

Title

What factors lead to differential attainment in obtaining higher surgical training (ST3) posts in the United Kingdom?

Summary

Core Surgical Training (CST) is the first hurdle in surgical training in the UK for most surgical specialities. This 24-month-long programme enables surgical trainees to rotate through various specialities before deciding to apply for further surgical training. CST continues to be highly competitive with many more applicants than available posts each year. In 2019, there were a total of 1896 applicants for only 648 posts, resulting in an overall competition ratio of 2.93 [1]. The next step after CST is typically applying for higher surgical training (ST3) posts, but there is a paucity of data on the demographic, socioeconomic and education factors that play a role in determining who a) applies for ST3 posts and b) is successful in obtaining ST3 posts. Firstly, it is worth noting that there is an obvious disparity between the sexes when it comes to surgical training. Given that 59% of medical students 54% of foundation trainees are women, it is surprising to see that upon entering the next stage of training, only 41% of those that secure CST posts are women [2,3]. Even more surprising is the fact that this number drops to as low as 12% for female consultant surgeons [3]. Therefore, this investigation aims to look at the gap between successfully securing a CST post and successfully becoming a surgical specialty trainee (ST3). Moreover, a previous study that focused on progression from CST into specialty surgical training revealed that posts are more likely to be offered to recently qualified, UK-trained, white, male applicants; however, this was published in 2011 [4]. Our investigation aims to focus on non-run-through specialities (General Surgery, Otolaryngology, Paediatric Surgery, Plastic Surgery, Trauma & Orthopaedics, Urology and Vascular Surgery) and provide an update to the existing literature by investigating the role that demographic, socioeconomic and educational factors play in applying for an ST3 post and in successfully obtaining an ST3 post. Our aim for wanting to investigate these factors is two-fold: to describe current population characteristics of applicants who apply to and successfully obtain higher surgical training (ST3) posts, and to guide ongoing work to increase diversity and inclusion in surgery. We would like to utilise a similar methodology to two studies: one by Woolf et al. [5] on the effect of sex on specialty training application outcomes, which was powered by the UK Medical Education database; and the approved UKMED application by Dr Aditi Das, titled "What factors lead to success in obtaining an ophthalmology specialty training (OST) post and completing postgraduate ophthalmology examinations?" (UKMEDP039).

References

1. Health Education England. Specialty Recruitment Competition Ratios 2019. 2020.
2. Moberly T. Number of women entering medical school rises after decade of decline. *BMJ*. 2018 360:k254.
3. Moberly T. A fifth of surgeons in England are female. *BMJ*. 2018 Oct 30;363:k4530.
4. Carr AS, Munsch C, Buggie S, Hamilton P. Core surgical training and progression into specialty surgical training: how do we get the balance right? *Ann R Coll Surg Engl (Suppl)*. 2011; 93:244–248.
5. Woolf K, Jayaweera H, Unwin E, Keshwani K, Valerio C, Potts H. Effect of sex on specialty training application outcomes: a longitudinal administrative data study of UK medical graduates. *BMJ Open*. 2019;9(3):e025004.

Research questions

The aim of this study is to understand the underlying factors that lead to differential attainment in obtaining higher surgical training posts. To answer this, we need to understand the role of demographics, socioeconomic and educational factors. 1. Which demographic factors (age, nationality, sex and ethnicity) lead to applying to and successfully obtaining a higher surgical training (ST3) post in the United Kingdom? 2. Which socioeconomic factors (parental education, parental income and location) lead to applying to and successfully obtaining a higher surgical training (ST3) post in the United Kingdom? 3. Which educational factors (medical school, medical school ranking as measured by EPM, training experience in CST-NTS scores, core surgical training programmes and MRCS scores) lead to applying to and successfully obtaining a higher surgical training (ST3) post in the United Kingdom?

Data required

Data Item	Data Type	Description
UKCAT_MOTHERTONGUE	VARCHAR2(360)	1st language spoken as declared by the applicant on the UKCAT registration form.
UKCAT_LANGUAGE_FLUENCY	VARCHAR2(800)	Applicant language fluency as recorded on UKCAT registration form.
SCHOOL_STATUS		
SCHOOL_POSTCODE		
FIRST_UKPRN_AFTER_GAP	VARCHAR2(32)	First UKPRN after any gap (non-continuous ACYEARS) in data from HESA.
NATIONALITY_SRC	VARCHAR2(6)	Nationality source. For cases on the GMC register this is the GMC, for cases not on registered it is HESA. However, nationality was only included in the GMC's HESA from the academic year 2015/16.
SAT_PLAB	VARCHAR2(4)	Flag to indicate whether the doctor sat PLAB.
PMQ_WORLD_REGION_AT_REGN	VARCHAR2(12)	The PMQ world region of the country the doctor obtained their PMQ at the point of their registration.
HESA_BIO_MED	VARCHAR2(120)	Flag to indicate if the student transferred on to a PMQ course from a Biomedical science course at the same provider.
WP_INDEX	NUMBER	From UKMEDP41. <p>Lambe P, Roberts M, Gale T, and Bristow D.</p> <p>Title: Evaluating the utility of contextual admissions data for widening participation in UK medical education.</p> <p>Calculated as follows</p> <p>POLAR quintile 1 = 1, quintile 2 = 0.9, quintile 3 = 0.8, quintile 4 = 0.7 and quintile 5= 0.6 </p> <p>IMD quintile 1 = 1, quintile 2 = 0.9, quintile 3 = 0.8, quintile 4 = 0.7 and quintile 5 = 0.6</p> <p>SCHOOL TYPE, PARED and BURSARY were weighted 1 = state funded school, 1= parent no HE qualifications, and 1= in receipt of a bursary, and zero otherwise.</p> <p>Only calculated for UK domiciled, aged under 21 years, entrants to Standard Entry Programmes, Medicine with a Gateway Year and Medicine with a Preliminary Year</p>
FIRST_COMDATE_AFTER_GAP	DATE	First commencement date of programme after a gap (non-continuous ACYEARS) in data from HESA.

Data Item	Data Type	Description
COURSETYPE_AFTER_GAP	VARCHAR2(800)	First course type after any gap (non-continuous ACYEARS) in data from HESA. This variable is derived to capture course type of the course completed for students who leave and then start their studies at another school.
SSN	VARCHAR2(60)	HESA held Student Support Number. See here for further details
XELSP01_LAST	VARCHAR2(1000)	Last value for expected length of programme. See here for further details
XELSP01_FIRST	VARCHAR2(1000)	First value for expected length of programme. See here for further details
CARELEAVER	VARCHAR2(1000)	HESA value that records whether a student is a care leaver. See here for further details
NTS_TRAINEE	CHAR	Flag to indicate if the case is in the NTS data.
RELIGION_SRC	VARCHAR2(48)	Indicates the GMC's database as the source of RELIGION. Or HESA.
RELIGION	VARCHAR2(200)	Collected by the GMC as part of registration process from January 2016. NTS respondents are also asked to update their details. <p> Possible values are: Buddhist Christian - Baptist Christian - Brethren Christian - Catholic Christian - Church of England Christian - Church of Ireland Christian - Church of Scotland Christian - Free Presbyterian Christian - Methodist Christian - Other Christian - Presbyterian Christian - Protestant Hindu Jewish Muslim No religion Other Prefer not to say Sikh
SEXUAL_ORIENTATION_SRC	VARCHAR2(48)	Indicates the GMC's database as the source of SEXUAL_ORIENTATION.
SEXUAL_ORIENTATION	VARCHAR2(200)	Collected by the GMC as part of registration process from January 2016. NTS respondents are also asked to update their details. <p>Possible values are:</p> Bisexual Heterosexual/Straight Lesbian/Gay Other Prefer not to say
PARED_INT	VARCHAR2(2)	PARED coded as an integer.
SOC2010_SRC	VARCHAR2(40)	Indicates HESA as the source of SOC2010.
SOC2010	VARCHAR2(400)	Occupation code – SOC code of student if ages 21 or over at the start of course, or the parents SOC code if under 21. <p>Occupational code of the student's parent (where the student is under 21), OR the occupation of the student themselves when they start training at over 21.</p>See here for further details</p>
NSSEC_INT	VARCHAR2(4)	NSSEC coded as an integer.
INCOME_SUPPORT_SRC	VARCHAR2(40)	Year of NTS for column INCOME_SUPPORT.
HESA_HIGHQUAL_OBTAIN2	VARCHAR2(1000)	Qualification obtained – Illustrates the qualification level achieved by the student. Students can obtain more than one qualification.
HESA_HIGHQUAL_OBTAIN1	VARCHAR2(1000)	Qualification obtained – Illustrates the qualification level achieved by the student. Students can obtain more than one qualification.
TALLPPE_ALEVA	NUMBER	Average point score per A level entry from the school attended. From DfE file linked on HESA_PREV_INST_DCODE. <p> Key Stage 5 Performance Tables – Published School Data </p> <p> Key Stage 5 Performance Tables – Published School Data for the year the student took A levels. Only available for England. </p>
HESA_QUAL_YEAR	VARCHAR2(16)	The earliest year the student obtained the qualifications used for entry to medical school.
HESA_PREV_INST	VARCHAR2(40)	Previous institution attended.
FIRST_MEDSCHOOL_AFTER_GAP	VARCHAR2(400)	First medical school after any gap (non-continuous ACYEARS) in data from HESA. This variable is derived to capture first medical school of the course completed for students who leave and then start their studies at another school.
NATIONALITY2	VARCHAR2(600)	Collected at the point of checking a doctor's ID – usually at the stage we grant registration, sometimes at the point where they are at PLAB ID checks. Doctors provide ID cards or Passports and it's logged as part of checking them.
NATIONALITY	VARCHAR2(600)	Collected at the point of checking a doctor's ID – usually at the stage registration is granted, sometimes at the point where they are at PLAB ID checks. Doctors provide ID cards or passports and it is logged as part of checking them.
CURR_REG_ADD_POSTCODE	VARCHAR2(120)	<i>Internal use only.</i>
PERSON_UID	VARCHAR2(60)	GMC unique doctor reference number for those that registered. <p>For those who did not complete their studies/have not completed to date this will be HESA_HUSID with an 'H' prefix.</p> <p>Replaced by extract specific STUDY_ID in de-identified research extracts.</p>
HESA_HUSID	VARCHAR2(200)	<p>HUSID – HESA's unique student identifier </p> <p><i>Internal use only.</i></p>
BIRTH_DT	DATE	<i>Internal use only.</i>

Data Item	Data Type	Description
GRADUATE_ON_ENTRY	VARCHAR2(21)	Based on HESA_QUALENT, the following values are defined as graduate entry: <p>'First degree of UK institution',</p> <p>'First degree with honours leading to Qualified Teacher Status (QTS)/registration with a General Teaching Council (GTC)',</p> <p>'Higher degree of UK institution',</p> <p>'Non-UK doctorate degree',</p> <p>'Non-UK first degree',</p> <p>'Non-UK masters degree',</p> <p>'PGCE with QTS/GTC registration',</p> <p>'PGCE without QTS/GTC registration',</p> <p>'Postgraduate diploma or certificate, excluding PGCE',</p> <p>'UK doctorate degree',</p> <p>'UK first degree with honours',</p> <p>'UK masters degree',</p> <p>'UK ordinary (non-honours) first degree',</p> <p>'Postgraduate Certificate in Education or Professional Graduate Diploma in Education',</p> <p>'Graduate of other overseas institution',</p> <p>'Professional Graduate Certificate in Education',</p> <p>'Integrated undergraduate/postgraduate taught masters degree on the enhanced/extended pattern',</p> <p>'Graduate of EU institution'</p>
SEC_COMBINED_LABEL	VARCHAR2(400)	Label for SEC_COMBINED field.
BURSARY	#N/A	Flag to indicate presence in the UKCAT Bursary table
SEC_COMBINED	NUMBER	Uses the value from HESA if present; if not present uses the value from the UKCAT registration form.
SUBCATEGORYDESCRIPTION	VARCHAR2(200)	Label for SUBCATEGORYID.
CATEGORYDESCRIPTION	VARCHAR2(50)	Label for CATEGORYID.
SUBCATEGORYID	VARCHAR2(50)	UCAS subcategory school classification <p> 1 = agricultural and horticultural college</p> <p> 2 = art, design and performing arts</p> <p> 3 = comprehensive school</p> <p> 4 = further education</p> <p> 5 = grammar school</p> <p> 6 = grant maintained (special school)</p> <p> 7 = grant maintained secondary school (state)</p> <p> 8 = higher education</p> <p> 9 = independent school</p> <p> 10 = language school</p> <p> 11 = sixth form centre</p> <p> 12 = sixth form college</p> <p> 13 = special school</p> <p> 14 = technical college</p> <p> 15 = tertiary college</p> <p> 16 = other secondary school</p> <p> 17 = other school</p> <p> 18 = not applicable</p> <p> 19 = unknown</p>
CATEGORYID	VARCHAR2(50)	UCAS school category identifier <p>1 = UK School</p> <p>2 = Under Sixteen School</p> <p>3 = Further Education College</p> <p>4 = Southern Irish School</p> <p>5 = EU School</p> <p>6 = Non-EU School</p> <p>7 = Overseas School</p> <p>8 = Unknown</p>
DFEID	VARCHAR2(50)	Schools code in UKCAT data. <p><i>Internal use only.</i></p>
COUNTRY	VARCHAR2(50)	Full name of the country in which the school is located.
PARED_SRC	VARCHAR2(40)	Indicates HESA as the source of PARED.
PARED	VARCHAR2(200)	Parental education records whether a student's parents had higher education qualifications. HESA provide further details of on how the data are collected here: <p> See here.</p>
SOC2000_SRC	VARCHAR2(40)	Indicates HESA as the source of SOC2000.
SOC2000	VARCHAR2(400)	Occupation code – SOC code of student if ages 21 or over at the start of course, or the parents SOC code if under 21. <p>Occupational code of the student's parent (where the student is under 21), OR the occupation of the student themselves when they start training at over 21.</p><p>See here for further details</p>
NSSEC_SRC	VARCHAR2(40)	Indicates that UKCAT registration form is the source of NSSEC.
NSSEC	VARCHAR2(400)	National Statistics socio-economic five-point scale classification <p>1 = managerial and professional occupations</p> <p>2 = intermediate occupations</p> <p>3 = small employers and own account workers</p> <p>4 = lower supervisory and technical occupations</p> <p>5 = semi-routine and routine occupations</p>
SEC_SRC	VARCHAR2(40)	Indicates HESA as the source of SEC.
SEC_INT	VARCHAR2(2)	SEC coded as an integer.
SEC	VARCHAR2(400)	Socio-economic classification. <p>Socio-economic classification of the student's parent (if under 21) or the student themselves when over 21.</p><p>See here for further details</p>
PARENT_DEGREE_SRC	VARCHAR2(40)	Year of NTS for column PARENT_DEGREE.
PARENT_DEGREE	VARCHAR2(1000)	Describes whether the doctor's parent(s) or guardian(s) completed a university degree course of equivalent captured retrospectively on the NTS.
FREE_SCHOOL_MEALS_SRC	VARCHAR2(40)	Year of NTS for column FREE_SCHOOL_MEALS.
FREE_SCHOOL_MEALS	VARCHAR2(1000)	Describes whether the doctor had free school meals as captured retrospectively on the NTS.
INCOME_SUPPORT	VARCHAR2(1000)	Describes whether the doctor's household received Income Support at any point during their school years. Captured retrospectively on the NTS.
SCHOOL_TYPE_SRC	VARCHAR2(40)	Describes source of SCHOOL_TYPE. HESA or NTS year.
SCHOOL_TYPE	VARCHAR2(1000)	Describes which type of school the doctor mainly attended between the ages of 11 and 16. HESA State school marker or if no HESA data then as captured retrospectively on the NTS.
UK_EDUCATED	VARCHAR2(1000)	Describes whether the doctor completed secondary education AND their undergraduate medical degree in the UK.
ADJUSTMENTS_SRC	VARCHAR2(40)	Year of NTS for column ADJUSTMENTS.
ADJUSTMENTS	VARCHAR2(1000)	Describes whether the doctor required any adjustment(s) to be made so they could carry out their work in their post. Captured on the NTS.
LIMITED_ACTIVITIES_SRC	VARCHAR2(40)	Year of NTS for column LIMITED_ACTIVITIITS.

Data Item	Data Type	Description
LIMITED_ACTIVITIES	VARCHAR2(1000)	Describes whether the doctor's day-to-day activities are limited because of a health problem or disability which has lasted, or is expected to last, 12 months. Captured on the NTS.
HESA_DISABILITY_LABEL_LAST	VARCHAR2(1000)	Last disability label in the HESA data for the student. <p>See here for further details</p>
HESA_DISABILITY_CODE_LAST	VARCHAR2(20)	Last disability code in the HESA data for the student. <p>See here for further details</p>
HESA_DISABILITY_LABEL_FIRST	VARCHAR2(1000)	First disability label in the HESA data for the student. <p>See here for further details</p>
HESA_DISABILITY_CODE_FIRST	VARCHAR2(20)	First disability code in the HESA data for the student. <p>See here for further details</p>
BME_INT	VARCHAR2(2)	Higher level ethnicity coded as an integer.
BME	VARCHAR2(7)	Higher level ethnicity coding: BME or white.
ETHNICITY_SRC	VARCHAR2(48)	Source system of the ETHNICITY_L1 and ETHNICITY_L2 data stored for this record.
ETHNICITY_L2_INT	NUMBER	Ethnicity Level 2 information coded as an integer. Possible values are: 1 - British2 - Gypsy or Irish Traveller3 - Irish4 - Any other White background5 - White and Black Caribbean6 - White and Black African7 - White and Asian8 - Any other mixed background9 - Chinese10 - Indian11 - Pakistani12 - Bangladeshi13 - Any other Asian background14 - Caribbean15 - African16 - Any other Black background17 - Arab18 - Any other ethnic group19 - Not stated
ETHNICITY_L2	VARCHAR2(2400)	Ethnicity Level 2 information. Possible values: BritishGypsy or Irish TravellerIrishAny other White backgroundWhite and Black CaribbeanWhite and Black AfricanWhite and AsianAny other mixed backgroundChineseIndianPakistaniBangladeshiAny other Asian backgroundCaribbeanAfricanAny other Black backgroundArabAny other ethnic groupNot statedAny other Asian or Asian British backgroundAny other Black or Black British backgroundAny other Other Ethnic Groups backgroundAny other White backgroundArabBritishChineseGypsy or TravellerIrishOther Asian backgroundOther Black backgroundOther BritishOther White backgroundOther ethnic backgroundOther mixed backgroundScottishWhite
ETHNICITY_L1_INT	NUMBER	Ethnicity Level 1 information coded as an integer. Possible values are: 1 - White2 - Mixed3 - Asian or Asian British4 - Black or Black British5 - Other Ethnic Groups6 - Not stated
ETHNICITY_L1	VARCHAR2(200)	Ethnicity Level 1 information. Possible values: Asian or Asian BritishBlack or Black BritishInformation refusedMixedNon UKNot knownNot statedOther Ethnic GroupsOther White backgroundWhite
ARCP_ACADEMIC_IND_INT	VARCHAR2(168)	Trainee flagged as an academic trainee on at least one ARCP return as an integer.
ARCP_ACADEMIC_IND	VARCHAR2(3)	Trainee flagged as an academic trainee on at least one ARCP return.
ARCP_MILITARY_IND_INT	VARCHAR2(168)	Trainee flagged as a military trainee on at least one ARCP return as an integer.
ARCP_MILITARY_IND	VARCHAR2(3)	Trainee flagged as a military trainee on at least one ARCP return.
UKCAT_NATIONALITY2	VARCHAR2(200)	Second nationality of applicant.
UKCAT_NATIONALITY1	VARCHAR2(200)	First nationality of applicant.
UKCAT_DOMICILE	VARCHAR2(200)	Area of residence of applicant.
UKCAT_PARENT2SUPERVISOR	VARCHAR2(200)	Participant parent 2 socio-economic classification supervisory responsibility description.
UKCAT_PARENT2EMPLOYERSIZE	VARCHAR2(200)	Languages spoken as declared on the UKCAT registration form.
UKCAT_PARENT2EMPLOYMENTSTATUS	VARCHAR2(200)	Participant parent 2 socio-economic classification employment status description.
UKCAT_PARENT2OCCUPATION	VARCHAR2(200)	Participant parent 2 socio-economic classification occupation description.
UKCAT_PARENT2GENDER	VARCHAR2(200)	Participant parent 2 gender description.
UKCAT_PARENT1SUPERVISOR	VARCHAR2(200)	Participant parent 1 socio-economic classification supervisory responsibility description.
UKCAT_PARENT1EMPLOYERSIZE	VARCHAR2(200)	Participant parent 1 socio-economic classification size of employer description.
UKCAT_PARENT1EMPLOYMENTSTATUS	VARCHAR2(200)	Participant parent 1 socio-economic classification employment status description.
UKCAT_PARENT1OCCUPATION	VARCHAR2(200)	Participant parent 1 socio-economic class occupation description.
UKCAT_REGIONAL_IDENTITY	VARCHAR2(200)	Delimited list of participant British regional identities.
UKCAT_NATIONAL_IDENTITY_INT	NUMBER	National identify coded as an integer.
UKCAT_NATIONAL_IDENTITY	VARCHAR2(50)	Delimited list of participant national identities.
UKCAT_NATIONAL_IDENTITY	VARCHAR2(200)	Delimited list of participant national identities from the UKCAT registration form.
HESA_QUALENT	VARCHAR2(800)	Highest qualification on entry - The highest qualification that a student holds on entry. QUALENT3 was compulsory for entrants from 2010/11, from that point only existing students could be given a QUALENT2 code.

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Methodology

Study design: this study will be a longitudinal study using UK-wide data. The data and permission to use the data for research purposes will be obtained from UKMED. Population: the population of this study will include all core surgical trainees on the UKMED database who were eligible to apply for higher surgical training (ST3) posts in the UK. Eligibility is defined as completion of ARCP Outcome 6 for CST and passing the membership exams. The time frame of this study will be based on the data available from UKMED, which includes 2,808 successful CST completers from 2014 to 2019 – as per our discussion with Daniel Smith. The overall population would include all those who apply (regardless of where their primary medical qualification is from), and a subgroup analysis can be performed for those who have obtained their primary medical qualification (PMQ) from the UK. Primary outcome and exposure of interest: the primary outcome is whether or not Core Surgical Trainees applied for an ST3 post, and if they were subsequently offered a post. This outcome will be measured for data in each of the following non-run-through surgical specialities: General Surgery, Otolaryngology, Paediatric Surgery, Plastic Surgery, Trauma & Orthopaedics, Urology and Vascular Surgery. The exposure of interest includes demographic factors, socioeconomic factors and educational factors. Background variables: We are interested in the demographic, socioeconomic and educational factors that have an impact on applying for and successfully obtaining a higher surgical training (ST3) post. The variables we will explore to measure demographic factors include age, race, sex and ethnicity. Similarly, the variables we will investigate to measure socioeconomic factors include parental education, parental income and location (IMD Quintiles). Finally, educational factors include medical school attended, medical school ranking as per the educational performance measure (EPM), training experience in CST (NTS scores), foundation school and MRC success (Part A/Part A and B). Other variables that we will explore include: Oriol interview scores, Oriol recruitment outcomes, NTS trainee history and practice history. Potential confounders will include all factors except the exposure of interest e.g. when looking at sex, all other demographic, socioeconomic and educational factors will be treated as potential confounders.

Analysis proposed

Descriptive analysis will be carried out to compare the baseline cohort characteristics between those who applied for and those who were successful in obtaining a higher surgical training (ST3) post using t-tests (for continuous variables) and chi-squared tests (for categorical variables). Where necessary, multiple imputation will be performed to account for missingness. Next, both univariate and multivariate logistic regression models will be carried out to produce odds ratios (ORs) and 95% confidence intervals for each exposure of interest (as described above) as a measure of relative risk of successfully obtaining a higher surgical training (ST3) post. All multivariate models will be adjusted for demographic, socioeconomic and educational factors. Multivariate analysis will answer whether there is a difference in who applies for high surgical training (ST3) posts, after accounting for earlier attainment e.g. EPM. A sub-group analysis can also be carried out for applicants who have a PMQ from the UK.

Timeline

Proposed Date: 2021-01-30

Duration: 12 month(s)

January 2021: Submission of application to UKMed to access relevant data. March-April 2021: Receiving data via a safe haven and all relevant data management. May 2021: Data analysis to be carried out by the team. May-August 2021: Preparation of a report for UKMED. August 2021: Submission of a preliminary report to UKMED. September 2021: Sharing initial findings with relevant stakeholders e.g. the Royal College of Surgeons of England, the Royal College of Surgeons of Edinburgh, AOMRC, HEE, GMC, BOTA, ASIT and BMA. September-December 2021: Submission of research manuscript to a peer-reviewed journal.

Proposal for dissemination

We will share our initial findings with UKMED for approval before presenting to relevant stakeholders. Thereafter, as this research proposal has been endorsed by RCS England and RCS Edinburgh, the output of the data analysis will be formally presented to the Learning and Assessment Committee of the RCS. This committee will aid with the dissemination to other relevant stakeholders. Additionally, we also plan to present our findings at national and international surgical conferences. Ultimately, we plan to submit our manuscript(s) to relevant peer-reviewed journals that attract an audience across surgical disciplines.