November 2016. July 2016 CCT guidance used as per JCST website. Conference costs do not include travel or subsistence. BMA= British Medical Association, CCT= Certificate of Completion of Training, CST= Core Surgical Trainee, CT= Core Training (year), FP=Foundation Programme, FRCS= Fellowship of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Surgical Trainee, JCST= Joint Committee on Surgical Training, MRCS= Membership of the Royal College of Surgeons, RCS= Surgical Royal College, RCSEng= Royal College of Surgeons of England, RCPSCG= Royal College of Physicians and Surgeons of Glasgow, ST= Specialty Trainee (year).

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#### **Cardiothoracic Surgery**

Requirements	Cost
Essential for Surgical Training	
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FP1 year, £425 per year for FP2+
Mandatory for progression to ST3	
MRCS examination	£1425
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50
Advanced Trauma Life Support Course (ATLS)	£710
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724
RCSEng Specialty Skills in Cardiothoracic Surgery Course	£774
Mandatory for CCT	
FRCS examination (including completion fee)	£2269
Good Clinical Practice Course	Free
NHS Management Course e.g. BMA management essentials	£354
Training and Education Course e.g. RCSEng Training the Trainers	£702
National or international conference attendance each year of training e.g. Society for Cardiothoracic	£205 per year for 2 years as CST, £305 per year for 6
Surgery conference booked as early bird rate as a member	years as HST
Other	
	(112 for ED1 year (222 non year for ED2 CT2 (220 no
BMA Membership (for 10 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329 pe
DCC subscription food a g. DCCC ng if complete MDCC at CT2 and EDCC as CT9	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 for 1 year
Creately Association Manchership a a Costaty for Condictherasis Conserve	as fellow
Specialty Association Membership e.g. Society for Cardiothoracic Surgery	£100 per year for 2 years as CST, £200 per year for 6
Uselikh some Dustantion Oversnigstiger (for 10 versus) and Madical Defenses Union	years as HST
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800
TOTAL ESTIMATE	£24039.00

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## **General Surgery**

Requirements	Cost
Essential for Surgical Training	
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FP1 year, £425 per year for FP2+
Mandatory for progression to ST3	
MRCS examination	£1425
	£1425 £670.50
RCSEng Basic Surgical Skills Course (BSS)	
Advanced Trauma Life Support Course (ATLS)	£650
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724
Mandatory for CCT	
FRCS examination (and completion fee)	£2269
Good Clinical Practice Course	Free
NHS Management Course e.g. BMA management essentials	£354
Training and Education Course e.g. RCSEng Training the Trainers	£702
Course relevant to specialist interest e.g. RCSEng specialty skills in coloproctology	£585
ATLS revalidation to keep valid at time of certification	£350
Attendance at 4 national or international conferences during training e.g. Association of Surgeons of	£260 per year for 4 years
Great Britain and Ireland conference booked as early bird rate as a member	
Other	
BMA Membership (for 10 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329 per
	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 for 1 year
	as fellow
Specialty Association Membership e.g. Association of Surgeons of Great Britain and Ireland	£81 per year for 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800
TOTAL ESTIMATE	£22488.50

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#### Neurosurgery

Requirements	Cost
Essential for Surgical Training	
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FP1 year, £425 per year for FP2+
Mandatory for progression to ST3	
MRCS examination	£1425.00
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50
Advanced Trauma Life Support Course (ATLS)	£650.00
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724.00
Mandatory for CCT	
FRCS examination (including completion fee)	£2269.00
Good Clinical Practice Course	Free
Research Methodology Course	Free
NHS Management Course e.g. BMA management essentials	£354.00
Training and Education Course e.g. RCSEng Training the Trainers	£702.00
Advanced Trauma Life Support Course (ATLS) completed during training	included above
Attendance at 4 national or international conferences during training e.g. Society of British Neurological	£150 per year for 4 years
Surgeons conference booked as early bird rate as an affiliate member	
Other	O <sub>A</sub>
BMA Membership (for 10 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329 pe
	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 for 1 year
	as fellow
Specialty Association Membership e.g. Society of British Neurological Surgeons	£145 per year for 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800
TOTAL ESTIMATE	£21625.50

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Requirements	Cost
Essential for Surgical Training	
Bachelor of Dental Surgery e.g. University of Liverpool BDS graduate entry	£9000 for 4 years
JCST fee (for 7 years)	£255 per year of surgical training
GMC registration (for 9 years)	£200 for FP1 year, £425 per year for FP2+
GDC registration (for 9 years)	£890 per year
Mandatory for progression to ST3	
MRCS examination	£1425
Desirable for progression to ST3	
Advanced Trauma Life Support Course (ATLS)	£650
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724
Acute Life-threatening Events Recognition and Treatment (ALERT) Course	£95
Mandatory for CCT	
FRCS examination (including completion fee)	£2269
Good Clinical Practice Course	Free
Research Methodology Course	Free
NHS Management Course e.g. BMA management essentials	£354
Training and Education Course e.g. RCSEng Training the Trainers	£702
ATLS revalidation to keep valid at time of certification	£350
Emergency Skills Course e.g. RCSEng Emergency Skills in Oral and Maxillofacial Surgery	£877.50
Basic Plating Course e.g. AO basic OMFS plating course	£499
Head and Neck Anatomy Course e.g. RCSEng basic surgical anatomy of the head and neck	£414
Surgical Dermatology Course e.g. RCSEd Facial aesthetics course	£785
Orthognathic Course e.g. 6 <sup>th</sup> biennial Glasgow course	£495
Microvascular Course e.g. University of Liverpool microvascular course	£1400
Complex/Advanced Trauma Course inc. condylar fractures and orbital access e.g. SORG course	£1500
3 advanced sub-specialty courses:	
e.g. Establishing a modern salivary gland practice	£1250
e.g. Newcastle functional septorhinoplasty and facial plastics cadaveric course	£950
e.g. Controversies in the management of head and neck cancer	£275
National or international conference attendance e.g. BAOMS Conference booked as early bird rate as a member *	£200

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Page	38	of	49
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BMA Membership (for 9 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329 per
	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year for 4 years as member, £531 for 1 year
	as fellow
Specialty Association Membership e.g. British Association of Oral and Maxillofacial Surgeons	£85 per year for 7 years
Healthcare Protection Organisation (for 9 years) e.g. Medical Defence Union	£1325
TOTAL ESTIMATE * Where no minimum number of attendances documented a minimum of 1 included	£71431.50

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Otolaryngology Requirements	Cost
Essential for Surgical Training	
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FP1 year, £425 per year for FP2+
Mandatory for progression to ST3	
Diploma of Otolaryngology Head and Neck Surgery (DO-HNS)	£932.00
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50
Advanced Trauma Life Support Course (ATLS)	£650
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724
Advanced Life Support Course	£550
Advanced Paediatric Life Support Course and 2 x ENT courses	see below
Mandatory for CCT	
FRCS examination (including completion fee)	£2269
Good Clinical Practice Course	Free
Research Methodology Course	Free
Training and Education Course e.g. RCSEng Training the Trainers	£702
Temporal Bone Dissection Course e.g. Cuschieri Skills Course	£225
Sinus Anatomy and Surgical Dissection Course e.g. Cuschieri Skills Course	£275
Head and Neck Surgery Course (including LASER) e.g. RCSEd Head and Neck Course Module 1 and 2	£850 and £1050
Septorhinoplasty and Facial Plastics Surgery Course e.g. NSTC Course	£350
Advanced Paediatric Life Support Course	£395
National or international conference attendance e.g. BACO Conference booked as an ENT-UK member *	£825
Other	
BMA Membership (for 10 years)	£113 for FP1 year, £222 per year for FP2-CT2,
	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 fo
	as fellow
Specialty Association Membership e.g. ENT-UK	£210 per year for 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800
TOTAL ESTIMATE	£25218.50

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. minimum of 1 included \* Where no minimum number of attendances documented a minimum of 1 included

#### **Paediatric Surgery**

Requirements	Cost
Essential for Surgical Training	
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FP1 year, £425 per year for FP2+
Mandatory for progression to ST3	
MRCS examination	£1425
Advanced Paediatric Life Support Course	£395
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50
Advanced Trauma Life Support Course (ATLS)	£650
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724
Mandatory for CCT	
FRCS examination (including completion fee)	£2269
Good Clinical Practice Course	Free
Research Methodology Course	Free
NHS Management Course e.g. BMA management essentials	£354
Training and Education Course e.g. RCSEng Training the Trainers	£702
ATLS revalidation to keep valid at time of certification	£350
National or international conference attendance e.g. British Association of Paediatric Surgeons	£150
conference booked as early bird rate as a member *	
Other	
BMA Membership (for 10 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329 per
	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 for 1 year
	as fellow
Specialty Association Membership e.g. British Association of Paediatric Surgeons	£110 per year for 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800
TOTAL ESTIMATE	£21640.50

 $\ensuremath{^*}$  Where no minimum number of attendances documented a minimum of 1 included

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#### Plastic Surgery

Requirements	Cost
Essential for Surgical Training	
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FP1 year, £425 per year for FP2+
Mandatory for progression to ST3	
MRCS examination	£1425
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50
Advanced Trauma Life Support Course (ATLS)	£650
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724
Mandatory for CCT	
FRCS examination (including completion fee)	£2269
Good Clinical Practice Course	Free
Research Methodology Course	Free
Training and Education Course e.g. RCSEng Training the Trainers	£702
Advanced Trauma Life Support Course (ATLS) completed during training	included above
Other	
BMA Membership (for 10 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329 per
	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 for 1 year
	as fellow
Specialty Association Membership e.g. BAPRAS	£150 per year for 7 years (first year membership free)
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800
TOTAL ESTIMATE	£20561.50

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## uma and Orthopaedic Surgery

Requirements	Cost
Essential for Surgical Training	
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FP1 year, £425 per year for FP2+
Mandatory for progression to ST3	
MRCS examination	£1425
Advanced Trauma Life Support Course (ATLS)	£650
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724
Basic Course on Fracture Management e.g. RCPSCG principles of casting for orthopaedic trainees	£20
Mandatory for CCT	
FRCS examination (including completion fee)	£2269
Good Clinical Practice Course	Free
Research Methodology Course	Free
Training and Education Course e.g. RCSEng Training the Trainers	£702
ATLS revalidation to keep valid at time of certification	£350
National or international conference attendance e.g. British Orthopaedic Association conference booker	J Free
as a member *	
Other	
BMA Membership (for 10 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329 p
	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 for 1 year
	as fellow
Specialty Association Membership e.g. British Orthopaedic Association	£152 per year for 2 years as CST, £166 per year for 2
	years as ST3-4, £204 per year for 2 years as ST5-6,
	£240 per year for 2 years as ST7-8
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800
TOTAL ESTIMATE	£21405.50

ere no minimum number of attendances documented a minimum of 1 included

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Requirements	Cost
Essential for Surgical Training	
JCST fee (for 7 years)	£255 per year of surgical training
GMC registration (for 9 years)	£200 for FP1 year, £425 per year for FP2+
Mandatory for progression to ST3	
MRCS examination	£1425
Desirable for progression to ST3	£670.50
RCSEng Basic Surgical Skills Course (BSS)	£650
Advanced Trauma Life Support Course (ATLS)	£724
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
Mandatory for CCT	
FRCS examination (including completion fee)	£2269
Good Clinical Practice Course	Free
Research Methodology Course	Free
NHS Management Course e.g. BMA management essentials	£354
Training and Education Course e.g. RCSEng Training the Trainers	£702
ATLS revalidation to keep valid at time of certification	£350
Urodynamics Course e.g. Belfast Training Academy Course	£187.50
Paediatric Urology Course e.g. BAPU Course	£295
Spinal Injuries Course e.g. Princess Royal Spinal Unit Course	£450
Emergency Urology Course e.g. East of England Emergency Urology Course	£65
Attendance at 1 national or international conference every 2 years of training e.g. British Association of Urological Surgeons Conference booked as early bird rate as a member	£100 per year for 3 years
Other	
BMA Membership (for 9 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329 pe
	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year for 4 years as member, £531 for 1 year
	as fellow
Specialty Association Membership e.g. British Association of Urological Surgeons	£160 per year for 7 years
Healthcare Protection Organisation (for 9 years) e.g. Medical Defence Union	£1325
TOTAL ESTIMATE	£20719

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#### Vascular Surgery

Requirements	Cost
Essential for Surgical Training	
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FP1 year, £425 per year for FP2+
Mandatory for progression to ST3	
MRCS examination	£1425
RCSEng Basic Surgical Skills Course (BSS)	£670.50
Advanced Trauma Life Support Course (ATLS)	£650
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724
Mandatory for CCT	
FRCS examination (including completion fee)	£2269
Good Clinical Practice Course	Free
Research Methodology Course	Free
NHS Management Course e.g. BMA management essentials	£354
Training and Education Course e.g. RCSEng Training the Trainers	£702
ATLS revalidation to keep valid at time of certification	£350
National or international conference attendance per year e.g. Vascular Society Conference booked as a	£375 per year for 8 years
member at early bird rate	
Other	
BMA Membership (for 10 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329 pe
	year for ST3-5, £443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year for 5 years as member, £531 for 1 year
	as fellow
Specialty Association Membership e.g. Vascular Society	£115 per year for 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800
TOTAL ESTIMATE	£24135.50

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## STROBE Statement for A CROSS-SECTIONAL STUDY OF THE FINANCIAL

## COST OF TRAINING TO THE SURGICAL TRAINEE

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Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	– cop		
		PAGE 1	en-2017 yright,		
		(b) Provide in the abstract an informative and balanced summary of what was done	-018		
		and what was found	308€ udir		
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Introduction			- Ses		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	rela Ent		
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Objectives	3	State specific objectives, including any prespecified hypotheses	- to ta		
objectives	5	PAGE 6	7. Dov thoge text a		
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Methods			Downloaded from ogeschool . kt and data mining		
Study design	4	Present key elements of study design early in the paper	ed f		
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Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment,	tp://		
		exposure, follow-up, and data collection	inir <b>b</b>		
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Participants	6	(a) Cohort study—Give the eligibility criteria, and the sources and methods of calculation of participanta. Describe methods of follow, up	simi		
		selection of participants. Describe methods of follow-up <i>Case-control study</i> —Give the eligibility criteria, and the sources and methods of	ilar		
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		<i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of	y 24 Iogi		
		selection of participants	es.		
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		(b) Cohort study—For matched studies, give matching criteria and number of	ittp://bmjopen.bmj.com/ on May 24, 2025 at Department GEZ-LTA Al training, and similar technologies.		
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Variables	7	controls per case Clearly define all outcomes, exposures, predictors, potential confounders, and effect	- GEZ		
v allaules	/	modifiers. Give diagnostic criteria, if applicable	Ë		

		PAGE 7-10
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if ther is more than one group
Bias	9	Describe any efforts to address potential sources of bias PAGE 4, 7-10
Study size	10	Explain how the study size was arrived at PAGE 10
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why PAGE 7-10
Statistical methods	12	( <i>a</i> ) Describe all statistical methods, including those used to control for confoundin PAGE 10
		(b) Describe any methods used to examine subgroups and interactions PAGE 10
		(c) Explain how missing data were addressed PAGE 9
		( <i>d</i> ) Cohort study—If applicable, explain how loss to follow-up was addressed <i>Case-control study</i> —If applicable, explain how matching of cases and controls was addressed
		<i>Cross-sectional study</i> —If applicable, describe analytical methods taking account sampling strategy PAGE 7-10
Continued on next page		( <u>e</u> ) Describe any sensitivity analyses

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Results			p
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	ublished
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		(b) Give reasons for non-participation at each stage	- 113 icte
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		(c) Consider use of a flow diagram N/A	– opy
Descriptive data	14*	<ul> <li>(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders</li> <li>PAGE 10-12</li> </ul>	Open: first published as 10.1136/bmjopen-2017-018086 on 15 November 2017. Downloaded from Erasmushogeschool. Protected by copyright, including for uses related to text and data mining
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		(b) Indicate number of participants with missing data for each variable of interest PAGE 10-13	on 15 Nc g for use
		(c) Cohort study—Summarise follow-up time (eg, average and total amount)	– sver
Outcome data	15*	Cohort study—Report numbers of outcome events or summary measures over time	– late
	10	Case-control study—Report numbers in each exposure category, or summary measures of exposure	nber 2017. Down Erasmushogesc lated to text and
		Cross-sectional study—Report numbers of outcome events or summary measures	– Dowr ogesc xt and
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Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their	Downloaded from ogeschool . (t and data mining
		precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	· ·
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		(b) Report category boundaries when continuous variables were categorized PAGE 10-13	Al training, and similar technologies.
		( <i>c</i> ) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	imilar 1
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	echnol
Discussion			y 24 ogie
Key results	18	Summarise key results with reference to study objectives PAGE 14-18	, 2025 at
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision.	- Depa
		Discuss both direction and magnitude of any potential bias PAGE 4	rtment c
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	- jez-Li

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PAGE 14-18         Generalisability       21       Discuss the generalisability (external validity) of the study results PAGE 14-18         Other information       Finding       22       Give the source of funding and the role of the funders for the present study and, if applicable for the original study on which the present article is based PAGE 19         *Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.         Note: An Explanation and Elaboration article discusses cach checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (free available on the Web sites of PLO 8M edicine at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.	BMJ Open			
PAGE 14-18         Other information         Funding       22         Give the source of funding and the role of the funders for the present study and, if applicable for the original study on which the present article is based         PAGE 19         *Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.         Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freel available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.				PAGE 14-18
<ul> <li>Funding 22 Give the source of funding and the role of the funders for the present study and, if applicable for the original study on which the present article is based PAGE 19</li> <li>*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.</li> <li>Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freel available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.</li> </ul>	Gen	eralisability	21	
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# **BMJ Open**

### A CROSS-SECTIONAL STUDY OF THE FINANCIAL COST OF TRAINING TO THE SURGICAL TRAINEE IN THE UK AND IRELAND

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<b>Primary Subject Heading</b> :	Medical education and training
Secondary Subject Heading:	Surgery
Keywords:	MEDICAL EDUCATION & TRAINING, SURGERY, HEALTH ECONOMICS, surgical training, cost of training, SURGICAL EDUCATION



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10 11 12	Adam P Williams, Rh	iannon L Harries; on behalf of the Council of the Association of
13 14	Surgeons in Training	
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30 31	Running head:	The cost of surgical training
32 33 34 35	Category:	Original research
36 37 38	Funding:	Nil
39 40 41	Keywords:	surgical training, cost of training, surgical education, medical
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45 46 47	Word count:	3809
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#### Abstract

#### **Objectives:**

Applications for surgical training has declined over the last decade and anecdotally, the costs of training at the expense of the surgical trainee are rising. We aimed to quantify the costs surgical trainees are expected to cover for postgraduate training.

#### Design:

Prospective, cross-sectional questionnaire based study.

#### Setting/Participants:

A non-mandatory online questionnaire for UK-based trainees was distributed nationally. A similar national questionnaire was distributed for Ireland, taking into account differences between the healthcare systems. Only fully completed responses were included.

#### **Results:**

There were 848 and 58 fully completed responses from doctors based in the UK and Ireland, respectively. Medical students in the UK reported a significant increase in debt on graduation by 55% from £17,892 (2000-2004) to £27,655 (2010-2014), p<0.01. 41% of specialty trainees in the UK indicated that some or all of their study budget was used to fund mandatory regional teaching. By the end of training, a surgical trainee in the UK spends on average £9,105 on courses, £5,411 on conferences and £4,185 on exams, not covered by training budget. Irish trainees report similarly high costs. Most trainees undertake a higher degree during their postgraduate training. The cost of achieving the mandatory requirements for completion of training ranges between £20,000-£26,000 (dependent on specialty), except oral and maxillofacial surgery, which is considerably higher (£71,431).

Medical students are graduating with significantly larger debt than before. Surgical trainees achieve their educational requirements at substantial personal expenditure. To encourage graduates to pursue and remain in surgical training, urgent action is required to fund the mandatory requirements and annual training costs for completion of training and provide greater transparency to inform doctors of what their postgraduate training costs will be. This is necessary to increase diversity in surgery, reduce debt load and ensure surgery remains a popular career choice.

## Strengths and Limitations of this Study

- This national study provides a large cross-sectional data set on the experience of the costs of surgical training by surgical trainees across all ten surgical specialties in the UK and Ireland
- The costs analysed provided a comprehensive overview of the breadth and depth of financial costs incurred by trainees.
- The wide-distribution of the survey and breadth of responses increased the likelihood that it is representative of trainee experience.
- We recognise that there is a significant number of surveys excluded due to incompletion, which we believe to be related to the need for accurate costings to compete the survey. However, the overall number of completed responses was higher than required to power the study.
- It is recognised that some costs could be subject to recall bias or an element of selection bias, in that those with significantly more debt may be more likely to respond, however the figures reported are largely consistent with the calculations we have made using the current prices of exams, courses and society memberships to verify the results.

#### Introduction

The number of trainees applying for surgical training has declined over the last decade<sup>1</sup>. Many factors including low workforce morale, poor work-life balance and recent contractual issues may act as a deterrent to medical students considering a career in surgery<sup>2</sup>. The cost of completing the mandatory postgraduate requirements to secure a higher surgical training programme post has been estimated to be between £2,735 and £20,780, dependent on surgical specialty (average £3,360) compared with medicine £2,815 and anaesthetics £2,215<sup>3</sup>. Following entry to higher surgical training, there are considerable ongoing costs incurred by trainees in order to meet the requirements for completion of training as mandated by the Joint Committee on Surgical Training (JCST). These include educational courses, conference attendance, Royal College membership and fellowship examinations and annual subscriptions, and specialty society membership subscriptions. In addition, trainees pay annual expenses such as registration with the respective regulatory bodies, the UK General Medical Council (GMC) or Irish Medical Council (IMC), medical indemnity insurance costs, and the JCST fee (paid by trainees in the UK).

In 2007, The Association of Surgeons in Training (ASiT) conducted a survey of UK surgical trainees, to assess the financial costs to trainees in surgical training<sup>4</sup>. The results demonstrated that the mean debt on qualification from medical school was over £20,000. However, in recent years there have been many new challenges facing the current generation of surgical trainees, including increased student debt, secondary to a rise in annual university tuition fees of up to £9,000 per annum<sup>5</sup>. It has previously been calculated that medical students graduating currently are unlikely to repay their student loan debt before reaching the 30-year point at which it is written off<sup>6</sup>. The salaries of male and female medical graduates diverge such that by the age of 55, the average male medical school

graduate earns 35% more<sup>6</sup>. This means that the average female graduate repays more when debt is low, but a lower amount when debt is high, compared to male graduates<sup>6</sup>. The cost of living has also increased; in the ten years, preceding November 2016 the UK Consumer Price Index (CPI) rose a total of 23.8%<sup>7</sup>.

To assess the current situation, we repeated a refined study, with a broader remit and more in depth assessment of cost pressures on trainee surgeons in both the UK and Ireland. The main aim was to assess the true financial cost of training to the surgical trainee in each of the ten surgical specialties. 

#### Participants and setting

Postgraduate surgical training in the UK and Ireland consists of a minimum of 8 years of training (except for oral and maxillofacial surgery (OMFS) and urology which is a minimum of 7 years) following completion of the initial post-qualification two-year Foundation Programme (or intern year in Ireland) **Figure 1**. Competitive entry occurs prior to both Core and Higher specialist training levels, except for neurosurgery, cardiothoracic surgery and Oral and maxillofacial surgery (OMFS) in the UK (and trauma and orthopaedics in Scotland), where 'run-through' training (no separate selection process between core and higher specialist training) from Core level exists. Core surgical knowledge is assessed by the Intercollegiate Membership of the Royal College of Surgeons (MRCS) examination and specialty specific knowledge during the later phase of higher surgical training is assessed by the Intercollegiate Fellowship of the Royal College of Surgeons (FRCS) examination.

In the UK and Ireland, the Joint Committee on Surgical Training (JCST) are responsible for curriculum development and quality assurance of all the surgical training programmes in the ten defined surgical specialities (cardiothoracic surgery, general surgery, neurosurgery, OMFS, otolaryngology, paediatric surgery, plastic surgery, trauma and orthopaedics, urology and vascular surgery). All surgical trainees are required to register with the JCST and to pay an annual fee (£255 at time of submission) that has more than doubled between 2010 and 2016. This fee supports the running costs of the JCST to manage trainee enrolment and recommendation for certification; the work of each of the ten surgical specialties 'Specialty Advisory Committee' (SACs); curriculum review and development and website support. The

JCST training fee is covered for trainees in Ireland directly by funding received by the RCSI from the Health Service Executive (HSE).

In the UK, Local Education Training Boards (LETBs) provide funding to Local Education Providers (essentially the hospital where a trainee is employed) to cover the direct costs of delivering education and training. This sum includes two components: firstly, salary support of 50% of each doctor's basic salary; the second component is a placement fee of £12,400 per year, per trainee, to fund all costs involved in delivering education and training needs. It is from this placement fee that trainees apply for study funding support towards courses and conferences essential to their training, often referred to as 'study leave budget', with a restricted amount available dependent on the LETB. Funding for military trainees in the UK regular Defence Medical Services (DMS) is overseen by External Education and Training Support (EETS) within the Defence Deanery. Funding for training courses for military trainees is therefore at the discretion of the Defence Consultant Advisor and Defence Deanerv<sup>8</sup>. In Ireland, the RCSI receives funding from HSE to provide surgical training, which covers the cost of the JCST fee, delivering the curriculum, human factors and operative skills training days. However, other elements essential for CCT (Certificate of Completion of Training) are not directly provided. More details of funding for Irish trainees is given in Appendix 1.

At the time of survey distribution, there were 5,323 surgical trainees in the UK and 438 surgical trainees in Ireland<sup>9</sup>.

Page 9 of 75

#### **BMJ Open**

#### Questionnaire design and distribution

A novel 54-item, survey tool was developed, consisting of free-text, binomial and variable scale responses. The questionnaire was designed with reference to previously published guidelines on conducting questionnaire research<sup>10-12</sup>. The online platform SurveyMonkey® (Palo Alto, CA, USA, www.surveymonkey.com) was used to build the survey. All individual question items were compulsory. No individually identifiable information was collected; therefore, non-responders could not be identified for follow-up. No incentives were offered for participation. A link to the online survey was distributed to members of ASiT, surgical specialty associations, and local and national mailing lists of surgical trainees. All surgical trainees in the UK including foundation doctors were included, as appropriate to the level of analysis. A modified version of the survey was circulated to ASiT members and surgical trainees in Ireland, which reflected relevant differences in health systems and training. Interns were excluded from distribution of the survey in Ireland as contact details were only available for those registered as surgical trainees with RCSI. Data collection took place from 2<sup>nd</sup> December 2015 to 26<sup>th</sup> April 2016. The ethical dimensions of this non-mandatory, anonymous evaluation survey were considered and no concerns were identified. Participants consented to the use of the analysis, distribution and publication of anonymised grouped results. A copy of the survey can be found in **Appendix 2.** 

This study was undertaken by ASiT (<u>http://www.asit.org</u>), a pan-surgical specialty professional body and registered charity in the UK (no: 274841) working to promote excellence in surgical training for the benefit of junior doctors and patients alike. ASiT is

independent of the National Health Service (NHS), Surgical Royal Colleges, and specialty associations.

#### **Data analysis**

Only fully completed questionnaires were included in the analysis. Due to the differing healthcare structures and funding systems of postgraduate education and training in UK and Ireland, a modified version of the survey was used for Ireland and the results are presented separately. Military trainees were excluded due to low numbers and a separate training funding structure. Data was graphed and analysed in *Excel®* (Microsoft, USA). Significance testing for continuous variables was conducted using Mann-Whitney U Test in *Stata®* (Statacorp, USA); statistical significance was accepted at p<0.05. Survey sample size calculations were based on standard published formulae and assuming a population of 6000 individuals, with alpha=0.01, 209 responses would be sufficient for margin of error of  $0.03^{13}$ . For readability, all values are presented to the nearest pound (£) or euro (€). We have used the exchange rate as accessed on  $13^{th}$  January 2017 of £0.87= €1.00 to provide comparisons between the two currencies<sup>14</sup>. The study results are reported in concordance with STROBE guidance on observational studies<sup>15</sup>. Results regarding costs are presented displaying trainees year of graduation in blocks of 5 years to show trends over time.

#### Costs of CCT to the trainee in each surgical specialty

Using guidance available from the JCST the total cost of achieving the mandatory and desirable requirements for CCT in each of the surgical specialties was also calculated. Where conference attendance was mandated, but no exact minimum number described, the cost of at least one attendance during the training period was calculated. For courses which

 required re-validation at the end of training, the reduced course cost of re-validation rather than a full attendance was used. Course costs from recognised bodies, such as the BMA and Surgical Royal Colleges, were used in all calculations, where applicable. Conference costs were calculated using the reduced rates available to society members or early registrations where possible.

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#### Results

Of 1603 surveys submitted, a total of 868 fully completed responses were included in the analysis from doctors based in the UK, and 58 fully completed responses from doctors based in the Republic of Ireland. Respondent demographics by country of work are detailed in **Table 1.** 

#### United Kingdom-specific responses

For the purposes of monetary analysis UK military doctors (n=20) were excluded from the main analysis, however a summary of military doctors' survey findings can be found in **Appendix 3**. This resulted in a total of 848 respondents for analysis. Of 848 respondents, 751 (88%) graduated from medical school in the UK. 89% (672) of these UK medical school graduates graduated with debt, with a mean of £25,404. The average debt by year of graduation has increased by 55% from £17,892 to £27,655 comparing graduates in the most recent generation (2010-2014) with those graduating between 2000 and 2004 (p<0.01) **Figure 2**.

There were 659 specialty trainee respondents from the UK (grades CT/ST1 to ST8) **Table 2**. Of these, 93% (618) responded that they were currently entitled to a study leave budget. The median value was £600 per annum (range £500-£835). Three LETBs reported no defined budget limit (Yorkshire and Humber, South West and Thames Valley). 41% of all respondents in specialty training indicated that some (31% of respondents) or all (10% of respondents), of their study budget was used to fund mandatory regional teaching.

By the end of training, a surgical trainee in the UK can expect to have spent on average  $\pm 9,105$  on courses,  $\pm 5,411$  on conferences and  $\pm 4,185$  on exams ( $\pm 18,701$ ) that they have

not been reimbursed through any source. Expense per year on conferences has marginally increased from £331 to £414 comparing older graduates with the more recent generation (2000-2004 versus 2010-2014, p=0.28). However, course expenses per year have increased significantly; the most recent graduates from medical school, graduating in the years 2010-2014, have spent on average £1,311 per year. This is an increase of 121% on the annual amount spent by medical school graduates graduating between 2000 and 2004 (p<0.01)

Figure 3.

400 respondents (47%) from the UK have undertaken a postgraduate degree since graduating from medical school, with this proportion rising by the later stages of training (ST7-8 and post-CCT fellow) to 68% (96/141). The average cost of the degree, including university fees and loss of earnings was estimated by respondents at £18,009; with an MD/PhD being the most popular higher degree completed (24.8%, mean cost £27,882), followed by MSc (21.3%, mean cost £11,090).

732 respondents from the UK (86%) and 340 of 349 trainees level ST3-ST8 (97%) pay an annual subscription to one of the four surgical royal colleges (mean £305 for all trainees, mean £386 for ST3-ST8). 700 respondents (82%) pay annually to their SAC-defined specialty society (mean £343) and 672 (79%) are members of the British Medical Association. Over the last year, the mean amount spent on journals was £72 and on textbooks was £212.

#### Ireland-specific responses

Of the 58 respondents, 57 were currently working in Ireland and one was on fellowship in the USA **Table 1 and Table 3**. 25 (43%) reported that they were currently entitled to a training fund **Appendix 1**. In the past year, trainees spent on average £1278 (€1469) on mandatory courses, including travel expenses to courses, many of which are outside of

Ireland, of which a mean of £784 (€902) euros was not reimbursed. Trainees spent a mean of £1,977 (€2,321) on non-mandatory courses, of which a mean of £1,850 (€2,164) was not reimbursed. In the past year, respondents had spent a mean of £1,153 (€1,353) on attending conferences, of which a mean £1,005 (€1,183) was not reimbursed. Since graduation, across all grades trainees had spent a mean £4,829 (€5,669) on examinations, of which a mean £3,402 (€4,004) was not reimbursed. For senior trainees (ST8), an average £9,796 (€11,500) had been spent on exams, of which £5,396 (€6,351) was not reimbursed.

47 respondents (n=81%) from Ireland had undertaken a post-graduate degree since graduating from medical school. The MCh was the most popular post-graduate degree (n=15, 26%), followed by the MSc (n=13, 22%) and MD (n=11, 19%). The average estimated total monetary cost of undertaking a postgraduate degree to the trainee, including course fees and loss of income, was £22,093 (€25,936).

#### Estimated costs of training (UK and Ireland) using CCT essential and desirable criteria

The costs range between £20,000 ( $\pounds$ 23,479) to £26,000 ( $\pounds$ 30,523) depending on surgical specialty, except OMFS, which is considerably higher (£71,431 or  $\pounds$ 83,858) due to the dual qualification in medicine and dentistry as well as having significantly more mandatory training courses than other specialties **Appendix 4**.

Only the minority of the costs are tax deductible, add to this the estimated cost of a postgraduate degree (£18,009 or €21,142), which many surgical trainees will also undertake at their own expense, and the estimated costs to the trainee increase to approximately  $\pm$ 40,000 (€46,958, excluding OMFS).

This study has shown that individual doctors incur many thousands of pounds in personal expense after graduating from medical school to pursue a career as a surgeon and to meet the requirements to complete surgical training. These costs are incurred in addition to the significant debt built up by most medical school graduates, a debt burden likely to rise further as a greater proportion of students graduate under increased student tuition fees in the UK. Many of the costs paid by the trainee towards their training are not recognised as tax deductible, yet are incurred to cover requirements that are essential to progress through training schemes, and therefore to maintain one's livelihood. Consultant surgeons-to-be now spend considerably more per year on courses than in the past, and these now represent the single largest training cost, according to our results. Efforts to make surgery an attractive and inclusive career must include an equitable distribution of training costs to the trainee.

Individual trainees spend significant amounts on courses that are not actually mandatory as documented in CCT requirements. We speculate there are two reasons for this; firstly, surgical trainees will undertake courses above and beyond the minimum requirements to develop their skills. Gaps in knowledge and experience delivered in current training posts are likely to contribute to this, such that simulation courses are necessary to address training needs. As such, issues with training programmes failing to meet trainee's educational needs are instead transferred to trainees, who still obtain this necessary training at their own cost. Secondly, to be competitive for higher surgical training and for consultant posts, trainees may undertake additional courses and extracurricular activities.

We have identified a regional variation in what amount is available to trainees, despite the standardised placement fee from the LETB. Study budgets for specialty trainees were lower than the values released in response to the recent FOI request by Varley *et al* in 7 out of 10 LETBs (North Central, South and North West London, North West England, East of England, Kent Surrey and Sussex and North East England), and equal in three LETBs (East Midlands, Wales, West Midlands)<sup>16</sup>. It is desirable that study budgets are standardised across the UK, in both amount and that they should not be top-sliced to provide mandatory regional teaching, and in the longer term all items deemed essential for CCT (including the JCST fee), should be funded directly, without expense to the trainee. ASiT has previously highlighted this issue of uncontrolled geographical variation, calling for an equitable approach through national standardisation<sup>17</sup>.

Irish trainees bear similar high costs in surgical training to their UK counterparts, not surprisingly given that JCST requirements are the same. The higher cost of courses for Irish trainees may reflect increased travel and accommodation expenses, as many courses require travel outside of Ireland and the exclusion of Irish interns from the study, who are less likely to have undertaken expensive technical skills courses. The higher cost of exams may reflect in part a higher proportion of Irish trainees who undertake USMLE examinations to pursue a fellowship in the USA, as well as increased travel expenses to intercollegiate examinations often held in the UK. While funding is available to reimburse some of these expenses, it falls short of being sufficient to avoid trainees bearing the greatest burden of the cost. These costs are on top of annual mandatory costs such as membership or fellowship of RCSI. These are a significant additional cost- for example, the 2016/2017 subscription rate is £315 (€370) for fellows and £226 (€265) for members), and the annual

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Irish Medical Council(IMC) retention fee (£477 (€560) for those registered for less than 3 years and £515 (€605) for those registered for more than 3 years). Of note, the payment for the Irish Medical Council (IMC) is an annual payment and cannot be split across the year which places a significant financial burden on trainees at the time of the year when they move jobs and incur considerable additional expenses.

68% of later stage higher surgical trainees in the UK and 81% of Irish trainees report obtaining a higher degree. This was associated with an average cost estimated by respondents of over £18,000 and £22,000 in the UK and Ireland, respectively. Whilst it is not deemed mandatory by the JCST to undertake a higher degree within surgical training, there are a number of reasons why surgical trainees choose to undertake one. Firstly, it is required in order to practice as an academic consultant surgeon, and secondly, a significant proportion of trainees will undertake one in order to make themselves competitive for consultant appointment.

Doctors need to be aware in advance of what their chosen pathway is likely to cost them, alongside the starting salary for consultant posts when they complete their training (ranging from £76,761 in the UK and £95,775 (€105,000) in Ireland<sup>18,19</sup>). This study has provided the most detailed assessment yet for both UK and Irish surgical trainees. It is difficult to compare the costs to other medical specialties as few similar studies have been undertaken in other disciplines. One calculation for the training costs towards the completion of CCT in Obstetrics and Gynaecology estimated slightly less than for surgical trainees, at £14,224<sup>20</sup>. Another calculation for only the early stages of training in other specialties was also slightly less for medicine and anaesthetics, than surgical specialties<sup>3</sup>. Comparisons to other professional careers, such as solicitors, are also difficult, but working in the private sector

has additional benefits. After qualifying with a law degree, solicitors must complete a Legal Practice Course (LPC), which costs £8,500-£15,000 dependent on type of course and location<sup>21</sup>. It is however possible to have this cost covered by a law firm if obtaining a training contract in advance, and many law firms will also provide a living expense grant of several thousand pounds per year<sup>22</sup>.

Research by the University of Kent for the Department of Health has provided costestimates for the training of various doctor grades from the start of medical school onwards<sup>23</sup>. This work found that the total cost of training a consultant was £564,112, with some contributions that came largely from the individual (such as undergraduate university fees, lost earnings, and postgraduate training fees) and others that came predominantly from the state (clinical placement, tuition and replacement)<sup>23</sup>. It is not possible from the document to disentangle the values independently contributed by each party.

An important consideration frequently overlooked in these analyses relates to the hospital activity performed by trainees generating hospital income. Doctors in training have a value as well as a cost, which should be taken into account to offset such cost-estimates. Two UK-based studies have sought to quantify this within surgical training<sup>24,25</sup>. In general surgery, an analysis of 1,184 out-patient clinic consultations demonstrated that trainees delivered a quarter of all out-patient related income, averaging £36,452 per trainee<sup>24</sup>. This was sufficient to offset 95% of the trainee's average basic salaries. Within ENT surgery, clinical activity undertaken by SHO grade doctors was calculated to generate an annual net income of £73,048 (4.3 times higher than their employment costs)<sup>25</sup>. Registrars generated an annual net income of £121,587 (5.4 times their employment cost). In total, 94% of trainees included in this analysis generated more hospital income than their employment costs.

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Given the benefit derived from hospitals from trainee-related clinical activity, it is reasonable that a proportionate amount of the associated costs of training should be borne by the employing hospitals.

The costs analysed in this study present a comprehensive overview of the breadth and depth of costs incurred by trainees. The survey was widely distributed across regions, specialties and grades, increasing the likelihood that it is representative of trainee experience. Future studies should seek to understand the balance of costs incurred by the health system in supporting training, which are poorly understood, the influence of training ernatio. cost on career choice, and wider international comparisons on the costs of training in different health systems.

#### Conclusions

Medical students are graduating with increasing debt. Surgical trainees achieve their educational requirements through considerable personal expenditure, with a total estimated monetary cost to the trainee in the region of £40,000 (€47,000). The Certificate of Completion of Training in surgical specialties comes with significant costs, which until now have not been accurately estimated. The cost goes far beyond the national training fee paid to the JCST annually in the UK, and greater transparency is immediately necessary to inform doctors of what their postgraduate training costs will be across all specialties. We strongly believe that the costs of mandatory surgical training should be covered by the Local Education and Training Boards, including the JCST fee and the costs of achieving CCT mandatory requirements. Furthermore, funding should be made available for nonmandatory surgical educational activity deemed beneficial by the trainee's educational supervisor, to ensure surgeons are trained to the highest level to provide excellent care. This is necessary to increase diversity in surgery, reduce debt load and make surgery a popular career choice again.

#### Acknowledgements

We thank all those trainees who took the time to complete the survey. We acknowledge the work done by Edward Fitzgerald and Charles Giddings on the previous 2007 costs of surgical training survey.

#### Contributors

RLH and JEFF conceived the study. All authors designed the questionnaire. JMOC collected the data. JMOC, HMM and RLH analysed the data. All authors were responsible for compiling and editing the manuscript, and approving the final article.

#### **Competing interests**

The authors are either current or previous surgical trainees, and current or past elected members of the Council of the Association of Surgeons in Training (Registered Charity No. 274841). JEFF is an employee of KPMG Global Health Practice, Honorary Clinical Advisor to the Lifebox Foundation charity, and a Trustee of the SURG Foundation research charity. The authors have no other relevant financial or personal conflicts of interest to declare in relation to this paper.

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#### **Data sharing statement**

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<text><text><text> Summary data is available from the corresponding author at president@asit.org. Consent to

**Table 1.** Basic Demographics. Respondents divided by country of work.

Demographic	United Kingdom	Ireland
Number	848	58
Male: Female (%)	518:327 (61.3:38.7, 3 NR)	35:23 (60:40)
Mean Age (years)	31.6 (range 23-55)	31.3 (range 25 to 41)
LTFT Trainees (%)	36 (4.3)	0
Academic Trainees (%)	69 (8.1)	N/A

NR= Not Reported, LTFT= Less than full time training

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> Table 2. Specialty, stage of training and LETB (Local Education and Training Board) for respondents from UK.

Which specialty do you intend to	What is your stage of training?	In which LETB/Deanery do you work?	
pursue?			
Cardiothoracic Surgery: 32 (3.8%)	Foundation Year 1: 12 (1.4%)	Scotland: 70 (8.3%)	
General Surgery: 296 (34.9%)	Foundation Year 2: 63 (7.4%)	Northern Ireland: 49 (5.8%)	
Neurosurgery: 28 (3.3%)	ST1/CT1/SHO1: 148 (17.5%)	Wales: 51 (6.0%)	
Oral and Maxillofacial: 19 (2.2%)	ST2/CT2/SHO2: 96 (11.3%)	North East: 42 (5.0%)	
Otolaryngology: 75 (8.8%)	CT3/SHO3: 10 (1.2%)	North West: 80 (9.4%)	
Paediatric Surgery: 29 (3.4%)	ST3/SPR1: 78 (9.2%)	Yorkshire and Humber: 55 (6.5%	
Plastic Surgery: 66 (7.8%)	ST4/SPR2: 59 (7.0%)	East Midlands: 51 (6.0%)	
Trauma and Orthopaedics: 172	ST5/SPR3: 77 (9.1%)	West Midlands: 70 (8.3%)	
(20.3%)	ST6/SPR4: 59 (7.0%)	East of England: 61 (7.2%)	
Vascular Surgery: 59 (5.4%)	ST7/SPR5: 60 (7.1%)	Thames Valley: 41 (4.8%)	
Urology: 59 (7.0%)	ST8/SPR6: 67 (7.9%)	Kent, Surrey and Sussex: 41 (4.8%)	
Other/Unsure: 26 (3.1%)	Post CCT: 17 (2.0%)	Wessex: 41 (4.8%)	
	Clinical Fellow: 35 (4.1%)	South West: 61 (7.2%)	
	Research Post:53 (6.3%)	North East and Central London: 43	
	Other: 14 (1.7%)	(5.1%)	
		North West London: 44 (5.2%)	
		South London: 46 (5.4%)	

CT= Core Training, NCE = North Central and East London, SPR= Specialist Registrar, ST= Specialist Training. 

**Table 3.** Specialty and stage of training for respondents from Ireland.

Which specialty do you intend to pursue?	What is your stage of training?
Cardiothoracic Surgery: 2 (3%)	ST1/CT1/SHO1: 13 (22%)
General Surgery: 22 (38%)	ST2/CT2/SHO2: 10 (17%)
Neurosurgery: 1(2%)	ST3/SPR1: 12 (21%)
Oral and Maxillofacial: 0	ST4/SPR2: 5 (9%)
Otolaryngology: 2 (3%)	ST5/SPR3: 4 (7%)
Paediatric Surgery: 0	ST6/SPR4: 2 (3%)
Plastic Surgery: 3(5%)	ST7/SPR5: 1 (2%)
Trauma and Orthopaedics: 20(34%)	ST8/SPR6: 3 (5%)
Vascular Surgery: 2(3%)	Clinical Fellow: 1 (2%)
Urology: 6 (10%)	Research Post: 1 (2%)

CT= Core Training, SPR= Specialist Registrar, ST= Specialist Training.

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**Figure 1.** Stages and years of training for UK doctors training to be consultant surgeons. Foundation Doctor Year 1 is the first stage following graduation from university/medical school. In Ireland, the Intern Year is the equivalent of the Foundation Doctor stage in the UK.

**Figure 2.** Mean debt on graduation from medical school, UK medical schools only. Debt has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01.

**Figure 3.** Mean expense per year on courses and conferences that trainees have not been reimbursed. Trainees grouped into 5- year generations by year of graduation. Expense on courses has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01. Expense on conferences has not significantly increased (p=0.28). UK medical school graduates only.

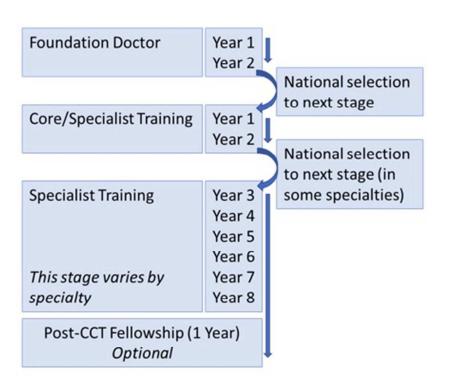


Figure 1. Stages and years of training for UK doctors training to be consultant surgeons. Foundation Doctor Year 1 is the first stage following graduation from university/medical school. In Ireland, the Intern Year is the equivalent of the Foundation Doctor stage in the UK. $\parallel$  +

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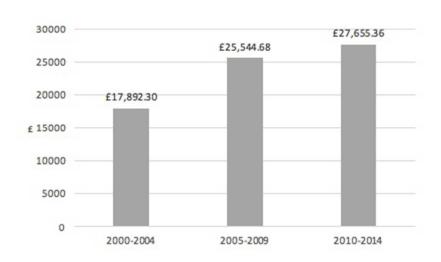
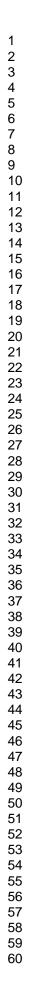


Figure 2. Mean debt on graduation from medical school, UK medical schools only. Debt has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01.

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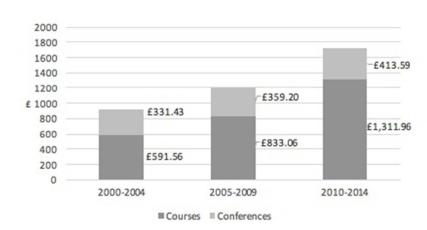


Figure 3. Mean expense per year on courses and conferences that trainees have not been reimbursed. Trainees grouped into 5- year generations by year of graduation. Expense on courses has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01. Expense on conferences has not significantly increased (p=0.28). UK medical school graduates only.!! +

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In Ireland, as the RCSI directly administers surgical training in Ireland, it receives funding from the HSE to prove de gurgical training. This includes covering the cost of the JCST fee and delivering the curriculum, including human factors and operative skills training days. There are three funding streams available to trainees on higher specialist training, equivalent to the UK "study budget"- the current funding available to HST trainees are:

- 1. Mandatory Fund- this is provided by the HSE/NDTP and administered by RCSI. It provides funding of courses while in full-time training in Ireland. This fund does not carry forward year on year and cannot be used if for example, on an overseas fellowship. However, its scope is limited as only approved mandatory courses are funded (1).
- 2. Specialist training fund- this is a fund of 500 euros per year, which accumulates over the course of HS is a fund of 500 euros per year, which accumulates over the course of HS is an be used for course fees, equipment costs and books etc. It excludes time spent out of full time training, e.g. on an overseas fellowship (1)
- 3. There is an additional clinical courses and exams fund, where trainees can claim 450 euros for exams  $\frac{1}{2}$  rejurses on a definitive list of those deemed relevant to the speciality. This includes a narrow list, for example Advanced Trauma Life Support (ATLS). By rexams undertaken outside of Ireland, 650 may be claimed. This is directly administered by the HSE/MET (2). The fund will only cover the cost of the cost of the speciality.

At the time of this survey, many trainees would have spent time prior to commencing HST completing courses to make themselves competitive to apply for HST at considerable personal cost. In addition, the range of courses covered by the above list currently excludes real and courses undertaking by trainees in their surgical training.

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ATLS if undertaken in Ireland. The current cost of ATLS is 875 euros, but the scheme will only cover 450 euros to a structure travel and

accommodation costs to regional centres to complete the course. Similarly, for membership and intercollegia and accommodation expenses. the cost, and as these are often held in the UK there are additional travel and accommodation expenses. References Appendix 1:

- 1. RCSI Training Funds for SpR Trainees. http://rcsi.ie/files/surgery/docs/20161019040654\_Funding-Information-2016.pdf Accessed 16th January 2017
- 2. HSE-National Doctors Training and Planning. Specialist Training Fund Guidance Document. July 2016.

http://bmjopen.bmj.com/ on May 24, 2025 at Department GEZ-LTA Al training, and similar technologies

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Cost of Surgical Training Survey 2015

## 1. Introduction

This survey aims to quantify the additional costs incurred by surgeons in training in pursuit of their career goals. It also aims to quantify the availability of study budgets to cover the required courses and other training needs.

A similar survey was conducted by ASiT in 2007 and we aim to give some comparison of changes over time.

The results will be freely disseminated, including through publication and on the trainee association websites, and provided to Political Leaders, the Royal Colleges, JCST and Specialty Associations.

Completion indicates your consent for this analysis, distribution and publication of anonymised, grouped results. Individual responses remain anonymous.

This survey is for ALL TRAINEES, REGARDLESS OF SURGICAL SPECIALTY in the UK and Republic of Ireland. Students are not included.

It takes approximately 10 minutes to complete.

For more information:

www.asit.org info@asit.org @ASiTofficial



Cost of Surgical Training Survey 2015

2. In which country do you work?

\* 1. Where do you work currently?

- United Kingdom
- Republic of Ireland
- Other

Other (please specify)

3. Pay

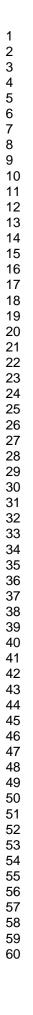
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	What is your current basic salary (without overtime, to the nearest euro)?
Ple	ease do not enter commas or symbols into any boxes relating to numerical values
То	remind you, current payscales are:
Int	ern € 30257
Se	nior House Officer
1€	38839
2€	E 40998
3€	2 44224
4€	2 46334
5€	£ 50578
6€	52687
7€	54746
Re	gistrar
1€	50578
2€	52687
3€	54746
4€	56260
5€	58279
6€	60305
Se	nior Registrar
1€	£ 65000
2€	£ 65000
3€	65620
4€	£ 67682
5€	£ 70061
6€	272540
7€	2 75097
Sp	ecialist Registrar
1€	60404
2€	61855
3€	63953
4€	€ 65000
5€	£ 66070
6€	£ 68980
7€	£ 71878

# \* 3. What is your current average monthly take home pay after tax (to the nearest euro)?

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4. <i>F</i>	Are you getting paid for your overtime?
	Yes- rostered only- all of it
	res- lostered only- all of it
	Yes- rostered only-some of it
	Yes- rostered and unrostered- all of it
	Yes-rostered and unrostered- some of it
	No
* 5. A	Are you currently entitled to a training fund? (e.g. the SpR mandatory training fund or specialist
trai	ning fund?)
	Yes
	No



ASiT	

4. Demographics

\* 6. Are you a military trainee?

O Yes

O No

7. What is your gender?

Male

Female

## \* 8. What is your age? (years)



7 8

Cost of Surgical Training Survey 2015 5. Current Post   * 9. Do you currently hold an academic post?  Yes No  * 10. Are you in Less Than Full Time Training? Yes No  11. Are you currently on leave? Yes-Matemity/Paternity leave Yes-Other leave No  * 12. Which specially do you intend to pursue? Cardiothoracic surgery Ceneral Surgery Paediatric Surgery Paediatric Surgery Paediatric Surgery Paediatric Surgery Trauma and Orthopaedics Ves-Vas-Vas-Vas-Vas-Vas-Vas-Vas-Vas-Vas-Va	SiT
<ul> <li>* 9. Do you currently hold an academic post?</li> <li>Yes</li> <li>No</li> <li>* 10. Are you in Less Than Full Time Training?</li> <li>Yes</li> <li>No</li> <li>11. Are you currently on leave?</li> <li>Yes- Maternity/Patemity leave</li> <li>Yes- Other leave</li> <li>No</li> <li>* 12. Which specialty do you intend to pursue?</li> <li>Cardiothoracic surgery</li> <li>General Surgery</li> <li>ENT</li> <li>Neurosurgery</li> <li>Oral and Maxillofacial surgery</li> <li>Plaetiatric Surgery</li> <li>Plaetiatric Surgery</li> <li>Plaetiatric Surgery</li> <li>Vesurgery</li> <li>Vacular Surgery</li> <li>Vacular Surgery</li> </ul>	Surgical Training Survey 2015
Yes No * 10. Are you in Less Than Full Time Training? Yes No 11. Are you currently on leave? Yes- Maternity/Paternity leave Yes- Other leave No * 12. Which specialty do you intend to pursue? Cardiothoracic surgery General Surgery General Surgery Oral and Maxillofacial surgery Paediatric Surgery Plastic Surgery Plastic Surgery Vascular Surgery	ent Post
Yes No * 10. Are you in Less Than Full Time Training? Yes No 11. Are you currently on leave? Yes- Maternity/Paternity leave Yes- Other leave No * 12. Which specialty do you intend to pursue? Cardiothoracic surgery General Surgery General Surgery Oral and Maxillofacial surgery Paediatric Surgery Plastic Surgery Plastic Surgery Vascular Surgery	Pro
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<ul> <li>* 10. Are you in Less Than Full Time Training?</li> <li>Yes</li> <li>No</li> <li>11. Are you currently on leave?</li> <li>Yes- Maternity/Paternity leave</li> <li>Yes- Other leave</li> <li>Yes- Other leave</li> <li>No</li> <li>* 12. Which specialty do you intend to pursue?</li> <li>Cardiothoracic surgery</li> <li>General Surgery</li> <li>General Surgery</li> <li>Oral and Maxillofacial surgery</li> <li>Plastic Surgery</li> <li>Plastic Surgery</li> <li>Plastic Surgery</li> <li>Yesurgery</li> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	
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Yes- Maternity/Paternity leave   Yes- Other leave   No   * 12. Which specialty do you intend to pursue?    Cardiothoracic surgery   General Surgery   ENT   Neurosurgery   Oral and Maxillofacial surgery   Paediatric Surgery   Plastic Surgery   Plastic Surgery   Yes- Other leave   Vacular Surgery	
Yes- Maternity/Paternity leave   Yes- Other leave   No   * 12. Which specialty do you intend to pursue?    Cardiothoracic surgery   General Surgery   ENT   Neurosurgery   Oral and Maxillofacial surgery   Paediatric Surgery   Plastic Surgery   Plastic Surgery   Yes- Other leave   Vacular Surgery	vou aurrently en leave?
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<ul> <li>Plastic Surgery</li> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	and Maxillofacial surgery
<ul> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	Jiatric Surgery
Vascular Surgery	tic Surgery
	ular Surgery
Urology	ogy
Other (please specify)	r (please specify)

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F1 or Intern
○ F2
ST1/CT1/SHO1
ST2/CT2/SHO2
СТ3/ЅНО3
ST3/SpR1
ST4/SpR2
ST5/SpR3
ST6/SpR4
ST7/SpR5
ST8/SpR6
O Post CCT
Clinical Fellow
Research post with no clinical work
Research post with part-time clinical work
Part-time clinical non-training
Other (please specify)

\* 13. What is your current grade?

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* 14. Under which Deanery/Local Education Training Board do you work?
Republic of Ireland
<ul> <li>NHS Education for Scotland</li> </ul>
Northern Ireland Medical and Dental Training Agency
Wales Deanery
Health Education North East
Health Education North West
Health Education Yorkshire and the Humber
Health Education East Midlands
Health Education West Midlands
Health Education East of England
Health Education Thames Valley
Health Education Kent, Surrey and Sussex
Health Education Wessex
Health Education South West
Health Education North Central and East London
Health Education North West London
Health Education South London

Cost of Surgical Training Survey 2015

## 6. Current Salary

\* 15. WITHOUT BANDING- What is your current basic salary? (gross, to the nearest pound) Please do not enter commas or symbols into any boxes relating to numerical values.

To remind you, doctors in training pay scales: England, Northern Ireland and Wales (Scotland in brackets). FY1 22636 (23205) 24049 (24654) 25461 (26102) FY2 28076 (28782) 29912 (30664) 31748 (32546) Specialty Training 30002 (30605) 31838 (32478) 34402 (35093) 35952 (36675) 37822 (38582)

 39693 (40491)

41564 (42399)

43434 (44307)

45304 (46215)

47175 (48123)

<u> </u>		
	What is your current banding as per your contract?	
$\bigcirc$	1A	
$\bigcirc$	1B	
$\bigcirc$	1C	
$\bigcirc$	2A	
$\bigcirc$	2B	
$\bigcirc$	3	
$\bigcirc$	Military- no banding recieved	
$\bigcirc$	Other (please specify)	
$\bigcirc$		1
17.	Are you currently entitled to a study leave budget?	
$\bigcirc$	Yes	
$\bigcirc$	No	
$\bigcirc$	Military trainee- funding at discretion of Defence Deanery	
$\bigcirc$		
If yes	s, please give the approximate value for 12 months (to the nearest pound)	

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Cos	st of Surgical Training Survey 2015
7. C	Debts
* 18.	What year did you qualify from medical school?
* 19.	Where was your medical school?
$\bigcirc$	UK
$\bigcirc$	Republic of Ireland
$\bigcirc$	Other EU
$\bigcirc$	Outside EU
□ □ □ □ □ □	Government student loan Military grant Bank or other loan NHS bursary Other bursary None of the above
prof	ressional loans, excluding mortgages) - please estimate the total value at that time (to the neares nd or euro)
* 22.	Is some or all of your study budget used to fund mandatory regional teaching? Some
$\bigcirc$	All
$\bigcirc$	None
$\bigcirc$	Don't know

# **BMJ Open**

ich in total have you paid over training, to the near	r own money that was not rei

# 8. Expenditures- Course and Exam Attendance

# \* 25. During your surgical training please identify which of the following courses or exams you have attended/attempted, and how many times:

	Once	Twice	3 x	More	Never
ALS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
APaedsLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
ATLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Basic Surgical Skills	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
CCriSP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
USMLE	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
RCSEng STEP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
MRCS Parts 1&2/A	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
MRCS Part 3/B	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
DOHNS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
FRCS Part 1	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
FRCS Part 2	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Training the Trainers	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

* 26. For any of the following courses or exams you attended, did you receive any funding?					
		All	Part	None	Not applicable
	ALS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	APaedsLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	ATLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	Basic Surgical Skills	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	CCriSP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	USMLE	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	RCSEng STEP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	MRCS Parts 1&2/A	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	MRCS Part 3/B	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	DOHNS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	FRCS Part 1	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	FRCS Part 2	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	Training the Trainers	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

- \* 27. In the last year, how much have you spent attending MANDATORY courses (to the nearest pound or euro)?
- \* 28. How much of this has been, or will be, reimbursed through your study budget or other funding (to the nearest pound or euro)?
- \* 29. In the last year, how much have you spent attending NON-MANDATORY training courses (to the nearest pound or euro)?
- \* 30. How much of this has been, or will be, reimbursed through your study budget or other funding (to the nearest pound or euro)?

\* 31. Since graduation from medical school, how much have you spent on registering for, or attending, post-graduate exams (to the nearest pound or euro)?

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33. Have you rec	eived industry funding to	o attend any of the follo	owing?	
	No industry funding received	Minor industry funding (under half expenditure)	Major industry funding (over half expenditure)	Completely indust funded
Courses	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Conferences	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Exams	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

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Cost of Surgical Training Survey 2015
9. Expenditures- Conferences, Memberships and Subscriptions
* 34. In the last year, how much have you spent attending conferences (to the nearest pound or euro)? Please include the cost of travel, registration fees and accommodation.
* 35. How much of this has been, or will be, reimbursed through your study budget or other funding (to the nearest pound or euro)?
* 36. Have you been refused funding for attending conferences in any of the regions below, for reasons other than your budget has already been used up?
UK - my deanery
UK - outside my deanery
Republic of Ireland
I have not been refused funding
Other (please specify)

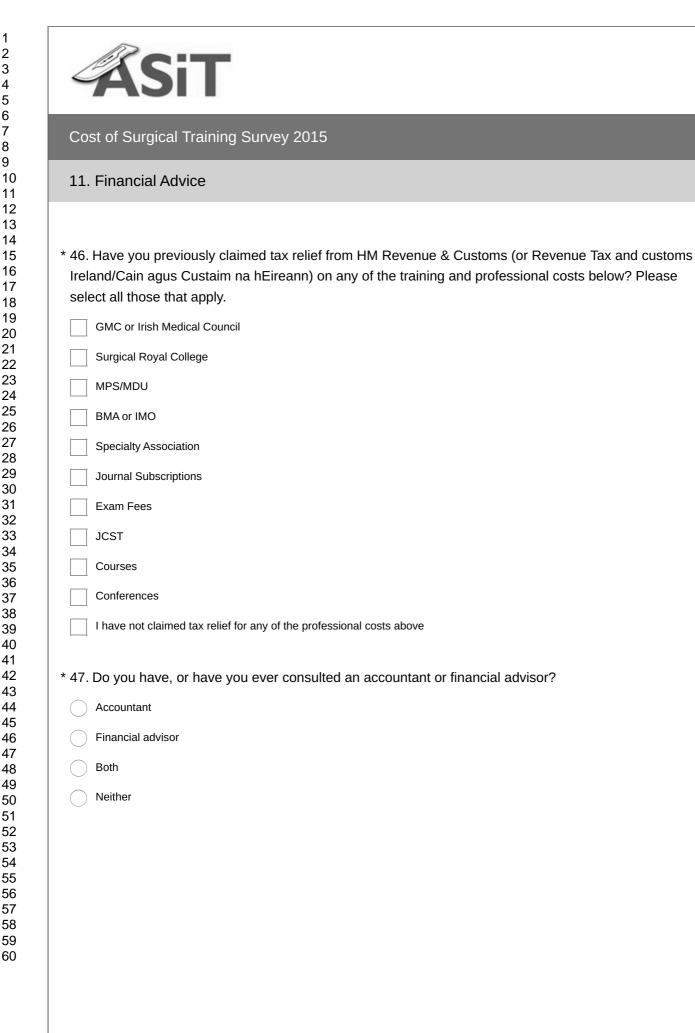
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* 37. Are you a member of any of the following professional bodies or have any other professional fe pay?	es to
General Medical Council or Irish Medical Council	
Royal College of Surgeons of Edinburgh	
Royal College of Surgeons of England	
Royal College of Physicians and Surgeons of Glasgow	
Royal College of Surgeons of Ireland	
Specialty associations eg ASGBI / SCTS / BOA / ENT-UK / BNS / BAPS / BAOMS / Vascular Society / BAPRAS etc	
Sub-specialty associations eg AUGIS / ACPGBI / BRS / ALSGBI / BASO / BTS etc	
Trainee associations eg ASiT / BOTA etc	
JCST (ISCP training fee)	
British Medical Association or Irish Medical Organization	
Hospital Consultants and Specialists Association	
MDU / MPS / other medical indemnity provider	
Royal Society of Medicine	
Journal subscriptions	
Regional training day fees	
Others (please specify)	
* 38. What is your current annual subscription to your surgical royal college? (to the nearest pound o euro)	r
* 39. In the last year how much have you spent on specialty society memberships (excluding surgica royal colleges, to the nearest pound or euro)?	I
* 40. In the last year how much have you spent on journal subscriptions (to the nearest pound or eur	o)?
* 41. In the last year how much have you spent on text books (to the nearest pound or euro)?	

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ASIT
Cost of Surgical Training Survey 2015
10. Out of Training Fellowships and Postgraduate Degrees
* 42. Have you undertaken a post-graduate degree since graduating from medical school?
Yes- PhD/DPhil Yes- MSc Yes- MPhil
Yes- MEd
Yes- MS/MChir
Yes- Other (please specify)
43. If yes, please estimate the cost of this degree to you personally in monetary terms. Please consider university fees and potential income lost that was not covered by any other funding source.
<ul> <li>* 44. Have you undertaken an overseas or other out-of-training fellowship?</li> <li>Yes</li> <li>No</li> </ul>
45. If, yes, did this negatively impact on your financial situation, please describe.



Page 54 of 75

Ŀ	SiT
Cost o	of Surgical Training Survey 2015
12. Th	e Non-Monetary Costs of Surgical Training
Nearly	there, this is the last page of questions!
* 48. Hov	w many times have you moved house for work?
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14	
15	
16	or above
* 49. Wit	h regards to childcare please select one of the following:
	o not have children
🔵 l ha	ave had to pay for weekend childcare to allow me to work
🔵 l ha	ave had to pay for evening childcare to allow me to work
🔵 l ha	ave had to pay for both evening and weekend childcare to allow me to work
🔵 l ha	ave children but have not had to pay for evening or weekend childcare

## **BMJ Open**

Yes No	D		
Mental Health	)		
Physical Health	)		
Relationships			
Financial Security			
Ability to settle down in a permanent home	)		
ther (please specify)			
1. Please answer the following questions			
	Yes	No	U
I have missed a major family event due to clinical work	$\bigcirc$	$\bigcirc$	
I have missed many family events due to clinical work	$\bigcirc$	$\bigcirc$	
I have missed a major family event due to non-clinical work that was necessary for my career progression	$\bigcirc$	$\bigcirc$	
	$\bigcirc$	$\bigcirc$	
progression I have missed many major family events due to non-clinical work that was necessary for my career	$\bigcirc$	$\bigcirc$	
progression I have missed many major family events due to non-clinical work that was necessary for my career progression		<ul><li>O</li><li>O</li><li>O</li></ul>	
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life			
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life	<ul> <li>Yes</li> </ul>	<ul> <li>No</li> </ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life		<ul> <li>No</li> </ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and		<ul> <li>○</li> <li>○</li> <li>No</li> <li>○</li> <li></li></ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and one specialty association I would support raising the annual Surgical Royal College Subscription for all MEMBERS AND		<ul> <li>○</li> <li>○</li> <li>No</li> <li>○</li> <li></li></ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and one specialty association I would support raising the annual Surgical Royal College Subscription for all MEMBERS AND FELLOWS in order to subsume the costs of the JCST fee		<ul> <li>○</li> <li>○</li></ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and one specialty association I would support raising the annual Surgical Royal College Subscription for all MEMBERS AND FELLOWS in order to subsume the costs of the JCST fee I would be happy to fund (up to £500 or 700 euro) a boot-camp in my specialty during core training		<ul> <li>○</li> <li>○</li></ul>	N

### **BMJ Open**

53. Are there any other comments you would like to make regarding the cost of surgical training, study budgets or any other related matters? Please use the box below.

54. Who do you think should contribute to the cost of surgical training? Please rank the stakeholders below, from most contribution (1), to least (9).

** ** **	The Government
0-0 0-0 0-0	NHS Trusts
0 0 0 0 0 0	Universities
0 0 0 0 0 0	Private sector providers
0 0 0 0 0 0	Trainees
0-0 0-0 0-0	Surgical Royal Colleges
** ** **	Industry
** ** **	Surgical specialty associations



Cost of Surgical Training Survey 2015

13. End of Survey

Thank you for taking the time to complete this survey, we are very grateful for your responses.

The results will be freely disseminated, including through publication and on trainee association websites, and provided to Political Leaders, the Royal Colleges, JCST and Specialty Associations.

For more information about the work being undertaken on your behalf, please visit our website, email us or tweet:

www.asit.org info@asit.org @ASiTofficial

For more information regarding professional bodies approved for tax relief:

https://www.gov.uk/government/publications/professional-bodies-approved-for-tax-relief-list-3/approved-professional-organisations-and-learned-societies#g



5 BMJ Open Appendix Three: Results for military trainees There were 20 military trainee respondents. All 20 graduated from medical school in the UK: 19 (90%) graduated with debt on graduation (mean £18,650). 16 (80%) had a military grant at medical school, 10 (50%) had a government studen in the stude (20%) had a bank or other loan. The mean amount paid out, that was not reimbursed, for courses was £4250, for conferences £16 \$3, and £2130 for exams. Mean costs per year included surgical royal college subscription (£317), specialty society membership (£336), jo 🛱 🗟 (£79), text books (£245). 7 had completed an MSc (35%), 5 an MD (25%) and 1 (5%) had done both since graduating from medical s අල් මු (mean cost £12822).

General Sur Trauma and	alty do you intend to pursue? gery: 6 (30%) I Orthopaedics: 6 (30%) rgery: 2 (10%)	What is your stage of training?           Foundation Year 1: 1 (5%)           Foundation Year 2: 0 (0%)           ST1/CT1/SHO1: 4 (20%)           ST2/CT2/SHO2: 2 (10%)           ST3/SPR1: 1 (5%)           ST4/SPR2: 4 (20%)           ST5/SPR3: 2 (10%)           ST6/SPR4: 1 (5%)           ST7/SPR5: 1 (5%)           ST8/SPR6: 1 (5%)           Post CCT: 1 (5%)           Research Post: 2 (10%)	17. Downloaded from http://bmjopen.bmj.com/ on May 24, 3 shogeschool . text and data mining, Al training, and similar technologies
	Demonstelle		n May
	Demographic	Military Trainees	May 24, 202 In <mark>plogies.</mark>
	Number Male: Female (%)	20	, 20
	I IVIAIE: Female (%)	1 14.0 (/0.30%)	N

Demographic	Military Trainees	nologies
Number	20	ogies
Male: Female (%)	14:6 (70:30%)	<u>, v</u>
Mean Age (years)	33.8 (range 27-41)	
LTFT Trainees (%)	0 (0)	
Academic Trainees (%)	1 (5%)	
		· · · ·



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 Appendix Four: Tables of costs to the trainee in each surgical specialty
 og

 Using the published requirements for progression through surgical training we have provided an estimated breaktown of the costs to the trainee in each

 surgical specialty. The following tables of costs assume straight progression through F1-ST8 without taking tine off tor LTFT, post-graduate degrees or surgical specialty. The following tables of costs assume straight progression through 1 and without taking the optimized as per JCST website. Conference costs do not include travel or subsistence.

BMA= British Medical Association, CCT= Certificate of Completion of Training, CST= Core Surgical Trainee, CT= 🕏 🛱 Training (year), FP=Foundation Programme, FRCS= Fellowship of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal Council, HST=Higher Signation of the Royal Council of th Surgical Training, MRCS= Membership of the Royal College of Surgeons, RCS= Surgical Royal College, RCSEng= RCPSCG= Royal College of Physicians and Surgeons of Glasgow, ST= Specialty Trainee (year). 

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I data mining, AI training, and similar technologies.

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2			udii	
3	Cardiothoracic Surgery		ng f	
4	Requirements	C	ost 🦉	
5	Essential for Surgical Training			2
6 7	JCST fee (for 8 years)	£	255 per year og	surgical training
8	GMC registration (for 10 years)			r, £425 per year for FP2+
9			ras	
9 10	Mandatory for progression to ST3			
11	MRCS examination	£	1425 <b>te is</b>	2 1
12			X g	7
13	Desirable for progression to ST3		and	
14	RCSEng Basic Surgical Skills Course (BSS)	£	670.50 g d	
15	Advanced Trauma Life Support Course (ATLS)	£	710 at õ a	
16	RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£	724 <u>B</u> . <u>B</u>	
17	RCSEng Specialty Skills in Cardiothoracic Surgery Course	£	724 mining,	2
18				
19	Mandatory for CCT		A F	
20	FRCS examination (including completion fee)	f	2269 <b>a</b>	
21	Good Clinical Practice Course	S F	Al training 354	
22	NHS Management Course e.g. BMA management essentials	f	354 <b>Ģ</b>	
23	Training and Education Course e.g. RCSEng Training the Trainers	f	702 <b>an</b>	
24	National or international conference attendance each year of training e.g. Society	for Cardiothoracic £	205 per y <b>e</b> ar f	r 2 years as CST, £305 per year for 6
25	Surgery conference booked as early bird rate as a member		ears as HS	
26 27			lar	
28	Other		tec	
29	BMA Membership (for 10 years)	£	113 for FP ye	r, £222 per year for FP2-CT2, £329 per
30		y	ear for ST 😤 5, 🛢	443 per year ST6+
31	RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£	316 per y 🛱 ar f	<b>f</b> 5 years as member, £531 for 1 year
32		a	s fellow 🤔 🏹	3
33	Specialty Association Membership e.g. Society for Cardiothoracic Surgery	£	100 per year f	2 years as CST, £200 per year for 6
34		Y	ears as HST 🛛 🛱	-
35	Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£	1800 <b>G</b>	
36	TOTAL ESTIMATE	£	1800 <b>24039.00</b>	
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38			מחפות פבל-רוא	
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eneral Surgery	ng t
Requirements	Cost 9 2
Essential for Surgical Training	s Z
CST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FI mar for FP2+
	ate
Mandatory for progression to ST3	
MRCS examination	£1425 <b>6 5 7</b>
RCSEng Basic Surgical Skills Course (BSS)	£670.50 <b>Å G</b>
Advanced Trauma Life Support Course (ATLS)	
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
	£724 da lo
Mandatory for CCT	B. ed
RCS examination (and completion fee)	f2269 no g
Good Clinical Practice Course	f2269 free g
NHS Management Course e.g. BMA management essentials	Free (9, 1) £354 <b>A</b> ftp: £702 and fp: £585 ft; £350 (9, 2) £260 per year for 4 years
Fraining and Education Course e.g. RCSEng Training the Trainers	£702 ta
Course relevant to specialist interest e.g. RCSEng specialty skills in coloproctology	£585 <b>2</b>
ATLS revalidation to keep valid at time of certification	£350 Ģ <mark>Ģ</mark>
Attendance at 4 national or international conferences during training e.g. Association of Surgeons of	£260 per year fer 4 years
Great Britain and Ireland conference booked as early bird rate as a member	o d d d
	in ti
Dther	ilar om
BMA Membership (for 10 years)	ـــــــــــــــــــــــــــــــــــ
	year for ST $\frac{2}{3}$ -5, $\frac{2}{5}$ 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year fer 5 years as member, £531 for 1 year
	as fellow 9. 2
Specialty Association Membership e.g. Association of Surgeons of Great Britain and Ireland	£81 per years
	£1800 8
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	

 Page 62 of 75

Page 63 of 75	pen-2017-018086 c opyright, including BMJ Open
1	t, inclu
2 3 Nourosurgery	din g
A	
5 Requirements	Cost 5 th
6 Essential for Surgical Training	S Z O
7 JCST fee (for 8 years)	£255 per year of surgical training
6 GMC registration (for 10 years)	£200 for Ft음 파클r, £425 per year for FP2+
9	ted
10 Mandatory for progression to ST3	
11 MRCS examination	£1425.00 to \$7.7
12	Xt og D
13 Desirable for progression to ST3	and
A RCSEng Basic Surgical Skills Course (BSS)	£670.50 g 6 g
15 Advanced Trauma Life Support Course (ATLS)	£670.50 and back
16 RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724.00 E. 8
17	£670.50 £650.00 £724.00 mining
18 Mandatory for CCT	
19 FRCS examination (including completion fee)	£2269.00 Å training Free Free fisst.00 g f702.00 år en
20 Good Clinical Practice Course	f2269.00 A training Free nin f354.00 g
Research Methodology Course	Free E
NHS Management Course e.g. BMA management essentials	£354.00 g g
2	
A Training and Education Course e.g. Reseng training the trainers	
Advanced Trauma Life Support Course (ATLS) completed during tra	
Attendance at 4 hational of international conferences during train	
7 Surgeons conference booked as early bird rate as an affiliate mem	ber 🚆 💐
8	e g
g Other	
BMA Membership (for 10 years)	£113 for Free year, £222 per year for FP2-CT2, £329 per
1	year for ST🔗 5, 🔀 43 per year ST6+
2 RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FR	CS as ST8 £316 per years as member, £531 for 1 year
3	as fellow
4 Specialty Association Membership e.g. Society of British Neurologi	cal Surgeons £145 per year f <b>¤</b> r 8 years
5 Healthcare Protection Organisation (for 10 years) e.g. Medical Def	ence Union £1800 <b>6</b> £21625.50 <b>6</b>
36 TOTAL ESTIMATE	£21625.50
37	
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Dral and Maxillofacial Surgery	ing o
Requirements	
Essential for Surgical Training	se Z
Bachelor of Dental Surgery e.g. University of Liverpool BDS graduate entry	$\pm 9000 \text{ for } \overset{\mathbf{a}}{\mathbf{P}} \text{ yeaks}$
JCST fee (for 7 years)	£255 per y
GMC registration (for 9 years)	£200 for Fig gear, £425 per year for FP2+
GDC registration (for 9 years)	£890 per y
	te bitsh
Mandatory for progression to ST3	×õg D
MRCS examination	
	보 수 한
Desirable for progression to ST3	data m · ·
Advanced Trauma Life Support Course (ATLS)	£650 <b>E</b> . <b>C</b>
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724 nr ro
Acute Life-threatening Events Recognition and Treatment (ALERT) Course	£650       mining,         £724       form http://bmjopen.bmj.         £95       Al training,         £2269       ning, and similar technologies         Free       f354         £350       fart technologies         £414       f785         £495       x
	A ∰
Mandatory for CCT	
FRCS examination (including completion fee)	£2269 📑 🧕
Good Clinical Practice Course	Free 🧧 🔒
Research Methodology Course	Free <b>P</b>
NHS Management Course e.g. BMA management essentials	£354 <u>v</u> .
Training and Education Course e.g. RCSEng Training the Trainers	£702 <u>3</u> 5
ATLS revalidation to keep valid at time of certification	£350 🍳 💆
Emergency Skills Course e.g. RCSEng Emergency Skills in Oral and Maxillofacial Surgery	£877.50 g
Basic Plating Course e.g. AO basic OMFS plating course	£499
Head and Neck Anatomy Course e.g. RCSEng basic surgical anatomy of the head and neck	
Surgical Dermatology Course e.g. RCSEd Facial aesthetics course	£785 <b>9</b> . 24 £495 <b>9</b> . 20 £1400 <b>25</b>
Orthognathic Course e.g. 6 <sup>th</sup> biennial Glasgow course	£495 <b>% 8</b>
Microvascular Course e.g. University of Liverpool microvascular course	
Complex/Advanced Trauma Course inc. condylar fractures and orbital access e.g. SORG course	£1500 🎬
3 advanced sub-specialty courses:	Deg
e.g. Establishing a modern salivary gland practice	£1250
e.g. Newcastle functional septorhinoplasty and facial plastics cadaveric course	£950 <b>1</b>
e.g. Controversies in the management of head and neck cancer	£275 <b>£</b>
National or international conference attendance e.g. BAOMS Conference booked as early bird rate as a	£1250 partment £950 file £275 ent £200 GEN
member *	Ξ <b>Ž</b> -

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Г		0 0
	Other	for n 1
	BMA Membership (for 9 years)	£113 for Flat year, £222 per year for FP2-CT2, £329 per
		year for ST 5, 2443 per year ST6+
	RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year 5 per year 5101 f 16 per year far 4 years as member, £531 for 1 year
	Specialty Association Membership e.g. British Association of Oral and Maxillofacial Surgeons	as fellow ar an ar an £85 per year ar ar ar ar an
	Healthcare Protection Organisation (for 9 years) e.g. Medical Defence Union	£1325 <b># 57</b>
	TOTAL ESTIMATE Where no minimum number of attendances documented a minimum of 1 included	£71431.50 <sup>×</sup> <sup>0</sup> <sub>4</sub> <sup>0</sup>
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tolaryngology	
Requirements	Cost 7
Essential for Surgical Training	USE
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FR 🛱 📭 🛓 r, £425 per year for FP2+
	atec
Mandatory for progression to ST3	
Diploma of Otolaryngology Head and Neck Surgery (DO-HNS)	£932.00 g S 7
	X O D
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50 g g g
Advanced Trauma Life Support Course (ATLS)	
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724 <u>3</u> . <u>6</u>
Advanced Life Support Course	
Advanced Paediatric Life Support Course and 2 x ENT courses	see below, <b>D</b>
Mandatasy for CCT	from http://bmjopen.bmj. £2269 Al training, Al training, Free Free free £702 f225 milar
Mandatory for CCT	
FRCS examination (including completion fee)	
Research Methodology Course	Free P
Training and Education Course e.g. RCSEng Training the Trainers Temporal Bone Dissection Course e.g. Cuschieri Skills Course	
Sinus Anatomy and Surgical Dissection Course e.g. Cuschieri Skills Course	
Head and Neck Surgery Course (including LASER) e.g. RCSEd Head and Neck Course Module 1 and 2	
Septorhinoplasty and Facial Plastics Surgery Course e.g. NSTC Course	
Advanced Paediatric Life Support Course	1305 D Ma
National or international conference attendance e.g. BACO Conference booked as an ENT-UK member *	
National of international conference attendance e.g. DACO conference booked as an ENT-OK member	£850 and £05@n £350 May 24, 202
Other	
BMA Membership (for 10 years)	f113 for FP1 year, £222 per year for FP2-CT2, £329 p
	year for ST3-5, <b>\$</b> 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	f316 per year for 5 years as member, £531 for 1 yea
	as fellow
Specialty Association Membership e.g. ENT-UK	£210 per year f <b>å</b> r 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	C1000
TOTAL ESTIMATE	f1800 G f25218.50 N ⊢

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Paediatric Surgery	
Requirements	Cost Cost
Essential for Surgical Training	IS Z
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for Fite mear, £425 per year for FP2+
Mandatory for progression to ST3	ed to the second s
MRCS examination	
Advanced Paediatric Life Support Course	£395 Č
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50 a 2 a
Advanced Trauma Life Support Course (ATLS)	£650 <b><u>∃</u>. <u><u>a</u></u></b>
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£650 mi d £724 rog mi rom
Mandatory for CCT	f Paediatric Surgeons
FRCS examination (including completion fee)	£2269 🚡 🕌
Good Clinical Practice Course	Free 📑 🧵
Research Methodology Course	Free 🦉 曼
NHS Management Course e.g. BMA management essentials	£354 🚆 🚆
Training and Education Course e.g. RCSEng Training the Trainers	£702 💆
ATLS revalidation to keep valid at time of certification	£350 Ē. Š
National or international conference attendance e.g. British Association o	f Paediatric Surgeons 🛛 🖊 £150 🛛 🗑 😫
conference booked as early bird rate as a member *	technol
Other	noic
BMA Membership (for 10 years)	£113 for F year, £222 per year for FP2-CT2, £32
	year for STS-5, §443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST	
	as fellow 🔒
Specialty Association Membership e.g. British Association of Paediatric Su	
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Un	
TOTAL ESTIMATE	£21640.50
* Where no minimum number of attendances documented a minimum of 1 included	
	1£21640.50 <u>∃</u>  Bt GE N  T →

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lastic Surgery	
Requirements	_ 61
Essential for Surgical Training	L Se No
JCST fee (for 8 years)	£255 per y 🖉 ar 🕳 surgical training
GMC registration (for 10 years)	£200 for FFង ក្រុឝភ្នំr, £425 per year for FP2+
Mandatory for progression to ST3	ed to the smust
MRCS examination	
Desirable for progression to ST3	figeschool £670.50 data £650 tata f f724 m
RCSEng Basic Surgical Skills Course (BSS)	
Advanced Trauma Life Support Course (ATLS)	£670.50 caro ca £650 ta caro caro caro caro caro caro caro car
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
Mandatory for CCT	£724 mining from http://bming Free mining free free free free free free
FRCS examination (including completion fee)	free free free free free free free free
Good Clinical Practice Course	Free to S
Research Methodology Course	Free E
Training and Education Course e.g. RCSEng Training the Trainers	£702 g g
Advanced Trauma Life Support Course (ATLS) completed during training	included above
Other	
BMA Membership (for 10 years)	£113 for Frain year, £222 per year for FP2-CT2, £329
	year for ST $\mathbf{\hat{g}}$ -5, $\mathbf{\hat{g}}$ 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	
	as fellow of a
Specialty Association Membership e.g. BAPRAS	£150 per y ar f ar 7 years (first year membership fre
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Uni	£20561.50

Page 69 of 7	5 BMJ Open	pen-201 <sup>.</sup> opyright,
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3	Trauma and Orthopaedic Surgery	ng t
4	Requirements	Cost 9 2
5	Essential for Surgical Training	S Z
6	JCST fee (for 8 years)	£255 per year of surgical training
/ 0	GMC registration (for 10 years)	£200 for FI <b>a g g g g g g g g g g</b>
8 9		te e
9 10	Mandatory for progression to ST3	
11	MRCS examination	£1425 <b>te sh</b> .7
12	Advanced Trauma Life Support Course (ATLS)	
13		an
14	Desirable for progression to ST3	
15	RCSEng Basic Surgical Skills Course (BSS)	$f_{1}$
16	RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
17	Basic Course on Fracture Management e.g. RCPSCG principles of casting for orthopaedic trainees	f20 hr fo
18		£724 m. d £20 nn g
19	Mandatory for CCT	
20	FRCS examination (including completion fee)	Al training f2269 training Free g, and similar Free mila
21	Good Clinical Practice Course	Free B. B
22	Research Methodology Course	Free <b>Q</b>
23	Training and Education Course e.g. RCSEng Training the Trainers	£702 B B
24	ATLS revalidation to keep valid at time of certification	£350 <b>v</b>
25	National or international conference attendance e.g. British Orthopaedic Association conference booked	Free B
26	as a member *	
27		te o
28	Other	<u>S</u>
29	BMA Membership (for 10 years)	£113 for FR year, £222 per year for FP2-CT2, £329 per
30		year for ST - 5, \$43 per year ST6+
31	RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 for 1 year
32		as fellow
33 34	Specialty Association Membership e.g. British Orthopaedic Association	£152 per year f <b>2</b> 2 years as CST, £166 per year for 2
		years as ST3-4, $\frac{1}{8}$ 204 per year for 2 years as ST5-6,
35 36		£240 per year for 2 years as ST7-8
37	Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	f1800
38	TOTAL ESTIMATE	f21405.50 g
39	* Where no minimum number of attendances documented a minimum of 1 included	<b>₽</b>
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Requirements	Cost of 1
Essential for Surgical Training	s z
JCST fee (for 7 years)	£255 per year of surgical training
GMC registration (for 9 years)	£200 for Fl بي سوع r, £425 per year for FP2+
	ate
Mandatory for progression to ST3	d th
MRCS examination	
	ži g d
Desirable for progression to ST3	£670.50 <b>a s s</b>
RCSEng Basic Surgical Skills Course (BSS)	
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	m. ed
	inii fro
Mandatory for CCT	m ng,
FRCS examination (including completion fee)	£2269 ≥ ∰
Good Clinical Practice Course	Free <b>1</b>
Research Methodology Course	Free E
NHS Management Course e.g. BMA management essentials	£354 <b></b>
Training and Education Course e.g. RCSEng Training the Trainers	£702 B S
ATLS revalidation to keep valid at time of certification	£350 0 5
Urodynamics Course e.g. Belfast Training Academy Course	£187.50 E
Paediatric Urology Course e.g. BAPU Course	£295 <b>a</b>
Spinal Injuries Course e.g. Princess Royal Spinal Unit Course	£450 ¢ o
Emergency Urology Course e.g. East of England Emergency Urology Course	
Attendance at 1 national or international conference every 2 years of training e.g. British Association of	£100 per vear for 3 years
Urological Surgeons Conference booked as early bird rate as a member	9 <u>9</u> . 2
	es. 1, 2
Other	£724 ad no ed from http://bmjopen.bmj.com/ on Magazina ed free free free f354 f702 and similar f295 f187.50 f187.50 f295 f450 f65 f100 per yogies. 24, 2025
BMA Membership (for 9 years)	£113 for FP1 year, £222 per year for FP2-CT2, £329
	year for ST3-5, <b>\$</b> 43 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year for 4 years as member, £531 for 1 years
	as fellow
Specialty Association Membership e.g. British Association of Urological Surgeons	£160 per year f <b>B</b> r 7 years
Healthcare Protection Organisation (for 9 years) e.g. Medical Defence Union	
TOTAL ESTIMATE	<b>£1325 G</b> <b>£20719 N</b> <b>T</b> <b>X</b>

Page 70 of 75

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Vascular Surgery	r-018086 o including
Requirements	Cost of t
Essential for Surgical Training	use
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for F g me r, £425 per year for FP2+
Mandatory for progression to ST3	er 2 asm
MRCS examination	£1425 te sh 7
RCSEng Basic Surgical Skills Course (BSS)	žo.
Advanced Trauma Life Support Course (ATLS)	£670.50 £650 £650 £724 £650
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
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Mandatory for CCT	д. ¢
FRCS examination (including completion fee)	free A training free £354 from http://bmjo
Good Clinical Practice Course	
Research Methodology Course	Free <b>A</b> training £354 training £702 training £350 <b>G</b>
NHS Management Course e.g. BMA management essentials	£354 🚮
Training and Education Course e.g. RCSEng Training the Trainers	£702 E
ATLS revalidation to keep valid at time of certification	
National or international conference attendance per year e.g. Vascular Society Conference booked as a	£375 per year for 8 years
member at early bird rate	ω
	inilar nj.com
Other	· · ·
BMA Membership (for 10 years)	£113 for Find year, £222 per year for FP2-CT2, £3
	year for ST3-5, 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year for 5 years as member, £531 for 1
	as fellow 🤤 🧏
Specialty Association Membership e.g. Vascular Society	£115 per year for 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800 S
TOTAL ESTIMATE	£24135.50 원
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# STROBE Statement for A CROSS-SECTIONAL STUDY OF THE FINANCIAL

## COST OF TRAINING TO THE SURGICAL TRAINEE

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Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	open opyr
		PAGE 1	-201 'ight
		(b) Provide in the abstract an informative and balanced summary of what was done	, inc
		and what was found	1808 Sludi
		PAGE 2-3	ing f
			- 15
Introduction			ISes
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	rela E
		PAGE 5-6	rasn Ited
Objectives	3	State specific objectives, including any prespecified hypotheses	- to te
objectives	5	PAGE 6	. Do
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Methods			Downloaded from ogeschool . tt and data mining
Study design	4	Present key elements of study design early in the paper	min fr
		PAGE 7-10	ing,
Satting	5	Describe the setting, locations, and relevant dates, including periods of recruitment,	– Alt
Setting	5	exposure, follow-up, and data collection	rain
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Participants	6	(a) Cohort study—Give the eligibility criteria, and the sources and methods of	http://bmjopen.bmj.com/ on May 24, 2 Al training, and similar technologies
		selection of participants. Describe methods of follow-up	vilar
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		<i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of	y 24 ∣ogi€
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		<i>Case-control study</i> —For matched studies, give matching criteria and the number of	imer
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Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect	EZ-L
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Data sources/       8*       For each variable of interest, give sources of assessment (measurement). Describe comparis more than one group         Bias       9       Describe any efforts to address potential sour PAGE 4, 7-10         Study size       10       Explain how the study size was arrived at PAGE 10         Quantitative variables       11       Explain how quantitative variables were han describe which groupings were chosen and PAGE 7-10         Statistical methods       12       (a) Describe all statistical methods, includin PAGE 10         (b) Describe any methods used to examine se PAGE 10       (b) Describe any methods used to examine se PAGE 10         (c) Explain how missing data were addressee PAGE 9       (d) Cohort study—If applicable, explain how case-control study—If applicable, explain for Case-control study—If applicable, describe any methods strategy	rability of assessment methods if the rces of bias dled in the analyses. If applicable, why
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PAGE 7-10	be analytical methods taking account o
( <u>e</u> ) Describe any sensitivity analyses Continued on next page	

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Results		
Participants	13*	<ul> <li>(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible,</li> <li>examined for eligibility, confirmed eligible, included in the study, completing follow-up, and</li> <li>analysed</li> <li>PAGE 10-12</li> </ul>
		(b) Give reasons for non-participation at each stage PAGE 10-12
		(c) Consider use of a flow diagram N/A
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders PAGE 10-12
		(b) Indicate number of participants with missing data for each variable of interest PAGE 10-13
		(c) Cohort study—Summarise follow-up time (eg, average and total amount)
Dutcome data	15*	Cohort study—Report numbers of outcome events or summary measures over time
		Case-control study—Report numbers in each exposure category, or summary measures of exposure
		Cross-sectional study—Report numbers of outcome events or summary measures PAGE 10-13
Main results	16	( <i>a</i> ) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included PAGE 10-13
		(b) Report category boundaries when continuous variables were categorized PAGE 10-13
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses
Discussion		
Key results	18	Summarise key results with reference to study objectives PAGE 14-18
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias PAGE 4
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence

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		PAGE 14-18
Generalisability	21	Discuss the generalisability (external validity) of the study results PAGE 14-18
Other information	on	
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based PAGE 19
		arately for cases and controls in case-control studies and, if applicable, for exposed and obort and cross-sectional studies.
	s.org/	ites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at , and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is e-statement.org.

# **BMJ Open**

#### A CROSS-SECTIONAL STUDY OF THE FINANCIAL COST OF TRAINING TO THE SURGICAL TRAINEE IN THE UK AND IRELAND

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5 6 7	TO THE SURGIC	AL TRAINEE IN THE UK AND IRELAND
8 9	John M O'Callaghan,	. Helen M Mohan, Anna E Sharrock, Vimal J Gokani, J Edward Fitzgeral
10 11 12	Adam P Williams, Rh	iannon L Harries; on behalf of the Council of the Association of
13 14	Surgeons in Training	
14 15 16		
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30 31	Running head:	The cost of surgical training
32 33 34 35	Category:	Original research
36 37 38	Funding:	Nil
39 40 41	Keywords:	surgical training, cost of training, surgical education, medical
42 43 44	education, health ec	conomics
45 46 47	Word count:	3809
48 49 50 51		
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57 58		
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#### Abstract

#### **Objectives:**

Applications for surgical training has declined over the last decade and anecdotally, the costs of training at the expense of the surgical trainee are rising. We aimed to quantify the costs surgical trainees are expected to cover for postgraduate training.

#### Design:

Prospective, cross-sectional questionnaire based study.

#### Setting/Participants:

A non-mandatory online questionnaire for UK-based trainees was distributed nationally. A similar national questionnaire was distributed for Ireland, taking into account differences between the healthcare systems. Only fully completed responses were included.

#### **Results:**

There were 848 and 58 fully completed responses from doctors based in the UK and Ireland, respectively. Medical students in the UK reported a significant increase in debt on graduation by 55% from £17,892 (2000-2004) to £27,655 (2010-2014), p<0.01. 41% of specialty trainees in the UK indicated that some or all of their study budget was used to fund mandatory regional teaching. By the end of training, a surgical trainee in the UK spends on average £9,105 on courses, £5,411 on conferences and £4,185 on exams, not covered by training budget. Irish trainees report similarly high costs. Most trainees undertake a higher degree during their postgraduate training. The cost of achieving the mandatory requirements for completion of training ranges between £20,000-£26,000 (dependent on specialty), except oral and maxillofacial surgery, which is considerably higher (£71,431).

Medical students are graduating with significantly larger debt than before. Surgical trainees achieve their educational requirements at substantial personal expenditure. To encourage graduates to pursue and remain in surgical training, urgent action is required to fund the mandatory requirements and annual training costs for completion of training and provide greater transparency to inform doctors of what their postgraduate training costs will be. This is necessary to increase diversity in surgery, reduce debt load and ensure surgery remains a popular career choice.

## Strengths and Limitations of this Study

- This national study provides a large cross-sectional data set on the experience of the costs of surgical training by surgical trainees across all ten surgical specialties in the UK and Ireland
- The costs analysed provided a comprehensive overview of the breadth and depth of financial costs incurred by trainees.
- The wide-distribution of the survey and breadth of responses increased the likelihood that it is representative of trainee experience.
- We recognise that there is a significant number of surveys excluded due to incompletion, which we believe to be related to the need for accurate costings to compete the survey. However, the overall number of completed responses was higher than required to power the study.
- It is recognised that some costs could be subject to recall bias or an element of selection bias, in that those with significantly more debt may be more likely to respond, however the figures reported are largely consistent with the calculations we have made using the current prices of exams, courses and society memberships to verify the results.

#### Introduction

The number of trainees applying for surgical training has declined over the last decade<sup>1</sup>. Many factors including low workforce morale, poor work-life balance and recent contractual issues may act as a deterrent to medical students considering a career in surgery<sup>2</sup>. The cost of completing the mandatory postgraduate requirements to secure a higher surgical training programme post has been estimated to be between £2,735 and £20,780, dependent on surgical specialty (average £3,360) compared with medicine £2,815 and anaesthetics £2,215<sup>3</sup>. Following entry to higher surgical training, there are considerable ongoing costs incurred by trainees in order to meet the requirements for completion of training as mandated by the Joint Committee on Surgical Training (JCST). These include educational courses, conference attendance, Royal College membership and fellowship examinations and annual subscriptions, and specialty society membership subscriptions. In addition, trainees pay annual expenses such as registration with the respective regulatory bodies, the UK General Medical Council (GMC) or Irish Medical Council (IMC), medical indemnity insurance costs, and the JCST fee (paid by trainees in the UK).

In 2007, The Association of Surgeons in Training (ASiT) conducted a survey of UK surgical trainees, to assess the financial costs to trainees in surgical training<sup>4</sup>. The results demonstrated that the mean debt on qualification from medical school was over £20,000. However, in recent years there have been many new challenges facing the current generation of surgical trainees, including increased student debt, secondary to a rise in annual university tuition fees of up to £9,000 per annum<sup>5</sup>. It has previously been calculated that medical students graduating currently are unlikely to repay their student loan debt before reaching the 30-year point at which it is written off<sup>6</sup>. The salaries of male and female medical graduates diverge such that by the age of 55, the average male medical school

graduate earns 35% more<sup>6</sup>. This means that the average female graduate repays more when debt is low, but a lower amount when debt is high, compared to male graduates<sup>6</sup>. The cost of living has also increased; in the ten years, preceding November 2016 the UK Consumer Price Index (CPI) rose a total of 23.8%<sup>7</sup>.

To assess the current situation, we repeated a refined study, with a broader remit and more in depth assessment of cost pressures on trainee surgeons in both the UK and Ireland. The main aim was to assess the true financial cost of training to the surgical trainee in each of the ten surgical specialties. 

#### Participants and setting

Postgraduate surgical training in the UK and Ireland consists of a minimum of 8 years of training (except for oral and maxillofacial surgery (OMFS) and urology which is a minimum of 7 years) following completion of the initial post-qualification two-year Foundation Programme (or intern year in Ireland) **Figure 1**. Competitive entry occurs prior to both Core and Higher specialist training levels, except for neurosurgery, cardiothoracic surgery and Oral and maxillofacial surgery (OMFS) in the UK (and trauma and orthopaedics in Scotland), where 'run-through' training (no separate selection process between core and higher specialist training) from Core level exists. Core surgical knowledge is assessed by the Intercollegiate Membership of the Royal College of Surgeons (MRCS) examination and specialty specific knowledge during the later phase of higher surgical training is assessed by the Intercollegiate Fellowship of the Royal College of Surgeons (FRCS) examination.

In the UK and Ireland, the Joint Committee on Surgical Training (JCST) are responsible for curriculum development and quality assurance of all the surgical training programmes in the ten defined surgical specialities (cardiothoracic surgery, general surgery, neurosurgery, OMFS, otolaryngology, paediatric surgery, plastic surgery, trauma and orthopaedics, urology and vascular surgery). All surgical trainees are required to register with the JCST and to pay an annual fee (£255 at time of submission) that has more than doubled between 2010 and 2016. This fee supports the running costs of the JCST to manage trainee enrolment and recommendation for certification; the work of each of the ten surgical specialties 'Specialty Advisory Committee' (SACs); curriculum review and development and website support. The

JCST training fee is covered for trainees in Ireland directly by funding received by the RCSI from the Health Service Executive (HSE).

In the UK, Local Education Training Boards (LETBs) provide funding to Local Education Providers (essentially the hospital where a trainee is employed) to cover the direct costs of delivering education and training. This sum includes two components: firstly, salary support of 50% of each doctor's basic salary; the second component is a placement fee of £12,400 per year, per trainee, to fund all costs involved in delivering education and training needs. It is from this placement fee that trainees apply for study funding support towards courses and conferences essential to their training, often referred to as 'study leave budget', with a restricted amount available dependent on the LETB. Funding for military trainees in the UK regular Defence Medical Services (DMS) is overseen by External Education and Training Support (EETS) within the Defence Deanery. Funding for training courses for military trainees is therefore at the discretion of the Defence Consultant Advisor and Defence Deanerv<sup>8</sup>. In Ireland, the RCSI receives funding from HSE to provide surgical training, which covers the cost of the JCST fee, delivering the curriculum, human factors and operative skills training days. However, other elements essential for CCT (Certificate of Completion of Training) are not directly provided. More details of funding for Irish trainees is given in Appendix 1.

At the time of survey distribution, there were 5,323 surgical trainees in the UK and 438 surgical trainees in Ireland<sup>9</sup>.

Page 9 of 75

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#### Questionnaire design and distribution

A novel 54-item, survey tool was developed, consisting of free-text, binomial and variable scale responses. The questionnaire was designed with reference to previously published guidelines on conducting questionnaire research<sup>10-12</sup>. The online platform SurveyMonkey® (Palo Alto, CA, USA, www.surveymonkey.com) was used to build the survey. All individual question items were compulsory. No individually identifiable information was collected; therefore, non-responders could not be identified for follow-up. No incentives were offered for participation. A link to the online survey was distributed to members of ASiT, surgical specialty associations, and local and national mailing lists of surgical trainees. All surgical trainees in the UK including foundation doctors were included, as appropriate to the level of analysis. A modified version of the survey was circulated to ASiT members and surgical trainees in Ireland, which reflected relevant differences in health systems and training. Interns were excluded from distribution of the survey in Ireland as contact details were only available for those registered as surgical trainees with RCSI. Data collection took place from 2<sup>nd</sup> December 2015 to 26<sup>th</sup> April 2016. The ethical dimensions of this non-mandatory, anonymous evaluation survey were considered and no concerns were identified. Participants consented to the use of the analysis, distribution and publication of anonymised grouped results. A copy of the survey can be found in Appendix 2.

This study was undertaken by ASiT (<u>http://www.asit.org</u>), a pan-surgical specialty professional body and registered charity in the UK (no: 274841) working to promote excellence in surgical training for the benefit of junior doctors and patients alike. ASiT is

independent of the National Health Service (NHS), Surgical Royal Colleges, and specialty associations.

#### Data analysis

Only fully completed questionnaires were included in the analysis. Due to the differing healthcare structures and funding systems of postgraduate education and training in UK and Ireland, a modified version of the survey was used for Ireland and the results are presented separately. Military trainees were excluded due to low numbers and a separate training funding structure. Data was graphed and analysed in *Excel®* (Microsoft, USA). Significance testing for continuous variables was conducted using Mann-Whitney U Test in *Stata®* (Statacorp, USA); statistical significance was accepted at p<0.05. Survey sample size calculations were based on standard published formulae and assuming a population of 6000 individuals, with alpha=0.01, 209 responses would be sufficient for margin of error of  $0.03^{13}$ . For readability, all values are presented to the nearest pound (£) or euro (€). We have used the exchange rate as accessed on  $13^{th}$  January 2017 of £0.87= €1.00 to provide comparisons between the two currencies<sup>14</sup>. The study results are reported in concordance with STROBE guidance on observational studies<sup>15</sup>. Results regarding costs are presented displaying trainees year of graduation in blocks of 5 years to show trends over time.

#### Costs of CCT to the trainee in each surgical specialty

Using guidance available from the JCST, the total cost of achieving the mandatory and desirable requirements for CCT in each of the surgical specialties was also calculated. Where conference attendance was mandated, but no exact minimum number described, the cost of at least one attendance during the training period was calculated. For courses which

 required re-validation at the end of training, the reduced course cost of re-validation rather than a full attendance was used. Course costs from recognised bodies, such as the BMA and Surgical Royal Colleges, were used in all calculations, where applicable. Conference costs were calculated using the reduced rates available to society members or early registrations where possible.

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#### 

#### Results

Of 1603 surveys submitted, a total of 868 fully completed responses were included in the analysis from doctors based in the UK, and 58 fully completed responses from doctors based in the Republic of Ireland. Respondent demographics by country of work are detailed in **Table 1.** 

#### United Kingdom-specific responses

For the purposes of monetary analysis UK military doctors (n=20) were excluded from the main analysis, however a summary of military doctors' survey findings can be found in **Appendix 3**. This resulted in a total of 848 respondents for analysis. Of 848 respondents, 751 (88%) graduated from medical school in the UK. 89% (672) of these UK medical school graduates graduated with debt, with a mean of £25,404. The average debt by year of graduation has increased by 55% from £17,892 to £27,655 comparing graduates in the most recent generation (2010-2014) with those graduating between 2000 and 2004 (p<0.01) **Figure 2**.

There were 659 specialty trainee respondents from the UK (grades CT/ST1 to ST8) **Table 2**. Of these, 93% (618) responded that they were currently entitled to a study leave budget. The median value was £600 per annum (range £500-£835). Three LETBs reported no defined budget limit (Yorkshire and Humber, South West and Thames Valley). 41% of all respondents in specialty training indicated that some (31% of respondents) or all (10% of respondents), of their study budget was used to fund mandatory regional teaching.

By the end of training, a surgical trainee in the UK can expect to have spent on average  $\pm 9,105$  on courses,  $\pm 5,411$  on conferences and  $\pm 4,185$  on exams ( $\pm 18,701$ ) that they have

not been reimbursed through any source. Expense per year on conferences has marginally increased from £331 to £414 comparing older graduates with the more recent generation (2000-2004 versus 2010-2014, p=0.28). However, course expenses per year have increased significantly; the most recent graduates from medical school, graduating in the years 2010-2014, have spent on average £1,311 per year. This is an increase of 121% on the annual amount spent by medical school graduates graduating between 2000 and 2004 (p<0.01)

Figure 3.

400 respondents (47%) from the UK have undertaken a postgraduate degree since graduating from medical school, with this proportion rising by the later stages of training (ST7-8 and post-CCT fellow) to 68% (96/141). The average cost of the degree, including university fees and loss of earnings was estimated by respondents at £18,009; with an MD/PhD being the most popular higher degree completed (24.8%, mean cost £27,882), followed by MSc (21.3%, mean cost £11,090).

732 respondents from the UK (86%) and 340 of 349 trainees level ST3-ST8 (97%) pay an annual subscription to one of the four surgical royal colleges (mean £305 for all trainees, mean £386 for ST3-ST8). 700 respondents (82%) pay annually to their SAC-defined specialty society (mean £343) and 672 (79%) are members of the British Medical Association. Over the last year, the mean amount spent on journals was £72 and on textbooks was £212.

#### Ireland-specific responses

Of the 58 respondents, 57 were currently working in Ireland and one was on fellowship in the USA **Table 1 and Table 3**. 25 (43%) reported that they were currently entitled to a training fund **Appendix 1**. In the past year, trainees spent on average £1278 (€1469) on mandatory courses, including travel expenses to courses, many of which are outside of

Ireland, of which a mean of £784 (€902) euros was not reimbursed. Trainees spent a mean of £1,977 (€2,321) on non-mandatory courses, of which a mean of £1,850 (€2,164) was not reimbursed. In the past year, respondents had spent a mean of £1,153 (€1,353) on attending conferences, of which a mean £1,005 (€1,183) was not reimbursed. Since graduation, across all grades trainees had spent a mean £4,829 (€5,669) on examinations, of which a mean £3,402 (€4,004) was not reimbursed. For senior trainees (ST8), an average £9,796 (€11,500) had been spent on exams, of which £5,396 (€6,351) was not reimbursed.

47 respondents (n=81%) from Ireland had undertaken a post-graduate degree since graduating from medical school. The MCh was the most popular post-graduate degree (n=15, 26%), followed by the MSc (n=13, 22%) and MD (n=11, 19%). The average estimated total monetary cost of undertaking a postgraduate degree to the trainee, including course fees and loss of income, was £22,093 (€25,936).

#### Estimated costs of training (UK and Ireland) using CCT essential and desirable criteria

The costs range between £20,000 ( $\pounds$ 23,479) to £26,000 ( $\pounds$ 30,523) depending on surgical specialty, except OMFS, which is considerably higher (£71,431 or  $\pounds$ 83,858) due to the dual qualification in medicine and dentistry as well as having significantly more mandatory training courses than other specialties **Appendix 4**.

Only the minority of the costs are tax deductible, add to this the estimated cost of a postgraduate degree (£18,009 or €21,142), which many surgical trainees will also undertake at their own expense, and the estimated costs to the trainee increase to approximately  $\pm$ 40,000 (€46,958, excluding OMFS).

This study has shown that individual doctors incur many thousands of pounds in personal expense after graduating from medical school to pursue a career as a surgeon and to meet the requirements to complete surgical training. These costs are incurred in addition to the significant debt built up by most medical school graduates, a debt burden likely to rise further as a greater proportion of students graduate under increased student tuition fees in the UK. Many of the costs paid by the trainee towards their training are not recognised as tax deductible, yet are incurred to cover requirements that are essential to progress through training schemes, and therefore to maintain one's livelihood. Consultant surgeons-to-be now spend considerably more per year on courses than in the past, and these now represent the single largest training cost, according to our results. Efforts to make surgery an attractive and inclusive career must include an equitable distribution of training costs to the trainee.

Individual trainees spend significant amounts on courses that are not actually mandatory as documented in CCT requirements. We speculate there are two reasons for this; firstly, surgical trainees will undertake courses above and beyond the minimum requirements to develop their skills. Gaps in knowledge and experience delivered in current training posts are likely to contribute to this, such that simulation courses are necessary to address training needs. As such, issues with training programmes failing to meet trainee's educational needs are instead transferred to trainees, who still obtain this necessary training at their own cost. Secondly, to be competitive for higher surgical training and for consultant posts, trainees may undertake additional courses and extracurricular activities.

We have identified a regional variation in what amount is available to trainees, despite the standardised placement fee from the LETB. Study budgets for specialty trainees were lower than the values released in response to the recent FOI request by Varley *et al* in 7 out of 10 LETBs (North Central, South and North West London, North West England, East of England, Kent Surrey and Sussex and North East England), and equal in three LETBs (East Midlands, Wales, West Midlands)<sup>16</sup>. It is desirable that study budgets are standardised across the UK, in both amount and that they should not be top-sliced to provide mandatory regional teaching, and in the longer term all items deemed essential for CCT (including the JCST fee), should be funded directly, without expense to the trainee. ASiT has previously highlighted this issue of uncontrolled geographical variation, calling for an equitable approach through national standardisation<sup>17</sup>.

Irish trainees bear similar high costs in surgical training to their UK counterparts, not surprisingly given that JCST requirements are the same. The higher cost of courses for Irish trainees may reflect increased travel and accommodation expenses, as many courses require travel outside of Ireland and the exclusion of Irish interns from the study, who are less likely to have undertaken expensive technical skills courses. The higher cost of exams may reflect in part a higher proportion of Irish trainees who undertake USMLE examinations to pursue a fellowship in the USA, as well as increased travel expenses to intercollegiate examinations often held in the UK. While funding is available to reimburse some of these expenses, it falls short of being sufficient to avoid trainees bearing the greatest burden of the cost. These costs are on top of annual mandatory costs such as membership or fellowship of RCSI. These are a significant additional cost- for example, the 2016/2017 subscription rate is £315 (€370) for fellows and £226 (€265) for members, and the annual

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Irish Medical Council(IMC) retention fee (£477 (€560) for those registered for less than 3 years and £515 (€605) for those registered for more than 3 years). Of note, the payment for the Irish Medical Council (IMC) is an annual payment and cannot be split across the year which places a significant financial burden on trainees at the time of the year when they move jobs and incur considerable additional expenses.

68% of later stage higher surgical trainees in the UK and 81% of Irish trainees report obtaining a higher degree. This was associated with an average cost estimated by respondents of over £18,000 and £22,000 in the UK and Ireland, respectively. Whilst it is not deemed mandatory by the JCST to undertake a higher degree within surgical training, there are a number of reasons why surgical trainees choose to undertake one. Firstly, it is required in order to practice as an academic consultant surgeon, and secondly, a significant proportion of trainees will undertake one in order to make themselves competitive for consultant appointment.

Doctors need to be aware in advance of what their chosen pathway is likely to cost them, alongside the starting salary for consultant posts when they complete their training (ranging from £76,761 in the UK and £95,775 (€105,000) in Ireland<sup>18,19</sup>). This study has provided the most detailed assessment yet for both UK and Irish surgical trainees. It is difficult to compare the costs to other medical specialties as few similar studies have been undertaken in other disciplines. One calculation for the training costs towards the completion of CCT in Obstetrics and Gynaecology estimated slightly less than for surgical trainees, at £14,224<sup>20</sup>. Another calculation for only the early stages of training in other specialties was also slightly less for medicine and anaesthetics, than surgical specialties<sup>3</sup>. Comparisons to other professional careers, such as solicitors, are also difficult, but working in the private sector

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has additional benefits. After qualifying with a law degree, solicitors must complete a Legal Practice Course (LPC), which costs £8,500-£15,000 dependent on type of course and location<sup>21</sup>. It is however possible to have this cost covered by a law firm if obtaining a training contract in advance, and many law firms will also provide a living expense grant of several thousand pounds per year<sup>22</sup>.

Research by the University of Kent for the Department of Health has provided costestimates for the training of various doctor grades from the start of medical school onwards<sup>23</sup>. This work found that the total cost of training a consultant was £564,112, with some contributions that came largely from the individual (such as undergraduate university fees, lost earnings, and postgraduate training fees) and others that came predominantly from the state (clinical placement, tuition and replacement)<sup>23</sup>. It is not possible from the document to disentangle the values independently contributed by each party.

An important consideration frequently overlooked in these analyses relates to the hospital activity performed by trainees generating hospital income. Doctors in training have a value as well as a cost, which should be taken into account to offset such cost-estimates. Two UK-based studies have sought to quantify this within surgical training<sup>24,25</sup>. In general surgery, an analysis of 1,184 out-patient clinic consultations demonstrated that trainees delivered a quarter of all out-patient related income, averaging £36,452 per trainee<sup>24</sup>. This was sufficient to offset 95% of the trainee's average basic salaries. Within ENT surgery, clinical activity undertaken by SHO grade doctors was calculated to generate an annual net income of £73,048 (4.3 times higher than their employment costs)<sup>25</sup>. Registrars generated an annual net income of £121,587 (5.4 times their employment cost). In total, 94% of trainees included in this analysis generated more hospital income than their employment costs.

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Given the benefit derived from hospitals from trainee-related clinical activity, it is reasonable that a proportionate amount of the associated costs of training should be borne by the employing hospitals.

The costs analysed in this study present a comprehensive overview of the breadth and depth of costs incurred by trainees. The survey was widely distributed across regions, specialties and grades, increasing the likelihood that it is representative of trainee experience. Future studies should seek to understand the balance of costs incurred by the health system in supporting training, which are poorly understood, the influence of training ernatic. cost on career choice, and wider international comparisons on the costs of training in different health systems.

#### Conclusions

Medical students are graduating with increasing debt. Surgical trainees achieve their educational requirements through considerable personal expenditure, with a total estimated monetary cost to the trainee in the region of £40,000 (€47,000). The Certificate of Completion of Training in surgical specialties comes with significant costs, which until now have not been accurately estimated. The cost goes far beyond the national training fee paid to the JCST annually in the UK, and greater transparency is immediately necessary to inform doctors of what their postgraduate training costs will be across all specialties. We strongly believe that the costs of mandatory surgical training should be covered by the Local Education and Training Boards, including the JCST fee and the costs of achieving CCT mandatory requirements. Furthermore, funding should be made available for nonmandatory surgical educational activity deemed beneficial by the trainee's educational supervisor, to ensure surgeons are trained to the highest level to provide excellent care. This is necessary to increase diversity in surgery, reduce debt load and make surgery a popular career choice again.

#### Acknowledgements

We thank all those trainees who took the time to complete the survey. We acknowledge the work done by Edward Fitzgerald and Charles Giddings on the previous 2007 costs of surgical training survey.

#### Contributors

RLH and JEFF conceived the study. All authors designed the questionnaire. JMOC collected the data. JMOC, HMM and RLH analysed the data. All authors were responsible for compiling and editing the manuscript, and approving the final article.

#### **Competing interests**

The authors are either current or previous surgical trainees, and current or past elected members of the Council of the Association of Surgeons in Training (Registered Charity No. 274841). JEFF is an employee of KPMG Global Health Practice, Honorary Clinical Advisor to the Lifebox Foundation charity, and a Trustee of the SURG Foundation research charity. The authors have no other relevant financial or personal conflicts of interest to declare in relation to this paper.

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#### **Data sharing statement**

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<text><text><text> Summary data is available from the corresponding author at president@asit.org. Consent to

**Table 1.** Basic Demographics. Respondents divided by country of work.

Demographic	United Kingdom	Ireland
Number	848	58
Male: Female (%)	518:327 (61.3:38.7, 3 NR)	35:23 (60:40)
Mean Age (years)	31.6 (range 23-55)	31.3 (range 25 to 41)
LTFT Trainees (%)	36 (4.3)	0
Academic Trainees (%)	69 (8.1)	N/A

NR= Not Reported, LTFT= Less than full time training

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> Table 2. Specialty, stage of training and LETB (Local Education and Training Board) for respondents from UK.

Which specialty do you intend to	What is your stage of training?	In which LETB/Deanery do you work?	
pursue?			
Cardiothoracic Surgery: 32 (3.8%)	Foundation Year 1: 12 (1.4%)	Scotland: 70 (8.3%)	
General Surgery: 296 (34.9%)	Foundation Year 2: 63 (7.4%)	Northern Ireland: 49 (5.8%)	
Neurosurgery: 28 (3.3%)	ST1/CT1/SHO1: 148 (17.5%)	Wales: 51 (6.0%)	
Oral and Maxillofacial: 19 (2.2%)	ST2/CT2/SHO2: 96 (11.3%)	North East: 42 (5.0%)	
Otolaryngology: 75 (8.8%)	CT3/SHO3: 10 (1.2%)	North West: 80 (9.4%)	
Paediatric Surgery: 29 (3.4%)	ST3/SPR1: 78 (9.2%)	Yorkshire and Humber: 55 (6.5%	
Plastic Surgery: 66 (7.8%)	ST4/SPR2: 59 (7.0%)	East Midlands: 51 (6.0%)	
Trauma and Orthopaedics: 172	ST5/SPR3: 77 (9.1%)	West Midlands: 70 (8.3%)	
(20.3%)	ST6/SPR4: 59 (7.0%)	East of England: 61 (7.2%)	
Vascular Surgery: 59 (5.4%)	ST7/SPR5: 60 (7.1%)	Thames Valley: 41 (4.8%)	
Urology: 59 (7.0%)	ST8/SPR6: 67 (7.9%)	Kent, Surrey and Sussex: 41 (4.8%)	
Other/Unsure: 26 (3.1%)	Post CCT: 17 (2.0%)	Wessex: 41 (4.8%)	
	Clinical Fellow: 35 (4.1%)	South West: 61 (7.2%)	
	Research Post:53 (6.3%)	North East and Central London: 43	
	Other: 14 (1.7%)	(5.1%)	
		North West London: 44 (5.2%)	
		South London: 46 (5.4%)	

CT= Core Training, NCE = North Central and East London, SPR= Specialist Registrar, ST= Specialist Training. 

**Table 3.** Specialty and stage of training for respondents from Ireland.

Which specialty do you intend to pursue?	What is your stage of training?
Cardiothoracic Surgery: 2 (3%)	ST1/CT1/SHO1: 13 (22%)
General Surgery: 22 (38%)	ST2/CT2/SHO2: 10 (17%)
Neurosurgery: 1(2%)	ST3/SPR1: 12 (21%)
Oral and Maxillofacial: 0	ST4/SPR2: 5 (9%)
Otolaryngology: 2 (3%)	ST5/SPR3: 4 (7%)
Paediatric Surgery: 0	ST6/SPR4: 2 (3%)
Plastic Surgery: 3(5%)	ST7/SPR5: 1 (2%)
Trauma and Orthopaedics: 20(34%)	ST8/SPR6: 3 (5%)
Vascular Surgery: 2(3%)	Clinical Fellow: 1 (2%)
Urology: 6 (10%)	Research Post: 1 (2%)

CT= Core Training, SPR= Specialist Registrar, ST= Specialist Training.

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**Figure 1.** Stages and years of training for UK doctors training to be consultant surgeons. Foundation Doctor Year 1 is the first stage following graduation from university/medical school. In Ireland, the Intern Year is the equivalent of the Foundation Doctor stage in the UK.

**Figure 2.** Mean debt on graduation from medical school, UK medical schools only. Debt has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01.

**Figure 3.** Mean expense per year on courses and conferences that trainees have not been reimbursed. Trainees grouped into 5- year generations by year of graduation. Expense on courses has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01. Expense on conferences has not significantly increased (p=0.28). UK medical school graduates only.

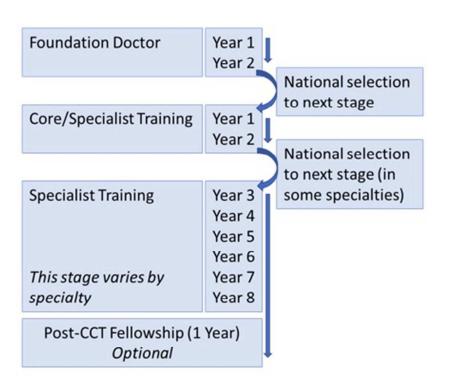


Figure 1. Stages and years of training for UK doctors training to be consultant surgeons. Foundation Doctor Year 1 is the first stage following graduation from university/medical school. In Ireland, the Intern Year is the equivalent of the Foundation Doctor stage in the UK. $\parallel$  +

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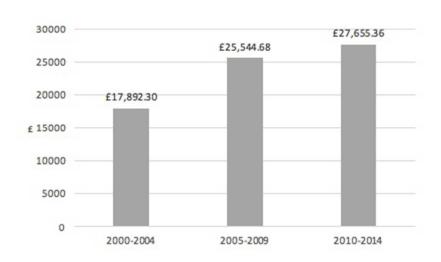
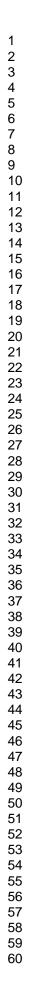


Figure 2. Mean debt on graduation from medical school, UK medical schools only. Debt has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01.

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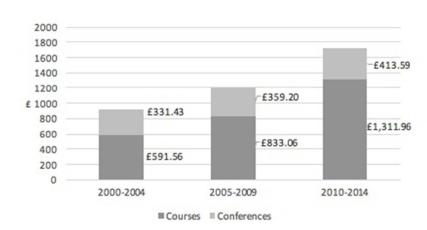


Figure 3. Mean expense per year on courses and conferences that trainees have not been reimbursed. Trainees grouped into 5- year generations by year of graduation. Expense on courses has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01. Expense on conferences has not significantly increased (p=0.28). UK medical school graduates only.!! +

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In Ireland, as the RCSI directly administers surgical training in Ireland, it receives funding from the HSE to prove de gurgical training. This includes covering the cost of the JCST fee and delivering the curriculum, including human factors and operative skills training days. There are three funding streams available to trainees on higher specialist training, equivalent to the UK "study budget"- the current funding available to HST trainees are:

- 1. Mandatory Fund- this is provided by the HSE/NDTP and administered by RCSI. It provides funding of courses while in full-time training in Ireland. This fund does not carry forward year on year and cannot be used if for example, on an overseas fellowship. However, its scope is limited as only approved mandatory courses are funded (1).
- 2. Specialist training fund- this is a fund of 500 euros per year, which accumulates over the course of HS is a fund of 500 euros per year, which accumulates over the course of HS is an be used for course fees, equipment costs and books etc. It excludes time spent out of full time training, e.g. on an overseas fellowship (1)
- 3. There is an additional clinical courses and exams fund, where trainees can claim 450 euros for exams  $\frac{1}{2}$  rejurses on a definitive list of those deemed relevant to the speciality. This includes a narrow list, for example Advanced Trauma Life Support (ATLS). By rexams undertaken outside of Ireland, 650 may be claimed. This is directly administered by the HSE/MET (2). The fund will only cover the cost of the cost of the speciality.

At the time of this survey, many trainees would have spent time prior to commencing HST completing courses to make themselves competitive to apply for HST at considerable personal cost. In addition, the range of courses covered by the above list currently excludes real and courses undertaking by trainees in their surgical training.

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ATLS if undertaken in Ireland. The current cost of ATLS is 875 euros, but the scheme will only cover 450 euros to a structure travel and

accommodation costs to regional centres to complete the course. Similarly, for membership and intercollegia and accommodation expenses. the cost, and as these are often held in the UK there are additional travel and accommodation expenses. References Appendix 1:

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Cost of Surgical Training Survey 2015

## 1. Introduction

This survey aims to quantify the additional costs incurred by surgeons in training in pursuit of their career goals. It also aims to quantify the availability of study budgets to cover the required courses and other training needs.

A similar survey was conducted by ASiT in 2007 and we aim to give some comparison of changes over time.

The results will be freely disseminated, including through publication and on the trainee association websites, and provided to Political Leaders, the Royal Colleges, JCST and Specialty Associations.

Completion indicates your consent for this analysis, distribution and publication of anonymised, grouped results. Individual responses remain anonymous.

This survey is for ALL TRAINEES, REGARDLESS OF SURGICAL SPECIALTY in the UK and Republic of Ireland. Students are not included.

It takes approximately 10 minutes to complete.

For more information:

www.asit.org info@asit.org @ASiTofficial



Cost of Surgical Training Survey 2015

2. In which country do you work?

\* 1. Where do you work currently?

- United Kingdom
- Republic of Ireland
- Other

Other (please specify)

3. Pay

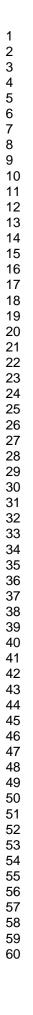
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	What is your current basic salary (without overtime, to the nearest euro)?
Ple	ease do not enter commas or symbols into any boxes relating to numerical values
То	remind you, current payscales are:
Int	ern € 30257
Se	nior House Officer
1€	38839
2€	E 40998
3€	2 44224
4€	2 46334
5€	£ 50578
6€	52687
7€	54746
Re	gistrar
1€	50578
2€	52687
3€	54746
4€	56260
5€	58279
6€	60305
Se	nior Registrar
1€	£ 65000
2€	£ 65000
3€	65620
4€	£ 67682
5€	£ 70061
6€	272540
7€	2 75097
Sp	ecialist Registrar
1€	60404
2€	61855
3€	63953
4€	€ 65000
5€	£ 66070
6€	£ 68980
7€	£ 71878

# \* 3. What is your current average monthly take home pay after tax (to the nearest euro)?

# **BMJ Open**

4. <i>F</i>	Are you getting paid for your overtime?
	Yes- rostered only- all of it
	res- lostered only- all of it
	Yes- rostered only-some of it
	Yes- rostered and unrostered- all of it
	Yes-rostered and unrostered- some of it
	No
* 5. A	Are you currently entitled to a training fund? (e.g. the SpR mandatory training fund or specialist
trai	ning fund?)
	Yes
	No



ASiT	

4. Demographics

\* 6. Are you a military trainee?

O Yes

O No

7. What is your gender?

Male

Female

## \* 8. What is your age? (years)



7 8

Cost of Surgical Training Survey 2015 5. Current Post   * 9. Do you currently hold an academic post?  Yes No  * 10. Are you in Less Than Full Time Training? Yes No  11. Are you currently on leave? Yes-Matemity/Paternity leave Yes-Other leave No  * 12. Which specially do you intend to pursue? Cardiothoracic surgery Ceneral Surgery Paediatric Surgery Paediatric Surgery Paediatric Surgery Paediatric Surgery Trauma and Orthopaedics Ves-Vas-Vas-Vas-Vas-Vas-Vas-Vas-Vas-Vas-Va	SiT
<ul> <li>* 9. Do you currently hold an academic post?</li> <li>Yes</li> <li>No</li> <li>* 10. Are you in Less Than Full Time Training?</li> <li>Yes</li> <li>No</li> <li>11. Are you currently on leave?</li> <li>Yes- Maternity/Patemity leave</li> <li>Yes- Other leave</li> <li>No</li> <li>* 12. Which specialty do you intend to pursue?</li> <li>Cardiothoracic surgery</li> <li>General Surgery</li> <li>ENT</li> <li>Neurosurgery</li> <li>Oral and Maxillofacial surgery</li> <li>Plaetiatric Surgery</li> <li>Plaetiatric Surgery</li> <li>Plaetiatric Surgery</li> <li>Vesurgery</li> <li>Vacular Surgery</li> <li>Vacular Surgery</li> </ul>	Surgical Training Survey 2015
Yes No * 10. Are you in Less Than Full Time Training? Yes No 11. Are you currently on leave? Yes- Maternity/Paternity leave Yes- Other leave No * 12. Which specialty do you intend to pursue? Cardiothoracic surgery General Surgery General Surgery Oral and Maxillofacial surgery Paediatric Surgery Plastic Surgery Plastic Surgery Vascular Surgery	ent Post
Yes No * 10. Are you in Less Than Full Time Training? Yes No 11. Are you currently on leave? Yes- Maternity/Paternity leave Yes- Other leave No * 12. Which specialty do you intend to pursue? Cardiothoracic surgery General Surgery General Surgery Oral and Maxillofacial surgery Paediatric Surgery Plastic Surgery Plastic Surgery Vascular Surgery	Pro
<ul> <li>No</li> <li>* 10. Are you in Less Than Full Time Training?</li> <li>Yes</li> <li>No</li> <li>11. Are you currently on leave?</li> <li>Yes- Maternity/Paternity leave</li> <li>Yes- Other leave</li> <li>No</li> <li>* 12. Which specialty do you intend to pursue?</li> <li>Cardiothoracic surgery</li> <li>General Surgery</li> <li>General Surgery</li> <li>Oral and Maxillofacial surgery</li> <li>Plastic Surgery</li> <li>Plastic Surgery</li> <li>Plastic Surgery</li> <li>Vascular Surgery</li> <li>Vascular Surgery</li> </ul>	u currently hold an academic post?
<ul> <li>* 10. Are you in Less Than Full Time Training?</li> <li>Yes</li> <li>No</li> <li>11. Are you currently on leave?</li> <li>Yes- Maternity/Paternity leave</li> <li>Yes- Other leave</li> <li>Yes- Other leave</li> <li>No</li> <li>* 12. Which specialty do you intend to pursue?</li> <li>Cardiothoracic surgery</li> <li>General Surgery</li> <li>General Surgery</li> <li>Oral and Maxillofacial surgery</li> <li>Plastic Surgery</li> <li>Plastic Surgery</li> <li>Plastic Surgery</li> <li>Yesurgery</li> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	
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Yes- Maternity/Paternity leave   Yes- Other leave   No   * 12. Which specialty do you intend to pursue?    Cardiothoracic surgery   General Surgery   ENT   Neurosurgery   Oral and Maxillofacial surgery   Paediatric Surgery   Plastic Surgery   Plastic Surgery   Yes- Other leave   Vacular Surgery	vou aurrently en leave?
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<ul> <li>Neurosurgery</li> <li>Oral and Maxillofacial surgery</li> <li>Paediatric Surgery</li> <li>Plastic Surgery</li> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	eral Surgery
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<ul> <li>Paediatric Surgery</li> <li>Plastic Surgery</li> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	osurgery
<ul> <li>Plastic Surgery</li> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	and Maxillofacial surgery
<ul> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	Jiatric Surgery
Vascular Surgery	tic Surgery
	ular Surgery
Urology	ogy
Other (please specify)	r (please specify)

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F1 or Intern
○ F2
ST1/CT1/SHO1
ST2/CT2/SHO2
СТ3/ЅНО3
ST3/SpR1
ST4/SpR2
ST5/SpR3
ST6/SpR4
ST7/SpR5
ST8/SpR6
O Post CCT
Clinical Fellow
Research post with no clinical work
Research post with part-time clinical work
Part-time clinical non-training
Other (please specify)

\* 13. What is your current grade?

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* 14. Under which Deanery/Local Education Training Board do you work?
Republic of Ireland
<ul> <li>NHS Education for Scotland</li> </ul>
Northern Ireland Medical and Dental Training Agency
Wales Deanery
Health Education North East
Health Education North West
Health Education Yorkshire and the Humber
Health Education East Midlands
Health Education West Midlands
Health Education East of England
Health Education Thames Valley
Health Education Kent, Surrey and Sussex
Health Education Wessex
Health Education South West
Health Education North Central and East London
Health Education North West London
Health Education South London

Cost of Surgical Training Survey 2015

## 6. Current Salary

\* 15. WITHOUT BANDING- What is your current basic salary? (gross, to the nearest pound) Please do not enter commas or symbols into any boxes relating to numerical values.

To remind you, doctors in training pay scales: England, Northern Ireland and Wales (Scotland in brackets). FY1 22636 (23205) 24049 (24654) 25461 (26102) FY2 28076 (28782) 29912 (30664) 31748 (32546) Specialty Training 30002 (30605) 31838 (32478) 34402 (35093) 35952 (36675) 37822 (38582)

 39693 (40491)

41564 (42399)

43434 (44307)

45304 (46215)

47175 (48123)

<b>I</b> U.	What is your current banding as per your contract?	
$\bigcirc$		
$\bigcirc$	1A	
$\bigcirc$	1B	
$\bigcirc$	1C	
$\bigcirc$	2A	
$\bigcirc$	2B	
$\bigcirc$	3	
$\bigcirc$	Military- no banding recieved	
$\bigcirc$	Other (please specify)	
$\bigcirc$		
17.	Are you currently entitled to a study leave budget?	
$\bigcirc$	Yes	
$\bigcirc$	No	
$\bigcirc$		
$\bigcirc$	Military trainee- funding at discretion of Defence Deanery	
If yes	s, please give the approximate value for 12 months (to the nearest pound)	

2	ASIT
Cos	st of Surgical Training Survey 2015
7. C	Debts
* 18.	What year did you qualify from medical school?
* 19.	Where was your medical school?
$\bigcirc$	UK
$\bigcirc$	Republic of Ireland
$\bigcirc$	Other EU
$\bigcirc$	Outside EU
□ □ □ □ □ □	Government student loan Military grant Bank or other loan NHS bursary Other bursary None of the above
prof	ressional loans, excluding mortgages) - please estimate the total value at that time (to the neares nd or euro)
* 22.	Is some or all of your study budget used to fund mandatory regional teaching? Some
$\bigcirc$	All
$\bigcirc$	None
$\bigcirc$	Don't know

# **BMJ Open**

uch in total have you pa over training, to the ne	of your own money that was not r
over training, to the ne	

# 8. Expenditures- Course and Exam Attendance

# \* 25. During your surgical training please identify which of the following courses or exams you have attended/attempted, and how many times:

	Once	Twice	3 x	More	Never
ALS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
APaedsLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
ATLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Basic Surgical Skills	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
CCriSP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
USMLE	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
RCSEng STEP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
MRCS Parts 1&2/A	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
MRCS Part 3/B	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
DOHNS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
FRCS Part 1	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
FRCS Part 2	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Training the Trainers	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

*	* 26. For any of the following courses or exams you attended, did you receive any funding?						
		All	Part	None	Not applicable		
	ALS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	APaedsLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	ATLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	Basic Surgical Skills	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	CCriSP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	USMLE	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	RCSEng STEP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	MRCS Parts 1&2/A	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	MRCS Part 3/B	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	DOHNS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	FRCS Part 1	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	FRCS Part 2	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		
	Training the Trainers	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$		

- \* 27. In the last year, how much have you spent attending MANDATORY courses (to the nearest pound or euro)?
- \* 28. How much of this has been, or will be, reimbursed through your study budget or other funding (to the nearest pound or euro)?
- \* 29. In the last year, how much have you spent attending NON-MANDATORY training courses (to the nearest pound or euro)?
- \* 30. How much of this has been, or will be, reimbursed through your study budget or other funding (to the nearest pound or euro)?

\* 31. Since graduation from medical school, how much have you spent on registering for, or attending, post-graduate exams (to the nearest pound or euro)?

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33. Have you rece	eived industry funding to	attend any of the follo	owing?	
	No industry funding received	Minor industry funding (under half expenditure)	Major industry funding (over half expenditure)	Completely indust funded
Courses	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Conferences	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Exams	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

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Cost of Surgical Training Survey 2015
9. Expenditures- Conferences, Memberships and Subscriptions
* 34. In the last year, how much have you spent attending conferences (to the nearest pound or euro)? Please include the cost of travel, registration fees and accommodation.
* 35. How much of this has been, or will be, reimbursed through your study budget or other funding (to the nearest pound or euro)?
* 36. Have you been refused funding for attending conferences in any of the regions below, for reasons other than your budget has already been used up?
UK - my deanery
UK - outside my deanery
Republic of Ireland
I have not been refused funding
Other (please specify)

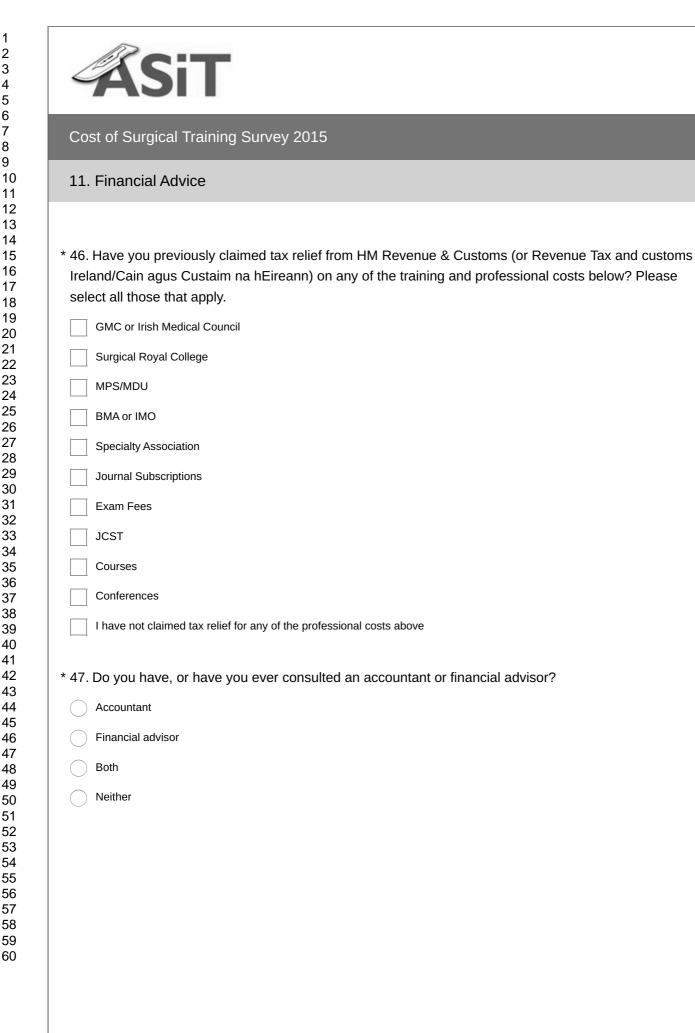
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* 37. Are you a member of any of the following professional bodies or have any other professional fe pay?	es to
General Medical Council or Irish Medical Council	
Royal College of Surgeons of Edinburgh	
Royal College of Surgeons of England	
Royal College of Physicians and Surgeons of Glasgow	
Royal College of Surgeons of Ireland	
Specialty associations eg ASGBI / SCTS / BOA / ENT-UK / BNS / BAPS / BAOMS / Vascular Society / BAPRAS etc	
Sub-specialty associations eg AUGIS / ACPGBI / BRS / ALSGBI / BASO / BTS etc	
Trainee associations eg ASiT / BOTA etc	
JCST (ISCP training fee)	
British Medical Association or Irish Medical Organization	
Hospital Consultants and Specialists Association	
MDU / MPS / other medical indemnity provider	
Royal Society of Medicine	
Journal subscriptions	
Regional training day fees	
Others (please specify)	
* 38. What is your current annual subscription to your surgical royal college? (to the nearest pound o euro)	r
* 39. In the last year how much have you spent on specialty society memberships (excluding surgica royal colleges, to the nearest pound or euro)?	I
* 40. In the last year how much have you spent on journal subscriptions (to the nearest pound or eur	o)?
* 41. In the last year how much have you spent on text books (to the nearest pound or euro)?	

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Cost of Surgical Training Survey 2015
10. Out of Training Fellowships and Postgraduate Degrees
* 42. Have you undertaken a post-graduate degree since graduating from medical school?
Yes- PhD/DPhil Yes- MSc Yes- MPhil
Yes- MEd
Yes- MS/MChir
Yes- Other (please specify)
43. If yes, please estimate the cost of this degree to you personally in monetary terms. Please consider university fees and potential income lost that was not covered by any other funding source.
<ul> <li>* 44. Have you undertaken an overseas or other out-of-training fellowship?</li> <li>Yes</li> <li>No</li> </ul>
45. If, yes, did this negatively impact on your financial situation, please describe.



Page 54 of 75

Ŀ	SiT
Cost c	of Surgical Training Survey 2015
12. Th	e Non-Monetary Costs of Surgical Training
Nearly	there, this is the last page of questions!
* 48. Hov	w many times have you moved house for work?
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15	
16	or above
* 49. Wit	h regards to childcare please select one of the following:
🔵 I do	o not have children
🔵 l ha	ave had to pay for weekend childcare to allow me to work
🔵 l ha	ave had to pay for evening childcare to allow me to work
🔵 l ha	ave had to pay for both evening and weekend childcare to allow me to work
🔵 l ha	ave children but have not had to pay for evening or weekend childcare

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Yes No	D		
Mental Health			
Physical Health	)		
Relationships			
Financial Security	)		
Ability to settle down in a permanent home	)		
ther (please specify)			
1. Please answer the following questions			
	Yes	No	U
I have missed a major family event due to clinical work	$\bigcirc$	$\bigcirc$	
I have missed many family events due to clinical work	$\bigcirc$	$\bigcirc$	
I have missed a major family event due to non-clinical work that was necessary for my career progression	$\bigcirc$	$\bigcirc$	
	$\bigcirc$	$\bigcirc$	
progression I have missed many major family events due to non-clinical work that was necessary for my career	$\bigcirc$	$\bigcirc$	
progression I have missed many major family events due to non-clinical work that was necessary for my career progression		<ul><li>O</li><li>O</li><li>O</li></ul>	
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life			
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life	<ul> <li>Yes</li> </ul>	<ul> <li>No</li> </ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life		<ul> <li>No</li> </ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and		<ul> <li></li> <li></li> <li></li> <li>No</li> <li></li> <li></li></ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and one specialty association I would support raising the annual Surgical Royal College Subscription for all MEMBERS AND		<ul> <li>○</li> <li>○</li></ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and one specialty association I would support raising the annual Surgical Royal College Subscription for all MEMBERS AND FELLOWS in order to subsume the costs of the JCST fee		<ul> <li>○</li> <li>○</li></ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and one specialty association I would support raising the annual Surgical Royal College Subscription for all MEMBERS AND FELLOWS in order to subsume the costs of the JCST fee I would be happy to fund (up to £500 or 700 euro) a boot-camp in my specialty during core training		<ul> <li>○</li> <li>○</li></ul>	Ν

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53. Are there any other comments you would like to make regarding the cost of surgical training, study budgets or any other related matters? Please use the box below.

54. Who do you think should contribute to the cost of surgical training? Please rank the stakeholders below, from most contribution (1), to least (9).

** ** **	The Government
0-0 0-0 0-0	NHS Trusts
0 0 0 0 0 0	Universities
0-0 0-0 0-0	Private sector providers
0 0 0 0 0 0	Trainees
0-0 0-0 0-0	Surgical Royal Colleges
** ** **	Industry
** ** **	Surgical specialty associations



Cost of Surgical Training Survey 2015

13. End of Survey

Thank you for taking the time to complete this survey, we are very grateful for your responses.

The results will be freely disseminated, including through publication and on trainee association websites, and provided to Political Leaders, the Royal Colleges, JCST and Specialty Associations.

For more information about the work being undertaken on your behalf, please visit our website, email us or tweet:

www.asit.org info@asit.org @ASiTofficial

For more information regarding professional bodies approved for tax relief:

https://www.gov.uk/government/publications/professional-bodies-approved-for-tax-relief-list-3/approved-professional-organisations-and-learned-societies#g



5 BMJ Open Appendix Three: Results for military trainees There were 20 military trainee respondents. All 20 graduated from medical school in the UK: 19 (90%) graduated with debt on graduation (mean £18,650). 16 (80%) had a military grant at medical school, 10 (50%) had a government studen in the stude (20%) had a bank or other loan. The mean amount paid out, that was not reimbursed, for courses was £4250, for conferences £16 \$3, and £2130 for exams. Mean costs per year included surgical royal college subscription (£317), specialty society membership (£336), jo 🛱 🗟 (£79), text books (£245). 7 had completed an MSc (35%), 5 an MD (25%) and 1 (5%) had done both since graduating from medical s අල් මු (mean cost £12822).

General Sur Trauma and	alty do you intend to pursue? gery: 6 (30%) I Orthopaedics: 6 (30%) rgery: 2 (10%)	What is your stage of training?           Foundation Year 1: 1 (5%)           Foundation Year 2: 0 (0%)           ST1/CT1/SHO1: 4 (20%)           ST2/CT2/SHO2: 2 (10%)           ST3/SPR1: 1 (5%)           ST4/SPR2: 4 (20%)           ST5/SPR3: 2 (10%)           ST6/SPR4: 1 (5%)           ST7/SPR5: 1 (5%)           ST8/SPR6: 1 (5%)           Post CCT: 1 (5%)           Research Post: 2 (10%)	17. Downloaded from http://bmjopen.bmj.com/ on May 24, 3 shogeschool . text and data mining, Al training, and similar technologies
	Demonstelle		n May
	Demographic	Military Trainees	May 24, 202 In <mark>plogies.</mark>
	Number Male: Female (%)	20	, 20
	I IVIAIE: Female (%)	1 14.0 (/0.30%)	N

Demographic	Military Trainees	nologies
Number	20	ogies
Male: Female (%)	14:6 (70:30%)	<u>, v</u>
Mean Age (years)	33.8 (range 27-41)	
LTFT Trainees (%)	0 (0)	
Academic Trainees (%)	1 (5%)	
		· · · ·



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 Appendix Four: Tables of costs to the trainee in each surgical specialty
 og

 Using the published requirements for progression through surgical training we have provided an estimated breaktown of the costs to the trainee in each

 surgical specialty. The following tables of costs assume straight progression through F1-ST8 without taking tine off tor LTFT, post-graduate degrees or surgical specialty. The following tables of costs assume straight progression through 1 and without taking the optimized as per JCST website. Conference costs do not include travel or subsistence.

BMA= British Medical Association, CCT= Certificate of Completion of Training, CST= Core Surgical Trainee, CT= 🕏 🛱 Training (year), FP=Foundation Programme, FRCS= Fellowship of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal Council, HST=Higher Signation of the Royal Council of th Surgical Training, MRCS= Membership of the Royal College of Surgeons, RCS= Surgical Royal College, RCSEng= RCPSCG= Royal College of Physicians and Surgeons of Glasgow, ST= Specialty Trainee (year). 

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I data mining, AI training, and similar technologies.

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2			udii	
3	Cardiothoracic Surgery		ng f	
4	Requirements	C	ost 🦉	
5	Essential for Surgical Training			2
6 7	JCST fee (for 8 years)	£	255 per year og	surgical training
8	GMC registration (for 10 years)			r, £425 per year for FP2+
9			ras	
9 10	Mandatory for progression to ST3			
11	MRCS examination	£	1425 <b>te is</b>	2 1
12			X g	7
13	Desirable for progression to ST3		and	
14	RCSEng Basic Surgical Skills Course (BSS)	£	670.50 g d	
15	Advanced Trauma Life Support Course (ATLS)	£	710 at õ a	
16	RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£	724 <u>B</u> . <u>B</u>	
17	RCSEng Specialty Skills in Cardiothoracic Surgery Course	£	724 mining,	2
18				
19	Mandatory for CCT		A F	
20	FRCS examination (including completion fee)	f	2269 <b>a</b>	
21	Good Clinical Practice Course	S F	Al training 354	
22	NHS Management Course e.g. BMA management essentials	f	354 <b>Ģ</b>	
23	Training and Education Course e.g. RCSEng Training the Trainers	f	702 <b>an</b>	
24	National or international conference attendance each year of training e.g. Society	for Cardiothoracic £	205 per y <b>e</b> ar f	r 2 years as CST, £305 per year for 6
25	Surgery conference booked as early bird rate as a member		ears as HS	
26 27			lar	
28	Other		tec	
29	BMA Membership (for 10 years)	£	113 for FP ye	r, £222 per year for FP2-CT2, £329 per
30		y	ear for ST 😤 5, 🛢	443 per year ST6+
31	RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£	316 per y 🛱 ar f	<b>5</b> years as member, £531 for 1 year
32		a	s fellow 🤔 🏹	3
33	Specialty Association Membership e.g. Society for Cardiothoracic Surgery	£	100 per year f	2 years as CST, £200 per year for 6
34		Y	ears as HST 🛛 🛱	-
35	Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£	1800 <b>G</b>	
36	TOTAL ESTIMATE	£	1800 <b>24039.00</b>	
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Requirements	Cost 9 2
Essential for Surgical Training	s Z
CST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FI mar for FP2+
	ate
Mandatory for progression to ST3	
MRCS examination	£1425 <b>6 5 7</b>
RCSEng Basic Surgical Skills Course (BSS)	£670.50 <b>Å G</b>
Advanced Trauma Life Support Course (ATLS)	
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
	£724 da lo
Mandatory for CCT	B. ed
RCS examination (and completion fee)	f2269 no g
Good Clinical Practice Course	f2269 free g
NHS Management Course e.g. BMA management essentials	Free (9, 1) £354 <b>A</b> ftp: £702 and fp: £585 ft; £350 (9, 2) £260 per year for 4 years
Fraining and Education Course e.g. RCSEng Training the Trainers	£702 ta
Course relevant to specialist interest e.g. RCSEng specialty skills in coloproctology	£585 <b>2</b>
ATLS revalidation to keep valid at time of certification	£350 Ģ <mark>Ģ</mark>
Attendance at 4 national or international conferences during training e.g. Association of Surgeons of	£260 per year fer 4 years
Great Britain and Ireland conference booked as early bird rate as a member	o d d d
	in ti
Dther	ilar om
BMA Membership (for 10 years)	ـــــــــــــــــــــــــــــــــــ
	year for ST $\frac{2}{3}$ -5, $\frac{2}{5}$ 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year fer 5 years as member, £531 for 1 year
	as fellow 9. 2
Specialty Association Membership e.g. Association of Surgeons of Great Britain and Ireland	£81 per years
	£1800 8
lealthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	

 Page 62 of 75

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2 3 Nourosurgery	din g
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5 Requirements	Cost 5 th
6 Essential for Surgical Training	S Z O
7 JCST fee (for 8 years)	£255 per year of surgical training
6 GMC registration (for 10 years)	£200 for Ft음 파클r, £425 per year for FP2+
9	ted
10 Mandatory for progression to ST3	
11 MRCS examination	£1425.00 to \$7.7
12	Xt og D
13 Desirable for progression to ST3	and
A RCSEng Basic Surgical Skills Course (BSS)	£670.50 g 6 g
15 Advanced Trauma Life Support Course (ATLS)	£670.50 and back
16 RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724.00 E. 8
17	£670.50 £650.00 £724.00 mining
18 Mandatory for CCT	
19 FRCS examination (including completion fee)	£2269.00 Å training Free Free fisst.00 g f702.00 år en
20 Good Clinical Practice Course	f2269.00 A training Free nin f354.00 g
Research Methodology Course	Free E
NHS Management Course e.g. BMA management essentials	£354.00 g g
2	
A Training and Education Course e.g. Reseng training the trainers	
Advanced Trauma Life Support Course (ATLS) completed during tra	
Attendance at 4 hational of international conferences during train	
7 Surgeons conference booked as early bird rate as an affiliate mem	ber 🚆 💐
8	e g
g Other	
BMA Membership (for 10 years)	£113 for Free year, £222 per year for FP2-CT2, £329 per
1	year for ST🔗 5, 🔀 43 per year ST6+
2 RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FR	CS as ST8 £316 per years as member, £531 for 1 year
3	as fellow
4 Specialty Association Membership e.g. Society of British Neurologi	cal Surgeons £145 per year f <b>¤</b> r 8 years
5 Healthcare Protection Organisation (for 10 years) e.g. Medical Def	ence Union £1800 <b>6</b> £21625.50 <b>6</b>
36 TOTAL ESTIMATE	£21625.50
37	
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Dral and Maxillofacial Surgery	ing o
Requirements	
Essential for Surgical Training	se Z
Bachelor of Dental Surgery e.g. University of Liverpool BDS graduate entry	$\pm 9000 \text{ for } \overset{\mathbf{a}}{\mathbf{P}} \text{ yeaks}$
JCST fee (for 7 years)	£255 per y
GMC registration (for 9 years)	£200 for Fig gear, £425 per year for FP2+
GDC registration (for 9 years)	£890 per y
	te bitsh
Mandatory for progression to ST3	×õg D
MRCS examination	
	보 수 한
Desirable for progression to ST3	data m · ·
Advanced Trauma Life Support Course (ATLS)	£650 <b>3</b> . <b>a</b>
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724 nr ro
Acute Life-threatening Events Recognition and Treatment (ALERT) Course	£650       mining,         £724       form http://bmjopen.bmj.         £95       Al training,         £2269       ning, and similar technologies         Free       f354         £350       fart technologies         £499       f414         £785       6495
	A ∰
Mandatory for CCT	
FRCS examination (including completion fee)	£2269 📑 🧕
Good Clinical Practice Course	Free 🧧 🔒
Research Methodology Course	Free <b>P</b>
NHS Management Course e.g. BMA management essentials	£354 <u>v</u> .
Training and Education Course e.g. RCSEng Training the Trainers	£702 <u>3</u> 5
ATLS revalidation to keep valid at time of certification	£350 🍳 💆
Emergency Skills Course e.g. RCSEng Emergency Skills in Oral and Maxillofacial Surgery	£877.50 g
Basic Plating Course e.g. AO basic OMFS plating course	£499
Head and Neck Anatomy Course e.g. RCSEng basic surgical anatomy of the head and neck	
Surgical Dermatology Course e.g. RCSEd Facial aesthetics course	£785 <b>9</b> . 24 £495 <b>9</b> . 20 £1400 <b>25</b>
Orthognathic Course e.g. 6 <sup>th</sup> biennial Glasgow course	£495 <b>% 8</b>
Microvascular Course e.g. University of Liverpool microvascular course	
Complex/Advanced Trauma Course inc. condylar fractures and orbital access e.g. SORG course	£1500 🎬
3 advanced sub-specialty courses:	Deg
e.g. Establishing a modern salivary gland practice	£1250
e.g. Newcastle functional septorhinoplasty and facial plastics cadaveric course	£950 <b>1</b>
e.g. Controversies in the management of head and neck cancer	£275 <b>£</b>
National or international conference attendance e.g. BAOMS Conference booked as early bird rate as a	£1250 partment £950 file £275 ent £200 GEN
member *	Ξ <b>Ž</b> -

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	Other	for n 1
	BMA Membership (for 9 years)	£113 for Flat year, £222 per year for FP2-CT2, £329 per
		year for ST 5, 2443 per year ST6+
	RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year 5 per year 5101 f £316 per year far 4 years as member, £531 for 1 year
	Specialty Association Membership e.g. British Association of Oral and Maxillofacial Surgeons	as fellow ar an ar an £85 per year ar ar ar ar an
	Healthcare Protection Organisation (for 9 years) e.g. Medical Defence Union	
	TOTAL ESTIMATE Where no minimum number of attendances documented a minimum of 1 included	£71431.50 <sup>×</sup> <sup>0</sup> <sub>4</sub> <sup>0</sup>
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tolaryngology	
Requirements	Cost 7
Essential for Surgical Training	USE
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FR mear, £425 per year for FP2+
	atec
Mandatory for progression to ST3	
Diploma of Otolaryngology Head and Neck Surgery (DO-HNS)	£932.00 g S 7
	X O D
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50 g g g
Advanced Trauma Life Support Course (ATLS)	
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724 <u>3</u> . <u>6</u>
Advanced Life Support Course	
Advanced Paediatric Life Support Course and 2 x ENT courses	see below, <b>D</b>
Mandatasy for CCT	from http://bmjopen.bmj. £2269 Al training, Al training, Free Free free £702 f225 milar
Mandatory for CCT	
FRCS examination (including completion fee)	
Research Methodology Course	Free P
Training and Education Course e.g. RCSEng Training the Trainers Temporal Bone Dissection Course e.g. Cuschieri Skills Course	
Sinus Anatomy and Surgical Dissection Course e.g. Cuschieri Skills Course	
Head and Neck Surgery Course (including LASER) e.g. RCSEd Head and Neck Course Module 1 and 2	
Septorhinoplasty and Facial Plastics Surgery Course e.g. NSTC Course	
Advanced Paediatric Life Support Course	1305 D Ma
National or international conference attendance e.g. BACO Conference booked as an ENT-UK member *	
National of international conference attendance e.g. DACO conference booked as an ENT-OK member	£850 and £05@n £350 May 24, 202
Other	
BMA Membership (for 10 years)	f113 for FP1 year, £222 per year for FP2-CT2, £329 p
	year for ST3-5, <b>\$</b> 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	f316 per year for 5 years as member, £531 for 1 yea
	as fellow
Specialty Association Membership e.g. ENT-UK	£210 per year f <b>å</b> r 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	C1000
TOTAL ESTIMATE	f1800 G f25218.50 N ⊢

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Paediatric Surgery	
Requirements	Cost Cost
Essential for Surgical Training	IS ZO
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for Fite mear, £425 per year for FP2+
Mandatory for progression to ST3	ed to the second s
MRCS examination	
Advanced Paediatric Life Support Course	£395 Č
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50 a 2 a
Advanced Trauma Life Support Course (ATLS)	£650 <b><u>∃</u>. <u>a</u></b>
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£650 mi d £724 rog mi rom
Mandatory for CCT	f Paediatric Surgeons
FRCS examination (including completion fee)	£2269 🚡 🕌
Good Clinical Practice Course	Free 📑 🧵
Research Methodology Course	Free 🦉 曼
NHS Management Course e.g. BMA management essentials	£354 🛱 🚆
Training and Education Course e.g. RCSEng Training the Trainers	£702 💆
ATLS revalidation to keep valid at time of certification	£350 Ē. Š
National or international conference attendance e.g. British Association o	f Paediatric Surgeons 🛛 🖊 £150 🛛 🗑 😫
conference booked as early bird rate as a member *	technol
Other	nolo
BMA Membership (for 10 years)	£113 for F year, £222 per year for FP2-CT2, £32
	year for STS-5, §443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST	
	as fellow 🔒
Specialty Association Membership e.g. British Association of Paediatric Su	
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Un	
TOTAL ESTIMATE	£21640.50
* Where no minimum number of attendances documented a minimum of 1 included	
	1£21640.50 <u>∃</u>  Bt GE N  T →

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lastic Surgery	
Requirements	_ 61
Essential for Surgical Training	L Se No
JCST fee (for 8 years)	£255 per y 🖉 ar 🕳 surgical training
GMC registration (for 10 years)	£200 for FFង ក្រុឝភ្នំr, £425 per year for FP2+
Mandatory for progression to ST3	ed to the smust
MRCS examination	
Desirable for progression to ST3	figeschool £670.50 data £650 tata f f724 m
RCSEng Basic Surgical Skills Course (BSS)	
Advanced Trauma Life Support Course (ATLS)	£670.50 caro ca £650 ta caro caro caro caro caro caro caro car
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
Mandatory for CCT	£724 mining from http://bming Free mining free free free free free free
FRCS examination (including completion fee)	free free free free free free free free
Good Clinical Practice Course	Free to S
Research Methodology Course	Free E
Training and Education Course e.g. RCSEng Training the Trainers	£702 g g
Advanced Trauma Life Support Course (ATLS) completed during training	included above
Other	
BMA Membership (for 10 years)	£113 for Frain year, £222 per year for FP2-CT2, £329
	year for ST $\mathbf{\hat{g}}$ -5, $\mathbf{\hat{g}}$ 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	
	as fellow of a
Specialty Association Membership e.g. BAPRAS	£150 per y ar f ar 7 years (first year membership fre
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Uni	£20561.50

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3	Trauma and Orthopaedic Surgery	ng t
4	Requirements	Cost 9 2
5	Essential for Surgical Training	S Z
6	JCST fee (for 8 years)	£255 per year of surgical training
/ 0	GMC registration (for 10 years)	£200 for FI <b>a g g g g g g g g g g</b>
8 9		te e
9 10	Mandatory for progression to ST3	
11	MRCS examination	£1425 <b>te sh</b> .7
12	Advanced Trauma Life Support Course (ATLS)	
13		an
14	Desirable for progression to ST3	
15	RCSEng Basic Surgical Skills Course (BSS)	$f_{1}$
16	RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
17	Basic Course on Fracture Management e.g. RCPSCG principles of casting for orthopaedic trainees	f20 hr fo
18		£724 m. d £20 nn g
19	Mandatory for CCT	
20	FRCS examination (including completion fee)	Al training f2269 training Free g, and similar Free mila
21	Good Clinical Practice Course	Free B. B
22	Research Methodology Course	Free <b>Q</b>
23	Training and Education Course e.g. RCSEng Training the Trainers	£702 B B
24	ATLS revalidation to keep valid at time of certification	£350 <b>v</b>
25	National or international conference attendance e.g. British Orthopaedic Association conference booked	Free B
26	as a member *	
27		te o
28	Other	<u>S</u>
29	BMA Membership (for 10 years)	£113 for FR year, £222 per year for FP2-CT2, £329 per
30		year for ST - 5, \$43 per year ST6+
31	RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 for 1 year
32		as fellow
33 34	Specialty Association Membership e.g. British Orthopaedic Association	£152 per year f <b>2</b> 2 years as CST, £166 per year for 2
		years as ST3-4, $\frac{1}{8}$ 204 per year for 2 years as ST5-6,
35 36		£240 per year for 2 years as ST7-8
37	Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	f1800
38	TOTAL ESTIMATE	f21405.50 g
39	* Where no minimum number of attendances documented a minimum of 1 included	<b>₽</b>
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Irology	086 or Iding
Requirements	Cost of 1
Essential for Surgical Training	
JCST fee (for 7 years)	£255 per year of surgical training
GMC registration (for 9 years)	£200 for Fr gr gr fr, £425 per year for FP2+
	asn ted
Mandatory for progression to ST3	5 g 22
MRCS examination	
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724 faint de faint d
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Mandatory for CCT	ig, h
FRCS examination (including completion fee)	£2269 🚔 🛱
Good Clinical Practice Course	Free 🗿 😽
Research Methodology Course	Free <b>B</b> .
NHS Management Course e.g. BMA management essentials	£354 🤤 🙀
Training and Education Course e.g. RCSEng Training the Trainers	£702 <b>n</b>
ATLS revalidation to keep valid at time of certification	£350 <b>s</b>
Urodynamics Course e.g. Belfast Training Academy Course	£187.50 E 8
Paediatric Urology Course e.g. BAPU Course	£295 <b>a</b> ž
Spinal Injuries Course e.g. Princess Royal Spinal Unit Course	f450 ec g
Emergency Urology Course e.g. East of England Emergency Urology Course	
Attendance at 1 national or international conference every 2 years of training e.g. British Association of	£100 per year tor 3 years
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Other	£724 ad from http://bmjopen.bmj.com/ on Magazina from http://bmjopen.bmj.com/ on Magazina from http://bmjopen.bmj.com/ on Magazina from from Magazina from from Magazina from from from from from from from from
BMA Membership (for 9 years)	t113 for FP1 ye <b>3</b> r, £222 per year for FP2-CT2, £329
p ( , ,, ,,	year for ST3-5, <b>2</b> 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year for 4 years as member, £531 for 1 years
	as fellow
Specialty Association Membership e.g. British Association of Urological Surgeons	£160 per year f <mark>e</mark> r 7 years
Healthcare Protection Organisation (for 9 years) e.g. Medical Defence Union	£1325 <b>6</b>
TOTAL ESTIMATE	<b>£1325 G</b> <b>£20719 N</b> <b>T</b>

Page 70 of 75

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Vascular Surgery	r-018086 o including
Requirements	Cost of t
Essential for Surgical Training	use
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for Figure mean for FP2+
Mandatory for progression to ST3	er 2 asm
MRCS examination	£1425 te sh 7
RCSEng Basic Surgical Skills Course (BSS)	žo.
Advanced Trauma Life Support Course (ATLS)	1670.50 10 00 10 10 10 10 10 10 10 10 10 10 10
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FRCS examination (including completion fee)	free Al training free £354 from http://bmjo
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Research Methodology Course	Free <b>A training</b> £354 <b>ai b</b> £702 <b>ni g</b>
NHS Management Course e.g. BMA management essentials	£354 🚡
Training and Education Course e.g. RCSEng Training the Trainers	£702
ATLS revalidation to keep valid at time of certification	
National or international conference attendance per year e.g. Vascular Society Conference booked as a	£375 per y ar for 8 years
member at early bird rate	u 🗧
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Other	· · ·
BMA Membership (for 10 years)	£113 for F 🛱 year, £222 per year for FP2-CT2, £3
	year for ST -5, -443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year for 5 years as member, £531 for 1
	as fellow 🤤 🧏
Specialty Association Membership e.g. Vascular Society	£115 per year for 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800 S
TOTAL ESTIMATE	£24135.50 원
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# STROBE Statement for A CROSS-SECTIONAL STUDY OF THE FINANCIAL

# COST OF TRAINING TO THE SURGICAL TRAINEE

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Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	open opyr
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		(b) Provide in the abstract an informative and balanced summary of what was done	- , inc
		and what was found	1808 Sludi
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Introduction			ISes
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	rela E
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Objectives	3	State specific objectives, including any prespecified hypotheses	- to te
objectives	5	PAGE 6	Do
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Methods			Downloaded from ogeschool . tt and data mining
Study design	4	Present key elements of study design early in the paper	ed fr
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		selection of participants. Describe methods of follow-up	nilar
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Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect	- EZ-L
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Results		
Participants	13*	<ul> <li>(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible,</li> <li>examined for eligibility, confirmed eligible, included in the study, completing follow-up, and</li> <li>analysed</li> <li>PAGE 10-12</li> </ul>
		(b) Give reasons for non-participation at each stage PAGE 10-12
		(c) Consider use of a flow diagram N/A
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders PAGE 10-12
		(b) Indicate number of participants with missing data for each variable of interest PAGE 10-13
		(c) Cohort study—Summarise follow-up time (eg, average and total amount)
Dutcome data	15*	Cohort study—Report numbers of outcome events or summary measures over time
		Case-control study—Report numbers in each exposure category, or summary measures of exposure
		Cross-sectional study—Report numbers of outcome events or summary measures PAGE 10-13
Main results	16	( <i>a</i> ) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included PAGE 10-13
		(b) Report category boundaries when continuous variables were categorized PAGE 10-13
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses
Discussion		
Key results	18	Summarise key results with reference to study objectives PAGE 14-18
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias PAGE 4
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence

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PAGE 14-18         Generalisability       21       Discuss the generalisability (external validity) of the study results PAGE 14-18         Other information       Image: Comparison of the funders for the present study and, if applicable for the original study on which the present article is based PAGE 19         *Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.         Note: An Explanation and Elaboration article discusses cach checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (free available on the Web sites of PLoS Medicine at http://www.pidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.		BMJ Open
PAGE 14-18         Other information         Funding       22       Give the source of funding and the role of the funders for the present study and, if applicable for the original study on which the present article is based         PAGE 19       *Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.         Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (free available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.		PAGE 14-18
<ul> <li>Funding 22 Give the source of funding and the role of the funders for the present study and, if applicable for the original study on which the present article is based PAGE 19</li> <li>*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.</li> <li>Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (free available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.</li> </ul>	Generalisability	
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# A CROSS-SECTIONAL STUDY OF THE FINANCIAL COST OF TRAINING TO THE SURGICAL TRAINEE IN THE UK AND IRELAND

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Complete List of Authors:	O'Callaghan, John; Association of Surgeons in Training Mohan, Helen; Association of Surgeons in Training Sharrock, Anna ; Association of Surgeons in Training Gokani, Vimal; Association of Surgeons in Training Fitzgerald, J; The Association of Surgeons in Training, Williams, Adam; Association of Surgeons in Training Harries, Rhiannon; Association of Surgeons in Training
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# Abstract

# **Objectives:**

Applications for surgical training has declined over the last decade and anecdotally, the costs of training at the expense of the surgical trainee are rising. We aimed to quantify the costs surgical trainees are expected to cover for postgraduate training.

# Design:

Prospective, cross-sectional questionnaire based study.

# Setting/Participants:

A non-mandatory online questionnaire for UK-based trainees was distributed nationally. A similar national questionnaire was distributed for Ireland, taking into account differences between the healthcare systems. Only fully completed responses were included.

# **Results:**

There were 848 and 58 fully completed responses from doctors based in the UK and Ireland, respectively. Medical students in the UK reported a significant increase in debt on graduation by 55% from £17,892 (2000-2004) to £27,655 (2010-2014), p<0.01. 41% of specialty trainees in the UK indicated that some or all of their study budget was used to fund mandatory regional teaching. By the end of training, a surgical trainee in the UK spends on average £9,105 on courses, £5,411 on conferences and £4,185 on exams, not covered by training budget. Irish trainees report similarly high costs. Most trainees undertake a higher degree during their postgraduate training. The cost of achieving the mandatory requirements for completion of training ranges between £20,000-£26,000 (dependent on specialty), except oral and maxillofacial surgery, which is considerably higher (£71,431).

Medical students are graduating with significantly larger debt than before. Surgical trainees achieve their educational requirements at substantial personal expenditure. To encourage graduates to pursue and remain in surgical training, urgent action is required to fund the mandatory requirements and annual training costs for completion of training and provide greater transparency to inform doctors of what their postgraduate training costs will be. This is necessary to increase diversity in surgery, reduce debt load and ensure surgery remains a popular career choice.

# Strengths and Limitations of this Study

- This national study provides a large cross-sectional data set on the experience of the costs of surgical training by surgical trainees across all ten surgical specialties in the UK and Ireland
- The costs analysed provided a comprehensive overview of the breadth and depth of financial costs incurred by trainees.
- The wide-distribution of the survey and breadth of responses increased the likelihood that it is representative of trainee experience.
- We recognise that there is a significant number of surveys excluded due to incompletion, which we believe to be related to the need for accurate costings to compete the survey. However, the overall number of completed responses was higher than required to power the study.
- It is recognised that some costs could be subject to recall bias or an element of selection bias, in that those with significantly more debt may be more likely to respond, however the figures reported are largely consistent with the calculations we have made using the current prices of exams, courses and society memberships to verify the results.

# Introduction

The number of trainees applying for surgical training has declined over the last decade<sup>1</sup>. Many factors including low workforce morale, poor work-life balance and recent contractual issues may act as a deterrent to medical students considering a career in surgery<sup>2</sup>. The cost of completing the mandatory postgraduate requirements to secure a higher surgical training programme post has been estimated to be between £2,735 and £20,780, dependent on surgical specialty (average £3,360) compared with medicine £2,815 and anaesthetics £2,215<sup>3</sup>. Following entry to higher surgical training, there are considerable ongoing costs incurred by trainees in order to meet the requirements for completion of training as mandated by the Joint Committee on Surgical Training (JCST). These include educational courses, conference attendance, Royal College membership and fellowship examinations and annual subscriptions, and specialty society membership subscriptions. In addition, trainees pay annual expenses such as registration with the respective regulatory bodies, the UK General Medical Council (GMC) or Irish Medical Council (IMC), medical indemnity insurance costs, and the JCST fee (paid by trainees in the UK).

In 2007, The Association of Surgeons in Training (ASiT) conducted a survey of UK surgical trainees, to assess the financial costs to trainees in surgical training<sup>4</sup>. The results demonstrated that the mean debt on qualification from medical school was over £20,000. However, in recent years there have been many new challenges facing the current generation of surgical trainees, including increased student debt, secondary to a rise in annual university tuition fees of up to £9,000 per annum<sup>5</sup>. It has previously been calculated that medical students graduating currently are unlikely to repay their student loan debt before reaching the 30-year point at which it is written off<sup>6</sup>. The salaries of male and female medical graduates diverge such that by the age of 55, the average male medical school

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graduate earns 35% more<sup>6</sup>. This means that the average female graduate repays more when debt is low, but a lower amount when debt is high, compared to male graduates<sup>6</sup>. The cost of living has also increased; in the ten years, preceding November 2016 the UK Consumer Price Index (CPI) rose a total of 23.8%<sup>7</sup>.

To assess the current situation, we repeated a refined study, with a broader remit and more in depth assessment of cost pressures on trainee surgeons in both the UK and Ireland. The main aim was to assess the true financial cost of training to the surgical trainee in each of the ten surgical specialties. 

# Participants and setting

Postgraduate surgical training in the UK and Ireland consists of a minimum of 8 years of training (except for oral and maxillofacial surgery (OMFS) and urology which is a minimum of 7 years) following completion of the initial post-qualification two-year Foundation Programme (or intern year in Ireland) **Figure 1**. Competitive entry occurs prior to both Core and Higher specialist training levels, except for neurosurgery, cardiothoracic surgery and Oral and maxillofacial surgery (OMFS) in the UK (and trauma and orthopaedics in Scotland), where 'run-through' training (no separate selection process between core and higher specialist training) from Core level exists. Core surgical knowledge is assessed by the Intercollegiate Membership of the Royal College of Surgeons (MRCS) examination and specialty specific knowledge during the later phase of higher surgical training is assessed by the Intercollegiate Fellowship of the Royal College of Surgeons (FRCS) examination.

In the UK and Ireland, the Joint Committee on Surgical Training (JCST) are responsible for curriculum development and quality assurance of all the surgical training programmes in the ten defined surgical specialities (cardiothoracic surgery, general surgery, neurosurgery, OMFS, otolaryngology, paediatric surgery, plastic surgery, trauma and orthopaedics, urology and vascular surgery). All surgical trainees are required to register with the JCST and to pay an annual fee (£255 at time of submission) that has more than doubled between 2010 and 2016. This fee supports the running costs of the JCST to manage trainee enrolment and recommendation for certification; the work of each of the ten surgical specialties 'Specialty Advisory Committee' (SACs); curriculum review and development and website support. The

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JCST training fee is covered for trainees in Ireland directly by funding received by the RCSI from the Health Service Executive (HSE).

In the UK, Local Education Training Boards (LETBs) provide funding to Local Education Providers (essentially the hospital where a trainee is employed) to cover the direct costs of delivering education and training. This sum includes two components: firstly, salary support of 50% of each doctor's basic salary; the second component is a placement fee of £12,400 per year, per trainee, to fund all costs involved in delivering education and training needs. It is from this placement fee that trainees apply for study funding support towards courses and conferences essential to their training, often referred to as 'study leave budget', with a restricted amount available dependent on the LETB. Funding for military trainees in the UK regular Defence Medical Services (DMS) is overseen by External Education and Training Support (EETS) within the Defence Deanery. Funding for training courses for military trainees is therefore at the discretion of the Defence Consultant Advisor and Defence Deanerv<sup>8</sup>. In Ireland, the RCSI receives funding from HSE to provide surgical training, which covers the cost of the JCST fee, delivering the curriculum, human factors and operative skills training days. However, other elements essential for CCT (Certificate of Completion of Training) are not directly provided. More details of funding for Irish trainees is given in Appendix 1.

At the time of survey distribution, there were 5,323 surgical trainees in the UK and 438 surgical trainees in Ireland<sup>9</sup>.

Page 9 of 75

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# Questionnaire design and distribution

A novel 54-item, survey tool was developed, consisting of free-text, binomial and variable scale responses. The questionnaire was designed with reference to previously published guidelines on conducting questionnaire research<sup>10-12</sup>. The online platform SurveyMonkey® (Palo Alto, CA, USA, www.surveymonkey.com) was used to build the survey. All individual question items were compulsory. No individually identifiable information was collected; therefore, non-responders could not be identified for follow-up. No incentives were offered for participation. A link to the online survey was distributed to members of ASiT, surgical specialty associations, and local and national mailing lists of surgical trainees. All surgical trainees in the UK including foundation doctors were included, as appropriate to the level of analysis. A modified version of the survey was circulated to ASiT members and surgical trainees in Ireland, which reflected relevant differences in health systems and training. Interns were excluded from distribution of the survey in Ireland as contact details were only available for those registered as surgical trainees with RCSI. Data collection took place from 2<sup>nd</sup> December 2015 to 26<sup>th</sup> April 2016. The ethical dimensions of this non-mandatory, anonymous evaluation survey were considered and no concerns were identified. Participants consented to the use of the analysis, distribution and publication of anonymised grouped results. A copy of the survey can be found in Appendix 2.

This study was undertaken by ASiT (<u>http://www.asit.org</u>), a pan-surgical specialty professional body and registered charity in the UK (no: 274841) working to promote excellence in surgical training for the benefit of junior doctors and patients alike. ASiT is

independent of the National Health Service (NHS), Surgical Royal Colleges, and specialty associations.

### Data analysis

Only fully completed questionnaires were included in the analysis. Due to the differing healthcare structures and funding systems of postgraduate education and training in UK and Ireland, a modified version of the survey was used for Ireland and the results are presented separately. Military trainees were excluded due to low numbers and a separate training funding structure. Data was graphed and analysed in *Excel®* (Microsoft, USA). Significance testing for continuous variables was conducted using Mann-Whitney U Test in *Stata®* (Statacorp, USA); statistical significance was accepted at p<0.05. Survey sample size calculations were based on standard published formulae and assuming a population of 6000 individuals, with alpha=0.01, 209 responses would be sufficient for margin of error of  $0.03^{13}$ . For readability, all values are presented to the nearest pound (£) or euro (€). We have used the exchange rate as accessed on  $13^{th}$  January 2017 of £0.87= €1.00 to provide comparisons between the two currencies<sup>14</sup>. The study results are reported in concordance with STROBE guidance on observational studies<sup>15</sup>. Results regarding costs are presented displaying trainees year of graduation in blocks of 5 years to show trends over time.

# Costs of CCT to the trainee in each surgical specialty

Using guidance available from the JCST, the total cost of achieving the mandatory and desirable requirements for CCT in each of the surgical specialties was also calculated. Where conference attendance was mandated, but no exact minimum number described, the cost of at least one attendance during the training period was calculated. For courses which

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 required re-validation at the end of training, the reduced course cost of re-validation rather than a full attendance was used. Course costs from recognised bodies, such as the BMA and Surgical Royal Colleges, were used in all calculations, where applicable. Conference costs were calculated using the reduced rates available to society members or early registrations where possible.

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# Results

Of 1603 surveys submitted, a total of 868 fully completed responses were included in the analysis from doctors based in the UK, and 58 fully completed responses from doctors based in the Republic of Ireland. Respondent demographics by country of work are detailed in **Table 1.** 

# United Kingdom-specific responses

For the purposes of monetary analysis UK military doctors (n=20) were excluded from the main analysis, however a summary of military doctors' survey findings can be found in **Appendix 3**. This resulted in a total of 848 respondents for analysis. Of 848 respondents, 751 (88%) graduated from medical school in the UK. 89% (672) of these UK medical school graduates graduated with debt, with a mean of £25,404. The average debt by year of graduation has increased by 55% from £17,892 to £27,655 comparing graduates in the most recent generation (2010-2014) with those graduating between 2000 and 2004 (p<0.01) **Figure 2**.

There were 659 specialty trainee respondents from the UK (grades CT/ST1 to ST8) **Table 2**. Of these, 93% (618) responded that they were currently entitled to a study leave budget. The median value was £600 per annum (range £500-£835). Three LETBs reported no defined budget limit (Yorkshire and Humber, South West and Thames Valley). 41% of all respondents in specialty training indicated that some (31% of respondents) or all (10% of respondents), of their study budget was used to fund mandatory regional teaching.

By the end of training, a surgical trainee in the UK can expect to have spent on average  $\pm 9,105$  on courses,  $\pm 5,411$  on conferences and  $\pm 4,185$  on exams ( $\pm 18,701$ ) that they have

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not been reimbursed through any source. Expense per year on conferences has marginally increased from £331 to £414 comparing older graduates with the more recent generation (2000-2004 versus 2010-2014, p=0.28). However, course expenses per year have increased significantly; the most recent graduates from medical school, graduating in the years 2010-2014, have spent on average £1,311 per year. This is an increase of 121% on the annual amount spent by medical school graduates graduating between 2000 and 2004 (p<0.01)

Figure 3.

400 respondents (47%) from the UK have undertaken a postgraduate degree since graduating from medical school, with this proportion rising by the later stages of training (ST7-8 and post-CCT fellow) to 68% (96/141). The average cost of the degree, including university fees and loss of earnings was estimated by respondents at £18,009; with an MD/PhD being the most popular higher degree completed (24.8%, mean cost £27,882), followed by MSc (21.3%, mean cost £11,090).

732 respondents from the UK (86%) and 340 of 349 trainees level ST3-ST8 (97%) pay an annual subscription to one of the four surgical royal colleges (mean £305 for all trainees, mean £386 for ST3-ST8). 700 respondents (82%) pay annually to their SAC-defined specialty society (mean £343) and 672 (79%) are members of the British Medical Association. Over the last year, the mean amount spent on journals was £72 and on textbooks was £212.

#### Ireland-specific responses

Of the 58 respondents, 57 were currently working in Ireland and one was on fellowship in the USA **Table 1 and Table 3**. 25 (43%) reported that they were currently entitled to a training fund **Appendix 1**. In the past year, trainees spent on average £1278 (€1469) on mandatory courses, including travel expenses to courses, many of which are outside of

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Ireland, of which a mean of £784 (€902) euros was not reimbursed. Trainees spent a mean of £1,977 (€2,321) on non-mandatory courses, of which a mean of £1,850 (€2,164) was not reimbursed. In the past year, respondents had spent a mean of £1,153 (€1,353) on attending conferences, of which a mean £1,005 (€1,183) was not reimbursed. Since graduation, across all grades trainees had spent a mean £4,829 (€5,669) on examinations, of which a mean £3,402 (€4,004) was not reimbursed. For senior trainees (ST8), an average £9,796 (€11,500) had been spent on exams, of which £5,396 (€6,351) was not reimbursed.

47 respondents (n=81%) from Ireland had undertaken a post-graduate degree since graduating from medical school. The MCh was the most popular post-graduate degree (n=15, 26%), followed by the MSc (n=13, 22%) and MD (n=11, 19%). The average estimated total monetary cost of undertaking a postgraduate degree to the trainee, including course fees and loss of income, was £22,093 (€25,936).

### Estimated costs of training (UK and Ireland) using CCT essential and desirable criteria

The costs range between £20,000 ( $\pounds$ 23,479) to £26,000 ( $\pounds$ 30,523) depending on surgical specialty, except OMFS, which is considerably higher (£71,431 or  $\pounds$ 83,858) due to the dual qualification in medicine and dentistry as well as having significantly more mandatory training courses than other specialties **Appendix 4**.

Only the minority of the costs are tax deductible, add to this the estimated cost of a postgraduate degree (£18,009 or €21,142), which many surgical trainees will also undertake at their own expense, and the estimated costs to the trainee increase to approximately  $\pm$ 40,000 (€46,958, excluding OMFS).

This study has shown that individual doctors incur many thousands of pounds in personal expense after graduating from medical school to pursue a career as a surgeon and to meet the requirements to complete surgical training. These costs are incurred in addition to the significant debt built up by most medical school graduates, a debt burden likely to rise further as a greater proportion of students graduate under increased student tuition fees in the UK. Many of the costs paid by the trainee towards their training are not recognised as tax deductible, yet are incurred to cover requirements that are essential to progress through training schemes, and therefore to maintain one's livelihood. Consultant surgeons-to-be now spend considerably more per year on courses than in the past, and these now represent the single largest training cost, according to our results. Efforts to make surgery an attractive and inclusive career must include an equitable distribution of training costs to the trainee.

Individual trainees spend significant amounts on courses that are not actually mandatory as documented in CCT requirements. We speculate there are two reasons for this; firstly, surgical trainees will undertake courses above and beyond the minimum requirements to develop their skills. Gaps in knowledge and experience delivered in current training posts are likely to contribute to this, such that simulation courses are necessary to address training needs. As such, issues with training programmes failing to meet trainee's educational needs are instead transferred to trainees, who still obtain this necessary training at their own cost. Secondly, to be competitive for higher surgical training and for consultant posts, trainees may undertake additional courses and extracurricular activities.

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We have identified a regional variation in what amount is available to trainees, despite the standardised placement fee from the LETB. Study budgets for specialty trainees were lower than the values released in response to the recent FOI request by Varley *et al* in 7 out of 10 LETBs (North Central, South and North West London, North West England, East of England, Kent Surrey and Sussex and North East England), and equal in three LETBs (East Midlands, Wales, West Midlands)<sup>16</sup>. It is desirable that study budgets are standardised across the UK, in both amount and that they should not be top-sliced to provide mandatory regional teaching, and in the longer term all items deemed essential for CCT (including the JCST fee), should be funded directly, without expense to the trainee. ASiT has previously highlighted this issue of uncontrolled geographical variation, calling for an equitable approach through national standardisation<sup>17</sup>.

Irish trainees bear similar high costs in surgical training to their UK counterparts, not surprisingly given that JCST requirements are the same. The higher cost of courses for Irish trainees may reflect increased travel and accommodation expenses, as many courses require travel outside of Ireland and the exclusion of Irish interns from the study, who are less likely to have undertaken expensive technical skills courses. The higher cost of exams may reflect in part a higher proportion of Irish trainees who undertake USMLE examinations to pursue a fellowship in the USA, as well as increased travel expenses to intercollegiate examinations often held in the UK. While funding is available to reimburse some of these expenses, it falls short of being sufficient to avoid trainees bearing the greatest burden of the cost. These costs are on top of annual mandatory costs such as membership or fellowship of RCSI. These are a significant additional cost- for example, the 2016/2017 subscription rate is £315 (€370) for fellows and £226 (€265) for members, and the annual

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Irish Medical Council(IMC) retention fee (£477 (€560) for those registered for less than 3 years and £515 (€605) for those registered for more than 3 years). Of note, the payment for the Irish Medical Council (IMC) is an annual payment and cannot be split across the year which places a significant financial burden on trainees at the time of the year when they move jobs and incur considerable additional expenses.

68% of later stage higher surgical trainees in the UK and 81% of Irish trainees report obtaining a higher degree. This was associated with an average cost estimated by respondents of over £18,000 and £22,000 in the UK and Ireland, respectively. Whilst it is not deemed mandatory by the JCST to undertake a higher degree within surgical training, there are a number of reasons why surgical trainees choose to undertake one. Firstly, it is required in order to practice as an academic consultant surgeon, and secondly, a significant proportion of trainees will undertake one in order to make themselves competitive for consultant appointment.

Doctors need to be aware in advance of what their chosen pathway is likely to cost them, alongside the starting salary for consultant posts when they complete their training (ranging from £76,761 in the UK and £95,775 (€105,000) in Ireland<sup>18,19</sup>). This study has provided the most detailed assessment yet for both UK and Irish surgical trainees. It is difficult to compare the costs to other medical specialties as few similar studies have been undertaken in other disciplines. One calculation for the training costs towards the completion of CCT in Obstetrics and Gynaecology estimated slightly less than for surgical trainees, at £14,224<sup>20</sup>. Another calculation for only the early stages of training in other specialties was also slightly less for medicine and anaesthetics, than surgical specialties<sup>3</sup>. Comparisons to other professional careers, such as solicitors, are also difficult, but working in the private sector

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has additional benefits. After qualifying with a law degree, solicitors must complete a Legal Practice Course (LPC), which costs £8,500-£15,000 dependent on type of course and location<sup>21</sup>. It is however possible to have this cost covered by a law firm if obtaining a training contract in advance, and many law firms will also provide a living expense grant of several thousand pounds per year<sup>22</sup>.

Research by the University of Kent for the Department of Health has provided costestimates for the training of various doctor grades from the start of medical school onwards<sup>23</sup>. This work found that the total cost of training a consultant was £564,112, with some contributions that came largely from the individual (such as undergraduate university fees, lost earnings, and postgraduate training fees) and others that came predominantly from the state (clinical placement, tuition and replacement)<sup>23</sup>. It is not possible from the document to disentangle the values independently contributed by each party.

An important consideration frequently overlooked in these analyses relates to the hospital activity performed by trainees generating hospital income. Doctors in training have a value as well as a cost, which should be taken into account to offset such cost-estimates. Two UK-based studies have sought to quantify this within surgical training<sup>24,25</sup>. In general surgery, an analysis of 1,184 out-patient clinic consultations demonstrated that trainees delivered a quarter of all out-patient related income, averaging £36,452 per trainee<sup>24</sup>. This was sufficient to offset 95% of the trainee's average basic salaries. Within ENT surgery, clinical activity undertaken by SHO grade doctors was calculated to generate an annual net income of £73,048 (4.3 times higher than their employment costs)<sup>25</sup>. Registrars generated an annual net income of £121,587 (5.4 times their employment cost). In total, 94% of trainees included in this analysis generated more hospital income than their employment costs.

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Given the benefit derived from hospitals from trainee-related clinical activity, it is reasonable that a proportionate amount of the associated costs of training should be borne by the employing hospitals.

The costs analysed in this study present a comprehensive overview of the breadth and depth of costs incurred by trainees. The survey was widely distributed across regions, specialties and grades, increasing the likelihood that it is representative of trainee experience. However, these results are specific to the UK and Ireland and caution should be taken when comparing to other national surgical training systems due to international variability of the requirements for completion of training, length of training programme, differing training costs and salaries. A significant number of surveys were excluded due to incompletion, which we believe to be related to the need for accurate costings to compete the survey. However, the overall number of completed responses was higher than required to power the study. It is also recognised that some costs could be subject to recall bias or an element of selection bias, in that those with significantly more debt may be more likely to respond, however the figures reported are largely consistent with the calculations made using the current prices of exams, courses and society memberships Appendix 4. Future studies should seek to understand the balance of costs incurred by the health system in supporting training, which are poorly understood, the influence of training cost on career choice, and wider international comparisons on the costs of training in different health systems.

#### Conclusions

Medical students are graduating with increasing debt. Surgical trainees achieve their educational requirements through considerable personal expenditure, with a total estimated monetary cost to the trainee in the region of £40,000 (€47,000). The Certificate of Completion of Training in surgical specialties comes with significant costs, which until now have not been accurately estimated. The cost goes far beyond the national training fee paid to the JCST annually in the UK, and greater transparency is immediately necessary to inform doctors of what their postgraduate training costs will be across all specialties. We strongly believe that the costs of mandatory surgical training should be covered by the Local Education and Training Boards, including the JCST fee and the costs of achieving CCT mandatory requirements. Furthermore, funding should be made available for nonmandatory surgical educational activity deemed beneficial by the trainee's educational supervisor, to ensure surgeons are trained to the highest level to provide excellent care. This is necessary to increase diversity in surgery, reduce debt load and make surgery a popular career choice again.

#### Acknowledgements

We thank all those trainees who took the time to complete the survey. We acknowledge the work done by Edward Fitzgerald and Charles Giddings on the previous 2007 costs of surgical training survey.

## Contributors

RLH and JEFF conceived the study. All authors designed the questionnaire. JMOC collected the data. JMOC, HMM and RLH analysed the data. All authors were responsible for compiling and editing the manuscript, and approving the final article.

## **Competing interests**

The authors are either current or previous surgical trainees, and current or past elected members of the Council of the Association of Surgeons in Training (Registered Charity No. 274841). JEFF is an employee of KPMG Global Health Practice, Honorary Clinical Advisor to the Lifebox Foundation charity, and a Trustee of the SURG Foundation research charity. The authors have no other relevant financial or personal conflicts of interest to declare in relation to this paper.

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## Data sharing statement

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<text><text><text> Summary data is available from the corresponding author at president@asit.org. Consent to

**Table 1.** Basic Demographics. Respondents divided by country of work.

Demographic	United Kingdom	Ireland
Number	848	58
Male: Female (%)	518:327 (61.3:38.7, 3 NR)	35:23 (60:40)
Mean Age (years)	31.6 (range 23-55)	31.3 (range 25 to 41)
LTFT Trainees (%)	36 (4.3)	0
Academic Trainees (%)	69 (8.1)	N/A

NR= Not Reported, LTFT= Less than full time training

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> Table 2. Specialty, stage of training and LETB (Local Education and Training Board) for respondents from UK.

Which specialty do you intend to	What is your stage of training?	In which LETB/Deanery do you work?	
pursue?			
Cardiothoracic Surgery: 32 (3.8%)	Foundation Year 1: 12 (1.4%)	Scotland: 70 (8.3%)	
General Surgery: 296 (34.9%)	Foundation Year 2: 63 (7.4%)	Northern Ireland: 49 (5.8%)	
Neurosurgery: 28 (3.3%)	ST1/CT1/SHO1: 148 (17.5%)	Wales: 51 (6.0%)	
Oral and Maxillofacial: 19 (2.2%)	ST2/CT2/SHO2: 96 (11.3%)	North East: 42 (5.0%)	
Otolaryngology: 75 (8.8%)	CT3/SHO3: 10 (1.2%)	North West: 80 (9.4%)	
Paediatric Surgery: 29 (3.4%)	ST3/SPR1: 78 (9.2%)	Yorkshire and Humber: 55 (6.5%	
Plastic Surgery: 66 (7.8%)	ST4/SPR2: 59 (7.0%)	East Midlands: 51 (6.0%)	
Trauma and Orthopaedics: 172	ST5/SPR3: 77 (9.1%)	West Midlands: 70 (8.3%)	
(20.3%)	ST6/SPR4: 59 (7.0%)	East of England: 61 (7.2%)	
Vascular Surgery: 59 (5.4%)	ST7/SPR5: 60 (7.1%)	Thames Valley: 41 (4.8%)	
Urology: 59 (7.0%)	ST8/SPR6: 67 (7.9%)	Kent, Surrey and Sussex: 41 (4.8%)	
Other/Unsure: 26 (3.1%)	Post CCT: 17 (2.0%)	Wessex: 41 (4.8%)	
	Clinical Fellow: 35 (4.1%)	South West: 61 (7.2%)	
	Research Post:53 (6.3%)	North East and Central London: 43	
	Other: 14 (1.7%)	(5.1%)	
		North West London: 44 (5.2%)	
		South London: 46 (5.4%)	

CT= Core Training, NCE = North Central and East London, SPR= Specialist Registrar, ST= Specialist Training. 

**Table 3.** Specialty and stage of training for respondents from Ireland.

Which specialty do you intend to pursue?	What is your stage of training?
Cardiothoracic Surgery: 2 (3%)	ST1/CT1/SHO1: 13 (22%)
General Surgery: 22 (38%)	ST2/CT2/SHO2: 10 (17%)
Neurosurgery: 1(2%)	ST3/SPR1: 12 (21%)
Oral and Maxillofacial: 0	ST4/SPR2: 5 (9%)
Otolaryngology: 2 (3%)	ST5/SPR3: 4 (7%)
Paediatric Surgery: 0	ST6/SPR4: 2 (3%)
Plastic Surgery: 3(5%)	ST7/SPR5: 1 (2%)
Trauma and Orthopaedics: 20(34%)	ST8/SPR6: 3 (5%)
Vascular Surgery: 2(3%)	Clinical Fellow: 1 (2%)
Urology: 6 (10%)	Research Post: 1 (2%)

CT= Core Training, SPR= Specialist Registrar, ST= Specialist Training.

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**Figure 1.** Stages and years of training for UK doctors training to be consultant surgeons. Foundation Doctor Year 1 is the first stage following graduation from university/medical school. In Ireland, the Intern Year is the equivalent of the Foundation Doctor stage in the UK.

**Figure 2.** Mean debt on graduation from medical school, UK medical schools only. Debt has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01.

**Figure 3.** Mean expense per year on courses and conferences that trainees have not been reimbursed. Trainees grouped into 5- year generations by year of graduation. Expense on courses has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01. Expense on conferences has not significantly increased (p=0.28). UK medical school graduates only.

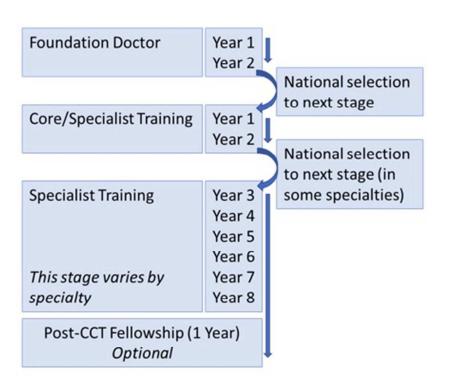


Figure 1. Stages and years of training for UK doctors training to be consultant surgeons. Foundation Doctor Year 1 is the first stage following graduation from university/medical school. In Ireland, the Intern Year is the equivalent of the Foundation Doctor stage in the UK. $\parallel$  +

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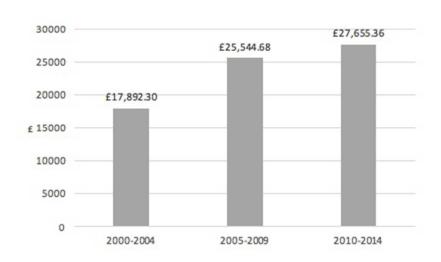
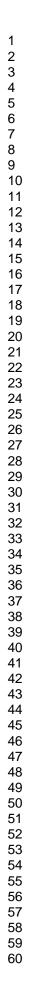


Figure 2. Mean debt on graduation from medical school, UK medical schools only. Debt has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01.

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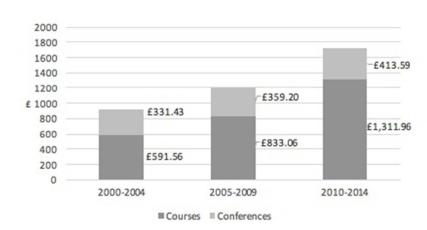


Figure 3. Mean expense per year on courses and conferences that trainees have not been reimbursed. Trainees grouped into 5- year generations by year of graduation. Expense on courses has increased significantly comparing the most recent generation (graduation between 2010 and 2014) with the older generation (graduation between 2000 and 2004), p<0.01. Expense on conferences has not significantly increased (p=0.28). UK medical school graduates only.!! +

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In Ireland, as the RCSI directly administers surgical training in Ireland, it receives funding from the HSE to prove de gurgical training. This includes covering the cost of the JCST fee and delivering the curriculum, including human factors and operative skills training days. There are three funding streams available to trainees on higher specialist training, equivalent to the UK "study budget"- the current funding available to HST trainees are:

- 1. Mandatory Fund- this is provided by the HSE/NDTP and administered by RCSI. It provides funding of courses while in full-time training in Ireland. This fund does not carry forward year on year and cannot be used if for example, on an overseas fellowship. However, its scope is limited as only approved mandatory courses are funded (1).
- 2. Specialist training fund- this is a fund of 500 euros per year, which accumulates over the course of HS is a fund of 500 euros per year, which accumulates over the course of HS is an be used for course fees, equipment costs and books etc. It excludes time spent out of full time training, e.g. on an overseas fellowship (1)
- 3. There is an additional clinical courses and exams fund, where trainees can claim 450 euros for exams  $\frac{1}{2}$  rejurses on a definitive list of those deemed relevant to the speciality. This includes a narrow list, for example Advanced Trauma Life Support (ATLS). By rexams undertaken outside of Ireland, 650 may be claimed. This is directly administered by the HSE/MET (2). The fund will only cover the cost of the cost of the speciality.

At the time of this survey, many trainees would have spent time prior to commencing HST completing courses to make themselves competitive to apply for HST at considerable personal cost. In addition, the range of courses covered by the above list currently excludes real and courses undertaking by trainees in their surgical training.

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ATLS if undertaken in Ireland. The current cost of ATLS is 875 euros, but the scheme will only cover 450 euros to a structure travel and

accommodation costs to regional centres to complete the course. Similarly, for membership and intercollegia and accommodation expenses. the cost, and as these are often held in the UK there are additional travel and accommodation expenses. References Appendix 1:

- 1. RCSI Training Funds for SpR Trainees. http://rcsi.ie/files/surgery/docs/20161019040654\_Funding-Information-2016.pdf Accessed 16th January 2017
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http://bmjopen.bmj.com/ on May 24, 2025 at Department GEZ-LTA Al training, and similar technologies

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Cost of Surgical Training Survey 2015

# 1. Introduction

This survey aims to quantify the additional costs incurred by surgeons in training in pursuit of their career goals. It also aims to quantify the availability of study budgets to cover the required courses and other training needs.

A similar survey was conducted by ASiT in 2007 and we aim to give some comparison of changes over time.

The results will be freely disseminated, including through publication and on the trainee association websites, and provided to Political Leaders, the Royal Colleges, JCST and Specialty Associations.

Completion indicates your consent for this analysis, distribution and publication of anonymised, grouped results. Individual responses remain anonymous.

This survey is for ALL TRAINEES, REGARDLESS OF SURGICAL SPECIALTY in the UK and Republic of Ireland. Students are not included.

It takes approximately 10 minutes to complete.

For more information:

www.asit.org info@asit.org @ASiTofficial



Cost of Surgical Training Survey 2015

2. In which country do you work?

\* 1. Where do you work currently?

- United Kingdom
- Republic of Ireland
- Other

Other (please specify)

3. Pay

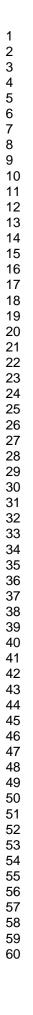
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	What is your current basic salary (without overtime, to the nearest euro)?
Ple	ease do not enter commas or symbols into any boxes relating to numerical values
То	remind you, current payscales are:
Int	ern € 30257
Se	nior House Officer
1€	38839
2€	E 40998
3€	2 44224
4€	2 46334
5€	£ 50578
6€	52687
7€	54746
Re	gistrar
1€	50578
2€	52687
3€	54746
4€	56260
5€	58279
6€	60305
Se	nior Registrar
1€	65000
2€	£ 65000
3€	65620
4€	£ 67682
5€	£ 70061
6€	272540
7€	2 75097
Sp	ecialist Registrar
1€	60404
2€	61855
3€	63953
4€	€ 65000
5€	£ 66070
6€	£ 68980
7€	£ 71878

# \* 3. What is your current average monthly take home pay after tax (to the nearest euro)?

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4. <i>F</i>	Are you getting paid for your overtime?
	Yes- rostered only- all of it
	res- lostered only- all of it
	Yes- rostered only-some of it
	Yes- rostered and unrostered- all of it
	Yes-rostered and unrostered- some of it
	No
* 5. A	Are you currently entitled to a training fund? (e.g. the SpR mandatory training fund or specialist
trai	ning fund?)
	Yes
	No



ASiT	

4. Demographics

\* 6. Are you a military trainee?

O Yes

O No

7. What is your gender?

Male

Female

# \* 8. What is your age? (years)



7 8

Cost of Surgical Training Survey 2015 5. Current Post   * 9. Do you currently hold an academic post?  Yes No  * 10. Are you in Less Than Full Time Training? Yes No  11. Are you currently on leave? Yes-Matemity/Paternity leave Yes-Other leave No  * 12. Which specially do you intend to pursue? Cardiothoracic surgery Ceneral Surgery Paediatric Surgery Paediatric Surgery Paediatric Surgery Paediatric Surgery Trauma and Orthopaedics Ves-Vas-Vas-Vas-Vas-Vas-Vas-Vas-Vas-Vas-Va	SiT
<ul> <li>* 9. Do you currently hold an academic post?</li> <li>Yes</li> <li>No</li> <li>* 10. Are you in Less Than Full Time Training?</li> <li>Yes</li> <li>No</li> <li>11. Are you currently on leave?</li> <li>Yes- Maternity/Patemity leave</li> <li>Yes- Other leave</li> <li>No</li> <li>* 12. Which specialty do you intend to pursue?</li> <li>Cardiothoracic surgery</li> <li>General Surgery</li> <li>ENT</li> <li>Neurosurgery</li> <li>Oral and Maxillofacial surgery</li> <li>Plaetiatric Surgery</li> <li>Plaetiatric Surgery</li> <li>Plaetiatric Surgery</li> <li>Vesurgery</li> <li>Vacular Surgery</li> <li>Vacular Surgery</li> </ul>	Surgical Training Survey 2015
Yes No * 10. Are you in Less Than Full Time Training? Yes No 11. Are you currently on leave? Yes- Maternity/Paternity leave Yes- Other leave No * 12. Which specialty do you intend to pursue? Cardiothoracic surgery General Surgery General Surgery Oral and Maxillofacial surgery Paediatric Surgery Plastic Surgery Plastic Surgery Vascular Surgery	ent Post
Yes No * 10. Are you in Less Than Full Time Training? Yes No 11. Are you currently on leave? Yes- Maternity/Paternity leave Yes- Other leave No * 12. Which specialty do you intend to pursue? Cardiothoracic surgery General Surgery General Surgery Oral and Maxillofacial surgery Paediatric Surgery Plastic Surgery Plastic Surgery Vascular Surgery	Pro
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<ul> <li>* 10. Are you in Less Than Full Time Training?</li> <li>Yes</li> <li>No</li> <li>11. Are you currently on leave?</li> <li>Yes- Maternity/Paternity leave</li> <li>Yes- Other leave</li> <li>Yes- Other leave</li> <li>No</li> <li>* 12. Which specialty do you intend to pursue?</li> <li>Cardiothoracic surgery</li> <li>General Surgery</li> <li>General Surgery</li> <li>Oral and Maxillofacial surgery</li> <li>Plastic Surgery</li> <li>Plastic Surgery</li> <li>Plastic Surgery</li> <li>Yesurgery</li> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	
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Yes- Maternity/Paternity leave   Yes- Other leave   No   * 12. Which specialty do you intend to pursue?    Cardiothoracic surgery   General Surgery   ENT   Neurosurgery   Oral and Maxillofacial surgery   Paediatric Surgery   Plastic Surgery   Plastic Surgery   Yes- Other leave   Vacular Surgery	vou aurrently en leave?
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<ul> <li>Paediatric Surgery</li> <li>Plastic Surgery</li> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	osurgery
<ul> <li>Plastic Surgery</li> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	and Maxillofacial surgery
<ul> <li>Trauma and Orthopaedics</li> <li>Vascular Surgery</li> </ul>	Jiatric Surgery
Vascular Surgery	tic Surgery
	ular Surgery
Urology	ogy
Other (please specify)	r (please specify)

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F1 or Intern
○ F2
ST1/CT1/SHO1
ST2/CT2/SHO2
СТ3/ЅНО3
ST3/SpR1
ST4/SpR2
ST5/SpR3
ST6/SpR4
ST7/SpR5
ST8/SpR6
O Post CCT
Clinical Fellow
Research post with no clinical work
Research post with part-time clinical work
Part-time clinical non-training
Other (please specify)

\* 13. What is your current grade?

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* 14. Under which Deanery/Local Education Training Board do you work?
Republic of Ireland
<ul> <li>NHS Education for Scotland</li> </ul>
Northern Ireland Medical and Dental Training Agency
Wales Deanery
Health Education North East
Health Education North West
Health Education Yorkshire and the Humber
Health Education East Midlands
Health Education West Midlands
Health Education East of England
Health Education Thames Valley
Health Education Kent, Surrey and Sussex
Health Education Wessex
Health Education South West
Health Education North Central and East London
Health Education North West London
Health Education South London

Cost of Surgical Training Survey 2015

# 6. Current Salary

\* 15. WITHOUT BANDING- What is your current basic salary? (gross, to the nearest pound) Please do not enter commas or symbols into any boxes relating to numerical values.

To remind you, doctors in training pay scales: England, Northern Ireland and Wales (Scotland in brackets). FY1 22636 (23205) 24049 (24654) 25461 (26102) FY2 28076 (28782) 29912 (30664) 31748 (32546) Specialty Training 30002 (30605) 31838 (32478) 34402 (35093) 35952 (36675) 37822 (38582)

 39693 (40491)

41564 (42399)

43434 (44307)

45304 (46215)

47175 (48123)

<u>т</u> 0.	What is your current banding as per your contract?	
$\bigcirc$		
$\bigcirc$	1A	
$\bigcirc$	1B	
$\bigcirc$	1C	
$\bigcirc$	2A	
$\bigcirc$	2B	
$\bigcirc$	3	
$\bigcirc$	Military- no banding recieved	
$\bigcirc$	Other (please specify)	
$\bigcirc$		
17.	Are you currently entitled to a study leave budget?	
$\bigcirc$	Yes	
$\bigcirc$	No	
$\bigcirc$		
$\bigcirc$	Military trainee- funding at discretion of Defence Deanery	
If yes	s, please give the approximate value for 12 months (to the nearest pound)	

2	ASIT
Cos	st of Surgical Training Survey 2015
7. C	Debts
* 18.	What year did you qualify from medical school?
* 19.	Where was your medical school?
$\bigcirc$	UK
$\bigcirc$	Republic of Ireland
$\bigcirc$	Other EU
$\bigcirc$	Outside EU
□ □ □ □ □ □	Government student loan Military grant Bank or other loan NHS bursary Other bursary None of the above
prof	ressional loans, excluding mortgages) - please estimate the total value at that time (to the neares nd or euro)
* 22.	Is some or all of your study budget used to fund mandatory regional teaching? Some
$\bigcirc$	All
$\bigcirc$	None
$\bigcirc$	Don't know

# **BMJ Open**

uch in total have you pa over training, to the ne	of your own money that was not i
over training, to the ne	

# 8. Expenditures- Course and Exam Attendance

# \* 25. During your surgical training please identify which of the following courses or exams you have attended/attempted, and how many times:

	Once	Twice	3 x	More	Never
ALS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
APaedsLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
ATLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Basic Surgical Skills	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
CCriSP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
USMLE	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
RCSEng STEP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
MRCS Parts 1&2/A	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
MRCS Part 3/B	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
DOHNS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
FRCS Part 1	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
FRCS Part 2	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Training the Trainers	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

* 26. For any of the following courses or exams you attended, did you receive any funding?						
		All	Part	None	Not applicable	
	ALS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	APaedsLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	ATLS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	Basic Surgical Skills	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	CCriSP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	USMLE	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	RCSEng STEP	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	MRCS Parts 1&2/A	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	MRCS Part 3/B	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	DOHNS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	FRCS Part 1	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	FRCS Part 2	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
	Training the Trainers	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	

- \* 27. In the last year, how much have you spent attending MANDATORY courses (to the nearest pound or euro)?
- \* 28. How much of this has been, or will be, reimbursed through your study budget or other funding (to the nearest pound or euro)?
- \* 29. In the last year, how much have you spent attending NON-MANDATORY training courses (to the nearest pound or euro)?
- \* 30. How much of this has been, or will be, reimbursed through your study budget or other funding (to the nearest pound or euro)?

\* 31. Since graduation from medical school, how much have you spent on registering for, or attending, post-graduate exams (to the nearest pound or euro)?

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33. Have you rec	eived industry funding to	o attend any of the follo	owing?	
	No industry funding received	Minor industry funding (under half expenditure)	Major industry funding (over half expenditure)	Completely indust funded
Courses	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Conferences	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Exams	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

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Cost of Surgical Training Survey 2015
9. Expenditures- Conferences, Memberships and Subscriptions
* 34. In the last year, how much have you spent attending conferences (to the nearest pound or euro)? Please include the cost of travel, registration fees and accommodation.
* 35. How much of this has been, or will be, reimbursed through your study budget or other funding (to the nearest pound or euro)?
* 36. Have you been refused funding for attending conferences in any of the regions below, for reasons other than your budget has already been used up?
UK - my deanery
UK - outside my deanery
Republic of Ireland
I have not been refused funding
Other (please specify)

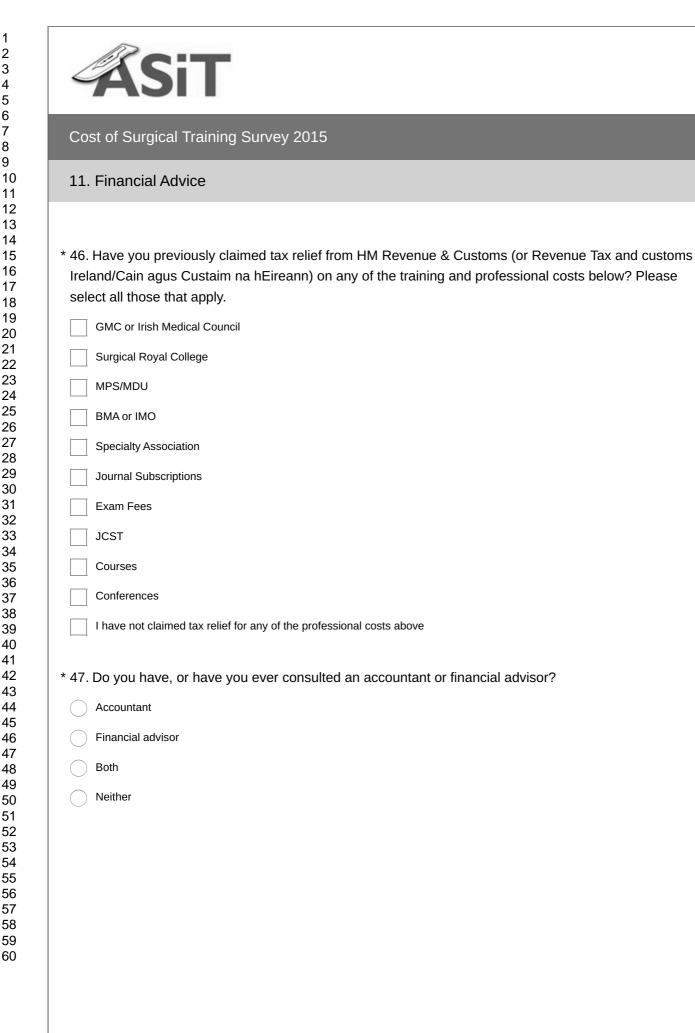
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* 37. Are you a member of any of the following professional bodies or have any other professional fe pay?	es to
General Medical Council or Irish Medical Council	
Royal College of Surgeons of Edinburgh	
Royal College of Surgeons of England	
Royal College of Physicians and Surgeons of Glasgow	
Royal College of Surgeons of Ireland	
Specialty associations eg ASGBI / SCTS / BOA / ENT-UK / BNS / BAPS / BAOMS / Vascular Society / BAPRAS etc	
Sub-specialty associations eg AUGIS / ACPGBI / BRS / ALSGBI / BASO / BTS etc	
Trainee associations eg ASiT / BOTA etc	
JCST (ISCP training fee)	
British Medical Association or Irish Medical Organization	
Hospital Consultants and Specialists Association	
MDU / MPS / other medical indemnity provider	
Royal Society of Medicine	
Journal subscriptions	
Regional training day fees	
Others (please specify)	
* 38. What is your current annual subscription to your surgical royal college? (to the nearest pound o euro)	r
* 39. In the last year how much have you spent on specialty society memberships (excluding surgica royal colleges, to the nearest pound or euro)?	I
* 40. In the last year how much have you spent on journal subscriptions (to the nearest pound or eur	o)?
* 41. In the last year how much have you spent on text books (to the nearest pound or euro)?	

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Cost of Surgical Training Survey 2015
10. Out of Training Fellowships and Postgraduate Degrees
* 42. Have you undertaken a post-graduate degree since graduating from medical school?
Yes- PhD/DPhil Yes- MSc Yes- MPhil
Yes- MEd
Yes- MS/MChir
Yes- Other (please specify)
43. If yes, please estimate the cost of this degree to you personally in monetary terms. Please consider university fees and potential income lost that was not covered by any other funding source.
<ul> <li>* 44. Have you undertaken an overseas or other out-of-training fellowship?</li> <li>Yes</li> <li>No</li> </ul>
45. If, yes, did this negatively impact on your financial situation, please describe.



Page 54 of 75

Ŀ	SiT
Cost c	of Surgical Training Survey 2015
12. Th	e Non-Monetary Costs of Surgical Training
Nearly	there, this is the last page of questions!
* 48. Hov	w many times have you moved house for work?
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16	or above
* 49. Wit	h regards to childcare please select one of the following:
🔵 I do	o not have children
🔵 l ha	ave had to pay for weekend childcare to allow me to work
🔵 l ha	ave had to pay for evening childcare to allow me to work
🔵 l ha	ave had to pay for both evening and weekend childcare to allow me to work
🔵 l ha	ave children but have not had to pay for evening or weekend childcare

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Yes No	D		
Mental Health			
Physical Health	)		
Relationships			
Financial Security	)		
Ability to settle down in a permanent home	)		
ther (please specify)			
1. Please answer the following questions			
	Yes	No	U
I have missed a major family event due to clinical work	$\bigcirc$	$\bigcirc$	
I have missed many family events due to clinical work	$\bigcirc$	$\bigcirc$	
I have missed a major family event due to non-clinical work that was necessary for my career progression	$\bigcirc$	$\bigcirc$	
	$\bigcirc$	$\bigcirc$	
progression I have missed many major family events due to non-clinical work that was necessary for my career	$\bigcirc$	$\bigcirc$	
progression I have missed many major family events due to non-clinical work that was necessary for my career progression		<ul><li>O</li><li>O</li><li>O</li></ul>	
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life			
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life	<ul> <li>Yes</li> </ul>	<ul> <li>No</li> </ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life		<ul> <li>No</li> </ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and		<ul> <li></li> <li></li> <li></li> <li>No</li> <li></li> <li></li></ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and one specialty association I would support raising the annual Surgical Royal College Subscription for all MEMBERS AND		<ul> <li>○</li> <li>○</li></ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and one specialty association I would support raising the annual Surgical Royal College Subscription for all MEMBERS AND FELLOWS in order to subsume the costs of the JCST fee		<ul> <li>○</li> <li>○</li></ul>	Ν
progression I have missed many major family events due to non-clinical work that was necessary for my career progression Staffing levels in my current post impact negatively on my quality of life Rota patterns in my current post impact negatively on my quality of life 2. Please answer the following questions I would support a fixed "training fee", which I would pay annually throughout my training that would cov tuition, courses, exams and fees to professional bodies such as surgical royal colleges, the GMC and one specialty association I would support raising the annual Surgical Royal College Subscription for all MEMBERS AND FELLOWS in order to subsume the costs of the JCST fee I would be happy to fund (up to £500 or 700 euro) a boot-camp in my specialty during core training		<ul> <li>○</li> <li>○</li></ul>	Ν

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53. Are there any other comments you would like to make regarding the cost of surgical training, study budgets or any other related matters? Please use the box below.

54. Who do you think should contribute to the cost of surgical training? Please rank the stakeholders below, from most contribution (1), to least (9).

** ** **	The Government
0-0 0-0 0-0	NHS Trusts
0 0 0 0 0 0	Universities
0-0 0-0 0-0	Private sector providers
0 0 0 0 0 0	Trainees
0-0 0-0 0-0	Surgical Royal Colleges
** ** **	Industry
** ** **	Surgical specialty associations



Cost of Surgical Training Survey 2015

13. End of Survey

Thank you for taking the time to complete this survey, we are very grateful for your responses.

The results will be freely disseminated, including through publication and on trainee association websites, and provided to Political Leaders, the Royal Colleges, JCST and Specialty Associations.

For more information about the work being undertaken on your behalf, please visit our website, email us or tweet:

www.asit.org info@asit.org @ASiTofficial

For more information regarding professional bodies approved for tax relief:

https://www.gov.uk/government/publications/professional-bodies-approved-for-tax-relief-list-3/approved-professional-organisations-and-learned-societies#g



5 BMJ Open Appendix Three: Results for military trainees There were 20 military trainee respondents. All 20 graduated from medical school in the UK: 19 (90%) graduated with debt on graduation (mean £18,650). 16 (80%) had a military grant at medical school, 10 (50%) had a government studen in the stude (20%) had a bank or other loan. The mean amount paid out, that was not reimbursed, for courses was £4250, for conferences £16 \$3, and £2130 for exams. Mean costs per year included surgical royal college subscription (£317), specialty society membership (£336), jo 🛱 🗟 (£79), text books (£245). 7 had completed an MSc (35%), 5 an MD (25%) and 1 (5%) had done both since graduating from medical s අල් මු (mean cost £12822).

General Sur Trauma and	alty do you intend to pursue? gery: 6 (30%) I Orthopaedics: 6 (30%) rgery: 2 (10%)	What is your stage of training?           Foundation Year 1: 1 (5%)           Foundation Year 2: 0 (0%)           ST1/CT1/SHO1: 4 (20%)           ST2/CT2/SHO2: 2 (10%)           ST3/SPR1: 1 (5%)           ST4/SPR2: 4 (20%)           ST5/SPR3: 2 (10%)           ST6/SPR4: 1 (5%)           ST7/SPR5: 1 (5%)           ST8/SPR6: 1 (5%)           Post CCT: 1 (5%)           Research Post: 2 (10%)	17. Downloaded from http://bmjopen.bmj.com/ on May 24, 3 shogeschool . text and data mining, Al training, and similar technologies
	Demonstelle		n May
	Demographic	Military Trainees	May 24, 202 In <mark>plogies.</mark>
	Number Male: Female (%)	20	, 20
	I IVIAIE: Female (%)	1 14.0 (/0.30%)	N

Demographic	Military Trainees	nologies
Number	20	ogies
Male: Female (%)	14:6 (70:30%)	<u>, v</u>
Mean Age (years)	33.8 (range 27-41)	
LTFT Trainees (%)	0 (0)	
Academic Trainees (%)	1 (5%)	
		· · · ·



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 Appendix Four: Tables of costs to the trainee in each surgical specialty
 og

 Using the published requirements for progression through surgical training we have provided an estimated breaktown of the costs to the trainee in each

 surgical specialty. The following tables of costs assume straight progression through F1-ST8 without taking tine off tor LTFT, post-graduate degrees or surgical specialty. The following tables of costs assume straight progression through 1 and without taking the optimized as per JCST website. Conference costs do not include travel or subsistence.

BMA= British Medical Association, CCT= Certificate of Completion of Training, CST= Core Surgical Trainee, CT= 🕏 🛱 Training (year), FP=Foundation Programme, FRCS= Fellowship of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal College of Surgeons, GMC= General Medical Council, HST=Higher Signation of the Royal Council, HST=Higher Signation of the Royal Council of th Surgical Training, MRCS= Membership of the Royal College of Surgeons, RCS= Surgical Royal College, RCSEng= RCPSCG= Royal College of Physicians and Surgeons of Glasgow, ST= Specialty Trainee (year). 

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I data mining, AI training, and similar technologies.

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2			udii	
3	Cardiothoracic Surgery		ng f	
4	Requirements	C	ost 🦉	
5	Essential for Surgical Training			2
6 7	JCST fee (for 8 years)	£	255 per year og	surgical training
8	GMC registration (for 10 years)			r, £425 per year for FP2+
9			ras	
9 10	Mandatory for progression to ST3			
11	MRCS examination	£	1425 <b>te is</b>	2 1
12			X g	7
13	Desirable for progression to ST3		and	
14	RCSEng Basic Surgical Skills Course (BSS)	£	670.50 g d	
15	Advanced Trauma Life Support Course (ATLS)	£	710 at õ a	
16	RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£	724 <u>B</u> . <u>B</u>	
17	RCSEng Specialty Skills in Cardiothoracic Surgery Course	£	724 mining,	2
18				
19	Mandatory for CCT		A F	
20	FRCS examination (including completion fee)	f	2269 <b>a</b>	
21	Good Clinical Practice Course	S F	Al training 354	
22	NHS Management Course e.g. BMA management essentials	f	354 <b>Ģ</b>	
23	Training and Education Course e.g. RCSEng Training the Trainers	f	702 <b>an</b>	
24	National or international conference attendance each year of training e.g. Society	for Cardiothoracic £	205 per y <b>e</b> ar f	r 2 years as CST, £305 per year for 6
25	Surgery conference booked as early bird rate as a member		ears as HS	
26 27			lar	
28	Other		tec	
29	BMA Membership (for 10 years)	£	113 for FP ye	r, £222 per year for FP2-CT2, £329 per
30		y	ear for ST 😤 5, 🛢	443 per year ST6+
31	RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£	316 per y 🛱 ar f	<b>5</b> years as member, £531 for 1 year
32		a	s fellow 🤔 🏹	3
33	Specialty Association Membership e.g. Society for Cardiothoracic Surgery	£	100 per year f	2 years as CST, £200 per year for 6
34		Y	ears as HST 🛛 🛱	-
35	Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£	1800 <b>G</b>	
36	TOTAL ESTIMATE	£	1800 <b>24039.00</b>	
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Requirements	Cost 9 2
Essential for Surgical Training	s Z
CST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FI mar for FP2+
	ate
Mandatory for progression to ST3	
MRCS examination	£1425 <b>6 5 7</b>
RCSEng Basic Surgical Skills Course (BSS)	£670.50 <b>Å G</b>
Advanced Trauma Life Support Course (ATLS)	
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
	£724 da lo
Mandatory for CCT	B. ed
RCS examination (and completion fee)	f2269 no g
Good Clinical Practice Course	f2269 free g
NHS Management Course e.g. BMA management essentials	Free (9, 1) £354 <b>A</b> ftp: £702 and fp: £585 ft; £350 (9, 2) £260 per year for 4 years
Fraining and Education Course e.g. RCSEng Training the Trainers	£702 ta
Course relevant to specialist interest e.g. RCSEng specialty skills in coloproctology	£585 <b>2</b>
ATLS revalidation to keep valid at time of certification	£350 Ģ <mark>Ģ</mark>
Attendance at 4 national or international conferences during training e.g. Association of Surgeons of	£260 per year fer 4 years
Great Britain and Ireland conference booked as early bird rate as a member	o d d d
	in ti
Dther	ilar om
BMA Membership (for 10 years)	ـــــــــــــــــــــــــــــــــــ
	year for ST $\frac{2}{3}$ -5, $\frac{2}{5}$ 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year fer 5 years as member, £531 for 1 year
	as fellow 9. 2
Specialty Association Membership e.g. Association of Surgeons of Great Britain and Ireland	£81 per years
	£1800 8
lealthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	

 Page 62 of 75

Page 63 of 75	pen-2017-018086 c opyright, including BMJ Open
1	t, inclu
2 3 Nourosurgery	din g
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5 Requirements	Cost 5 th
6 Essential for Surgical Training	S Z O
7 JCST fee (for 8 years)	£255 per year of surgical training
6 GMC registration (for 10 years)	£200 for Ft음 파클r, £425 per year for FP2+
9	ted
10 Mandatory for progression to ST3	
11 MRCS examination	£1425.00 to \$7.7
12	Xt og D
13 Desirable for progression to ST3	and
A RCSEng Basic Surgical Skills Course (BSS)	£670.50 g 6 g
15 Advanced Trauma Life Support Course (ATLS)	£670.50 and back
16 RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724.00 E. 8
17	£670.50 £650.00 £724.00 mining
18 Mandatory for CCT	
19 FRCS examination (including completion fee)	£2269.00 Å training Free Free fisst.00 g f702.00 år en
20 Good Clinical Practice Course	f2269.00 A training Free nin f354.00 g
Research Methodology Course	Free E
NHS Management Course e.g. BMA management essentials	£354.00 g g
2	
A Training and Education Course e.g. Reseng training the trainers	
Advanced Trauma Life Support Course (ATLS) completed during tra	
Attendance at 4 hational of international conferences during train	
7 Surgeons conference booked as early bird rate as an affiliate mem	ber 🚆 💐
8	e g
g Other	
BMA Membership (for 10 years)	£113 for France year, £222 per year for FP2-CT2, £329 per
1	year for ST🔗 5, 🔀 43 per year ST6+
2 RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FR	CS as ST8 £316 per years as member, £531 for 1 year
3	as fellow
4 Specialty Association Membership e.g. Society of British Neurologi	cal Surgeons £145 per year f <b>¤</b> r 8 years
5 Healthcare Protection Organisation (for 10 years) e.g. Medical Def	ence Union £1800 <b>6</b> £21625.50 <b>6</b>
36 TOTAL ESTIMATE	£21625.50
37	
38	tment GEZ-LTA
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Dral and Maxillofacial Surgery	ing o
Requirements	
Essential for Surgical Training	se Z
Bachelor of Dental Surgery e.g. University of Liverpool BDS graduate entry	$\pm 9000 \text{ for } \overset{\mathbf{a}}{\mathbf{P}} \text{ yeaks}$
JCST fee (for 7 years)	£255 per y
GMC registration (for 9 years)	£200 for Fig. 3 ear, £425 per year for FP2+
GDC registration (for 9 years)	£890 per y
	te bitsh
Mandatory for progression to ST3	×õg D
MRCS examination	
	보 수 한
Desirable for progression to ST3	data m · ·
Advanced Trauma Life Support Course (ATLS)	£650 <b>E</b> . <b>C</b>
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724 nr ro
Acute Life-threatening Events Recognition and Treatment (ALERT) Course	£650       mining,         £724       form http://bmjopen.bmj.         £95       Al training,         £2269       ning, and similar technologies         Free       f354         £350       fart technologies         £414       f785         £495       x
	A ∰
Mandatory for CCT	
FRCS examination (including completion fee)	£2269 📑 🧕
Good Clinical Practice Course	Free 🧧 🔒
Research Methodology Course	Free <b>P</b>
NHS Management Course e.g. BMA management essentials	£354 <u>v</u> .
Training and Education Course e.g. RCSEng Training the Trainers	£702 <u>3</u> 5
ATLS revalidation to keep valid at time of certification	£350 🍳 💆
Emergency Skills Course e.g. RCSEng Emergency Skills in Oral and Maxillofacial Surgery	£877.50 g
Basic Plating Course e.g. AO basic OMFS plating course	£499
Head and Neck Anatomy Course e.g. RCSEng basic surgical anatomy of the head and neck	
Surgical Dermatology Course e.g. RCSEd Facial aesthetics course	£785 <b>9</b> . 24 £495 <b>9</b> . 20 £1400 <b>25</b>
Orthognathic Course e.g. 6 <sup>th</sup> biennial Glasgow course	£495 <b>% 8</b>
Microvascular Course e.g. University of Liverpool microvascular course	
Complex/Advanced Trauma Course inc. condylar fractures and orbital access e.g. SORG course	£1500 🎬
3 advanced sub-specialty courses:	Deg
e.g. Establishing a modern salivary gland practice	£1250
e.g. Newcastle functional septorhinoplasty and facial plastics cadaveric course	£950 <b>1</b>
e.g. Controversies in the management of head and neck cancer	£275 <b>£</b>
National or international conference attendance e.g. BAOMS Conference booked as early bird rate as a	£1250 partment £950 file £275 ent £200 GEN
member *	Ξ <b>Ž</b> -

65 of 75	BMJ Open	pen-2017-018086 opyright, includir
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	Other	for n 1
	BMA Membership (for 9 years)	£113 for Flat year, £222 per year for FP2-CT2, £329 per
		year for ST 5, 2443 per year ST6+
	RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year 5 per year 5101 f 16 per year far 4 years as member, £531 for 1 year
	Specialty Association Membership e.g. British Association of Oral and Maxillofacial Surgeons	as fellow ar an ar an £85 per year ar ar ar ar an
	Healthcare Protection Organisation (for 9 years) e.g. Medical Defence Union	£1325 <b># 57</b>
	TOTAL ESTIMATE Where no minimum number of attendances documented a minimum of 1 included	£71431.50 <sup>×</sup> <sup>0</sup> <sub>4</sub> <sup>0</sup>
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tolaryngology	
Requirements	Cost 7
Essential for Surgical Training	USE
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for FR mear, £425 per year for FP2+
	atec
Mandatory for progression to ST3	
Diploma of Otolaryngology Head and Neck Surgery (DO-HNS)	£932.00 g S 7
	X O D
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50 g g g
Advanced Trauma Life Support Course (ATLS)	
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724 <u>3</u> . <u>6</u>
Advanced Life Support Course	
Advanced Paediatric Life Support Course and 2 x ENT courses	see below, <b>D</b>
Mandatasy for CCT	from http://bmjopen.bmj. £2269 Al training, Al training, Free Free free £702 f225 milar
Mandatory for CCT	
FRCS examination (including completion fee)	Free <b>9</b>
Research Methodology Course	Free P
Training and Education Course e.g. RCSEng Training the Trainers Temporal Bone Dissection Course e.g. Cuschieri Skills Course	
Sinus Anatomy and Surgical Dissection Course e.g. Cuschieri Skills Course	
Head and Neck Surgery Course (including LASER) e.g. RCSEd Head and Neck Course Module 1 and 2	
Septorhinoplasty and Facial Plastics Surgery Course e.g. NSTC Course	
Advanced Paediatric Life Support Course	1305 D Ma
National or international conference attendance e.g. BACO Conference booked as an ENT-UK member *	
National of international conference attendance e.g. DACO conference booked as an ENT-OK member	£850 and £05@n £350 May 24, 202
Other	
BMA Membership (for 10 years)	f113 for FP1 year, £222 per year for FP2-CT2, £329 p
	year for ST3-5, <b>\$</b> 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	f316 per year for 5 years as member, £531 for 1 yea
	as fellow
Specialty Association Membership e.g. ENT-UK	£210 per year f <b>å</b> r 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	C1000
TOTAL ESTIMATE	f1800 G f25218.50 N ⊢

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Paediatric Surgery	
Requirements	Cost Cost
Essential for Surgical Training	IS Z
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for Fite mear, £425 per year for FP2+
Mandatory for progression to ST3	ed to the second s
MRCS examination	
Advanced Paediatric Life Support Course	£395 Č
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	£670.50 a 2 a
Advanced Trauma Life Support Course (ATLS)	£650 <b><u>∃</u>. <u>a</u></b>
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£650 mi d £724 rog mi rom
Mandatory for CCT	f Paediatric Surgeons
FRCS examination (including completion fee)	£2269 🚡 🕌
Good Clinical Practice Course	Free 📑 🧵
Research Methodology Course	Free 🦉 曼
NHS Management Course e.g. BMA management essentials	£354 🛱 🚆
Training and Education Course e.g. RCSEng Training the Trainers	£702 💆
ATLS revalidation to keep valid at time of certification	£350 Ē. Š
National or international conference attendance e.g. British Association o	f Paediatric Surgeons 🛛 🖊 £150 🛛 🗑 😫
conference booked as early bird rate as a member *	technol
Other	noic
BMA Membership (for 10 years)	£113 for F year, £222 per year for FP2-CT2, £32
	year for STS-5, §443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST	
	as fellow 🔒
Specialty Association Membership e.g. British Association of Paediatric Su	
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Un	
TOTAL ESTIMATE	£21640.50
* Where no minimum number of attendances documented a minimum of 1 included	
	1£21640.50 <u>∃</u>  Bt GE N  T →

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lastic Surgery	
Requirements	_ 61
Essential for Surgical Training	L Se No
JCST fee (for 8 years)	£255 per y 🖉 ar 🕳 surgical training
GMC registration (for 10 years)	£200 for FFង ក្រុឝភ្នំr, £425 per year for FP2+
Mandatory for progression to ST3	ed to the smust
MRCS examination	
Desirable for progression to ST3	£670.50 data £650 tata £724 m.
RCSEng Basic Surgical Skills Course (BSS)	
Advanced Trauma Life Support Course (ATLS)	f670.50 caro caro f650 ta caro
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
Mandatory for CCT	£724 mining from http://bming Free mining free free free free free free
FRCS examination (including completion fee)	free free free free free free free free
Good Clinical Practice Course	Free to S
Research Methodology Course	Free E
Training and Education Course e.g. RCSEng Training the Trainers	
Advanced Trauma Life Support Course (ATLS) completed during training	included above
Other	
BMA Membership (for 10 years)	£113 for Frain year, £222 per year for FP2-CT2, £329
	year for ST $\mathbf{\hat{g}}$ -5, $\mathbf{\hat{g}}$ 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	
	as fellow of a
Specialty Association Membership e.g. BAPRAS	£150 per y ar f ar 7 years (first year membership fre
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Uni	£20561.50

Page 69 of 7	5 BMJ Open	pen-201 <sup>.</sup> opyright,
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3	Trauma and Orthopaedic Surgery	ng t
4	Requirements	Cost 9 2
5	Essential for Surgical Training	S Z
6	JCST fee (for 8 years)	£255 per year of surgical training
/ 0	GMC registration (for 10 years)	£200 for FI <b>a g g g g g g g g g g</b>
8 9		te e
9 10	Mandatory for progression to ST3	
11	MRCS examination	£1425 <b>te sh</b> .7
12	Advanced Trauma Life Support Course (ATLS)	
13		an
14	Desirable for progression to ST3	
15	RCSEng Basic Surgical Skills Course (BSS)	$\begin{array}{c} \mathbf{d} \mathbf{d} \mathbf{o} \mathbf{o} \mathbf{a} \\ \mathbf{f} \mathbf{o} \mathbf{o} \mathbf{a} \\ \mathbf{f} \mathbf{o} \mathbf{c} \mathbf{a} \\ \mathbf{f} \mathbf{o} \mathbf{c} \mathbf{a} \\ \mathbf{f} \mathbf{c} \mathbf{a} \\ \mathbf{f} \mathbf{c} \mathbf{a} \\ \mathbf{f} \mathbf{c} \mathbf{a} \end{array}$
16	RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
17	Basic Course on Fracture Management e.g. RCPSCG principles of casting for orthopaedic trainees	f20 hr fo
18		£724 m. d £20 nn g
19	Mandatory for CCT	
20	FRCS examination (including completion fee)	Al training f2269 training Free g, and similar Free mila
21	Good Clinical Practice Course	Free B. B
22	Research Methodology Course	Free <b>Q</b>
23	Training and Education Course e.g. RCSEng Training the Trainers	£702 B B
24	ATLS revalidation to keep valid at time of certification	£350 <b>v</b>
25	National or international conference attendance e.g. British Orthopaedic Association conference booked	Free B
26	as a member *	
27		te o
28	Other	<u>S</u>
29	BMA Membership (for 10 years)	£113 for FR year, £222 per year for FP2-CT2, £329 per
30		year for ST - 5, \$43 per year ST6+
31	RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST8	£316 per year for 5 years as member, £531 for 1 year
32		as fellow
33 34	Specialty Association Membership e.g. British Orthopaedic Association	£152 per year f <b>2</b> 2 years as CST, £166 per year for 2
		years as ST3-4, $\frac{1}{8}$ 204 per year for 2 years as ST5-6,
35 36		£240 per year for 2 years as ST7-8
37	Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	f1800
38	TOTAL ESTIMATE	f21405.50 g
39	* Where no minimum number of attendances documented a minimum of 1 included	<b>₽</b>
40		GEZ-LTA
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42		ГА
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Irology	086 or Iding
Requirements	Cost of 1
Essential for Surgical Training	
JCST fee (for 7 years)	£255 per year of surgical training
GMC registration (for 9 years)	£200 for Fr gr gr fr, £425 per year for FP2+
	asn ted
Mandatory for progression to ST3	5 g 22
MRCS examination	
Desirable for progression to ST3	
RCSEng Basic Surgical Skills Course (BSS)	
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	£724 faint de faint d
	nin
Mandatory for CCT	ig, h
FRCS examination (including completion fee)	£2269 🚔 🛱
Good Clinical Practice Course	Free 🗿 😽
Research Methodology Course	Free <b>B</b> .
NHS Management Course e.g. BMA management essentials	£354 🤤 🙀
Training and Education Course e.g. RCSEng Training the Trainers	£702 <b>n</b>
ATLS revalidation to keep valid at time of certification	£350 <b>s</b>
Urodynamics Course e.g. Belfast Training Academy Course	£187.50 E 8
Paediatric Urology Course e.g. BAPU Course	£295 <b>a</b> ž
Spinal Injuries Course e.g. Princess Royal Spinal Unit Course	f450 ec g
Emergency Urology Course e.g. East of England Emergency Urology Course	
Attendance at 1 national or international conference every 2 years of training e.g. British Association of	£100 per year tor 3 years
Urological Surgeons Conference booked as early bird rate as a member	gies 24
Other	£724 ad from http://bmjopen.bmj.com/ on Magazina from http://bmjopen.bmj.com/ on Magazina from http://bmjopen.bmj.com/ on Magazina from from Magazina from from Magazina from from from from from from from from
BMA Membership (for 9 years)	t113 for FP1 ye <b>3</b> r, £222 per year for FP2-CT2, £329
p ( , ,, ,,	year for ST3-5, <b>2</b> 443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year for 4 years as member, £531 for 1 years
	as fellow
Specialty Association Membership e.g. British Association of Urological Surgeons	£160 per year f <mark>e</mark> r 7 years
Healthcare Protection Organisation (for 9 years) e.g. Medical Defence Union	£1325 <b>6</b>
TOTAL ESTIMATE	<b>£1325 G</b> <b>£20719 N</b> <b>T</b>

Page 70 of 75

	pen-2017-018086 opyright, includin
Vascular Surgery	r-018086 o including
Requirements	Cost of t
Essential for Surgical Training	use
JCST fee (for 8 years)	£255 per year of surgical training
GMC registration (for 10 years)	£200 for Figure mean for FP2+
Mandatory for progression to ST3	er 2 asm
MRCS examination	£1425 te sh 7
RCSEng Basic Surgical Skills Course (BSS)	žo.
Advanced Trauma Life Support Course (ATLS)	1670.50 10 00 10 10 10 10 10 10 10 10 10 10 10
RCSEng Care of the Critically III Surgical Patient Course (CCrISP)	
Reserve of the entitedity in subgreat ration course (certary	£724 data ata m·ed
Mandatory for CCT	д. <u>«</u>
FRCS examination (including completion fee)	free Al training free £354 from http://bmjo
Good Clinical Practice Course	
Research Methodology Course	Free <b>A training</b> £354 <b>ai b</b> £702 <b>ni g</b>
NHS Management Course e.g. BMA management essentials	£354 🚡
Training and Education Course e.g. RCSEng Training the Trainers	£702
ATLS revalidation to keep valid at time of certification	
National or international conference attendance per year e.g. Vascular Society Conference booked as a	£375 per y ar for 8 years
member at early bird rate	u 🗧
	inj.com
Other	· · ·
BMA Membership (for 10 years)	£113 for F 🛱 year, £222 per year for FP2-CT2, £3
	year for ST -5, -443 per year ST6+
RCS subscription fees e.g. RCSEng if complete MRCS at CT2 and FRCS as ST7	£316 per year for 5 years as member, £531 for 1
	as fellow 🤤 🧏
Specialty Association Membership e.g. Vascular Society	£115 per year for 8 years
Healthcare Protection Organisation (for 10 years) e.g. Medical Defence Union	£1800 S
TOTAL ESTIMATE	£24135.50 원
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	Department GEZ-LTA
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# STROBE Statement for A CROSS-SECTIONAL STUDY OF THE FINANCIAL

## COST OF TRAINING TO THE SURGICAL TRAINEE

		BMJ Open	Page 72ໜ
STROBE Stat	teme	nt for a cross-sectional study of the financial	Open: first published as 10.1136/bmjopen-2017-018086 on 15 November 201 Erasmus Protected by copyright, including for uses related to
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COST OF TRAIN	IING I	O THE SURGICAL TRAINEE	ublis
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	Item		36/b ted b
	No	Recommendation	- by co
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	open
		PAGE 1	-201 'ight
		(b) Provide in the abstract an informative and balanced summary of what was done	, inc
		and what was found	1808 Sludi
		PAGE 2-3	ng f
			- <sup>io</sup> ru
Introduction			ISes
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	rela E
		PAGE 5-6	rasn Ited
Objectives	3	State specific objectives, including any prespecified hypotheses	- to te
objectives	5	PAGE 6	. Do
			and o
Methods			Downloaded from ogeschool . tt and data mining
Study design	4	Present key elements of study design early in the paper	nin fr
		PAGE 7-10	ing,
Satting	5	Describe the setting, locations, and relevant dates, including periods of recruitment,	– Alt
Setting	5	exposure, follow-up, and data collection	rain
		PAGE 7-10	ing,
			_ and
Participants	6	(a) Cohort study—Give the eligibility criteria, and the sources and methods of	http://bmjopen.bmj.com/ on May 24, 2 Al training, and similar technologies
		selection of participants. Describe methods of follow-up	rilar
		<i>Case-control study</i> —Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases	tec
		and controls	hno
		<i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of	y 24 ∣ogi€
		selection of participants	эs.
		PAGE 7-10	http://bmjopen.bmj.com/ on May 24, 2025 at Department GEZ-LTA Al training, and similar technologies.
		(b) Calant study. For motobol -to disc size weathin it is a large for	– De
		( <i>b</i> ) <i>Cohort study</i> —For matched studies, give matching criteria and number of exposed and unexposed	part
		<i>Case-control study</i> —For matched studies, give matching criteria and the number of	mer
		controls per case	nt G
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect	EZ-L
		modifiers. Give diagnostic criteria, if applicable	.TA

Data sources/       8*       For each variable of interest, give source assessment (measurement). Describe com is more than one group         Bias       9       Describe any efforts to address potential s PAGE 4, 7-10         Study size       10       Explain how the study size was arrived at PAGE 10         Quantitative variables       11       Explain how quantitative variables were I describe which groupings were chosen an PAGE 7-10         Statistical methods       12       (a) Describe all statistical methods, inclue PAGE 10         (b) Describe any methods used to examin PAGE 10       (c) Explain how missing data were addres PAGE 10         (d) Cohort study—If applicable, explain AGE 9       (d) Cohort study—If applicable, explain AGE 9         (d) Cohort study—If applicable, explain addressed       Cross-sectional study—If applicable, dessampling strategy	parability of assessment methods if the ources of bias andled in the analyses. If applicable,
Bias       9       Describe any efforts to address potential s         PAGE 4, 7-10       PAGE 4, 7-10         Study size       10       Explain how the study size was arrived at PAGE 10         Quantitative variables       11       Explain how quantitative variables were I describe which groupings were chosen an PAGE 7-10         Statistical methods       12       (a) Describe all statistical methods, inclue PAGE 10         (b) Describe any methods used to examin PAGE 10       (c) Explain how missing data were addres PAGE 10         (d) Cohort study—If applicable, explain H Case-control study—If applicable, explain addressed Cross-sectional study—If applicable, describe and study a	andled in the analyses. If applicable,
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PAGE 10 (b) Describe any methods used to examin PAGE 10 (c) Explain how missing data were address PAGE 9 (d) Cohort study—If applicable, explain h Case-control study—If applicable, explain addressed Cross-sectional study—If applicable, desc	а wпу
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PAGE 9 (d) Cohort study—If applicable, explain h Case-control study—If applicable, explain addressed Cross-sectional study—If applicable, dese	e subgroups and interactions
<i>Case-control study</i> —If applicable, explain addressed <i>Cross-sectional study</i> —If applicable, desc	sed
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PAGE 7-10	ribe analytical methods taking account o
( <u>e</u> ) Describe any sensitivity analyses Continued on next page	

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		BMJ Open
Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed PAGE 10-12
		TAOL 10-12
		(b) Give reasons for non-participation at each stage
		PAGE 10-12
		(c) Consider use of a flow diagram N/A
Descriptive lata	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders PAGE 10-12
		(b) Indicate number of participants with missing data for each variable of interest PAGE 10-13
		(c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)
utcome data	15*	Cohort study—Report numbers of outcome events or summary measures over time
		Case-control study—Report numbers in each exposure category, or summary measures of exposure
		Cross-sectional study—Report numbers of outcome events or summary measures PAGE 10-13
Main results	16	( <i>a</i> ) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included PAGE 10-13
		(b) Report category boundaries when continuous variables were categorized PAGE 10-13
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses
Discussion		
ey results	18	Summarise key results with reference to study objectives PAGE 14-18
imitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias PAGE 4
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence

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		PAGE 14-18
Generalisability	21	Discuss the generalisability (external validity) of the study results PAGE 14-18
Other information	on	
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based PAGE 19
		arately for cases and controls in case-control studies and, if applicable, for exposed and obort and cross-sectional studies.
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