BOA Undergraduate Guide 2011

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Introduction

Orthopaedics is often used as an abbreviation for Trauma and Orthopaedic surgery. It is a surgical specialty concerned with bones and joints and the structures that bring about their movement – the musculoskeletal system. It deals with two broad areas:

- The musculoskeletal system when injured – trauma
- The musculoskeletal system in the absence of injury e.g. congenital & degenerative conditions and infection.

Orthopaedics is derived from the Greek words '*ortho*' meaning straight and 'paedion' a derivative of '*pais*' meaning child reflecting the fact that originally the main workload of orthopaedic surgeons was to treat children suffering from spinal and limb deformities, and the role of the orthopaedic surgeon was to make the children grow straight. The term was coined by Nicolas Andry in 1741 when he published 'Orthopaedia: or the Art of Correcting and Preventing Deformities in Children' which included his illustration of the Andry Tree that is today recognised internationally as a symbol for orthopaedic surgery.

Orthopaedics patients are derived from all age groups and the range of Orthopaedic pathology is similarly varied. It includes congenital, traumatic, degenerative, infective, neo- plastic and metabolic conditions that affect the musculoskeletal system.

A career in orthopaedic surgery builds on all of the skills and competencies acquired as an undergraduate. Skills include, but are not limited to, history taking, clinical examination, communication and knowledge of investigations. The setting is a hospital environment, usually with accident and emergency facilities. The role involves team working with many different groups of people; surgical colleagues, medical colleagues (e.g. Paediatricians, Rheumatologists & Geriatricians), outpatient staff, theatre staff and hospital managers.

A Career In Trauma & Orthopaedic Surgery

Overview

Being a trauma and orthopaedic surgeon is an extremely rewarding career. There are few areas in medicine where we have the opportunity to transform people's lives, whether you are putting them back together after severe trauma, or whether you are giving someone back their independence by relieving the horrendous pain from an arthritic joint.

Orthopaedic Surgeons are able to use surgical techniques to diagnose and treat injuries due to trauma, congenital diseases, degenerative diseases, infections and tumours relating to the musculoskeletal system.
Orthopaedic consultants in the UK operate around 40% of the time, with the rest divided between clinics, ward work and on-call commitments.

One of the main attractions of Orthopaedics as a career is the fact that our interventions can rapidly and dramatically improve quality of life for patients. It combines theoretical knowledge with practical skills but also involves an interface with technology, industry and the multidisciplinary team unmatched by any other specialty.

Life as an Orthopaedic Surgeon is hard work, enjoyable and immensely satisfying. It is a career that very few people regret pursuing and is one that I would highly recommend to interested and committed trainees.

Subspecialties

Trauma and Orthopaedic Surgery offers a wide range of clinical diversity. Towards the end of training (ST6-8) orthopaedic surgeons may begin to develop an interest in one particular area of the musculoskeletal system and sub-specialise. Sub-specialties include:

- Ankle Surgery
- Knee Surgery
- Hip Surgery
- Upper Limb Surgery
- Paediatric Surgery
- Spinal Surgery
- Sports Injuries Surgery
- Trauma Surgery

Trauma

Trauma concerns injury to the musculoskeletal system. This ranges from isolated low energy fractures (neck of femur fracture in the elderly) to high velocity fracture and the multiply injured patient. Emergency admissions in orthopaedic surgery are not all for traumatic injury. Bone and Joint infection is a particular example of an acute problem often requiring emergency admission and surgery.

Elective

Elective surgery refers to planned treatment of what are usually more chronic conditions. A hip replacement for osteoarthritis would be a good example. Elective surgery is organised according to the region of the body and aims to relive pain and restore function.

Academic Surgery

Despite there being a massive burden of disease (over 20% of GP attendances are for musculoskeletal problems) and a massive cost to the NHS (- over 3 billion pounds per year), the aetiology and treatment of musculoskeletal diseases has been relatively under

researched. There are therefore ample opportunities to carry out research and make a difference to patient care.

Given the clinical diversity it is no surprise that the potential for research is enormous. Clinical research is varied with implant performance and outcome assessment being a common area. Large population studies can examine the epidemiology and genetics of chronic condition such as osteoarthritis. Laboratory research spans many disciplines; biomechanics to cell biology. Musculoskeletal research is involved in a number of cutting edge initiatives such as nanomedicine and stem cell therapy.

Most regions in the UK will have or be near to an academic department where this type of research is carried out. The research is usually lead by a clinical academic. This is a practising surgeon who devotes a significant amount of the working week to research. Training in this career path is undergoing change but will probably involve completion of a higher degree (e.g. PhD) and two slightly different forms of ST post; the Academic Clinical Fellow in ST1 and ST2 and Lecturer in the years ST3 through to completion.

Life as an Orthopaedic Trainee

In most Hospitals in the country, a Specialty Trainee in Trauma & Orthopaedic Surgery will be exposed to both emergency and elective trauma and orthopaedics. During the course of training, the trainee will rotate through the different subspecialties prior to sitting the FRCS (Tr & Orth) examination and at the end of a successful training programme will be awarded the Certificate of Completion of Training (CCT), to allow entry onto the Specialist Register.

A typical day in the life of a trainee will focus on either trauma or elective orthopaedics. In most Departments, all trainees will participate in an on-call rota. Some posts are fairly general, but most are now subspecialised. Generally, the working day will usually focus on trauma or elective activities.

Trauma

08.00 Trauma Meeting

All emergency admissions from the previous 24 hours discussed and X-rays reviewed.

08.30 Post-take Ward Round

All admissions seen by the admitting Consultant and team.

09.00 Fracture Clinic

Very busy with large numbers of new referrals from A&E and follow-ups.

13.30 Trauma List

Ideally, patients admitted the previous day will be operated on. Usually very good experience for the trainee.

17.30 Post-op Ward Round

Essential to ensure that all patients are stable following surgery.

Elective

08.00 Pre-op Ward Round

All patients on the operating list must be seen, marked and consented and their notes and X-rays reviewed.

08.30 Elective Operating List

A combination of assisting the Consultant and performing operations under supervision.

13.30 Orthopaedic Clinic

New and follow-up patients with musculoskeletal pathology with an opportunity to discuss with and present to the Consultant.

All trainees are also expected to take part in educational activities such as X-Ray Meetings, Journal Clubs, Clinical Conferences, Core Curriculum Teaching and are required to contribute to Clinical Governance, Audit and Research.

Life as an Orthopaedic Consultant

A typical working week consists of three operating sessions (one trauma, two elective), three clinics (one fracture, two orthopaedic), ward rounds and on-calls. Personally, my own sub-specialist interests include hip, knee and trauma surgery, a large proportion of which consists of hip and knee replacement, knee arthroscopy and fixation of fractures. In addition, there are various administrative and managerial tasks to be undertaken. Consultants should be committed to teaching and training and must participate fully in audit and clinical governance.

Currently, a major challenge facing Consultants is in maintaining a high standard of training, whilst ensuring optimum service delivery and ultimately the provision of safe, high quality patient care. Within the restrictions of the EWTR, this requires maximum utilisation of teaching opportunities, leadership qualities, robust assessment tools and good support for trainers and trainees.

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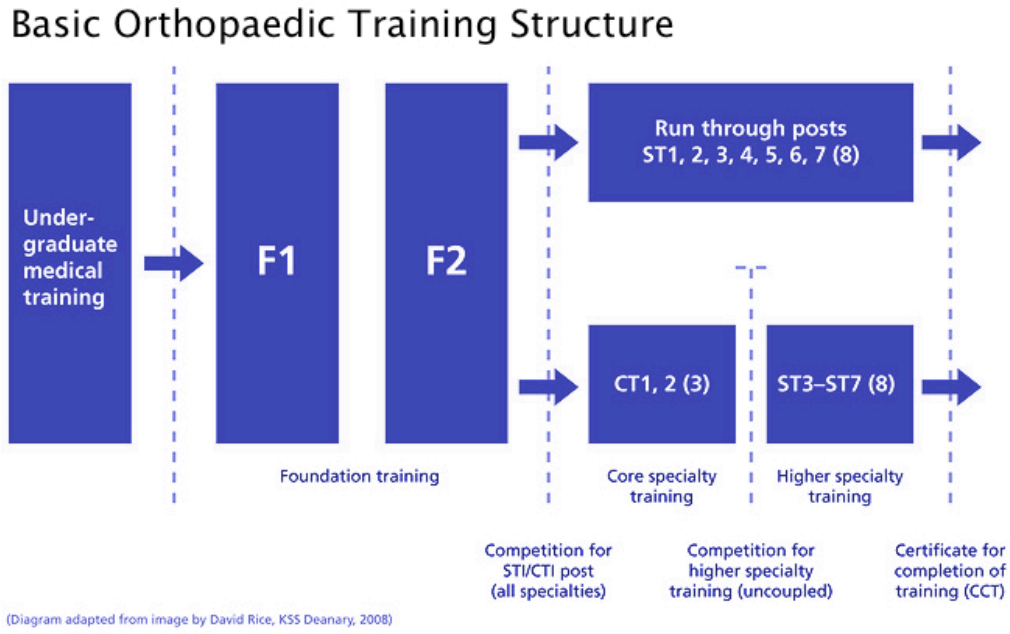
Selection into Trauma & Orthopaedic Surgery

Overview

Selection into Orthopaedic specialty training takes place following the successful completion of the two year foundation programme.



In 2011 Trauma and Orthopaedic Surgery offers both run-through and uncoupled training posts:

- "Run-through" training is where progression to the next level of training is automatic (so long as you satisfy all the competency requirements)
- "Uncoupled" training is where there are two years of core training (CT1/2), followed by another competitive application system for higher training posts (ST3+) and progression to completion of training (provided you satisfy all the competency requirements).

Run-through posts have the advantage of guaranteed career progression to the completion of training without a further competitive selection process but are currently only being offered in Scotland.

Core Surgical Recruitment

Applications to core surgical training open within the first half of the Foundation Year 2 year. Selection in to core surgical training is via an online, national application system.
The national process gives applicants the option to make only one application, preferencing their Deanies of choice with up to two interviews (subject to eligibility) with a centralised offer process giving the applicants the information needed to make a decision.

Applications are based on a national person specification:

CT1 TO Person Specification

Interviews
All core surgery interviews will follow the same structure nationally. All interviews will require you to provide evidence of your achievements such as elogbook records, eportfolio, educational supervisor's report and certificates.

All interviews will comprise of 3 x 10 minute stations. You will be required to get to the interview location 45 minutes before your interview commences.

The Clinical Scenario Station: This is the most weighted station within your interview. You will be given a clinical scenario to read before you enter your interview which you must talk to having had time to think about the case. You will then be asked another scenario to which you will need to answer on the spot. The panelists will have positive and negative indicators to look for and a series of questions used as probes to explore your answers. This station will last 10 minutes.

The Management Station: This station is to ask questions surrounding the management of your time, judgement and ethics. You will be asked a series of questions with probes with positive and negative indicators. This station will last 10 minutes.

The Portfolio Station: Whilst your portfolio is not scored at interview it will be examined by panel members and will contribute to the interview discussion. You are strongly advised to ensure that it contains relevant evidence of academic achievement, attainment of Foundation competences and of key activities which you have undertaken in the workplace or within the community which will demonstrate your strengths as a doctor and manager of people. You will be asked to refer to items within your portfolio at interview so make sure you are able to quickly access these and discuss, particularly audits and research examples.

Applicants will be ranked against a national marking scheme and decisions will be announced on a 'National Surgery Offers Day'.
Successful applicants will then have 48 hrs to accept or reject an offer and will then be contacted by the deanery directly.

Round 1 of the application process opens in December, interviews take place at the end of January/Beginning of February and offers are announced on a set day in March. A second round opens later in the year to fill any remaining posts.

Run-Through Recruitment

Run-through posts are only available in Scotland. Applications can be made here.

Applications open in early December and close before Christmas. Interviews are then held in February.

The interview will consist of 3x10 minute interview station, 2x10 minute skills station and 1x3 minute presentation station.

Academic Posts

A number of deaneries offer CT1 academic jobs outside of the national selection system. These pair clinical experience with time spend in research.

ST3 Recruitment

The Yorkshire and the Humber Postgraduate Deanery is co-coordinating national recruitment for vacancies in Trauma & Orthopaedic Surgery ST3 and LAT posts across England in 2011. Applications open in February and the close in March. Eligible candidates will be interviewed by their 1st and 2nd choice of deanery only. Applicants submit one application electronically

for all vacancies via the intrepid:pathway electronic recruitment portal.

The person specification can be found below:

 ST3 T&O Person Specification

Further Info:

Yorkshire & Humber T&O National ST3 Selection

Orthopaedic Specialty Training

The Trauma and Orthopaedic Curriculum is governed by the Intercollegiate Surgical Curriculum Programme (ISCP). This builds Orthopaedic experience through ST1/3 to the Completion of training.
The ISCP breaks down the curriculum into stages:

- Intermediate (ST3-6)
- Final (ST6-8)

The intermediate years of training (ST3 onwards) will be structured around more focused Orthopaedic training, concentrating on trauma management and the generality of elective practice. It will be based around the core of the National Orthopaedic Curriculum. You will be expected to demonstrate the gaining of competencies by continuous assessments between you and your trainers using the Orthopaedic Competence Assessment Programme. The culmination of this phase of training will be in gaining the FRCS (T+O) exam. This exam is designed to show candidates performing at the level expected of a newly appointed consultant in an MCQ exam. This will be followed on successful completion of this by a clinical and Viva exam three months later.

The final years of training will be spent developing an interest in sub specialist practice. It will be through a series of more senior posts and fellowships (perhaps abroad) where more specialist knowledge and techniques will be learned. This will form the basis of a development of practice after award of the Certificate of Completion of Training. This will make you eligible to apply to the specialist register and apply for consultant posts.

Maximising Chances of Selection

Overview

Selection in to Trauma and Orthopaedic Surgery is fiercely competitive and following recent reforms to medical education such as modernising medical careers, the vast majority of orthopaedic surgeons are going to be selected directly into the specialty from F2. This will mean that it is essential for you to have found out as much as you can about a Trauma and Orthopaedic career whilst you are still a student. It is advisable to create a CV as early as possible with sections covering:

- Qualifications
- Presentations (Local, Regional, National, International)
- Publications
- Prizes
- Courses
- Teaching
- Extra-Curricular Achievements

Medical School

Enhancing your CV may be the last thing on your mind while enjoying student life and cramming in revision for exams. However there are lots of opportunities during medical school to gain insight into a career in orthopaedic surgery and to boost your CV for future selection.

Surgical Placements
Placements will give you good exposure to all surgical disciplines so that you can select a career best suited to you.

- Maximising your time spent in theatre and on orthopaedic wards will allow you to get a feel for what life is like as an orthopaedic surgeon. Surgeons are keen to teach and if you show an interest you will gain lots during placements.
- Gaining exposure to orthopaedic and general surgical techniques in theatre will give you a good grounding for when you eventually get a chance to perform procedures yourself. It is wise to keep a record of any procedures observed or performed for future reference. eLogbook has a facility for medical students to keep such records.
- Learning the basic principles of fracture management, examination and management of common injuries is a minimum requirement of most placements and reading around any orthopaedic topics will boost your knowledge.

Locate a Mentor
If you are interested in a career in Orthopaedics and Trauma, you should contact the Professor, Reader, Senior Lecturer or Director of Postgraduate Training Programme in Orthopaedics in your medical school at as early a stage as possible in your course. They will offer career advise together with putting you in contact with suitable departments to undertake audit or research should you wish. If you are interested in an academic career in orthopaedics, you should discuss with the Professor of Orthopaedics in your medical school the best time for you to carry out a PhD. A way to distinguish your application is by including a recommendation letter from an orthopaedic surgeon who knows you well, perhaps having worked with you on research projects, at clinic, or in the operating room, and can compose a glowing letter with specific experiences and observations from personal knowledge of yourself. This will be helped if you have been able to accompany your mentor to the clinic and operating room.Obtaining a letter of recommendation from a nationally recognised orthopaedic surgeon may further distinguish your application. After an orthopaedic surgeon has agreed to act as a referee, supply him/her with background information (such as your goals) and your curriculum vitae.

Student Selected Modules
Most Universities offer study periods during which students may choose to complete a

project. SSMs are ideal ways to learn more about orthopaedics or to undertake an audit or research project. Tips to make the most of SSMs include:

- Contact a supervisor early to help plan any projects.
- Decide what type of project you want to undertake and get planning early.
- Most hospitals have audit or research departments who may be able to facilitate your project
- Try and make the most of your project report, think either presentation, publication or prize for the end result

Intercalation
Undertaking an intercalated degree is not for everyone and it is important that you choose a subject that genuinely interests you. Intercalation is a great way to become involved with research at an early stage and, together with attaining an additional degree, may open the door for presentation or publication of your final project.

Electives/Vacation Periods
Most universities offer periods of study that can be undertaken anywhere in the world. This is a great opportunity to not only get a tan but to also show your interest in orthopaedics.

- Contact an orthopaedic department early
- Try and undertake a project as this can help boost your CV as well as increasing your chances of successfully gaining funding for your elective
- Start looking for elective bursaries early as bursaries not only help to fund your trip but will also count as prizes for your CV
- Do something awesome that you will enjoy and make you stand out, there are lots of amazing possible destinations and institutions to visit so make the most of the time

Surgical Societies
Most universities have surgical societies that run workshops and events for students interested in surgery. These range from suture workshops to full-blown conferences.

- Get involved early and try to help organise events
- Attend events of interest

National Societies, Events & Prizes
National societies such as the Royal Society of Medicine, Royal College of Surgeons, British Orthopaedic Trainees Association or BOA are great ways to stay up-to-date with the latest surgical events, prizes and news. Presenting a poster or just attending national conferences will boost your knowledge outside of medical school and prizes not only look great on your CV but may also come with a cash prize.

Foundation Years

The selection process is likely to happen in the middle of F2. The foundation years are to provide generic core skills rather than the chance to experience different specialties. Therefore, it is essential for junior doctors to have considered their likely career path by the time they have finished their final year of medical school.

While gaining a foundation job in Trauma & Orthopaedics will increase your exposure to the specialty it is not an essential requirement for ST applications. It is important to be aware of what interview and selection panels are looking for as ST applications come around early in the F2 year. Below is a breakdown of ways to boost your CV prior to ST applications.

Audits
Audits are a requirement of foundation training and can help to improve current practice in your hospital together with being ideal opportunities for presentations and publications. Try and undertake an audit in an area that interests you and that will benefit your department.

Research
For those with a keen interest in academic surgery there are a number of academic

foundation jobs that offer periods of research/lab work as part of the rotation. Depending on your institution you may also be able to get involved with research though this can be time consuming on top of your normal job.

Presentations
Presenting audits or case studies at local, regional, national or international level is a great way to add oral or poster presentations to your CV. CT1 and ST3 applications give points for publications at local, regional and national/international levels.

Publications
Together with presenting getting published will gain you points on most application forms and help to improve your CV. Many journals, websites or hospital publications will accept articles including opinions, case reports or audit write-ups. Getting work published in well-respected journals will help you stand out from the crowd and being first author on PubMed referenced publications will stand you in good stead for ST3 applications.

Surgical Events, Societies & Courses
Attending orthopaedic events will highlight your interest in the specialty. Many surgical organisations offer affiliate membership for junior doctors and will keep you updated with the latest news and courses. Attaining certificates of achievement for Basic Surgical Skills, ALS, ATLS and other surgical courses also shows your commitment to surgery while providing you with ways to bolster your practical skills

Exams
There are points on most application forms for successfully passing both parts of the MRCS examination. Part A can be taken anytime after successfully graduating and consists of SBA and EMQs on surgical sciences and anatomy. It is advisable to get a good grounding in surgery prior to attempting the examination. Part B is an OSCE exam and can be taken after passing Part A, again it is advisable to first gain adequate exposure to surgical practice. Further info can be found at iMRCS and in BMJ Careers.

Taster Placements
Many hospitals offer foundation doctors taster weeks in chosen specialties during which they can sample what life is like as a trainee. This is another great opportunity to show interest in orthopaedics and to get to theatre.

Theatre & eLogbook
As a junior doctor you will be constantly completing DOPS and recording practical procedures in the NHS ePortfolio as part of foundation training. Improving your surgical skills in theatre and recording procedures in eLogbook is a great way to show that you are committed to surgery.

Teaching
ST/CT Applications award points for showing a level of commitment to teaching this can range from organising teaching sessions for medical students, undertaking a teaching course or embarking upon a postgraduate degree in medical education. The most important part of this is gaining feedback from teaching sessions in order to improve them for the next group of students.

Extracurricular activities
While it is important to boost your CV it is also vital to maintain a healthy work-life balance. Continuing team sports, exercise or other interests outside of medicine after graduating is vital.

Core Surgical Training Years

While the majority of core surgical training programmes offer general surgery placements it is important that trainees gain exposure to trauma and orthopaedic specific procedures. It is recommended that trainees gain as much exposure as possible to orthopaedic surgery in the

core surgical training years. Several deaneries offer themed orthopaedic programmes with 18 months of orthopaedic jobs and six of another surgical specialty.

When choosing an orthopaedic placement consider these questions:

- Is the programme located where you would like ultimately to settle?
- Is there ongoing research in an area of interest?
- Is there strong sub-specialty training in an area of interest?
- Do you know someone who had a good experience on this programme?
- What is the overall reputation of the programme?
- What is the local system for delivering orthopaedic services e.g. traditional hospital or independent sector treatment centre?
- Is there a good pass rate of the FRCS (Trauma and Orthopaedic) from that programme?

During the CT years trainees are expected to continue building their CVs for ST3 interviews and to expand the above areas covered in the Foundation Years.

Further Info

www.boa.ac.uk

www.bota.org.uk

www.rcseng.ac.uk/

www.rcsed.ac.uk

www.iscp.ac.uk

http://www.surgeryrecruitment.nhs.uk/

http://www.yorksandhumberdeanery.nhs.uk/specialty_recruitment_2011/specialties/TO.aspx

http://www.scotmt.scot.nhs.uk