



So you want to be a surgeon?

What does a surgeon do?

When you hear about surgery and surgeons do you think of what you see on TV in dramas and soaps?

In reality surgery is not always so glamorous or dramatic – but it is definitely as exciting. Surgery is challenging, varied, and rewarding but also entails hard work and dedication. Many surgeons say they enjoy the intellectual challenges of their job and its quick results and active approach to the treatment of disease, which is almost unique in medicine. They say that to perform an operation and see a patient's life improve almost immediately is a privilege and enormously satisfying.

But a surgeon's life isn't confined to the operating theatre. Surgeons divide their time between several activities, including:

Ward rounds: daily visits to check on the condition patients under their care, liaise with nursing staff and colleagues and teach junior doctors.

Operating: working on pre-booked elective operations or emergency cases. The operating team includes other surgeons, anaesthetists, technicians, nurses and administrators all working together to ensure the best possible care and outcome for patients.

Outpatient clinics: meeting with patients and family members and/or carers to discuss treatment options and explain procedures. Surgeons will also undertake tests and arrange x-rays and scans to decide if an operation is needed or prepare a patient for the procedure. Surgeons meet with patients again after an operation, to monitor and support their recovery.

Administration: paperwork is necessary and helps to make sure patients get the right treatment at the right time. Surgeons spend some of their time writing to patients, colleagues and GPs, writing up notes and keeping accurate records. They may also be involved in arranging rotas and filling in paperwork to support trainee surgeons.

Supporting work: surgeons may take on additional or voluntary roles to support the teaching and development of surgery for example teaching at the Royal College of Surgeons, working in admissions or teaching at medical schools.

Research: surgeons will undertake many forms of research throughout their career; this may either be formal research such as undertaking a PhD or clinical trials, or more informal such as undertaking departmental audits or individual research to present at a specialist surgical society meeting.

What kind of surgeon could I be?

There are different types of surgery, all of which have different benefits and challenges. Surgery is diverse and there may be several specialities which appeal to you at various stages of your Medical training. After completing basic surgical training, you will choose to specialise in one of the ten surgical specialities:

1. General surgery

This is a wide-ranging speciality and incorporates many different sub-specialties such as breast surgery, laparoscopic (keyhole), colorectal and upper and lower gastrointestinal surgery (surgery of the abdomen). There is lots of flexibility for where in the country you would work, as general surgeons operate in medical facilities across the country. There is potentially a lot of high energy emergency work involved with general surgery, which means there can be lots of on-call and out of hours work. There is a lot of variety within general surgery and lots of opportunity to sub-specialise in particular aspects of general surgery.

2. Cardiothoracic surgery

This speciality deals with conditions of the heart and lungs. Cardiothoracic surgery can involve long and complex operations, but can be rewarding as you can quickly see the life-changing impact surgery has on patients' lives. It can involve a lot of on-call work and lots of work with patients in intensive care, so there are lots of opportunities to work with people from other medical and related specialties.

3. Neurosurgery

This focuses on the brain, central nervous system and spinal conditions. It is one of the most intricate surgical specialties, often with high stakes involved in fast-paced decision making. Neurosurgery involves an element of emergency work, so can result in significant on call and out of hours working. There are a number of areas of sub-specialisation open to neurosurgeons, ranging from paediatric neurosurgery to spinal surgery.

4. *Otorhinolaryngology* (also known as 'ENT' – ear, nose and throat surgery)

A varied specialty focusing on conditions of the ear, nose and throat. ENT surgeons spend a lot of time talking to and assessing patient in pre- and post-operation appointments. A significant proportion of patients referred to ENT surgeons don't need operation, so the surgeon has to be able to make the right decisions of whether and when to operate.

5. Paediatric surgery

Paediatric surgery involves working with children and their parents. It offers a great breadth of practice, encompassing all aspects of surgery from premature babies to full-grown teenagers. There is relatively little geographical flexibility, as the specialty tends to focus around large specialist hospitals and centres and fewer options for going into private practice than other specialties.

6. Plastic surgery

One of the few specialties with no anatomically defined region; plastic surgeons work closely with other surgical specialties repairing large wounds or reconstructing parts of the body. It is much more than just cosmetic surgery. Plastic surgery can offer less geographical choice, within the UK, than other surgical specialties, but there are many options for working overseas and there is lots of opportunity to practice privately.

7. Trauma and orthopaedic surgery

This speciality is concerned with bones and joints. There is generally lots of flexibility for where in the country you could work and lots of on-call duties are likely to be required. It is the biggest surgical specialty and demand for trauma and orthopaedic surgeons is unlikely to decrease over the coming years – with an aging population and the obesity crisis, it is likely that there will be growing demand for surgeons in this specialty.

8. Urology

Urology involves treating conditions in the genitourinary system; including the kidneys, bladder and prostate. Surgeons in this specialty generally have less on-call and emergency work. Urology is a specialty generally considered to be in demand due to the aging population in the UK, and surgeons in this specialty often deal with delicate or taboo topics that require careful handling.

9. Oral and maxillofacial surgery (OMFS)

This specialty focuses on the face and mouth. OMFS requires both medical and dental degrees, as well as basic training in both medicine and dentistry. Most oral and maxillofacial surgery is elective, so there is often less on-call work with this specialty.

10. Vascular surgery

Vascular surgeons deal with veins and arteries. This is the newest surgical specialty and involves working across all parts of the body. It requires a fair amount of on-call and emergency work. It can also provide lots of opportunities for academic research, particularly as it is such a new specialty.

Academic Surgery

In addition to these 10 specialties you can also choose to follow a career in academic surgery. This involves qualifying and working in a surgical specialty but also undertaking surgical research and teaching at a medical school. All surgeons will undertake some research throughout their careers, though for academic surgeons, this is their focus.

Training: becoming a surgeon

Training in surgery is “on the job”, which means you are actually working in a supported environment as you train. This table shows the most common training route. There are various opportunities to do something different or additional, throughout training, with the chance to take time out to pursue academic, specialty, or other interests.

| Medical School | |
|--|---|
| Duration | 4 - 6 years |
| Content | Basic knowledge required for all medical specialties. |
| Application | UCAS |
| Normal entry requirements | GCSEs at grade C+ in your A level subjects, English and Maths. At least three A Levels: normally at grades AAB, normally including chemistry with at least one other science or maths. UKCAT (UK Clinical Aptitude Test) or BMAT (BioMedical Admissions Test). Graduate Entry is possible at some medical schools. |
| Foundation Training | |
| Duration | 2 years |
| Content | A paid training job in a hospital (or other medical) setting. Covers a range of medical specialties, including surgery. |
| Application | Applications via the Foundation Programme. Medical students are “matched” to places based on application form. |
| Normal entry requirements | Successful completion of approved medical degree. |
| Core Surgical Training | |
| Duration | 2 years |
| Content | A paid training job in a hospital setting. A range of surgical specialties. May be “themed” towards one particular specialty. |
| Application | Applications to deaneries, via forms and interview /assessment etc. |
| Normal entry requirements | Complete foundation competencies GMC registration |
| Specialty Training | |
| Duration | Approximately 6 years |
| Content | A paid training job in a hospital setting Training on one surgical specialty at the end of which you can apply for a senior appointment |
| Application | Applications to deaneries, via forms and interview /assessment etc. |
| Normal entry requirements | Complete core competencies GMC registration MRCS examination |
| Senior medical appointment | |
| Such as a consultant or a fellowship for further, more specialised training. | |

Medical student: all surgeons need to obtain a medical degree before they can train to be a surgeon. In the UK, medical degrees are between four and six years in duration. The standard medical degree takes five years and teaches you the basic knowledge and skills you need to start to train in a number of different medical specialities.

Foundation trainee: all doctors who want to train or work in the UK need to complete the Foundation Programme. The Foundation Programme is a training job: a two-year programme made up of a number of different three-month jobs (rotations) in different areas of medicine and surgery. It is designed to help you learn a bit more about working as a doctor and what kind of doctor you want to be.

Core surgical trainee: if you want to become a surgeon, then the next step is to complete core surgical training. Core surgical training is a two-year programme made up of a number of surgical jobs that aims to teach junior doctors the basics of becoming a surgeon. Core surgical trainees work in hospitals in a number of surgical sub-specialties and are taught by specialty trainees and consultant surgeons.

Speciality trainee: once you have completed core surgical training if you wish to become a consultant surgeon you must decide which kind of surgeon you want to be and undertake speciality training. Speciality Training is a five to seven-year programme in one surgical speciality. During this time specialty trainees teach core and foundation trainees and are taught by senior surgeons.

Consultant surgeon: once you have completed surgical training you become a consultant surgeon. Consultant surgeons are in charge of the surgical team and with a number of colleagues are responsible for teaching trainees. Consultant surgeons may also teach medical students or undertake research, work for private hospitals or undertake a number of other roles such as examiners or advisors.

Applying to Medical School

What is a medical degree?

To become a doctor, and then a surgeon, you must complete a medical degree at an approved medical school – there are 34 medical schools in the UK, though not all of these offer medicine at undergraduate level. Some medical degrees are only open to those with an undergraduate degree in a related subject. No two medical schools are identical; each has developed their own curriculum and style of teaching. No matter which medical school you attend, all provide medical degrees that will qualify you upon graduation as a ‘doctor’. This qualification will then enable you to continue training in your chosen professional field, whether it be as a surgeon, GP, psychiatrist, or any other medical specialty.

When you graduate from medical school you will be awarded a Bachelor of Medicine, Bachelor of Surgery degree. There are several abbreviations for this title depending upon which medical school you graduate from - all of these are equivalent. During medical school some students may have completed an ‘Intercalated’ Bachelor of Sciences degree and will graduate medical school with a BSc MBBS.

How are medical degrees taught?

There are 3 main ways that medical degrees are taught in the UK: -

- » Traditional courses
- » Problem-based learning
- » Integrated courses

Which you choose will depend on your own style – there is no best option, merely the one that fits your own learning preferences. All the courses will teach the same information, but in different ways.

Traditional courses

Medical schools that teach you the theory of medicine prior to placing you in a clinical setting are referred to as traditional courses. The aim of this style of teaching is to provide you with a basic scientific foundation upon which you will subsequently build your clinical knowledge. You can expect to spend the first two years of your degree in lectures and seminars that will cover lots of different subjects such as anatomy. You will spend the remaining time undertaking clinical placements in areas such as medicine, surgery, obstetrics and paediatrics, being taught by junior doctors, registrars and consultants in small groups at a local teaching hospital.

Problem-based learning courses (PBLC's)

PBL is a much more integrated approach to clinical experience from the beginning. For example, it may be that you spend the first year studying the basic general principles of pre-clinical subjects and then go on to spend the next two years studying pre-clinical and clinical subjects. For example, you might spend six weeks studying anatomy and physiology of the heart followed by six weeks studying clinical cardiology. Your final two years will be predominantly clinical teaching aimed at consolidating your knowledge, and this may be when you would take your electives and sit exams. Each medical school using PBLC's will use a slightly different model. PBLC's provide you with early patient interaction in a clinical setting which should help you to develop better communication skills and strengthen your clinical inference skills. If you are someone who enjoys working independently and doing lots of research a PBLC may be better for you.

Integrated Courses

Integrated or Systems based courses are run at the majority of UK medical schools. They sit as a compromise between a traditional style course and a PBL course. Teaching is based on body systems and supplemented by other lectures on subjects such as pharmacology etc.

Intercalating

Some medical students spend one or two additional years at medical school (lengthening a five-year course to six or seven years) studying for an intercalated degree. This is an extra degree awarded in addition to a medical degree usually in a related topic, providing an opportunity to gain an extra qualification while improving your research and laboratory skills.

At the end of this intercalated period students are awarded an additional bachelor's degree. Usually students complete an intercalated bachelor's degree the year after completing the second or third year of their medical course. Normally you do not need to decide if you want to do an intercalated BSc until you are at medical school but at a few universities it is compulsory so remember to check directly before applying.

How do I get into medical school?

Grades: Medicine is a popular and competitive subject; places are unlikely to be available through clearing. Most universities require a minimum of three A2s (predicted or obtained) in grades A*/A.

Chemistry is usually essential along with at least one other science subject or mathematics. Some universities prefer biology and some make it an essential requirement. A handful of medical schools may accept A2 qualifications in subjects such as modern languages or a humanities subject. Some subjects such as general studies or arts will not be accepted. You should try to find out the exact requirements of your preferred schools when choosing your A Levels or before making your application.

You will also need good AS Level results (usually three AS A*/A grades) and good GCSE results including A to C grades in Mathematics, English and Sciences (individually or a double science award).

Work/Voluntary Experience: Most medical schools will expect that you have some relevant work experience. If you are able to organise a placement at your local hospital, or shadow a medical professional, great! If you do not know anyone working in the sector, it may be hard to make contact and get that experience.

The most important thing is to persevere in your attempts to find experience in the field – you may receive lots of refusals (when you even receive responses) but you only need one positive response to get the experience that will help build your personal statement. Start looking early on so that you have time to send out more requests and consider broadening your scope: not just looking to hospitals, but also considering GP surgeries, nursing homes, and hospices.

Another way to demonstrate your enthusiasm for the medical profession would be to get involved with a voluntary organisation such as the Red Cross or St John's Ambulance – they both have schemes aimed at young people and they might have opportunities in your local area.

Work and voluntary experience is not just important for your medical school applications, it can be vital in giving you the chance to make sure you are fully committed to a medical career before even applying to university.

Admissions tests: Anyone applying to study at a medical school in the UK will have to take an admissions test. At present, most medical schools use the UK Clinical Aptitude Test (UKCAT) and the BioMedical Admissions Test (BMAT). Your test scores will be sent to those medical schools to which you have applied alongside your UCAS personal statement. Each school will set a pass mark – if your score is below this, it is highly unlikely you will be invited to interview, unless there are extenuating circumstances. You cannot re-sit admission tests – you will have to wait until the following year to reapply to medical school and sit the exam again.

It is important to ensure you are fully ready for the test before taking it. You cannot 'revise' for the UKCAT or BMAT as they are testing aptitude rather than knowledge, but you can certainly prepare. Preparation guides may be available from your local library or school/college careers service, or you may be able to find second-hand copies online. There are also online resources containing practice questions and guidance from current medical students on how best to prepare for the tests.

There is a fee for taking either test but bursaries are available. It is most important that you ensure you take the right test for the medical schools you are applying to – this may influence which medical schools you apply to, or you may choose to take both tests. Further details about the tests, fees and what to expect can be found on the UKCAT website here

<http://www.ukcat.ac.uk/>; and on the BMAT website here:
<http://www.admissionstestingservice.org/our-services/medicine-and-healthcare/bmat/about-bmat/>

UCAS Personal Statement: You can apply to up to four medical schools through UCAS, listing the schools in order of preference, as well as choosing a fifth 'back-up' place in another related subject.

Along with your test scores, your UCAS personal statement will be what medical schools use to decide whether to invite you to interview. It is your chance to sell yourself to the medical school, make a lasting impression and give yourself a head start over other applicants. You should give the personal statement as much care and attention as possible.

How to?: The UCAS form is designed to provide a comprehensive summary of your achievements and ambitions. The statement is limited to a maximum of 4,000 characters or 47 lines of text (whichever you reach first) so it is important to make the content as concise as possible. Your statement should include your reasons for wanting to study medicine and what makes you suitable for a career in medicine, drawing upon your skills, experiences and extracurricular activities. It would be sensible to draft your statement in a separate Word document and then upload it when you are happy with the content. Remember once it has been submitted your statement cannot be amended. Make sure you check several times that your spelling, grammar and punctuation are correct. It may be helpful to ask a relative, friend, careers advisor or teacher to read through your statement as well.

What to include: It is important to ensure your statement reflects your individuality. Make sure there is a good balance between academic achievement and extracurricular activities. Think about what makes you different from other candidates, e.g. work experience, travel, charity work, sporting achievements, musicality, prizes or hobbies, and be sure to expand upon these in the statement. Do not to copy someone else's statement and do not lie, you will be caught out if you do!

Further information about how to draft your personal statement can be found on the UCAS website <http://www.ucas.com/>

The Interview: Many medical school interviews will last around 45 minutes, although some might take the form of several short interviews (Multiple Mini Interviews – MMIs). Traditional panel interviews will be conducted by a panel of 2 - 3 people, which might include medical school staff, doctors/associated health professionals or current medical students. MMIs tend to take the format of a number (usually around 8) of short interview/scenario stations, whereby your aptitude for medicine is tested – similar to the entrance exams, you cannot revise for MMIs, but you can do research about the format, what to expect, and how to prepare.

Some medical schools may expect you just to turn up for interview and then go home; others will invite you to an interview as part of an open day where you will have the opportunity to tour the facilities and speak to current students. *Be sure to check the arrangements for the day with the medical school beforehand.*

Be sure to prepare yourself for the interview:

- Do your research

- Visit the Medical School in advance if possible or read through their website and/or prospectus
- Use online resources
- Practise your interview technique using your school or college careers service or a family member or friend
- Prepare answers to common interview questions
- Keep on top of current affairs and developments by reading journals and newspapers
- Familiarise yourself with the contents of your UCAS personal statement

Remember that if you have been offered an interview it means the medical school is already impressed by what they have read about you and this is your opportunity to persuade them that you are committed and suited to studying medicine at their university.

Practice questions

There are some types of interview question that are frequently used by medical schools in traditional panel interviews. This is not an exhaustive list but has been designed to give you an idea of common themes. It is important to think about how you would answer these questions, but you should not write answers and learn them off by heart!

At the end of the interview you may be asked if you have any questions. This is a great opportunity to ask about anything that hasn't been covered and focus on areas where you would like more information or clarity. Prepare questions in advance; this will show your enthusiasm and that you are genuinely interested in that medical school.

Why do you want to be a doctor?

You are very likely to be asked this. Be honest in your response and consider the following points: You want to study medicine for yourself rather than for someone else, talk about your attributes that would make you a good doctor, and if you want to "help people" explain why you want to do this in medicine particularly, as opposed to another helping profession.

What do you think makes a good team?

Think about successful teams you have been a member of and how they differ from unsuccessful teams. Try to include practical examples to illustrate your point.

Do you read any medical publications?

You are not expected to be reading high end medical journals. Look at things like student BMJ (<http://student.bmj.com/student/student-bmj.html>) and Bright Journals (<https://www.brightjournals.org/>).

Tell me about any medical advances and issues you have heard about recently.

This question can be quite daunting so good preparation is essential; read a lot! Especially useful are broadsheet newspapers (especially the health sections) and online medical forums.

What makes a good doctor?

Your answer should be specific in relation to your own characteristics as well as general characteristics associated with being a good doctor in general – you should also explain your reasoning behind the importance of the skills you choose to highlight. You might wish to consider the following points:

- Good communication skills
- Compassion
- Flexible and being able to work under pressure
- Ability to adapt knowledge to find a solution to a problem

Which quality do you think is the most important in a doctor?

There really is no right or wrong answer but you must justify your opinion for example: Adapting my application of knowledge because no two patients are exactly the same.

What is the difference between primary care and secondary care?

Primary care is healthcare advice and treatment provided close to home by a doctor who acts as a first point of consultation for all patients - this service is supplied by General Practitioners (GPs) who make up the overwhelming majority of doctors in the UK.

Secondary care is health care provided in a hospital for specialist treatment and emergencies. Almost all surgeons work in secondary care.

What is the "postcode lottery"?

Despite the name, the NHS isn't one organisation. It is broken down into local services (called NHS Trusts). The Trust decides how money is spent on a specific area or treatment and not all decide to spend this in the same way. As a result quality or availability of care can vary across the country.

This can be controversial and the term 'postcode lottery' refers to this idea that healthcare can be based on geographic location rather than merit or need. Try to have a view on the problems and issues this can cause, preferably with an example.

Would you prescribe the oral contraceptive pill to a 14 year old girl that is sleeping with her boyfriend?

Remember there is no right or wrong answer but give different point of views as well as your own. Remember that you may be working in a place with official guidelines or policies around issues such as this.

How do you see Britain's healthcare system in 20 years' time?

Give reasons for your answer. Suggest how the situation can be improved in 20 years' time.

If you had £1 billion to spend on one element of healthcare, what would you spend it on and why?

Try and be imaginative, some examples may be; prevention of diseases such as obesity and lung cancer by promoting ways of keeping healthy. Be clear on why this is a priority over other healthcare issues – this is particularly helpful to demonstrate a broader knowledge of current healthcare issues.

What do you feel are the good and bad points about being a doctor?

Be balanced in your answer – think about what you will like, how realistic your view is of the job, and consider bad points. Bad points could include: It's can be stressful and takes a long time to train and on calls mean that you have to wake up a lot in the middle of the night. Good points might include: Job satisfaction as you know you are making a difference to people's lives, challenging work environment or constant development of skills.

How would you balance your outside interests with studying a degree?

It is important that you have an outlet for stress and a life outside medicine—doctors need to be people too, so don't be afraid to say you have outside interests.

What single healthcare intervention could change the health of the population the most?

Justify your answer with a reason or an example. General examples could include preventative public health measures on issues around mental illness in the community, teenage sexual health, or early years childcare.

What do you think about [prominent ethical issue] etc.?

Examples of prominent ethical issues raised with this question could include:

- Abortion
- Euthanasia
- Cosmetic surgery on the NHS
- Care for smokers/the obese
- Postcode lottery

In an interview it is vital to show awareness of views for and against the argument presented. Remember as a doctor your personal beliefs and views are often overridden by the patients' choice. Be sure to present a balanced argument.

What have you gained from your work experience/hobbies/community work?

Talk about how the skills you have gained will help you succeed in your future career in medicine or have just helped you develop as an individual.

What qualities do you have that mean that you will be a good doctor?

Be as specific as possible and show them how you are different to other people in terms of what you can offer.

How do you cope with stress?

Be honest—think about what got you through GCSE's. You need to demonstrate you can deal with it, that you're realistic about medical school, and that you have a plan for dealing with it.

What are your best and worst qualities?

Again be honest but think about your answer in the context of being a doctor—it is also worth saying what you are doing to combat your worst qualities. For example: I have found it difficult to concentrate on revision in the past. I have made efforts to create a timetable and have given myself fun rewards during my breaks as an incentive to work during my revision slots.

Never say that you don't have any bad qualities! It is unlikely to be true.

What did you do in your year out? (if you had one)

Whatever you did, explain how it has helped you develop.

What responsibility do you have?

Think about what you do in your free time and any areas of responsibility that you may hold or have held at school, such as sports captain, team leader or prefect. Explain clearly what the role is/was and the kind of responsibility it required.

What do you think will be your greatest challenge in completing medical school or learning how to be a doctor?

Again be honest. Everyone is challenged by different things. Consider what challenges you will face over your course, such as independent working or financial independence, and how you may overcome them.

What will you do if you aren't accepted to medical school?

Give this genuine thought, most medical schools receive at least 10 applications per place. Other options include taking a medically related for example biomedicine, audiology other science degrees and trying for graduate entry or taking a year out to improve your application. Show you have thought about a serious alternative, to help you to demonstrate that you are committed but flexible. Say you will listen to feedback.

And finally....

A career in surgery can be incredibly rewarding and fulfilling. It is open to everyone with the determination, enthusiasm and aptitude to succeed, regardless of background, ethnicity or gender. There isn't one specific kind of person best suited to surgery, and the surgeons of tomorrow will probably look very different from the surgeons of today. We hope you're one of them!

Good luck in your future surgical career!

Contact details

The Royal College of Surgeons of England: 35-43 Lincoln Inn Fields, London, WC2A 3PE

www.rcseng.ac.uk

careers@rcseng.ac.uk

020 7869 6212

If you would be interested in having a surgical careers workshop at your school, your science teacher or careers advisor can email careers@rcseng.ac.uk to see if we can arrange one.