



Trainee Handbook

13th edition | July 2021



Association
of Anaesthetists

www.anaesthetists.org



Satinder Dalay

Foreword

I am delighted to welcome you to the 13th edition of the Association of Anaesthetists' Trainee Handbook.

The main objective of the handbook is to offer trainees a comprehensive resource as you navigate your way through your career. A vast array of high-quality authors have been commissioned to write about their specialist field or area of knowledge. Whatever path you choose to take, I believe you will find useful sections within this handbook.

Training within anaesthesia is constantly evolving. As I write this foreword, a new training curriculum is being implemented. To reflect the changes ahead, this handbook is not only fully interactive but also a live document. Thus, it will be updated at regular intervals to ensure information remains accurate and relevant.

Although this handbook is designed for you to dip in and out of, I strongly encourage you to read the chapters about taking care of yourself. Training is a challenging time, but here at the Association of Anaesthetists we are dedicated to supporting our trainee members.

I would like to personally thank all the authors who contributed to this handbook. A special mention of thanks to my fellow Trainee Committee members, Sally El-Ghazali and Rhys Clyburn, as well as the countless Association staff who have made this publication possible.

I welcome any feedback you may have, therefore please feel free to contact the Trainee Committee via email trainees@anaesthetists.org or Twitter [@Anaes_Trainees](https://twitter.com/Anaes_Trainees)

Finally, good luck in your career – I hope this handbook helps you along the way!

Satinder Dalay

*Elected Member, Association of Anaesthetists Trainee Committee 2015–2019
Consultant Anaesthetist, Worcestershire Acute Hospitals NHS*

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Every effort has been made to ensure the information in this handbook was accurate at the time of going to press. However, articles (particularly those to do with the organisation of training) have a tendency to go out of date which may be further compounded by the COVID-19 pandemic, so you are advised to check with the appropriate organisation for the most up-to-date information.

This has been designed as an interactive document and accessible links are highlighted in blue. Weblinks were correct as of May 2021.

Potential conflict of interest

Sally El-Ghazali is a consultant for Medtronic. No other external funding or competing interests declared.

The Trainee Handbook is kindly sponsored by:

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Who's who?

Association of Anaesthetists

The Association of Anaesthetists of Great Britain & Ireland was founded in 1932. Today the Association represents the life-changing, life-saving profession of anaesthesia by supporting, informing and inspiring a worldwide community of over 10,000 members. In 2018, the organisation undertook its first ever branding exercise and launched its modern visual identity as the Association of Anaesthetists. Association of Anaesthetists is the brand name used to refer to both the Association of Anaesthetists of Great Britain & Ireland and its related charity, the AAGBI Foundation.

The Association published its first [long-term strategy](#) in 2017, updated it in 2019 and continues to review and regularly update it as a 'living' document.

The combined current objectives of the Association of Anaesthetists and its charitable foundation are:

- To advance and improve patient care and safety in the field of anaesthesia and disciplines allied to anaesthesia in the UK, Ireland and worldwide;
- To promote and support education and research in anaesthesia, medical specialties allied to anaesthesia and related sciences and the publication of the results of such studies and research;
- To represent, protect, support and advance the interests of its members;
- To encourage and support worldwide co-operation between anaesthetists;
- The advancement of public education in and the promotion of those branches of medical science concerned with anaesthesia, including its history.

The Association pursues these objectives with vigour and enthusiasm on behalf of both anaesthetists and the general public. Trainees make up 31% of the Association's membership and are represented by the Association's Trainee Committee.

The headquarters of the Association are at 21 Portland Place, an elegant 18th century Grade II* listed building on London's 'Grandest Street'. It houses the staff team, together with meeting rooms of various sizes, a restaurant and a Heritage Centre.

The activities of the Association, a company limited by guarantee, are co-ordinated by the Board of Directors. Voting members of the Board are the Officers, elected members including an elected Staff and Associate Specialist (SAS) member as of 2019, the Trainee Committee Chair and Honorary Secretary.

The Council of the Association meets quarterly and includes all Board members as well as a number of co-opted members: the Presidents of the Royal College of Anaesthetists (RCoA) and College of Anaesthesiologists of Ireland (CAI), the Convenors of the Association's Scottish and Irish Standing Committees, a representative from the defence medical services, chair of the Association's SAS Committee (if this role is not undertaken by an elected Board member), a British Medical Association (BMA) representative, a representative from the Clinical Director's network, the UK representative of the European Society of Anaesthesiology and Intensive Care (ESAIC) Council, Trainee Committee Vice Chair and independent specialists. Council provides a forum for strategic discussion of issues affecting the specialty and is advisory to the Board; it has no decision-making authority.

Separate from the Association, is the related registered charity known as the AAGBI Foundation. The charity operates under the Association of Anaesthetists brand and the same long-term strategy. The Foundation has its own Board of Trustees, some of whom are also Directors of the Association; to ensure a degree of separation from the Association, the charity directly appoints between 2-5 independent Trustees. The core programmes of the Foundation are safety, education, research, international and heritage.

The charity founded the Overseas Anaesthesia Fund in 2006, which provides an opportunity for individual donors to contribute to the international work of the Foundation. Projects include the book donation programme, the Safer Anaesthesia From Education (SAFE) Obstetric and Paediatric anaesthesia and Operating Room courses. SAFE is a joint project developed in 2011 by the Association and World Federation of Societies of Anaesthesiologists (WFSA). Over the last seven years the SAFE project has trained 5255 clinicians in 44 countries, mostly anaesthesia providers but also midwives, obstetricians, surgeons and other physicians. Over 1000 clinicians have been trained as SAFE trainers. The International Relations Committee (IRC) considers applications for travel and project grants in low resource countries. Funding partners of the IRC include the Association, Difficult Airway Society (DAS), Regional Anaesthesia UK (RA-UK), RCoA, Society for Intravenous Anaesthesia (SIVA), and the World Anaesthesia Society.



Branching out from the Boards are the numerous sub-committees of the Association and Foundation. These include Education, Anaesthesia Equipment Standards, Safety, Membership Services, Environment and Sustainability, Heritage, Independent Practice, SAS, Trainees, Research and Grants, and the Editorial Boards for the journals *Anaesthesia* and *Anaesthesia Reports*, and the monthly member magazine *Anaesthesia News*.

The Association also has a number of working parties tasked with producing national equipment, pharmacological and safety guidance. All guidelines are available on the [website](#) (in keeping with our environmentally friendly policy of keeping print to a minimum) or via our iOS or Android [Guidelines apps](#).

Association representatives sit on the Council of the RCoA and other anaesthetic specialist societies, National Confidential Enquiry into Patient Outcome and Deaths (NCEPOD) and NHS Committees/groups facilitating collaboration and information dissemination. The President and Officers of the Association also meet regularly with their equivalents at the RCoA and CAI.

What exactly does the Association do?

A large amount of the work of the Association concerns education and development within the specialty. Three scientific meetings are normally organised each year: WSM (or Winter Scientific Meeting) is the biggest meeting and is held in London every January and includes a Core Topics day. The Trainee Conference is held every summer and the venue rotates around the UK to provide equality of access to trainees. Annual Congress takes place each September at a venue in the UK or Ireland.

This is on top of the popular Core Topics days held regionally and the numerous seminars that take place at 21 Portland Place and now regionally throughout the year. The Association has also been running an online education programme of webinars, online seminars and Core Topics in response to the COVID-19 pandemic. All events are open to all anaesthetists, but members of the Association enjoy discounted rates. The Trainee Committee also organises several seminars and webinars on topics relevant to trainees and those approaching consultancy.

In 2008, the Association, together with the RCoA, the journals *Anaesthesia* and *British Journal of Anaesthesia*, formed the National Institute of Academic Anaesthesia (NIAA), which is now the main source of funding for anaesthesia research in the UK. The NIAA has been awarded Partnership status by the National Institute for Health Research (NIHR). This means that many studies funded through the NIAA are adopted onto the NIHR portfolio and are eligible for support from the NIHR Comprehensive Local Research Networks.

Anaesthesia is the monthly scientific journal of the Association and available to all members either in print or digitally through the website and the *Anaesthesia* app. The Association is encouraging a 'greener' approach to communications and publications and members can choose to access publications online.

In 2013, the Association established *Anaesthesia Cases* online, to allow anaesthetists to upload interesting case reports and to share their knowledge and experiences. Following on from this success, in 2019 the Association launched a new peer-reviewed online journal, *Anaesthesia Reports*, with a broader remit than just case reports; the journal permits the use of multimedia pieces within the articles. *Anaesthesia Reports* is now listed on PubMed.

Anaesthesia News is the Association member magazine. It aims to keep members up to date with specialty news as well as taking a more light-hearted look at our specialty.

The Association has the wellbeing of all members, and those that work within the anaesthesia community, as an integral part of its work, and offers a wide range of services and campaigns to support you throughout your career. Resources can be found in the [wellbeing and support area of the website](#).



Why do we have a College and an Association?

The Association of Anaesthetists was responsible for introducing the Diploma of Anaesthesia and the Faculty of Anaesthetists to the Royal College of Surgeons in 1948. This ultimately led to the formation of a separate College of Anaesthetists, which received its Royal Charter in 1992. The Association of Anaesthetists and the RCoA have many objectives in common. However, the Association can act in areas in which the RCoA cannot, for instance, in matters affecting the terms and conditions of service and in representing the interests of anaesthetists as individuals. Both bodies share the promotion of education and, more recently, anaesthetist and team wellbeing and healthcare policy development. Collaboration is, and needs to be, close on many issues. However, the RCoA, with its Royal Charter and Ordinances, is bound by statute to protect the public. It also has other statutory duties such as setting the Fellowship exams, advisory appointments committees and duties to its fellows. The functions of the RCoA are therefore constrained by these statutes. The Association of Anaesthetists, while sharing similar objectives, can act more obviously for the benefit of anaesthetists. Fortunately, for us all, the RCoA and the Association work closely and in harmony.

Why join the Association of Anaesthetists?

The membership [benefits](#) are wide ranging and include [patient transfer insurance cover](#), discounts on educational events and access to online learning and peer-reviewed journals. You can join via the [website](#), or contact the Association of Anaesthetists membership department: Tel: 020 7631 8801; Email: members@anaesthetists.org.

Acknowledgements

I would like to acknowledge Chris Meadows (GAT Committee Chair 2007-2009), Richard Paul (GAT Committee Chair 2013-2014) and Andrew Hartle (Association of Anaesthetists' President 2014-2016) for their original authorship and work undertaken to update this chapter.

Kathleen Ferguson

Immediate Past President, Association of Anaesthetists

Consultant Anaesthetist, Aberdeen Royal Infirmary, NHS Grampian



Association of Anaesthetists Trainee Committee

I joined the then Group of Anaesthetists in Training (GAT) Committee at the end of my CT2 year and five years on, I am currently the longest-serving member of the committee and have enjoyed every single moment of it. My time on the committee has been a busy one - I have passed my Primary FRCA, Final FRCA, FFICM exam, been Honorary Secretary and Chair as well as witnessed a rebrand of the Association of Anaesthetists Trainee Committee!

I have always been passionate about being an advocate and voice for trainee wellbeing and, therefore, I joined because I wanted to make a difference to the working lives of anaesthetic trainees in the UK and Ireland. In recent years, our profession has faced difficult times and I wanted to raise issues on behalf of my colleagues and represent their views. I was lucky enough to be working with a friend who was on the committee at the time and she was telling me how much she enjoyed being part of it. I was impressed with how hard the committee worked and the fact it shared the same level of passion to improve trainee welfare, so when I saw an email calling for nominations, I thought...why not?

Background

The Trainee Committee is a democratically elected body consisting of trainees from UK and Ireland that exists to represent trainees in anaesthesia at a national and international level. It exists under the auspices of the Association of Anaesthetists and represents the views and perspectives of over 3500 anaesthetic trainees, accounting for over 70% of anaesthesia trainees within the UK, and approximately one-third of the Association of Anaesthetists membership.

History

1956

- Trainees first admitted as associate members of the Association of Anaesthetists of Great Britain & Ireland

1967

- Associates in Training Group (ATG) established under the Presidency of Dr Pinkerton

1970

- ATG changed to Junior Anaesthesia Group (JAG)
- Two members of JAG were admitted to Council with full voting rights

1992

- JAG became Group of Anaesthetists in Training (GAT)

2018

- GAT becomes the Association of Anaesthetists Trainee Committee

Present day

We have 14 elected members including four officer roles comprising Chair, Vice Chair, Honorary Secretary and Trainee Network Lead Officer. Additionally, we have co-opted trainee members from the RCoA, BMA, CAI, and Defence Anaesthesia, in addition to close links with the Association of Anaesthetists Board of Directors and the staff team.

Members of the Trainee Committee are key stakeholders on various internal and external committees, and both the Chair and Honorary Secretary sit on the Association of Anaesthetists Board of Directors and are Trustees of the charitable Foundation. Our opinions are always valued and carry a lot of weight with the Board Members.



The Trainee Committee has established several networks of trainee links across the country to improve information gathering and dissemination. After raising training and political issues with the relevant organisations, we relay information to our membership via the many avenues available to us including:

- Trainee Network Leads
- Less than full-time trainee network
- Association of Anaesthetists e-newsletter
- Social media including Twitter, Facebook and Instagram
- Association of Anaesthetists website
- *Anaesthesia News*

Representation

The Trainee Committee has always been involved in representing the views of anaesthetic trainees on a national front. Recent examples include a letter to the Secretary of State in response to the Working Time Regulations report, as well as submitting evidence to consultations such as Shape of Training and credentialing. Our responses highlighted concerns we had regarding our profession and for anaesthetic trainees. Most recently, the Association wrote to the four national education leads emphasising our concerns about using an unvalidated and potentially unfair process for ST3 recruitment during the COVID-19 pandemic.

It is arguably one of the most interesting and challenging times to train within the NHS, and we have continued to provide support and a strong voice for anaesthetic trainees. We were actively involved in highlighting concerns we had with the junior doctors' contract and reacted swiftly as soon as the Government announced it was imposing this. We published a statement countersigned by eight other training groups that questioned the logic behind the decision. The Trainee Committee also raised concerns shared by many trainees in light of the Bawa-Garba case via statements and through a meeting with the General Medical Council (GMC).

In 2017, we conducted a trainee pay survey following reports of salary issues. The results showed 73% of respondents had received a late or inaccurate salary in the past 12 months with almost 80% experiencing multiple instances of incorrect pay. We felt this was unacceptable and thus took this further and organised a meeting with NHS England, who produced guidance and resources to help. We have recently conducted a repeat survey to compare results and assess whether there has been improvement to timely and correct payment amongst anaesthetic trainees.

Wellbeing

As a group, we are passionate about trainee wellbeing and welfare. The #FightFatigue campaign has been hugely successful and one of the biggest achievements from the Trainee Committee. Following the tragic death of an anaesthetic trainee who fell asleep while driving home after a night shift, the Trainee Committees of the Association of Anaesthetists and RCoA supported and promoted a trainee fatigue survey around the UK. Following this, we were involved in launching an agenda for action to address the impact of fatigue and shift-working on the NHS workforce. The campaign supports healthcare professionals with practical, everyday solutions that help to raise awareness, change attitudes and improve working environments. We have had many organisations and parliamentarians taking interest in this work, and the increasing number of signatories supporting the campaign has been overwhelming. It has been so exciting that the Trainee Committee has been central to inspiring change.

The Trainee Committee has helped to develop and introduce the #CoffeeandaGas initiative. This is a trainee-led wellbeing project where we encourage anaesthetists in training, consultants and all theatre staff, to take time out of a busy working day to come together and have a chat! Conversations are important to help us share our experiences and reduce stress levels. It has been a great success, with some departments running this regularly or during induction.

Another of our projects is the #KnockItOut campaign. This was a joint venture with the RCoA and inspired by the #HammerItOut work done by the British Orthopaedic Trainee Association. This campaign focuses on the importance of positive workplace culture that is free from bullying, harassment and undermining behaviours. The initiative highlights negative behaviours within an environment and empowers individuals to speak up if they experience or witness unacceptable behaviours.



Many of us on the Trainee Committee are trained mentors and have been trained through the [Association of Anaesthetists national mentoring scheme](#). It was set up to allow members to spend time with a trained mentor in their region to help establish their values and goals and explore what will help or hinder them in making changes. It enables mentees to achieve something they care about that would lead to a positive difference in their personal life or career. The mentorship programme allows mentees to reflect, which leads to change, in order to produce a valued outcome.

Education

Through close work with the Association of Anaesthetists Education Committee and Events team, we run a successful annual Trainee Conference. It is now recognised for its scientific content with parallel streams catering for Primary, Final and post-exam delegates. We continue to attract high-calibre speakers as well as fantastic oral and poster presentations. We have recently introduced a wellbeing award to be presented at the Trainee Conference commending projects that have been led by anaesthetic trainees. Our conference was also the first Association meeting to introduce the Parent and Baby Room, and we are still proud to provide this facility in order to enable and encourage trainees to attend our conference with their babies and toddlers.

Our consultant interview seminars and management and leadership courses continue to be very popular and attract many trainees. Recently we organised a trainee-led webinar on 'Management Made Easy' and there are more webinars planned in the future. Members of the Trainee Committee also have the chance to contribute to working parties and help produce the guidelines that anaesthetic departments use to provide advice and guidance.

We want you!

Being part of the Trainee Committee comes with responsibilities; however, it is lots of fun and provides ample opportunity to develop your skills in leadership, organisation, management and presentation at a national level. We are a very cohesive group from all over the UK and at various stages of training who are passionate about making a change as well as being a great support network for each other. It can be busy, but it is good fun. If you are passionate about your profession and have opinions you wish to share, I would encourage you to join us.

Sally El-Ghazali

Immediate Past Chair, Association of Anaesthetists Trainee Committee



Trainee Network Leads

What is the Trainee Network Lead Scheme?

In 2012, an initiative was set up that aimed to improve the communication between trainees at a regional level and the Trainee Committee. The goal was two-fold:

- To allow easy, rapid dissemination of information relating to the Trainee Committee and Association of Anaesthetists
- To create a two-way dialogue to facilitate discussion around concerns, opportunities and local programmes that might be applicable to all

Trainee Network Leads (TNLs) are trainees within each school of anaesthesia or area across the UK and Ireland that act as a continual point of contact and communication within the network. The aim is to continue to have the entire area served by the network and each role is passed to a successor. The evolution of the Trainee Network now involves communication via social media and a platform for discussions to establish potential areas of work. It is hoped this will lead to further collaboration by members of the Trainee Network with the Association of Anaesthetists and Trainee Committee.

What are the roles of a TNL?

We expect a TNL to be an enthusiastic trainee at any stage of training, keen to be actively involved and quick to respond to queries from the Trainee Committee. The post is ideally held for a minimum of 12 months, and includes a number of varied and stimulating responsibilities that, as well as improving personal and professional development in areas such as leadership and management, will make for engaging discussion at a Annual Review of Competency Progression (ARCP). Several past TNLs have subsequently run for and become democratically elected members of the Trainee Committee.

Formal TNL responsibilities include:

- Helping to raise the profile and encourage membership of the Association of Anaesthetists by ensuring local trainees are aware of the multitude of services and support that are available
- Disseminating information from the Trainee Committee and Association of Anaesthetists, including regular e-newsletters and topics of note
- Advertising and encouraging attendance and participation at the annual Trainee Conference
- Discussing within the trainee groups any issues that arise within your region, and feeding back concerns to the Trainee Committee for consideration and action at a national level
- Keeping the Trainee Committee informed of local ideas, progress and examples of excellence that are to be applauded and might be of benefit to trainees elsewhere
- Aiming to attend the annual Trainee Conference and the Links Day at the Association of Anaesthetists Annual Congress
- Completing and submitting an annual report
- Ensuring the role of TNL is self-sustaining by establishing the next regional TNL prior to stepping down

There is no dedicated funding for this work stream, and this work is done on a voluntary basis. The Trainee Committee hugely appreciates the work undertaken by the TNLs and ensures that they have a formal letter on behalf of the Association of Anaesthetists and Trainee Committee, which can be used as portfolio evidence. In addition, as a TNL you are invited to the annual Links Day at Annual Congress and may be given the opportunity to attend meetings on behalf of the Trainee Committee and be involved in Association of Anaesthetists-related initiatives such as working parties, audit and research. We would encourage TNLs to take these up when offered.

How do I contact or become a TNL?

The Association of Anaesthetists website has an area dedicated to TNLs [where you can find out who represents your region](#). If your region does not have a TNL, there is a proposal form on the website, which can be submitted. Each region decides how they will handover or identify their next TNL, be that by ballot, volunteer or nomination. Some areas have more than one TNL, particularly if their school of anaesthesia is large or disparate in geography. One size does not fit all, and the scheme remains flexible and under regular review to allow for this.

Please feel free to contact us at trainees@anaesthetists.org if you would like to know more or become involved.

Acknowledgement

With thanks to Rowena Clark for the previous chapter on which this is based.

Katy Miller

Former Trainee Network Lead Officer, Association of Anaesthetists Trainee Committee



The Royal College of Anaesthetists

The Royal College of Anaesthetists (RCoA) is the professional body responsible for the specialty of anaesthesia throughout the UK. By membership, it is the third largest medical Royal College in the UK and has a principle responsibility to ensure the quality of patient care through the maintenance of standards in anaesthesia, pain medicine and intensive care.

The College's activities as laid down by its Royal Charter include:

- Setting standards of clinical care
- Establishing standards for the training of anaesthetists and those practising critical care and pain medicine (in conjunction with the GMC)
- Setting and running examinations
- Continued medical education of all practising anaesthetists
- Acting as the voice of the specialty

Organisation

The College Council

The RCoA has a council of 24 practising anaesthetists who are elected by fellows and members of the College. A President and two Vice Presidents are elected from the Council members by ballot. Particular areas of work are considered by the College Council and a series of Boards and Committees. Meetings of the Council take place on a monthly basis, excluding January and August. They include discussion of policy and professional issues that may require extensive consideration, formal and ceremonial matters, granting of diplomas, and the passing of resolutions for which the formal authority of the Council is required. The Committees of the Council meet at various points of the year and report back to the Council when relevant.

Council members include:

- Twenty Consultant members who have been Fellows for more than four years. The positions are renewable, the first term of service being six years and the second term four years.
- Two Staff and Associate Specialist members (SAS) elected for six years. They can be re-elected for a further four years.
- Two Trainee Members elected for four years. Trainee member positions are not renewable and those eligible to stand for election must be registered as a trainee with the College at the time of taking up their Council seat.

In addition, there are nine co-opted members representing the interests of other organisations including the Faculty of Pain Medicine, Faculty of Intensive Care Medicine, RCoA Advisory Boards for the devolved nations, Association of Anaesthetists, RCoA Lay Committee, Clinical Directors and the *British Journal of Anaesthesia*.

College Structure

The College has recently undergone restructuring, which has resulted in a series of Boards that oversee the work of College committees, working parties and working groups. These are aligned with College strategy and are organised by Finance and Resources, Education, Training and Examinations, Clinical Quality and Research, Communications and External Affairs and Faculties.

Committees are responsible for considering college-related issues in more detail and providing recommendations to the Council for decisions to be made. Trainee members of the Council or representatives from the Trainee Committee sit on all committees concerning the interests of trainees. The administrative functions of the College are organised into four operational Sections and are carried out by approximately 75 members of staff. In addition to the valued work of these employed staff members, the College is only able to administer its numerous duties due to the significant contribution of a large number of volunteers. The Fellowship of the Royal College of Anaesthetists (FRCA) examination could not run without the dedication of the volunteer examiners. Ensuring the delivery of high-quality training is the responsibility of over 300 college tutors and 50 regional advisors. College assessors advise on consultant appointment committees and undertake peer review for clinical standards accreditation.

The RCoA is also represented on a large number of external committees including the Association of Anaesthetists Council, the Association of Anaesthetists Trainee Committee, Academy of Medical Royal Colleges and the Faculties of Intensive Care and Pain Medicine. In addition, the College is asked to contribute to various working groups and publications and consultations from the wider healthcare community such as the GMC, National Institute for Health and Care Excellence (NICE), Department of Health, and NCEPOD.



Trainee representation within the RCoA

The Anaesthetists in Training Representative Group (ATRG) was formed in 2014 and consists of one trainee representative from each school of anaesthesia (decided by each individual school). The Group also welcomes co-opted members from the Faculties of Intensive Care Medicine and Pain Medicine. The ATRG allows a sustainable and operable system to ensure true representation of trainee concerns and trainee engagement within the College.

From this group, five members are elected, along with the two trainee members of the Council to sit on the Anaesthetists in Training Committee. The committee provides trainee representation across all activities of the College along with external groups such as the Academy of Medical Royal Colleges' Trainee Doctors Group (ATDG) and the Association of Anaesthetists Trainee Committee.

The role of the College's Trainee Committee is to:

- Represent trainee opinion to the College Council
- Enhance and maintain dissemination of relevant information to trainees
- Contribute to the RCoA *Bulletin* and produce *The Gas*, a newsletter for all anaesthetists in training
- Provide representation on the Council sub-committees and working parties
- Actively participate in the professional development of trainee anaesthetists

Curriculum

The College is responsible for writing the curriculum for training of anaesthetists in the UK; the current curriculum being published in 2010. The Training Committee oversees all aspects of training, from revising the Certificate of Completion of Training (CCT) to making recommendations to the GMC for the award of a CCT.

In 2017, the GMC produced a new document, [Excellence by design: standards for postgraduate curricula](#), which requires the curricula for all medical specialties to be revised by 2020; however, with the COVID-19 pandemic this has been revised to 2021. There are certain requirements for the new curriculum; in particular, to introduce Generic Professional Capabilities, ensure structure around a limited number of 'specialty learning outcomes', and provide a reduced assessment burden. The curriculum review is a complex project that has resulted in the establishment of a curriculum working group to ensure the needs of the GMC, specialty and learners are met.

Examinations

To become a Fellow of the RCoA by examination you must pass the Primary and Final examinations. The examinations are set and supervised by the RCoA through a Board of Examiners who are senior consultants and experts in their fields. The College is committed to maintaining the highest possible standards for its examinations. In order to maintain this position, the FRCA examiners and the Examinations Department rigorously quality assure all processes and actively engage in research and ongoing development work to ensure the pre-eminence of the FRCA.

Lifelong Learning platform

Training in anaesthesia requires the maintenance of an electronic portfolio, which is administered by the College's Training Department. The Lifelong Learning platform is the specialty's electronic portfolio and includes logbook functionality. The platform was introduced in August 2018, replacing the old e-Portfolio. All users were transferred to the new system by August 2019. Support is available via email at lifelong@rcoa.ac.uk. More details, including frequently asked questions, regarding the platform are available on the RCoA website.

e-Learning Anaesthesia (e-LA)

e-LA is an interactive and engaging web-based learning resource developed by the RCoA in partnership with e-Learning for Healthcare (e-LfH). Written and edited by anaesthetists, e-LA covers the knowledge and key concepts that underpin the anaesthetic curriculum and will help trainees prepare for the FRCA examination. The learning material is presented as a structured series of bite-sized lessons and includes access to an extensive e-Library, a self-assessment area and e-continuing professional development to support continued professional development in anaesthesia.



Novice guide

The RCoA has produced an interactive [Novice guide](#) to support their first 3–6 months on the training programme. The guide was originally produced in August 2013 and is available online in a format compatible with most tablet computers and smartphones. The guide contains key documents and a step-by-step approach to help trainees get started on the training programme. It also contains Module 1 from e-LA, specifically written for novice trainees as an introduction to anaesthesia, to support the first three months on the training programme. There are additional learning resources and guidelines available from the Association of Anaesthetists, Resuscitation Council and DAS.

Acknowledgement

This chapter was written using text from the previous version written by J. P. Lomas.

Felicity Corcoran

Trainee Committee Elected Member, RCoA



The General Medical Council

The General Medical Council (GMC) is the independent regulator of the medical profession in the UK. Doctors must be registered with the GMC and have a licence to practise medicine in the UK. The medical register is available for anyone to search on the GMC website.

Good medical practice

The GMC sets the professional standards for doctors. The core guidance is [Good medical practice](#), which sets out the principles and values that all doctors should follow in their work. More detailed guidance covers issues as diverse as end of life care, obtaining consent and doctors' use of social media. All the guidance and a range of learning tools, including interactive case studies, flowcharts and videos are available on the GMC website. The GMC's [Raising and acting on concerns about patient safety](#) document gives advice on raising a concern, and on the help and support available to doctors. It has an [ethical hub](#), which includes lots of information and a simple visual tool to help make decisions about raising a concern. The GMC also runs a confidential helpline (0161 923 6399, open Monday-Friday, 9.00-17.00), staffed by specially trained advisors, for doctors to raise concerns.

Revalidation

Revalidation was launched by the GMC at the end of 2012. This aims to ensure doctors have regular appraisals and to keep their knowledge and skills up to date. More information about revalidation, including specific questions and answers for doctors in training, is available [on the website](#).

Standards for education and training

The GMC sets the standards for medical education and training, and ensures that these are being met. The document [Promoting excellence: standards for medical education and training](#) covers all stages of medical education and training, and became effective from 1 January 2016. The GMC puts patient safety, quality of care and fairness at the heart of the teaching and training of medical students and doctors in training. An important way for the GMC to check training standards is through its national training surveys. These annual surveys ask doctors in training and trainers to provide confidential feedback on training environments. Education providers and Royal Colleges use the responses to review and improve training programmes and posts.

Fitness to practice

When a serious concern is raised about a doctor's behaviour or the way they do their job, the GMC assess whether it needs to investigate. The GMC usually investigate cases where the doctor is putting the safety of patients, or the public's confidence in doctors, at risk.

More about how this occurs is available [via the website](#).

Outreach

The GMC outreach team works across the UK to improve understanding of GMC guidance. They explain how GMC processes work and promote GMC standards. They also collaborate with services to understand the issues faced at local level. More information is available on the [website](#).

Colin Melville

Professor and Medical Director and Director of Education and Standards, GMC



The British Medical Association

The British Medical Association (BMA) is an independent trade union and professional body, representing 156,000 doctors and 19,000 medical students across the UK. It is officially recognised by the Government and the Review Body on Doctors' and Dentists' Remuneration as the only trade union representing doctors in training under national agreements. On behalf of the profession, the BMA negotiates in England, Scotland, Wales and Northern Ireland to not only maintain and improve the terms and conditions of service of doctors, but also to lobby for change on many areas of recruitment, education and training. On a local level, the BMA supports local negotiating committees in almost every trust and lead employer, working to improve conditions beyond national agreements. On an individual level, the BMA offers a range of services to members aimed at supporting them throughout their career and at crucial points along the way.

Employment support

BMA members with employment or training queries can contact the BMA first point of contact team on 0300 123 1233 (8.00–20.00 Monday–Friday and 9.00–17.00 on Saturdays), email support@bma.org.uk or use the Webchat feature of the BMA website <https://www.bma.org.uk/membership/webchat#>. Most queries are resolved on the first call, but if needed, your case can be assigned dedicated staff with the relevant expertise to help.

Wellbeing

BMA Wellbeing Services (formerly BMA Counselling; 0330 123 1245) is available to all doctors and medical students in the UK, regardless of membership status, offering 24/7 confidential advice and support with hundreds of additional external contacts for services.

Career advice

From student life to retirement, BMA Career Advice offers support and guidance for foundation applications, entering specialty training and applying for your first general practitioner/consultant jobs, as well how to plan for retirement and keeping job plans sustainable later in your career.

Information Services

Membership includes access to a wide range of information, including the weekly *BMJ* and monthly *The Doctor* magazine. For access to current and archived articles, go to the *BMJ* website. The BMA library provides free access to over 1300 e-books and more than 300 e-journals, and full access to the Medline database. Books and DVDs can be requested through a free postal loans service (returns are also free for students). The library, based at BMA House in London, has an extensive offering of anaesthetic texts and also provides computer access, scanning, printing and photocopying facilities. For further information on up-to-date services, visit the BMA website or email bma-library@bma.org.uk

Getting involved

Local representation

The BMA exists to support members in their workplace, and aims to have at least one junior doctor per trust/employer as a BMA representative to represent their colleagues at a local level, and to act as a port of call for other members on the ground. Local reps are supported in their work by an Industrial Relations Officer, who is a member of BMA staff with experience in workplace disputes and advice. Your local rep will attend the Local Negotiating Committee at your hospital, which negotiates on your behalf with employers at a local level on issues specific to your place of work; this might include staffing, rotas or car parking. Local reps receive formal training from the BMA to support their work, and are afforded paid time to carry out their duties under the Trade Union Act.

Regional representation

Both England and Scotland have Regional Junior Doctor Committees, which represent all the doctors working within a certain region, most of these boundaries follow the boundaries of the training region in which you work. These committees usually meet four times a year, and all junior doctors are welcome to attend regardless of membership. Regional Junior Doctor Committees are a place to ask advice, learn from colleagues, debate topics and, crucially, feed your view into the BMA on key national issues affecting your working and training life. All of the Regional Junior Doctor Committees are listed on the BMA website, with contact details for your Committee chair.



National representation

If you work in one of the devolved nations, you will have a specific national committee which has devolved responsibility for certain issues. Representatives from Scotland, Wales and Northern Ireland, along with regional representatives from England, form the UK Junior Doctors Committee.

The UK Junior Doctors Committee represents all junior doctors in the UK and works to implement the policy set by members through their Regional Junior Doctor Committees/devolved nation committees and the Junior Doctors Conference. It normally meets four times a year in London at BMA House. The UK Junior Doctors Committee has a visitor scheme so that members who aren't representatives may attend to observe the debate and working of the committee. If you are interested in the visitors' scheme email info.jdc@bma.org.uk for more details.

Contacting the BMA

The BMA website is a great first point of call for enquiries, but if you can't find what you need then you can talk to an advisor on 0300 123 1233 or email support@bma.org.uk, referencing your membership number.

Acknowledgement

This chapter was written using text from the previous version written by Heidi Mounsey.

Matthew Tuck

BMA representative, Association of Anaesthetists Trainee Committee





The training years



Anaesthetic training, competencies and assessments

Training

The current curriculum for a Certificate of Completion of Training (CCT) in Anaesthetics [1] was introduced in 2010 and aimed to produce 'well-trained, high quality clinicians, with the broad range of clinical leadership and management skills and professional attitudes necessary to meet the diverse needs of the modern NHS and who can embark upon safe, independent practice as consultant anaesthetists in the United Kingdom (UK)'. A review of the curriculum was undertaken in 2014 following the [Shape of Training](#) report and again following industrial action by junior doctors in 2015. The RCoA felt there was room to improve training to allow for more balanced and flexible doctors, and to give more time to pass the Primary exam and improve confidence in more junior trainees. Therefore, the RCoA used this opportunity to revise its curriculum and incorporate interchangeable and consistent generic professional capabilities at the forefront. The proposed changes to the curriculum were due to come into effect in August 2020; however, with the COVID-19 pandemic this was revised to 2021.

The current anaesthetic training programme, as overseen by the RCoA, is described as 'a competency-based, supervised, continuously evaluated and tightly regulated programme, with the potential for tailoring to suit individual requirements and interests'.

A typical training period in anaesthetics lasts seven years and, from 2021, will be made up of the following stages:

- Stage 1 (previously Core training) - three years (CT1-3) or four years if Acute Care Common Stem (ACCS)
 - Primary FRCA gained before progressing to ST4
- Stage 2 (previously Intermediate training) (ST4 and 5) - two years
 - Final FRCA gained during this stage
- Stage 3 (previously higher and advanced level training) (ST 6-7) - two years

The actual duration of training is not fixed but will depend on individual needs and the rate at which competencies are achieved.

Those already in training who are more than two years from CCT, will gradually transition onto the new curriculum. Further information regarding the curriculum change can be found at <https://rcoa.ac.uk/training-careers/training-anaesthesia/2021-anaesthetics-curriculum>.

The full 2021 curriculum is still under review by the GMC; however, it is unlikely that the broad areas will change significantly. The objectives of training are grouped into four stages of learning (basic, intermediate, higher and advanced) and, within these, are organised by surgical subspecialty or anaesthetic focus. In addition, there is a group of general outcomes that is listed separately as 'professionalism and common competencies in medical practice'.

Training concepts: competency, spiral, broad-based, flexible and experiential learning

The RCoA defines competence as: 'possession of the knowledge, skills and attitudes required to undertake safe clinical practice at a level commensurate with stated objectives'. The training scheme is designed to ensure trainees become competent in each area before progressing rather than moving on simply due to the passage of time.

The current curriculum is built around spiral learning where trainees return to anaesthetic subspecialties a number of times over the training years, allowing them to gradually acquire the skills, attitudes and behaviours to the level expected by the end of training. Flexibility is maintained so that the needs of anaesthetic trainees who choose not to specialise until their later years of training can be catered for; this also allows the specialty to respond rapidly to the changing face of medicine. Finally, practical skills are learnt through 'hands-on' training, with not all trainees being expected to acquire the same advanced skills. The length of the training programme should allow trainees to become expert in the key competencies required for safe independent practice.



Common competencies of medical practice required of all doctors

Aside from the clinical training, the trainee must also develop the general professional knowledge, skills, attitudes and behaviours required of all doctors. Thirteen domains have been identified by the RCoA covering professionalism and common competencies. These are as follows:

- Professional attitudes and behaviours
- Clinical practice
- Team-working
- Leadership
- Innovation
- Management
- Education
- Safety in clinical practice
- Medical ethics and confidentiality
- Relationships with patients
- Legal framework for practice
- Information technology
- Alcohol and other drugs

The Anaesthetic Training Programme

Foundation Years 1 and 2

Many doctors will pass through anaesthetic departments for a few months as part of their foundation training programme, but their numbers are limited. Some of them may return to anaesthesia in the future having achieved valuable competencies during time spent in other specialties.

Important milestones in the anaesthetic training programme

- Initial Assessment of Competence (IAC) (within first six months)
- Initial Assessment of Competence in Obstetric Anaesthesia (IACOA) (within first two years)
- Primary FRCA examination (required for progression to stage two training)
- Core Level Training Certificate (CLTC) (end of CT)
- Final FRCA examination (required for progression to stage three training)
- Intermediate Level Training Certificate (ILTC) (issued once all intermediate level units of training completed and Final FRCA passed)
- Higher essential units of training (during ST6-7)
- Advanced special interest units of training relevant to ultimate area of practice (during ST6-7)
- Recommendation for Certificate of Completion of Training (CCT)

A separate career pathway for those wishing to become academic anaesthetists is discussed below.

Core Level Training

Currently Core Training Years 1 and 2 or ACCS years CT1, CT2 and CT3

The detailed explanation of the competencies required to complete core level training and how they are assessed are found in Annex B of the CCT in Anaesthetics, which can be found at www.rcoa.ac.uk

There are two pathways into anaesthetic training, either as a Core Anaesthetic Trainee or via the Acute Care Common Stem (ACCS). If entering anaesthetics via the ACCS route, basic training will be extended by a year to allow time to be spent in emergency medicine and acute general medicine.

Core Level Anaesthetic Training is divided into two parts:

- Introduction to Anaesthesia (normally 3-6 months)
- Core Anaesthesia (including 3 months of intensive care medicine (ICM)) which is normally 18-21 months



The initial training of novice anaesthetists is an introduction to the principles and practice of safe anaesthetic care and consists of the following units:

- Pre-operative assessment including history taking, clinical examination and specific anaesthetic evaluation
- Pre-medication
- Induction of general anaesthesia
- Intra-operative care
- Postoperative and recovery room care
- Management of respiratory and cardiac arrest in adults and children
- Control of infection
- Introduction to anaesthesia for emergency surgery

Trainees are expected to have achieved these clinical learning outcomes and obtained the Initial Assessment of Competence (IAC) before progressing to the remainder of core level training. The IAC must be obtained prior to trainees undertaking anaesthetic activity without direct supervision. This usually occurs about three months into the training scheme, although the RCoA is keen to stress that the emphasis, particularly during core level training, is on competence not on time. ACCS trainees from parent specialties other than anaesthesia are expected to complete the Introduction to Anaesthesia and gain their IAC. Trainees arriving in the UK having worked elsewhere will also be obliged to pass this assessment before undertaking any solo work or participating in an on-call rota.

Core anaesthesia training will normally last 18-21 months and provides an introduction to all aspects of elective and emergency anaesthetic practice as well as intensive care medicine. The Initial Assessment of Competence in Obstetric Anaesthesia (IACO) must also be obtained. Completion of RCoA workplace-based assessments, passing the Primary FRCA exam and demonstration of acceptable attitudes are required to gain the Core Level Training Certificate (CLTC), usually at the end of the second year of anaesthetic training.

Intermediate Level Training

The detailed explanation of the competencies required to complete core level training and how they are assessed are found in Annex C of the CCT in Anaesthetics which can be found at www.rcoa.ac.uk

Currently ST Years 3 and 4

This period of training will normally last 24 months and is based on the principle of 'spiral learning'. Trainees are required to gain intermediate level competencies in all the units of training undertaken in core level training, as well as in important, new and often complex areas of clinical practice, e.g. anaesthesia for neuro and cardiac surgery. Intermediate competencies have been subdivided into 7 'essential' units and 3 'optional' units. A minimum of 20 sessions is required to complete the core clinical learning outcomes for each unit of training. At the end of ST4, trainees will receive an Intermediate Level Training Certificate (ILTC) if they have successfully passed the Final FRCA, continued to demonstrate acceptable attitudes and behaviour, and completed all the required units of training. Due to regional variations in delivery of training, some local flexibility is possible for ST4 and ST5, allowing up to two intermediate units of training to be deferred to ST5. Trainees also have an additional six months to complete the final FRCA if required. An Intermediate Level Progress Report (ILPR) must be issued at the end of ST4 and the ILTC completed during the first six months of the ST5 year.

Higher and advanced level training

Currently ST Years 5, 6 and 7

The detailed explanation of the competencies required to complete higher and advanced level training and how they are assessed are found in Annex D and E respectively of the CCT in Anaesthetics which can be found at www.rcoa.ac.uk

After acquisition of the ILTC, the primary aim is 'to produce trainees competent for independent professional practice in their chosen consultant career path'. The RCoA highlights that training opportunities should be balanced with anticipated career vacancies. All trainees must undertake a generalist pattern of training within a broad and balanced programme, but this stage is designed to be more flexible and tailored than basic and intermediate level training programmes. In order to attain consultant status, every trainee must complete the full higher and advanced programme of training and have undertaken a total of at least nine months of ICM (see above). Higher and advanced training together normally takes three years and can be completed in a flexible sequence. At least two of these three years must be spent in approved training or research posts within the UK. Up to one year may be spent either outside the UK in a prospectively approved post, and/or in dedicated work in a single specialty area. Only one year of full-time research can count towards a CCT.



Higher level ('post-fellowship') training lasts for two years, at least one year of which should be spent undertaking general duties. In this year, at least 9 of the 14 general units of training must be completed, including 3 mandatory units (airway management, management of respiratory and cardiac arrest and peri-operative medicine).

Advanced level training lasts for one year and may involve further training in either general or specialist anaesthesia. Advanced training in general anaesthesia may involve several units or focus on one. The trainee should aim to gain expertise in both clinical and professional competencies. The assessment of professionalism is formalised at advanced level into six generic domains:

- Clinical Practice
- Team-working
- Leadership
- Innovation
- Management
- Education

Learning outcomes and competencies expected by this point in training are detailed in each unit and must be demonstrated to allow final 'sign off' at the end of training.

In order to achieve a CCT it is necessary to complete all training in an approved training programme, be registered as a trainee with the RCoA and complete the minimum training to a satisfactory standard.

Academic Training

There are a number of different routes into academic anaesthesia.

The National Institute for Health Research Pathway is a clear, integrated academic training pathway developed by the NIHR. Trainees now have the opportunity to choose an academic training pathway from foundation training - much earlier than was traditional. Academic training posts are now available at three stages in training:

- Foundation level, which may involve time within academic anaesthesia departments
- Academic clinical fellowships
- Clinical lecturers

Trainees are appointed to National Training Number Academic (rather than the usual National Training Number) jointly by United Kingdom Research Collaboration together with local education and training boards (LETBs), universities and trusts.

Academic clinical fellowships offer a 3-year contract with 25% of time allocated to academic work with the remaining 75% being specialist clinical training. The aim is that during this time, academic clinical fellowships will gain funding to support further research years towards gaining a PhD or MD(Res).

Clinical lectureships are available for doctors in higher specialist training following the acquisition of a PhD or MD(Res) and offer contracts of a maximum of four years, with 50% of time being academic and 50% as clinical training. The aim is that trainees will be able to continue both post-doctoral research and complete clinical training to obtain a CCT.

Alternative routes to an academic career

In addition to the NIHR pathway, a number of opportunities exist to demonstrate and fulfil an interest in research. The NIAA was established in 2008 and has a database of clinical academics who are happy to be contacted if you would like to discuss options. The NIAA's Health Services Research Centre offers fellowships every year, which can be one year or up to three or four years if you want to undertake an MD(Res) (usually two years) or PhD (usually three years). Some of these posts can be part-funded by hospital trusts if undertaking some part-time clinical work in the NHS or in private sector ICUs.

The RCoA is very supportive of academic training but stresses that all the usual competencies are still required to gain the CCT. It is recognised that academic trainees may have a more limited time period than usual to complete the clinical training scheme and flexibility and personalisation of training blocks is encouraged including consideration of more training time being offered if this is felt appropriate. Academic tutors and heads of academic departments fulfil the supportive roles that college tutors and regional advisors perform in the traditional training pathway. If you are interested in an academic career, the most important first step is to find a good mentor and supervisor. The NIAA website can help you to do this, as can your local training programme director or university academic department.



How do you know if you are competent?

Anaesthetic training requires a robust and validated assessment programme. Knowledge and decision-making skills are assessed via the Primary and Final FRCA exams. Trainee knowledge is also tested using workplace-based assessments and simulation. The RCoA has developed a set of workplace-based assessments which are blueprinted against the curriculum. Every learning outcome in the curriculum is matched to at least one possible assessment. The anaesthetic workplace-based assessment tools used are:

- Anaesthetic Clinical Evaluation Exercise (A-CEX)
- Anaesthetic List/Clinic/Ward Management Assessment Tool (ALMAT)
- Acute Care Assessment Tool for ICM (ICM-ACAT)
- Direct Observation of Procedural Skills (DOPS)
- Case-Based Discussion (CBD)
- Multi-Source Feedback (MSF)
- Completion of Unit of Training form

Skills, attitudes and behaviour are assessed using the above tools and documentation and an up-to-date electronic logbook must also be maintained. All of these are used during appraisal and the Annual Review of Competence Progression (ARCP) to formulate a decision about whether each trainee can progress safely to the next year of anaesthetic training.

Avoiding the main pitfalls

Documentation is of central importance to making competency-based training work, and this cannot be overemphasised. Good organisation and awareness of what is required will make a potential headache much easier to deal with. It is better to ensure all documentation is up-to-date and complete before leaving a post, as chasing people once you have moved on can be difficult. Incomplete paperwork may result in delays in completion of your training and problems with the revalidation process. This advice is particularly pertinent to trainees who transfer between LETBs and consequently, have assessments from more than one region, and also to less than full-time trainees or those following an academic interest, for whom calculating training time and a subsequent CCT date accurately can be more difficult. Accurate electronic logbook data are extremely important so that any gaps in training can be highlighted and resolved promptly. In the current climate an up-to-date portfolio containing evidence of education and training (e.g. courses attended, presentations given) is essential and will impress upon your trainers that you are well organised and motivated.

Lifelong Learning platform

The Lifelong Learning platform replaces the previous e-Portfolio and includes logbook functionality. It is designed to keep all documentation pertaining to the completion of training in one online platform that, going forward, can continue to be used to provide evidence of continuing professional development for revalidation throughout your career. Educational supervisors, college tutors and regional advisors are able to monitor each trainee's progress remotely. All consultants in training hospitals should be registered with the RCoA and have access to the Lifelong Learning platform to allow them to complete requested workplace-based assessments. For ACCS trainees who require assessments to be completed by consultants in other specialties, there is a guest assessor option. There is a local 'lead' for the platform who can provide any support required and the RCoA Lifelong Learning platform support team are very helpful and reply promptly to queries (0207 092 1556 or Lifelong@rcoa.ac.uk).



What do I do if I have a problem with gaining my competencies?

Problems are easier to solve if they are identified early and taken to the appropriate people. Your first port of call should be your educational supervisor or college tutor, and regular appraisal with them will be invaluable in this respect. If problems remain or are not dealt with to your satisfaction, then your training programme director or regional advisor should be able to help. The main thing is to be proactive in your approach to your training. The RCoA has made it clear that 'it is the trainee's responsibility to ensure that their workplace assessments for individual units of training take place by reminding those responsible at the appropriate time: it is not the trainer's role to chase the trainee.' Remember there is only one of you, but your trainer may be responsible for several trainees.

How can I keep up to date with all the changes?

Many changes have occurred in anaesthetic training and it is vital to keep up to date with them. The RCoA website is regularly updated and details of the competency-based training programme can be found in the training section, in the updated 'The CCT in Anaesthetics' publications. This will be especially important when the new Curriculum is introduced.

Acknowledgement

Many thanks to Ramani Moonesinghe, Academic Training Co-ordinator at the RCoA, for her assistance with this section of the handbook.

Useful resource

- RCoA. *Curriculum for a CCT in Anaesthetics*, 2nd edn, August 2010, version 1.8. <https://www.rcoa.ac.uk/document-store/curriculum-cct-anaesthetics-2010>

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Less than full-time training

Anaesthesia has deservedly developed a reputation for successfully managing and delivering training on a less than-full-time (LTFT) basis. Figures from the GMC survey in 2017 showed that 10% of anaesthetic trainees were training flexibly [1].

Training LTFT in anaesthesia is an option for those doctors who need time to care for dependents, to adjust their working pattern if suffering from ill health or disability, and for those who wish to pursue other non-work-related commitments. Ideally, it should make a reasonable work-life balance achievable for those individuals; however, it can also be a daunting prospect. The Trainee Committee has collated much of the available information onto the [LTFT training section on the Association of Anaesthetists website](#).

Eligibility and application for LTFT training

All trainees are eligible to apply for LTFT training. Those doing so must demonstrate one of the well-founded individual reasons summarised below. Trainees in Category 1 will be given priority.

Category 1:

- Disability or ill-health (may include IVF programmes)
- Responsibility for caring for children (< 18 years)
- Responsibility for caring for ill/disabled partner, relative or other dependent

Category 2:

- Unique opportunities for personal or professional development
- Religious commitment
- Non-medical professional development

It is wise to begin the process as early as possible, although applications can be processed more urgently if required. The process usually starts with submission of an application to your local Health Education England area, NHS Education for Scotland, Health Education and Improvement Wales or Northern Ireland Medical and Dental Training Agency to confirm your eligibility. Each region has its own application process and it may be done online in some areas. There will be a contact at the deanery who deals with LTFT training, who can advise further.

It is a good idea to involve your training programme director early so that they are aware of your plans. Most regions now also have a local LTFT Training Advisor who will be able to offer advice regarding the application process, your future training needs, and importantly introduce you to other local LTFT trainees.

Further information is available from the Gold Guide [2], Welsh School of Anaesthesia [3] and Scotland Deanery [4].

Types of LTFT training programmes [5]

- **Job share:** Two trainees share one job and between them cover the days of the week and out of hours equally - this arrangement is rare in anaesthesia and ICM.
- **Slot-share:** Two or three trainees are placed into the equivalent of one or two full-time slots. The LTFT trainees are employed and paid as individuals for the hours worked. This arrangement is NOT a job share. The trainees share a place on the rota, but not a contract and may overlap sessions. The other person in your slot-share can change from post to post, i.e. you do not need to move round departments together. Funding is provided by both the local education and training board and the host training trust.
- **Supernumerary:** Applications will normally only be granted to doctors with differing needs in extenuating circumstances and are often for limited periods of time. Supernumerary posts are in addition to the normal complement of trainees on a rota. The proportion of hours worked and out-of-hours commitment will be arranged on an individual basis.
- **Reduced hours in a full-time post:** Most commonly occurs when there are gaps in the training rotation. A LTFT trainee is put into a full-time slot rather than leaving the slot empty. This is often done for trainees working 60% or more of whole-time equivalent (WTE). As a 0.6 slot share, it will take you 20 months of training to complete the equivalent of a year full-time (12 months/0.6 = 20 months). If your circumstances change, it is possible to return to full-time training, although you may have to wait until there is an available slot on your rotation. As before, early discussion with your training programme director and LTFT Training Advisor should smooth this transition.



Royal College of Anaesthetists

It is very important that you inform the College Training Department when you commence LTFT training, the proportion of full-time hours you will be working and the dates of any absences. The College will use this information to recalculate your Certificate of Completion of Training (CCT) date; therefore, you must keep the College updated regarding any subsequent absences or changes to your working pattern. The re-calculation of CCT may only be calculated once you are in higher or advanced training.

The RCoA has a Bernard Johnson Advisor with responsibility for LTFT training who is available for support and advice.

Can I achieve adequate training while working part-time?

Acquisition of a skill is easier if a procedure can be repeated several times in quick succession, therefore training LTFT may make it harder to acquire confidence and progress competence in new skills and situations. In exceptional circumstances a trainee may be allowed to train at less than 0.5 WTE (0.2 WTE being the absolute minimum supported) for a maximum of 12 months [6].

The allowed percentage of hours worked varies and, traditionally 0.5 or 0.6 WTE was worked unless there were individual special circumstances, but with workforce evolution this is changing and higher percentages are allowed. The flexibility offered within a region should be researched to ensure you are able to achieve the training that is desired.

Like full-time trainees, it is very important you make the most of your training time and maximise opportunities. Notify your training programme director and LTFT Training Advisor of your training needs early in order that you receive suitable rotational placements. Out-of-hours work is usually arranged pro-rata and you should expect to rotate between posts on the rotation to gain advantage of all the educational opportunities available. The length of placements may not easily fit with your percentage worked. For example, a six month WTE placement extends to 10 months when working 60%, which does not fit in with the usual rotation schedule. This may mean you need to consider how to best maximise opportunities at different placements and plan your time accordingly.

You will still undergo annual (in time, rather than training year) appraisal and an Annual Review of Clinical Progression (ARCP) assessment. Although this may seem like an additional burden of portfolio activity, it should be used to your advantage to evaluate your training needs and identify any problems early. It will also ensure your case mix, responsibilities and proportion of out-of-hours work are educationally comparable to the full-time equivalent. Your goals clinically for workplace-based assessments and continuing professional development should be calculated on a pro-rata basis according to percentage of full-time worked.



Ongoing support

It is important that you know where to seek advice when training LTFT. From personal experience, fellow LTFT trainees are a valuable resource. There have been some interesting personal experience articles offering insights into the opportunities afforded and hurdles encountered during LTFT training in anaesthesia [7]. There are additional chapters in this handbook, which may also be of relevance, and a LTFT study day that is organised between the RCoA and the Association of Anaesthetists.

The Association of Anaesthetists regularly updates the LTFT pages of its website and has recently added a map with a list of LTFT contacts across the country [8]. If you have any queries regarding LTFT training and think we could be of assistance, then please feel free to contact us at ltft@anaesthetists.org.

Acknowledgements

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Applying for training in England

The first point to make in this section is that the application process for medical specialty recruitment and training changes periodically to follow national guidelines and requirements. These changes are usually well publicised; however, smaller changes happen more frequently within the mandated framework, so it is vital to access the most up to date information. This can be found in two main places.

1. [The Specialty Training website](#). This supports doctors in their application for specialty training in the UK and provides information on any changes to the national recruitment and selection process.
2. [The Anaesthetics National Recruitment Office website](#). This is hosted by the West Midlands Deanery. It is the organisation responsible for co-ordinating recruitment to anaesthesia training (including ACCS Anaesthetics) within the NHS. This responsibility is carried out on behalf of the RCoA throughout England, Scotland, Wales and Northern Ireland.

Anaesthesia is an uncoupled training programme with separate application and recruitment to core anaesthesia training (CAT)/Acute Care Common Stem (ACCS) and specialty training (ST). This is conducted twice yearly for August and February commencement. Up to date information can be found on the RCoA website <https://www.rcoa.ac.uk/training-careers/training-anaesthesia/anaesthetic-cct-curriculum-2020>.

Choosing a specialty

Careers advice for doctors is available from several sources, including from your local deanery as well as organisations such as the Royal Colleges and the BMA. The RCoA website contains excellent anaesthesia-specific advice and the Careers and Training section covers topics such as *'Why to choose anaesthesia as a career?'* and *'How to train less than full-time'*, as well as further information on the recruitment and selection process. The Association of Anaesthetists Trainee Committee publishes a guide called *'Who is the anaesthetist?'*, last updated in 2013. This offers advice aimed at medical students and foundation doctors. If you would like to make direct contact, please email the Trainee Committee at trainees@anaesthetists.org and they will be glad to help. Arranging a taster week during your foundation year allows you to gain experience of specialties that interest you and which your foundation years may not have covered. It is a practical and CV-relevant way to try out anaesthesia!

Points of entry into anaesthesia

Foundation doctors can apply to anaesthesia training via two programmes: CAT and ACCS training. Currently, CAT is a two-year programme and ACCS three years, with the additional ACCS year comprising six months each of emergency medicine and acute medicine. The new anaesthesia curriculum will see a change to this arrangement in 2021 when CAT will become a three-year programme (and ACCS therefore a four-year programme). The entry point to specialty training in anaesthesia will therefore change from its current ST3 point to ST4. From 2021, specialty training will therefore become a four-year programme leading to a Certificate of Completion of Training (CCT).

There is a dual CCT in Anaesthesia and Intensive Care Medicine available, as well as a standalone CCT in Intensive Care Medicine. See the [Faculty of Intensive Care Medicine website](#) for further information.

There are also academic clinical fellowships in anaesthesia; see the [National Institute for Health Research website](#) for further details. Academic clinical fellowship recruitment is run by the NIHR Trainees Coordinating Centre. Importantly, if appointed as an academic clinical fellow, the candidate will also have to reach the appointable standard at a specialty clinical interview, which requires a separate application via a central electronic portal (Oriol).

Preparation is the key to being successful in your application. Information on the person specifications for CAT, ACCS and ST posts is easily accessible via the specialty training website. Review the requirements early to ensure you meet all the essential criteria and have addressed them in your application form. Some areas that score points need time and effort to achieve; you may need to start covering these areas as a medical student or foundation doctor. Information about each school of anaesthesia can be obtained from either an individual local education and training board website or the corresponding school of anaesthesia website. Alternatively, advice may be sought from the RCoA college tutor in your hospital or the regional advisors and training programme directors for the schools to which you wish to apply.



The application process

Recruitment to anaesthesia is a national process covering the whole of the UK and Northern Ireland. Posts are advertised in the [BMJ](#), on [NHS Jobs](#) and the [Oriel online application portal](#). Applications are made via the Oriel online system and co-ordinated by the Anaesthetics National Recruitment Office. Applicants are initially required to rank the main area of the UK in which they wish to train, and then subsequently, during the interview window, state a preference for the units of application/training regions to which they wish to apply. One application form is completed for both CAT and ACCS; applicants can then indicate on the form whether they wish to be considered for CAT, ACCS or both.

Long listing is performed by the Anaesthetics National Recruitment Office to remove any applicants ineligible for appointment based on GMC status, level of experience and standard of written and spoken English.

Applicants are then invited for interview. A national standardised interview process applies and interviews are conducted at a number of selection centres around the country. You have the opportunity to choose your selection centre, therefore your interview may or may not be in the units of application/training region where you want to train.

An important part of the application process is the completion of a self-assessment form. The current self-assessment criteria and scoring can be found on the specialty training website. For accuracy, the score is confirmed during the interview process.

Application processes have been significantly affected by COVID-19. For the latest information refer to the [specialty training website](#).

Interviews

The interview process is transparent and allows for adequate preparation. Currently, interviews comprise three stations: a clinical interview, portfolio review and a presentation, each with a minimum of two consultant assessors. These stations are designed to assess various aspects of your personality, team-working, performance under stress, past achievements and clinical decision-making. The portfolio station consists of a 10 minute review of your self-assessment form, during which it is essential you provide evidence for all domains from which you have claimed points. This is followed by a further 10 minutes of questions related to your portfolio and experience thus far. The 10 minute clinical interview comprises questions in relation to a clinical scenario and follow-up questions. In the presentation station, you will be given 10 minutes to prepare, then 5 minutes to deliver your presentation followed by 5 minutes of related questions.

A standardised marking scheme ensures you then have a score (out of 200) that is transferable between units of application. If you reach the threshold score to be appointable, and depending on your score relative to others who have stated a preference for the same units of application you may be offered a post in your preferred training region/units of application.

Offers/success

All offers of appointment will be made via the Oriel recruitment system, where offers may be accepted, held or declined. A system similar to clearing exists for recycling of offers to candidates who are appointable but may not have ranked highly enough to be offered a job in their initial units of application/training region of choice. There is no requirement to attend another interview for these recycled posts; the offers are made through the Oriel system. The competition ratios for posts in specific regions therefore have a bearing on how well you have to score at interview to secure a post in your region of choice. Flexibility in the units of application/training region where you would consider training increases your chances of obtaining a post. Feedback is made available to any unsuccessful candidate.

Best wishes for your application!

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Applying for training in Wales

Anaesthetic training in Wales presents the opportunity to train in diverse settings including both urban and rural environments. The [Welsh School of Anaesthesia](#) (WSA) represents a single unit of application, with the school covering 12 acute hospitals across Wales.

Core Training in Anaesthesia

Core training in anaesthesia in Wales follows a similar path to that described in the previous chapter 'Applying for Training in England'. The recruitment process is nationally co-ordinated by the West Midlands Deanery on behalf of the RCoA.

Core Training in Wales can be accessed via Core Anaesthetic Training or via the three-year Acute Care Common Stem training programme. Core training is normally based at a single hospital or region, such as South East, South West or North Wales.

CT3 Anaesthesia

An additional year of training at CT3 level has been uniquely approved by the GMC for the WSA. This consists of an additional six-month placement in anaesthesia, combined with a six-month placement in a complementary specialty, e.g. emergency medicine, intensive care medicine (ICM) or acute medicine.

This additional year of training is very popular among trainees allowing consolidation of anaesthetic knowledge and skills prior to progression to specialty training (ST) level. Those interested in such a programme should apply during the early months of their CT2 year of training.

Specialty Training in Anaesthesia

The ST programme and recruitment in Wales reflects that in England (please refer to the previous chapter). Recruitment is via a nationally co-ordinated process twice annually, as at CT level. This is co-ordinated by the West Midlands Deanery, on behalf of the RCoA, for a five-year programme ST3-ST7.

Training programme preferences are made at the time of application and candidates are encouraged to rank all rotations available. The first three years have fixed hospital placement, while the final two years are indicated as either South Wales or North/South Wales to allow greater flexibility for advanced training options, which are determined at the end of the ST4 year.

Access to the electronic application portal for national recruitment is via the West Midlands Deanery website.

Higher training opportunities

Higher training consists of one year of higher training in general duties in a district general hospital and a further year of subspecialty training in ICM, neuro-anaesthesia, paediatric, cardiac and obstetric anaesthesia.

Advanced training options

Following the successful completion of intermediate training (ST3 and ST4), trainees have the opportunity to apply for advanced training in a range of subspecialist interests as part of the 2010 curriculum.

Advanced training modules available in the WSA are subject to competitive entry via CV application and interviews. These modules include obstetrics, paediatrics, peri-operative medicine, regional anaesthesia, cardiac, research and teaching, airway management, pain medicine and general anaesthesia.

Teaching

WSA holds mandatory induction days at CT1, ST3 and ST5 levels of training. Focused exam teaching takes place for both the Primary FRCA and Final FRCA with well-established rolling programmes across the region and specific courses. For post-fellowship trainees, the school has a regional programme called the Post Fellowship Study Day, which supports networking and is focused towards the non-clinical aspects of the RCoA curriculum.



Education and research

University Hospital of Wales has strong links with Cardiff University and a well-known reputation for research and education, including a new simulation centre. Trainees with an interest in education or research can undertake a six-month placement in research or education as part of their advanced training. A clinical lecturer post option is also available in Swansea. There is also the option of becoming involved with the trainee-led [Welsh Anaesthesia Audit, Research and Engagement Network](#).

Out-of-programme

Out-of-programme (OOP) training and experience is available at the discretion of the deanery and on discussion with the training programme director. OOP training in the WSA is available to post-fellowship trainees that have entered ST5. The Geoff Clark Award is made annually to the trainee who has achieved the most during their OOP training or experience.

Less than full-time training

The Wales Local Education and Training Board fully supports trainees who wish to train LTFT, and there is a strong network of consultants and trainees that make this process straightforward. A popular return-to-work course started locally and now available nationally helps trainees return to anaesthesia following a break in training.

Support for trainees

The [Junior Anaesthetists of Wales](#) (JAW) group is an organisation established and run by Welsh trainees with the aim of promoting academic and social wellbeing for trainees in Wales. JAW holds an annual meeting and offers great social and educational opportunities for trainees.

As well as the support of a dedicated team of educational supervisors and college tutors, Wales operates a 'buddy scheme'. This pairs up new anaesthetic trainees with post-fellowship trainees who can offer guidance, encouragement and advice throughout training. There is also a Professional Support Unit that provides confidential advice and guidance for any doctor in training across Wales.

There are trainee representatives at each hospital as well as regional representatives for core, intermediate, higher and LTFT trainees.

Intensive care medicine

In August 2012, a new curriculum for a single Certificate of Completion of Training (CCT) in ICM training was introduced in the UK. Wales offers both dual and single CCT training in ICM with exposure to cardiac and neurology intensive care environments. See the [Faculty of Intensive Care Medicine website](#) for further information.

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Applying for training in Scotland

Training in Scotland is unique and varied, and all within a modern, diverse and beautiful country. The NHS in Scotland may have diverged somewhat in its organisation, structure and outlook compared with the other nations of the UK, but with regards to anaesthetic training it remains consistent. Training is delivered to the highest standards, with the same examinations and Certificate of Completion of Training (CCT) being awarded as with the rest of the UK.

Anaesthetic training in Scotland is provided by four separate Schools of Anaesthesia centred around one of four major cities, each with a medical school and major trauma centre: North of Scotland (Aberdeen), East of Scotland (Dundee), South-East of Scotland (Edinburgh) and West of Scotland (Glasgow). Training is overseen by NHS Education for Scotland rather than Health Education England, but operates in a similar way. NHS Education for Scotland acts as the deanery for all of the four separate schools. The West (Glasgow) and South-East (Edinburgh) account for 70% of trainees, due to urban population density around the central belt, but with one-third of the UK's landmass, but only 10% of the UK's population, Scotland has many remote and rural areas, particularly in the East and North schools, which can provide unique training and lifestyle opportunities.

The NHS in Scotland offers all adult and paediatric services apart from a few supra-national transplant services (lung and small bowel), allowing easy access to fellowships and advanced training in a number of areas, such as retrieval and transfer medicine, remote and rural, tertiary paediatrics, trauma, regional and many more.

Scotland is incorporated into the national recruitment process with competitive selection at entry into CT/ACCS and ST. NHS Education for Scotland oversees the application and delivery of specialty training, but the Oriel system and national centre continue to co-ordinate the UK recruitment process.

How many jobs are there?

There were 48 anaesthetic CT1 posts available in Scotland for 2019 and an additional 18 ACCS (anaesthesia) posts. At ST3 level, there were 55 anaesthetic posts and 10 ICM posts offered in 2019; however, these numbers have varied in recent years. Overall numbers have increased in the past year due to ongoing expansion and full appointment to posts and rotas. Indeed, Scotland had 100% fill rates to medicine, surgery and anaesthesia posts in 2018 allowing for more stable rotas and no back fill to non-anaesthetic rotas required.

What is the recruitment procedure?

During the application process, candidates are required to rank, in order of preference, all units of application in the UK, including Scotland (as a whole). Application scores dictate which unit interviews you, but candidates will only be interviewed by one unit location dependent on their application score. Hence, if you are interviewed in Scotland, you will not be interviewed elsewhere in the UK. Final ranking is based on performance at interview. On applying, candidates are required to rank the four Scottish Schools in order of preference for core anaesthetics, ACCS and ST3 posts. The highest ranked candidates will be assigned posts in their chosen school. Lower ranked candidates offered a second or lower choice can hold an offer in the hope of securing their first choice in the event of a higher ranked candidate turning down their offer, or equally they can choose to accept/decline the initial offer made to them.

Applicants for ST3 posts

Application for ST3 posts in Scotland is also part of the national process. Candidates apply for a unit of application, again Scotland as a whole is offered with the separate schools selected thereafter. In order to apply for an ST3 post, you must have achieved a pass in the Primary FRCA. The pressures of achieving a pass in the Primary FRCA within a two-year window (CT1/2) has meant some past trainees have not been able to progress to ST3 as planned. There is provision from NES for trainees in this position to undertake an additional year while completing exams in order to be eligible to apply for an ST3 post whilst remaining within an approved training programme.

More information about applications and jobs in Scotland can be found at <http://www.scotmt.scot.nhs.uk>.



Other training opportunities

Locum appointments for training are still in use in many areas of Scotland and can allow trainees who have taken time away from training or have followed a non-traditional career path to enter into approved training. These posts are offered by the local schools and appointed locally rather than through national recruitment. However, once appointed, the training provided is comparable to those appointed at times of national recruitment. These offer flexibility and alternative opportunities for trainees in Scotland. These are often advertised locally, in national medical press or can be tailor-made on discussions with the relevant regional advisors.

Research and higher degrees in medicine are offered at Scotland's world-class universities; each of the Schools of Anaesthesia have their own medical school, and professor-led academic units in anaesthesia, pain and ICM are present throughout the country, continuing the innovation based on a history of discovery in anaesthesia from chloroform to propofol.

The Scottish clinical leadership fellowship programme allows out-of-programme experience to work on national projects within the Scottish Government and positions have been sponsored for anaesthetic trainees only in the past.

Support

Examination in the FRCA, FFICM and FFPMRCA are all supported by free revision courses for all trainees. Pass rates for many of the exams remains higher than the UK average and several candidates have been prize winners in recent years. There is a network of Association-trained mentors across Scotland, with many units and schools creating novel and active solutions to ensure good trainee wellbeing.

With a perhaps more perceptive government, which we have been able to influence more readily in relation to contracts, wellbeing and fatigue, working conditions have remained more stable, contracts have remained on the 'old system', parking charges only apply to three PFI sites (Glasgow Royal Infirmary, Royal Infirmary of Edinburgh and Ninewells in Dundee) and anaesthetic trainee and consultant numbers have increased in recent years.

Scotland offers a wonderful and enriching training environment with plenty of experience on offer, alongside one of the best standards of living anywhere in the world.

Best of luck in your applications, we look forward to welcoming you!

Alastair Hurry

ST7 ICM and Anaesthesia, West of Scotland

Former member, Association of Anaesthetists Trainee Committee

Applying for training in Northern Ireland

The training deanery comprises five health and social care trusts across Northern Ireland and these service a population of 1.8 million. The Belfast Trust is the largest in Northern Ireland making it one of the largest in the UK. Anaesthetic training takes place over several acute hospital sites; these include the Royal Victoria Hospital, Belfast City Hospital, Antrim Area Hospital, Craigavon Area Hospital, Ulster Hospital, and Altnagelvin Area Hospital. The [Northern Ireland Medical and Dental Training Agency](#) (NIMDTA) is responsible for funding, managing and supporting postgraduate medical and dental education within the Northern Ireland Deanery. It provides a range of services for those engaged in the delivery of postgraduate medical and dental education, courses and training.

Application process

Anaesthesia is a popular specialty in Northern Ireland and this is reflected by the level of competition. It attracts applicants who have completed time in other specialties in addition to direct entry from the foundation programme. Taking time for taster sessions, clinical audit and courses related to anaesthesia plays an important part in preparing a competitive application. Northern Ireland participates in the national recruitment process administered via the West Midlands Deanery. Core and specialist training applications are both consistent with the rest of the UK.

Core training

Core training is a two-year programme leading to a core level training certificate prior to competitive application for specialist training. Adverts for CT1 posts generally begin to appear from November for posts commencing in August of the following year. For each core trainee, training placements are generally delivered over two of the hospital sites mentioned above, with one year spent in each.

Specialist training

ST3 posts are advertised from February for training commencing in the following August. At least 24 months experience in anaesthetics and/or intensive care medicine (not including foundation modules) is expected by the time of the intended start date of the post. However, no more than six of these 24 months should be in intensive care medicine. Successful completion of the Primary FRCA examination is also required by the date of interview.

Recently Northern Ireland has opted out of the single transferable score but remains part of national recruitment. Prospective candidates applying to Northern Ireland will be interviewed locally (as opposed to candidates being able to select any centre in the UK to interview at even if they had no wish to working in that deanery).

The interview process

Shortlisted candidates will be offered one interview. These interviews will be conducted by trained selectors against the criteria set in the personal and job specifications, and last around 40 minutes. These interviews take place a local level generally at the unit of application. Candidates are scored and ranked from these results. It is possible to miss out on a place at your chosen school yet be deemed appointable and therefore have the potential of an offer of appointment to a different school. The interview format may change as national recruitment evolves, but it has previously consisted of a document check on initial attendance to ensure you have met all the required eligibility criteria. The interview itself consists of a portfolio review, a 5 minute unseen presentation based on topical issues not necessarily related to anaesthesia (5 minute preparation time with either poster or acetate presentation) and clinical interview based around a medical scenario.

Successful applicants will receive offers via the Oriel online system, through which offers may be accepted, declined or held.

Education and exams

Educational courses and study days are generally co-ordinated by NIMDTA via the Intrepid online system. Excellent teaching is provided by NIMDTA to help trainees studying for the Primary and Final FRCA. Each year senior trainees take up tutor roles for the Primary FRCA and for the Final FRCA. These trainees co-ordinate compulsory teaching sessions, exam practice sessions and provide excellent support for trainees preparing for upcoming examinations. In Northern Ireland, trainees must take the Primary and Final FRCA at the RCoA in London rather than at the College of Anaesthesiologists of Ireland.



Advanced and additional training opportunities

Advanced training options are available with competitive application for fellowships including posts in the regional trauma centre, obstetric anaesthesia, cardiac anaesthesia, paediatric anaesthesia, pain medicine and research. The Achieve Develop Explore Programme for Trainees (ADEPT) offers an opportunity to develop organisational and leadership skills in healthcare by taking time out-of-programme to work with senior leaders in organisations within Northern Ireland. Queen's University Belfast provides opportunities to explore further education and research. Other opportunities include involvement within the trainee-led Audit and Research Network Northern Ireland (ARNni).

The Anaesthesia page on NIMDTA's website provides information on upcoming social events, links to educational material for the FRCA examination and educational study days and the website for health and social care jobs in Northern Ireland can be [accessed here](#).

Best of luck!

Adam Lowe

Specialist Training Registrar, Northern Ireland School of Anaesthesia



Applying for training in the Republic of Ireland

The College of Anaesthesiologists of Ireland (CAI) co-ordinates the training of Specialist Anaesthesiology Trainees (SATs) in the Republic of Ireland. An average of 44 trainees enter the scheme every year, and recruitment is run nationally through a centralised application and interview process.

The SAT scheme is a six-year programme. It is a run-through scheme, with streamlined progression through basic and higher specialist training provided a trainee meets the required milestones. These waypoints include a broad selection of modules in core competencies and subspecialty areas, as well as successful completion of the Membership (MCAI) and Fellowship (FCAI) examinations. Trainees are also required to maintain a logbook and training diary, and attend a number of mandatory workshops and simulation courses. The SAT will attend progression interviews at multiple time points to assess progress each year. SATs also have three-monthly meetings with local departmental tutors to assess progress and highlight any issues.

The first two years form basic training, and are followed by three years of subspecialty training, with the final year comprising advanced training. Each trainee will rotate through accredited hospitals recognised by the CAI every 6–12 months to gain the required experience. The first two years of each rotation is regionally based within one of three areas - western, eastern or southern Ireland - with trainees working in at least two different regions over their six years. Trainees will receive a Certificate of Satisfactory Completion of Specialist Training (CSCST) in anaesthesiology, to include intensive care medicine and pain medicine, at the end of training and may then practice independently as a consultant.

A two-year complementary higher specialist training programme is available in intensive care medicine, accredited by the Joint Faculty of Intensive Care Medicine of Ireland (JFICMI), which if successfully completed, will result in the award of a full additional CSCST. This also requires candidates to pass the written and practical JFICMI examinations. Similarly, post-CSCST fellowship training and examinations are available in pain medicine under the governance of the CAI's Faculty of Pain Medicine.

Application process

There is an annual recruitment process, with interested candidates submitting an application form to the training office of the CAI around December every year. Eligibility depends on successful completion of the intern year (first postgraduate year), or equivalent experience if applying from outside Ireland. Points are awarded for: undergraduate education; postgraduate experience; higher qualifications or postgraduate examinations; relevant skills courses; academic achievements in relation to anaesthesiology, intensive care medicine or pain medicine; and references.

The interview process

Candidates with the highest score based on the application form after short-listing will be invited to interview around January. Further points are available at interview, bringing the total maximum score to 100 points. The interview is approximately 30 minutes long. It consists of a discussion around your CV, clinical experience as well as questions on relevant topical issues in anaesthesia and the health service in general. There are no mandatory clinical questions but they may discuss anaesthesia topics pulled from case reports or research in your CV. The top 44 candidates based on cumulative scoring of application forms and interviews will be offered positions on the SAT scheme.

Tips for success at interview

It is important for candidates to score as many points as possible in the application and interview process. The application form is made available online each year, and outlines the points awarded for various items (the exact criteria and proportions of points tend to vary from year to year). Ranking in final medical school exams and any awards or achievements as an undergraduate are important. Previous anaesthesiology experience as an intern or SHO, and success in postgraduate examinations (such as MCAI, MRCP, MRCS or MRCEM), will also attract points. Know your application form very well and practise your interview technique with colleagues or friends. Other areas to hone include getting involved in audit and research projects in your local anaesthesiology department, presentations at an anaesthesia meeting and attending relevant courses (for example, ACLS or ATLS).

More detailed information on training and examinations are available on the CAI website: <http://www.coa.ie>

Good luck!

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Out-of-programme training/research

Out-of-programme training (OOPT) is clinical training taken out-of-programme that will count towards the Certificate of Completion of Training (CCT) or Certificate of Eligibility for Specialist Registration through the Combined Programme (CESR CP) provided certain conditions and requirements are met.

Out-of-programme research (OOPR) relates to trainees applying to undertake research as part of their training experience. Research projects may last up to three years and can contribute up to one year towards a trainee's CCT. Research undertaken should usually be aimed at achieving a higher degree.

The experiences and skills you develop during OOPT/OOPR can make it an immensely exciting and satisfying opportunity. It allows a period of time, often away from your region or local education and training board (LETB), to gain experience in your specialist interest.

Your decision on what to do and where to go during OOPT/OOPR will depend on a number of factors - country, language, subspecialty interest, research interest and supervisors. It is important to plan when the correct time for you would be to undertake a fellowship and this will depend on what you want to achieve, which modules you would like to complete and what advanced training you wish to gain.

In the Republic of Ireland, the College of Anaesthesiologists of Ireland (CAI) has recently launched an integrated PhD programme where Specialist Anaesthesiology Trainees (SATs) can undertake a PhD with the Irish Clinical Academic Training body (ICAT) during their time on the SAT scheme. This will involve a variable mix of clinical and non-clinical time to include a total of four years of non-clinical work.

Eligibility

To be eligible for OOPT/OOPR you must have completed the final FRCA and be in training years ST5/6/7. It is important to liaise with the training programme director to ensure you meet the eligibility criteria for your region or LETB. It also should be noted that any OOPT cannot be undertaken in the last six months prior to obtaining your CCT.

For the post to count towards training, it must be approved prospectively by the RCoA and GMC. Retrospective submissions are no longer permitted. The time permitted for OOPT is usually one year and OOPR usually does not exceed three years. Up to one year of research can be counted towards the CCT/CESR CP. If there is a clinical element to the programme (this includes out-of-hours duties within the hospital where the trainee is based for their research time), the full year may be counted. If there is no clinical element to the research programme, a maximum of six months only will count towards the CCT/CESR CP.

Paperwork and planning

Organising OOPT/OOPR requires lots of planning, therefore it is important to find a clinical/academic supervisor at least a year prior to commencing the post. There is a large amount of paperwork that will need to be reviewed and signed, and a meeting with your training programme director is imperative.

To ensure the programme is suitable for an individual's training needs, the aims and objectives of training requirements should be mapped to the RCoA curriculum. This will be done in conjunction with your LETB, the RCoA and the department in which you intend to work. All paperwork needs to be completed and submitted at least six months prior to the start date. For an intensive care medicine (ICM)/pain fellowship, approval will be required by the regional advisor for the relevant specialty in your region.

Once all the paperwork is complete and the time frame confirmed, the remaining details of the year can be addressed. Although the aim may be predominantly to form part of higher/advanced training or completion of a higher degree, it can also fulfil other training needs and contribute to development of your CV. This can include roles within education and teaching, leadership and management, quality improvement initiatives as well as other relevant courses and projects.



The pros

- Meeting new people
- Experience of how things can be done differently in another region/country
- A CV building opportunity
- To gain new knowledge and skills, e.g. an airway fellowship may involve learning to use new equipment or allow a research fellow to improve their critical appraisal and analytical skills
- To aid becoming a well-rounded clinician
- Experience of travelling and exploring a new country and its culture
- Potential weather and lifestyle differences

The cons

- Requires a lot of planning
- Large quantities of paperwork are needed
- Potential financial pressure
- Family responsibilities might make timing difficult

Practicalities

Obtaining visas and medical clearance, if applicable, may take some months and will need to be factored in to when you will be able to officially start. Other considerations prior to commencing your new post include medical indemnity cover, appropriate medical council registration, criminal record check, ongoing GMC registration and pensions payments.

On your return

During the year, stay in contact with your training programme director to ensure that, on your return, placements and outstanding modules can be completed. Trainees are required to complete an OOPT/OOPR report on their return. Although this has no set format, it should include details and evidence of any research, audits, projects, courses modules completed, assessments (DOPS, ACEX, ALMAT, MSFs) and a summary of cases. Your supervisor for the OOP post will be asked to complete an appraisal report outlining what you have achieved during the post.

Despite the planning and paperwork that is required, undertaking OOPT or OOPR is an opportunity I think everyone should undertake as it can be hugely rewarding. Time for completion of specialty training to CCT can go quickly and once a consultant post is obtained it may prove more difficult to work abroad for extended periods. Equally, being granted time away from clinical commitments to conduct research or explore your interest in different areas of anaesthesia can prove more difficult once in an established consultant post.

The UK consultant job market is competitive; OOPT can make you stand out on an application form or at interview. The time spent during OOPT or OOPR can not only expand skills and knowledge, but you can bring back renewed ideas, thoughts and enthusiasm to make you a well-rounded individual, providing both professional and personal satisfaction.

Useful resources

- Royal College of Anaesthetists. Training out of programme (OOPE and OOPT). <https://www.rcoa.ac.uk/training-careers/training-anaesthesia/flexibility-training/changes-your-training-programme>
- Conference of Postgraduate Medical Deans. A reference guide for postgraduate specialty training in the UK. The Gold Guide, 8th edition, version GG8. 31st March 2020. https://www.copmed.org.uk/images/docs/gold_guide_8th_edition/Gold_Guide_8th_Edition_March_2020.pdf
- National Institute of Academic Anaesthesia. <https://www.niaa.org.uk/>
- Association of Anaesthetists. Organising a year abroad: out-of-programme advice from the GAT committee, 3rd edn. 2009. https://anaesthetists.org/Portals/0/PDFs/Archive%20guidelines%20PDFs/Archived_guidelines_Organising_a_year_abroad_2009.pdf?ver=2018-06-28-154808-133
- Health Research Board Irish Clinical Academic Training programme: <https://www.hrb.ie/funding/funding-schemes/funding-updates/funding-news-and-updates-story/article/research-career-opportunities-for-anaesthesiologists/>

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Anaesthesia training and the armed forces

The Defence Medical Services (DMS) encompasses healthcare professionals from all three services in the armed forces: Royal Navy, British Army and Royal Air Force. The DMS recruits doctors at all stages of training, from cadets at university through to accredited consultants. The entry process remains stringent, and places for medical officers in acute specialties are very competitive. Each service has its own entry requirements and selection process. There is also a period of initial military and military medical training, which is undertaken after completion of Foundation Training. Newly qualified medical officers receive a first posting as General Duties Medical Officers (GDMOs) and, depending on chosen service, specialty training commences 1–3 years later than for NHS peers.

The Defence Medical Academy is the tri-service organisation responsible for the selection of doctors into military specialty training. Once accepted into anaesthesia training, trainees come under the umbrellas of the Department of Military Anaesthesia and Pain and the Defence Postgraduate Medical Deanery, which sits within the overarching structure of the Defence Medical Academy.

The Department of Military Anaesthesia and Pain is not only responsible for anaesthesia training, but is also the lead for operational deployments, research, innovations in equipment and techniques related to anaesthesia, and pain management. The defence consultant advisor for the Department of Military Anaesthesia and Pain and the Defence Anaesthesia Specialty Board oversee the specialty on a day-to-day basis. The defence consultant advisor is also the RCoA regional advisor, and is assisted by two deputy regional advisors. In addition, each service provides a consultant advisor who acts as a primary point of contact, for dissemination of specialty-specific information, and educational and pastoral support, for consultants and trainees. The Army has separate defence consultant advisors and consultant advisors for anaesthetics and critical care. The Defence Professor in Anaesthesia, Pain and Critical Care oversees academic endeavour across both specialties.

The pathway to becoming a consultant

Trainees wishing to pursue a career in anaesthesia must successfully gain a Core Training (CT) post [1]. Acute Care Common Stem (ACCS) is no longer offered as a training route into anaesthesia for DMS trainees. Selection for anaesthesia CT, and all subsequent training paths, is performed in the same manner as for civilians. DMS consultants are involved in the civilian-run interview process, to ensure that military candidates are compared and benchmarked directly against their civilian colleagues. If successful, trainees are then offered a place in one of the local education and training boards with which the Defence Postgraduate Medical Deanery has links.

After passing the Primary FRCA and completing CT, DMS trainees are eligible to apply for competitive entry into Specialty Training (ST) [2]. Application for dual anaesthesia and intensive care medicine (ICM) training is currently done via a staged process over two recruitment episodes [3]. Specialty training then follows a clear path according to the curricula of the RCoA for anaesthesia trainees, plus that of the Faculty of Intensive Care Medicine (FICM) for dual trainees. The Final FRCA examination must be passed by all trainees wishing to accredit in anaesthesia or dual anaesthesia and ICM, with those completing the ICM pathway also needing to pass the Final Fellowship of the Faculty of Intensive Care Medicine (FFICM).

Pre-hospital emergency medicine (PHEM) is a relatively new subspecialty area of training, with accreditation awarded via completion of an approved national training programme. Due to concerns regarding workload for future revalidation, Defence Anaesthesia supports applications for PHEM training from standalone, but not dual, anaesthesia trainees. In order to be eligible for PHEM selection, anaesthesia trainees must have passed the Primary FRCA. Currently, anaesthesia applicants must have a minimum of six months CT-level training in an approved training post in both anaesthesia and emergency medicine [4]. However, from 2021, anaesthesia trainees will be required to have six months of CT-level training in all four of the acute care specialties. DMS trainees who have progressed via the CT route will need to undertake relevant out-of-programme (OOP) posts, thereby extending their specialty training time, but the RCoA endorses the benefits of commencing PHEM training as a more experienced anaesthesia trainee [4]. For PHEM accreditation, trainees must pass the Royal College of Surgeons of Edinburgh Diploma and Fellowship examinations in Immediate Medical Care (DIMC and FIMC) [5]. The Intercollegiate Board for Training in Pre-Hospital Emergency Medicine is responsible for PHEM trainees on behalf of their parent Colleges [6].

Specialty training follows the same essential training course as for civilian trainees, with a few additional objectives. These include both military and military anaesthesia skills. All DMS trainees undertake mandatory annual military training to complement their clinical skills. Maintaining physical fitness is obligatory and is tested periodically. Other military skill requirements vary across the three services, but may include weapon handling, fire fighting, first aid, dinghy drills and chemical, biological, radiological and nuclear warfare training.



In 2008, the former Postgraduate Medical Education and Training Board formally recognised the Military Anaesthesia Higher Training Module [7]. This has been incorporated into the RCoA Anaesthesia Certificate of Completion of Training (CCT) curriculum [8] and provides a framework for maintaining core knowledge and skills for the military anaesthetist. It is designed to be flexible enough to allow trainees to be up-to-date with new developments, and is regularly reviewed and updated accordingly.

During the conflict in Afghanistan, military anaesthesia trainees had the opportunity to work alongside experienced consultant colleagues and receive one-to-one training [9]. To prevent loss of corporate experience from lessons learned during that period, the Military Module has been updated to prepare trainees for anticipated future operational deployments (hostile and peacekeeping), with the aim of equipping DMS trainees with the additional knowledge and skills required to ensure wounded military personnel receive the highest quality of healthcare wherever they are serving. Competencies are delivered via a number of key military courses, often using high-fidelity simulation training. Learning objectives for the Military Module include:

- The ability to deliver and organise military pre-hospital care during casualty retrieval [10, 11]
- Principles of in-hospital resuscitation and field anaesthesia [12-14]
- The management of anaesthesia and critical incidents using field surgical equipment [15]
- Field critical care and aeromedical evacuation [16]
- Battle casualty rehabilitation
- Deployed military hospital management
- Attitudes and behaviour [17, 18]

Defence Anaesthesia has an appreciation that OOP posts during training, both in the UK and abroad, may further facilitate the development of skills and experiences that will enhance the role of a military anaesthetist. Applications for these programmes are often competitive, and are considered on a case-by-case basis. OOP opportunities exist in areas such as medical education/simulation, intensive care, pre-hospital care, pain management (including regional anaesthesia), developing world anaesthesia, and acute trauma. In recent years, military anaesthesia trainees have undertaken OOP posts in places such as Canada, the USA, and Zambia, as well as all over the UK.

Annual meetings of the Tri-service Anaesthetic Society (TSAS) and the Society of Tri-service Anaesthetists in Training (STAT) bring together military anaesthetists from across the UK, and at all stages of their career, to share knowledge and experiences in the context of learning about academic and technical innovations in military anaesthesia.

Once a CCT has been obtained, trainees attend an Armed Services Consultant Advisory Board, which is the military version of a consultant appointment interview. It is conducted in the same way as a civilian appointment, and is approved by the NHS. After passing a rigorous interview, the individual becomes a fully-fledged DMS consultant.

Operational deployments

When military anaesthesia trainees undertake an operational deployment, they do so under the supervision of a Defence Anaesthesia consultant. Up to two months of a deployment may be able to count towards training, provided that prospective approval has been sought from the RCoA. Operational deployments vary, but are usually to a field hospital in an operational area. For Royal Navy trainees, this may be in support of a seaborne operation. Likewise, for Royal Air Force Medical Service (RAFMS) trainees, there may be opportunities to deploy in support of an Aeromedical Staging Unit.

RAF trainees are supervised, as an integral part of their anaesthetic training, as members of Critical Care Air Support Teams (CCASTs). This complements other RAFMS-specific training for aeromedical evacuation duties. CCASTs deploy to repatriate critically ill patients from anywhere in the world, in what is essentially a fully-equipped flying intensive care unit.

Royal Navy trainees may have the opportunity to deploy to a primary casualty receiving ship (hospital ship), or as part of a small team on another maritime platform. Again, this depends on prevailing military operations.

Consultant anaesthetists also take an active role in management within field hospitals, with full participation in clinical governance and management issues specific to working in a field environment. Senior consultant anaesthetists are often selected to become Deployed Medical Directors, advising commanders on medical matters and assisting in the overall medical management strategy.

Before deploying with a field hospital, all members of the multidisciplinary team are required to complete a pathway of Specialty Specific Training. This ensures familiarity with deployable equipment and standard operating procedures [19]. It is mandatory for all anaesthetists to attend the Defence Anaesthesia Simulation Course, which provides formal training on the Diamedica Portable Anaesthesia Machine [20]. This is a simple, portable, robust, lightweight machine, capable of delivering draw-over volatile anaesthesia, as well as positive pressure ventilation through manual or mechanical modes, for paediatric and adult patients.



Prior to deploying or joining a medical treatment facility held at high readiness, clinicians attend a hospital simulation exercise (HOSPEX), which is undertaken in a mock field hospital set-up. HOSPEX tests not only the team's clinical skills and decision-making, but also the patient journey from the point of receiving initial treatment from the pre-hospital medical emergency response team during helicopter transfer to hospital, through the emergency department, operating theatres, intensive care and, finally, CCAST evacuation back to the UK. HOSPEX provides an immersive training experience, using high-fidelity simulation manikins or live actors from commercial firms as the presenting casualties.

Another mandatory pre-deployment training course is Military Operational Surgical Training. This includes a mixture of cadaveric training, classical high-fidelity simulations, and hybrid simulations [21]. Technical and non-technical skills, particularly the team resource management required to optimise damage control resuscitation, are developed further during this course. The interaction of human factors and the delivery of safe Defence Anaesthesia have recently been described [22]. The ability to practise non-technical as well as technical skills specifically for the deployed medical environment is vital.

Research

Defence Anaesthesia trainees with an interest in academia are encouraged to undertake military directed research. The Defence Professor in Anaesthesia, Pain and Critical Care leads the academic department based at the Royal Centre for Defence Medicine, with a team of RCoA-appointed senior lecturers and foundation senior lecturers. Any trainees wishing to undertake a higher degree are encouraged to do so, but must compete for limited places. Trainees will be expected to complete significant projects before moving on to a higher degree.

Reservists

All three services have a reserve component that supports regular forces undertaking missions in the UK and overseas. Reserve personnel receive the same world-class training to develop the skills required to carry out the same roles, to equally high standards. It is recognised that enabling reserve personnel to train and work more closely with their regular colleagues helps to create a more integrated military [23]. Developing core skills of communication, teamwork and leadership, fostering a 'can-do' attitude, and engaging with continued professional development, are all values that can be applied to both military and NHS practice. On average, the annual commitment for defence training in the reserves is 27 days. NHS employers provide 14 days of additional paid leave, and the remainder is paid by the armed reserve forces, at rates that are equivalent to the NHS, dependent on rank, role and experience. Reservists are mobilised as individuals for their specific skills, or as ready-formed units, to serve alongside regular forces. The Reserve Forces Act 1996 provides the legal framework and mechanisms for training and mobilisation of personnel, while offering safeguards to their NHS employers [24].

Reserve trainees are not required to complete a General Duties Medical Officer posting and, as a result, incur no delay in applying for NHS training numbers. If desired, they may apply for ACCS, rather than CT, for anaesthesia, and in any region. Supervision and management of their training is via a regional local education and training board and not the Defence Postgraduate Medical Deanery. Completing the Higher Military Module is strongly recommended and supported by Defence Anaesthesia. Following the award of a CCT, a civilian interview, rather than a Armed Services Consultant Advisory Board, is required to secure NHS consultant employment.

Recent patient outcomes achieved in Afghanistan reflect the high standard of care that the DMS aspires to maintain. The DMS continues to go from strength to strength, supporting contingent operations and continuing to strive for innovation in clinical concepts, techniques, education and research. A career in military anaesthesia gives the unrivalled opportunity to be part of a team that has demonstrated the ability to deliver world-class medical care [25]. It is exciting and challenging, demanding a high level of expertise, initiative and flexibility. Defence Anaesthesia might be the place for you!

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Logbooks, confidentiality, security and data protection

Keeping a logbook is a key part of training in anaesthesia as it allows you to log your procedures, cases and sessions, and thus demonstrate your breadth of experience in different areas of practice. Reports from this then act as a piece of evidence to get modules 'signed off', the logs can serve as a memory jog to interesting or educational cases to perform formal assessments or reflect on later and completion of a logbook generally demonstrates progression through training and commitment to learning. Ideally, your logbook will also help trainers, educational supervisors and training programme directors evaluate their training programme and know what it is providing you with as an anaesthetist in training.

When logging information, you must be careful not to record data that could identify a patient - it should be anonymised, with minimal demographic data and no hospital numbers recorded.

The logbook contained within the new Lifelong Learning platform available at lifelong.rcoa.ac.uk will allow you to meet the requirements of training in anaesthesia. This is currently provided as part of your membership of the RCoA (surgical trainees pay a separate fee for their e-logbook, but the RCoA has no plans to do that). This logbook has many benefits over previous standalone ones: integration with the e-Portfolio function, ability of trainers to query logbooks from Completion of Unit of Training forms or educational supervisors structured reports (ESSRs) and the safe and secure online cloud-based storage of data, with a mobile responsive and adaptive site allowing use on a smartphone.

The College of Anaesthesiologists of Ireland has a logbook integrated into its website which trainees and consultants use to log cases. This forms the basis for both competency assessments and continuing professional development accreditation.

There are a number of third party logbooks available, but if you use one of these then think long and hard about data security, how it backs up the data (or how you might have to yourself) and if it outputs in an acceptable format for your Annual Review of Competency Progression (ARCP). The summary report is currently defined and contained within an appendix of the curriculum document. This report format may change in the future, so make sure that the developers plan to track the RCoA and other regulatory changes (there will be a new curriculum in 2021). Some third party logbook developers are anaesthetists or anaesthetists in training and understand these issues, and so are responsive and open to feedback. Some are not. Some charge an annual or monthly fee and some are free. The Lifelong Learning platform does not currently support integration with any of the third party logbooks or applications, so anything you provide trainers with from a third party logbook will have to be in an acceptable format (PDF ideally) already to allow them to sign Completion of Unit of Training forms or ESSRs/ARCPs; best done by uploading an exported report and tagging it appropriately through the Personal Activity function. It is also worth considering the support and instruction materials available for the logbook you use - the RCoA helps with this, but only if you are using the integrated Lifelong Learning platform logbook - and there are a number of videos that are really helpful to a new user of the platform, including one concerning the logbook, on the [RCoA's YouTube channel](#). Other third party developers offer different levels of support. Finally, think about how the data are stored and in what format. What would you do if the company providing the logbook shuts down or the programme became unsupported on an updated operating system on your device, or if it was in a format that you could not access without some detailed knowledge of databases? These may sound unlikely, but are examples of problems in the past and were some of the drivers behind the development of the logbook within the Lifelong Learning platform by the RCoA.

Many people worry about the 'right' number of cases an anaesthetist in training should see/perform/do, per year, per rotation or even across the whole of training, but it is very difficult to define an absolute number for any given module - it will vary from region to region with some regions being more prescriptive than others. In addition, there is no linear relationship between numbers and competence - everyone is different - but it remains a useful yardstick to help guide your training. One should check case number expectations with your clinical supervisors before you start the modules. The other trap with logbooks is to fall behind logging things contemporaneously, making for some uncomfortable times scraping through theatre information systems trying to prepare for the ARCP - log what you do as soon as you can, in a logbook you trust, follow the advice of the module supervisors, and you will be fine!

Jamie Strachan

Elected member, RCoA Council



Annual Review of Competency Progression

The Annual Review of Competency Progression (ARCP) is a formal assessment process by which trainee doctors are reviewed each year. This is to ensure they are offering safe, quality patient care, and to assess their progression against curriculum standards in their training programme. All aspects of training are detailed in the [Gold Guide](#), and the ARCP process is covered in Section 4. All training bodies in the UK must follow this. Each region conducts their ARCPs slightly differently so the RCoA is developing a standardised, national process to ensure uniformity.

The ARCP requires trainees to provide evidence of training by uploading documentation on the Lifelong Learning platform. The uploaded evidence can incorporate the trainee's educational portfolio, an educational supervisor structured report (ESSR), work-based placed assessments, logbook, exams, achievements, and out- of-programme (OOP) experience. Dependent on the evidence provided, this will enable the ARCP panel to make a judgement on a trainee's suitability to progress to the next stage of training. Form R, covering a trainee's full scope of work for revalidation, is also completed. Previously each region had its own ARCP checklist but the RCoA has now produced a national checklist which should be used instead.

The ARCP process is applicable to all specialty trainees, trainees OOP, locum appointments for training trainees, and trainees resigning from the programme. It is an annual process, but can be more frequent if there are performance or progression issues. Less than full-time trainees have an ARCP each calendar year, but it does not correspond with each year of training.

Trainees need to familiarise themselves with their curriculum; evidence required for the ARCP, GMC standards and the ARCP process at the start of their training programme. Prior to the ARCP, the trainee meets with their educational supervisor to review the year's portfolio and complete the ESSR. The ESSR is submitted to the college tutor for comment and then goes to the ARCP panel for review. Any concerns about a trainee's performance should be discussed with the trainee and documented on the ESSR. All evidence should be submitted at least 1-2 weeks prior to the ARCP; this time frame can vary between regions. Health Education England will request the completion of Form R for revalidation at the ARCP.

The ARCP panel comprises at least three members and can include the Head of School, training programme director, dean, regional advisors, lay representative, external RCoA advisors, college tutors, educational supervisors and observers. A Health Education England representative will be present for administrative and guidance purposes. The panel must review the documents and make a decision on outcome before they meet the trainee - it is for this reason that good, clear, complete documentation is essential. If a trainee is in any difficulty, for example, if they have not passed an exam on time, this should be made known to the training programme director in advance so that this can be taken into account. There should be no surprises on the day.

The ARCP panel will recommend one of the eight outcomes. The rules do not require a trainee to be present to meet the ARCP panel unless they have been given an outcome other than satisfactory (Outcome 1), in which case the outcome must be given to the trainee in person.

The College of Anaesthesiologists of Ireland (CAI) holds annual progression interviews for all Specialist Anaesthesiology Trainees (SATs). These include reviews of trainees' logbooks, continuing professional development activities, tutor assessments, module completion and also provide trainees with an opportunity to feed back to the CAI the pros and cons of their respective training sites.

ARCP outcomes

Outcome 1

Satisfactory progress – achieving progress and development of competencies at expected rate. This is the most common outcome.

Outcome 2

Development of specific competencies required – additional training time not needed. Certain competencies have not been achieved. This is a chance to focus on certain issues or topics that need development, and is generally reviewed after six months at an (early) ARCP.

Outcome 3

Inadequate progress – additional training time required. This means the training 'clock' will stop until the specific competencies have been achieved. A common example would be failure to pass an exam by the end of the relevant section of training (e.g. Primary FRCA by end of CT2, Final FRCA by mid ST5 year). If it is necessary to allow another sitting in the next training year, extra time will be required at that level as the trainee cannot progress to the next year without passing the exam. The maximum training time that can be extended is one year in total for all of training. Only the dean can allow more time and only then in exceptional circumstances. Extra time may be referred to as an extension of training time or as remedial training. The duration of the training programme will be extended.



Outcome 4

Released from training programme – with or without specified competencies. The trainee is released from the training programme. An example of this outcome would be failure to pass an exam by the end of maximum remedial training time. It can also be allocated if a trainee is making insufficient and sustained lack of progress despite additional training time.

Outcome 5

Incomplete evidence presented – additional training time maybe required. This is a temporary outcome that will become Outcome 1 if the reason is rectified within the time limit stipulated by the panel. It will become an Outcome 3 if more time is required. An Outcome 5 should be recommended as a consequence of failure to submit Form R.

Outcome 6

Gained all required competences – will be recommended as having completed the training programme (core or specialty).

Outcome 7

For fixed-term posts (e.g. locum appointments for training): Outcome 7 is split into sections similar to the trainee outcomes; 7.1 being satisfactory, 7.2 development of competences, 7.3 additional training time. Note: 7.4 is insufficient evidence.

Outcome 8

OOP for clinical experience, research or a career break (OOPE/OOPR/OOPC). The panel should receive a report from the OOP supervisor indicating what has been achieved and trainees complete an OOP form.

There are times when the ARCP panel will not issue an outcome, such as when the trainee is absent due to maternity, paternity, adoption or sick leave. The reasons for no outcome will be recorded.

The ARCP outcome will be sent to the trainee electronically via the Lifelong Learning platform for their approval with any targets set by the ARCP panel documented. Most trainees will achieve Outcome 1. If trainees receive Outcomes 2, 3 or 4, they can request a review or appeal.

If a trainee receives an Outcome 2 or 7.2, they can request a review; this must be made in writing and with supporting evidence (e.g. mitigating circumstances) to the Chair of the ARCP panel within 10 working days of receiving the outcome. The original ARCP panel will review its decision where practical within 15 working days of receiving the request. After review the trainee will receive their decision in writing or meet a senior representative of the panel if appropriate. The decision of this review is final and there is no further appeal process.

If a trainee receives an Outcome 3 or 4 then they have the right to appeal. The appeal request should be made in writing to the postgraduate dean within 10 working days of receiving the outcome. The request must state the grounds for appeal. A review panel will review the evidence. If the review panel modify the decision of the original ARCP panel to an Outcome 1 or 2, the appeal process is completed. Where the review panel does not alter the decision of the original ARCP panel, or an Outcome 4 is changed to Outcome 3, the postgraduate dean will confirm with the trainee that they wish to proceed to an appeal hearing and this will be arranged. The appeal panel usually includes the dean, a consultant from another specialty, a local specialty representative and one from out-of-region, and a trainee representative. The trainee can have a friend or union rep to accompany them. Further information is in the [Gold Guide](#).

An appeal against a decision not to award a Certificate of Completion of Training (CCT) or Certificate of Eligibility for Specialist Registration through the Combined Programme (CESR CP) is the responsibility of the GMC and appeals should be directed there.

Following an ARCP, annual planning of training should occur. In anaesthesia, most ARCPs are conducted face to face and the trainee discusses a training plan with the training programme director and other panel members there and then for the next year. If not, a separate meeting should occur with the training programme director.

For any further detailed information on any aspects of the ARCP process the Gold Guide is the best place to refer to.

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The FRCA examination

The FRCA (Fellowship of the Royal College of Anaesthetists) is the professional examination of the Royal College of Anaesthetists (RCoA). Every anaesthetic trainee who wishes to become a consultant must complete the FRCA before completing their training and Certificate of Completion of Training (CCT) in anaesthesia.

There are two parts to the exam: the Primary, which must be passed by the end of Stage 1 of the 2021 curriculum, before progressing to ST4. Following this is the Final, which must be obtained by the end of Stage 2, before the end of ST5. Both examinations have seen changes to their format in recent years and further changes are planned, but currently comprise the following:

Primary FRCA

The MCQ (multiple choice questions) paper consists of 45 MTF (multiple true–false) and 45 SBA (single best answer) questions on the core basic science topics of pharmacology, physiology and physics/clinical measurement. There may also be a few statistics and anatomy questions and more emphasis on clinical topics, but the core theme remains that of the basic sciences.

The plan is for the MTF questions to be gradually phased out and replaced entirely with SBA questions over the next two years. This is the preference of the General Medical Council (GMC) as educationalists believe SBA questions to be a more effective assessment tool. From March 2022 the paper will be made up of 30 MTF and 60 SBA questions, and by September 2023 the written paper will comprise exclusively SBA questions.

The OSCE (Objective Structured Clinical Examination) and SOE (Structured Oral Examination) can be taken following success in the MCQ papers. The subjects examined are the same with the addition of a dedicated clinical SOE. The MCQ sittings are September, November and March, and the OSCE/SOE sittings are in November, January and May.

Final FRCA

The Final FRCA is a clinically focused examination with basic science principles linked to clinical practice. The Final written paper has two components:

- The MCQ paper, which also consists of 45 MTF and 45 SBA questions (3 hours)
- A paper consisting of 12 CRQ (Constructed Response Questions) (3 hours)

Constructed response questions were introduced in 2019 to replace the previous short answer question format. Examples of the CRQ format are available on the RCoA website. Constructed response questions are said to be more reliable with reduced possibility of misinterpretation. They are designed to test the candidate's ability to think critically and prioritise information.

The planned changes to the Final FRCA MCQ paper mirror those of the Primary MCQ, i.e. from March 2022 the split will be 30 MTF/60 SBA questions and 90 SBA questions from September 2023.

The Final SOE examination can be attempted following a successful pass in the written examination. There are two SOEs:

- SOE 1 contains parts A and B, which are taken consecutively. Each part is 26 minutes long and comprises two clinical short cases, each with a linked clinical science question. The clinical science question may come before or after the clinical short case. Candidates have 13 minutes to complete each short case and linked question. It is followed by the SOE 2.
- SOE 2 comprises a two-section clinical long case followed by two clinical short cases, unrelated to the clinical long case. This SOE is 36 minutes long, with 10 minutes to view the clinical material, 13 minutes for the two-section clinical long case and 13 minutes to answer the two clinical short cases.

There are two sittings of the Final FRCA each year - the written examination in March and September and the SOE in June and December.

The RCoA website contains a comprehensive examinations section, which details all information regarding dates, fees and eligibility.



Preparing for the FRCA

The FRCA is a daunting prospect for most trainees, particularly because it is a high-stakes exam. The RCoA has a responsibility to ensure the highest standards in training and the FRCA is no exception. However, with appropriate preparation, it is a perfectly achievable task for the anaesthesia trainee.

The most common reasons for difficulty with the FRCA are failure to cover the entire syllabus and lack of understanding of the concepts involved. The syllabus is linked to the training curriculum and the FRCA tests both knowledge and understanding, which are necessary to become a safe and competent anaesthetist.

The RCoA produces two books that are guides to both parts of the FRCA: *Guide to the FRCA Examination: The Primary* and *Guide to the FRCA Examination: The Final*. These are essential study guides and contain practice questions, which are taken from the question banks.

Preparing for the Primary FRCA

The key to preparing for the Primary FRCA is to aim to cover the syllabus before sitting the MCQ paper. Knowledge and understanding of the topics will be preparation for all parts of the exam and as there is only a relatively short time period between the MCQ and OSCE/SOE sittings, this time is best utilised with focused examination practice. There are several standard textbooks available which cover the basic sciences and also books that cover the whole syllabus.

A good starting point, and invaluable resource, is the e-Learning Anaesthesia (e-LA) modules. These are web-based sessions that cover a mixture of basic sciences and clinical practice, and include MCQs to help consolidate learning. These questions are also taken from the question bank.

There are many books available with practice MTF and SBA questions, which are useful to supplement revision and to see the depth of understanding needed.

The OSCE consists of 16 × 5-minute stations, which assess clinical skills and practice. There are a number of practical stations that include physical examination, checking equipment, history taking, communication and simulation scenarios. There are also radiology images and anatomy stations. Obtaining a list of previous stations from trainees who have previously sat the OSCE is very useful. The OSCE is arguably the part of the Primary for which it is most beneficial to attend a course so that you can gain an insight into the timings and how it will run, in addition to the way the stations are marked. Preparation for the OSCE is often neglected in favour of the SOE, which can be detrimental. It is a good idea to prepare a revision plan for the OSCE as the station categories remain broadly the same.

The SOE is a comprehensive assessment of conceptual understanding of the same subject areas as the MCQ exam. There are 2 × 30-minute SOEs, which are structured as follows:

- SOE 1 - Pharmacology (15 minutes) and Physiology (15 minutes)
- SOE 2 - Clinical (15 minutes) and Physics and Clinical Measurement (15 minutes)

Plenty of practice is essential. The candidate is marked on knowledge, depth of understanding, structure/organisation of answers and safe practice. The examiners will probe a candidate's grasp of the subject areas, and this is the part of the exam where understanding must be demonstrated. The SOE is more structured now than in previous years, with the questions being direct and specific. A good strategy is to ask consultants and senior trainees in your department for their availability for the weeks preceding the SOE and create an SOE practice timetable.

Preparation for the Final FRCA

Many of the principles of preparation for the Final examination are similar to the Primary. The focus is very much on clinical anaesthesia, which includes anaesthesia for a wide range of surgical procedures from all the different surgical specialties. Candidates must demonstrate a good understanding of the important factors relating to peri-operative management: pre-operative optimisation, conduct of anaesthesia, patient positioning and possible pitfalls and complications.

In addition, the Final FRCA assesses the candidate's medical knowledge as they must demonstrate competence in managing patients with a wide range of comorbidities from systemic disease processes. The examination also covers the common challenges faced in intensive care medicine and pain management.

There are fewer specific textbooks centred around the final exam, hence multiple resources will be needed. As with the Primary, the e-LA modules will prove useful and there are many books with practice questions for the written paper. Review

articles from journals such as the *British Journal of Anaesthesia (BJA)* and *Anaesthesia* will cover a range of recent topics. The regular articles in the BJA supplement *Continuing Education in Anaesthesia Critical Care and Pain* are comprehensive yet concise.

The CRQ paper assesses the candidate's knowledge of the training curriculum. Practice papers under exam conditions are essential for this part of the exam. There are 12 questions in 3 hours, which only gives 15 minutes per question. The CRQs are focused with answers being in the form of lists and short sentences. All questions must be attempted or else the candidate will fail.

The SOE in the Final exam consists of a mixture of long and short cases to test the candidate's clinical judgement. In addition, four of the six short cases are linked to basic science, which tests the application of Primary knowledge to areas such as physiological changes during surgery, drug actions and regional anaesthesia. There are 12 questions in total - 2 marks are given for a pass, 1 mark for a borderline performance and 0 marks for a fail. As with the Primary, practice is essential, which may take the form of locally organised sessions or national courses.

COVID-19 pandemic and FRCA examinations

The COVID-19 pandemic clearly caused a huge amount of disruption to all professional examinations. The RCoA acted quickly to adapt all parts of the FRCA examination to an online format, which has been in use since September 2020 and is set to continue until at least April 2022. It is likely that some parts of the examination will stay in an online format, but the reintroduction of face to face sections of the exam has not yet been confirmed due to the fluid situation of the pandemic.

Two platforms are currently used to deliver the different components of the exams. The written parts are done on a platform called Testreach, who provide online proctoring of candidates in a ratio of one invigilator to six candidates. The OSCE and SOE sections use a platform known as Practique. This enables remote examination by the examiners and includes the ability for actors to be incorporated into the OSCE. After a few expected teething issues, the exams now run relatively smoothly. Allowances are made for internet connection issues, which includes being able to repeat stations or SOEs if the candidate has been disadvantaged in any way. The feedback to date has been good for the online format, which has enabled many candidates to sit examinations during a very difficult time.

In short...

The FRCA examination is an essential milestone in anaesthetic training. Despite being a challenging task, it is achievable with appropriate preparation. The sheer breadth of the syllabus means that several months of preparation are required. Decide well in advance when you are going to sit the exam and book study leave and courses several months in advance. Consider the fact that you will have life events, leave and stressful shift patterns within this time frame. Pace your revision and talk to colleagues who have been through it. It is a stressful time, but you can make it as painless as possible with early planning and adequate time.

Acknowledgements

Thanks to Elizabeth Shewry and Adam Edwards, from whose chapter in the GAT Handbook 2016-2017 this has been updated.

Useful resources

- [RCoA. Primary FRCA](#)
- [RCoA. Final FRCA](#)
- [RCoA. Final FRCA SOE](#)

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Deanery and local education and training board structure

Training in anaesthesia in the UK is administered and governed by the statutory organisations and the RCoA, with some distinct responsibilities and other, overlapping roles. The past 20 years have seen a number of changes to the structure of postgraduate medical training and how it is commissioned, delivered and managed. Currently, responsibility for medical training lies with different NHS bodies in each of the four nations. Health Education England (HEE), NHS Education for Scotland (NES), Health Education and Improvement Wales (HEIW) and Northern Ireland Medical and Dental Training Agency (NIMDTA) are responsible for implementing specialty training according to the GMC-approved curriculum for anaesthesia, but responsibility for the practical management of training lies with the postgraduate deans through the Schools of Anaesthesia.

England

HEE was established in 2012 and is a non-departmental public body overseeing the education of all healthcare professionals including doctors. It works through 13 local areas, which replaced the pre-existing postgraduate medical deaneries. The term deanery still sticks, although these areas are officially called local education and training boards (LETB). More recently the 13 areas have been grouped into four regions, North, Midlands and East, South and London; the regions aligning with NHS England's sustainability and transformation boundaries. In each local area, medical education continues to be led by a postgraduate medical dean or deans, who oversee specialty training through specialty schools of which anaesthesia (often in combination with intensive care medicine (ICM)) is one. The specialty schools are in turn led by a Head of School.

Scotland

NES is the body with responsibility for delivering training, with the management of medical education falling to the Scotland Deanery. The Scotland Deanery was created in 2014 and replaced the four previously existing deaneries. There are four Deans, each one having lead responsibility for different specialties. The Deanery is split into four regions and each region has a school of anaesthesia. The West region has a Head of School, but in the other regions, the schools are led by the training programme directors and regional advisors for anaesthesia.

Wales

In October 2018, the Welsh Government formed a new body, HEIW. This is a special health authority within NHS Wales, which has combined the role of the Wales Deanery with additional responsibility for postgraduate pharmacy education, and workforce planning and design for all healthcare professional staff. The Welsh School of Anaesthesia sits under HEIW and is led by a Head of School.

Northern Ireland

NIMDTA is responsible for funding, managing and supporting medical education and is in effect the Northern Ireland Deanery with a single postgraduate dean. It contains a school of anaesthesia led by a Head of School.

In addition to the four nations, there is a Defence Postgraduate Medical Deanery, which manages the training of military trainees across the UK.

Role of the deaneries/LETBs

The deaneries or LETBs oversee the delivery of training and are responsible for administering training programmes. Their role includes:

- Ensuring that trainees are appointed to the appropriate posts through recruitment and informing trusts about training placements
- Quality assurance of the training programmes to ensure that trainees receive high-quality education
- Ensuring the curriculum is delivered and that trainees are able to get adequate experience in all parts of the curriculum
- Organisation of Annual Review of Competence Progression (ARCP)
- Facilitating training for those trainees who wish to work less than full-time
- Administration of time out-of-programme
- Facilitate transfers of trainees between deaneries
- Careers advice
- Provision of support and guidance for trainees who are struggling to progress through training

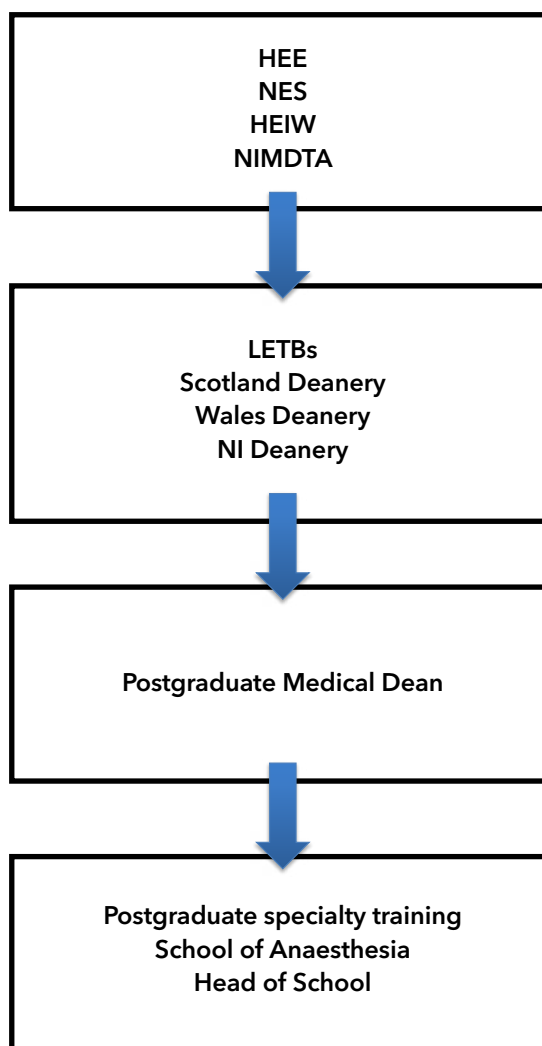


Schools of Anaesthesia

Within the deanery or LETB, the Schools of Anaesthesia have a specific function in ensuring that the roles listed above are delivered for anaesthetic trainees. In order to facilitate this, Schools have Specialty Training Committees or Boards, which are commonly chaired by the Head of School. The Head of School has a proactive and strategic role in the delivery, development and quality management of training. They are responsible to the postgraduate medical dean, but they also work with the RCoA to deliver the curriculum. They appoint the training programme directors who manage the core and specialty programmes. They represent the School at deanery and national level, but they are also a link between the deanery and trusts.

The Specialty Training Committees help steer the delivery of training in their regions and are the link between trainees, the local training departments and the deanery or LETB. Their members usually include training programme directors, regional advisors, pain medicine and ICM advisors, LTFT representatives and trainee representatives as well as deanery administrative staff. There may also be leads for specific areas, such as quality assurance and simulation. Their work is key to the local delivery of the curriculum, the quality assurance of training posts and the identification and support of trainees who are having difficulties progressing through training. These committees receive information from various sources including ARCP outcomes, quality data such as trainee feedback, recruitment and local trainers including college tutors and educational supervisors.

Deanery hierarchy



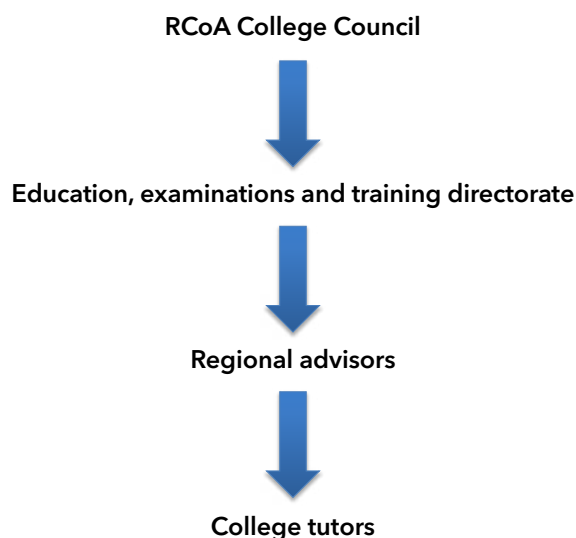
RCoA

The RCoA's role in the delivery of training in some ways overlaps with the deaneries/LETBs and in other ways is distinctly different. The RCoA sets the rules and regulations covering training through the anaesthetic curriculum. The curriculum is approved by the GMC, which is the body with overall responsibility for regulating training, and this curriculum is implemented by the deaneries through the Schools of Anaesthesia. The RCoA monitors trainees' progression and advises the GMC when they have completed training and are eligible to go onto the Specialist Register. The RCoA provides an online platform to do this, called the Lifelong Learning platform and has a role in the quality management of training and provides external advisors for ARCPs and deanery hospital visits.

The RCoA divides the UK into separate Schools of Anaesthesia. These Schools align with the historic regions and are often the same as the deanery or LETB Schools. However, some regions, such as West Midlands, have one specialty School, but several RCoA Schools. Each RCoA School of Anaesthesia has a regional advisor.

The regional advisor is a senior RCoA representative appointed by Council. Their role largely involves training but encompasses all aspects of RCoA work. They work with and advise all stakeholders in training and education within their School and region and lead in quality management of training and co-ordinate the appointment of college tutors in trusts. They are commonly involved with recruitment, ARCPs and are members of the specialty training committees. They may well have been a training programme director and/or college tutor so they have a great depth of knowledge concerning training, which is why they contribute to the deanery/LETB processes and roles. In some specialty schools the regional advisor is also the Head of School.

RCoA Hierarchy



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Hospital structure

The national context

Understanding the structure of the hospital in which you work and its place in the NHS can help you understand your role in the organisation and what you need to do to influence change in services and improvements in patient care. Although there are differences in structure and terminology between nations, the principles are similar: hospitals or trusts are organised into groups by geography that are then managed by a national health service. Depending on which country in the UK you work in, your hospital will either sit in one of seven regional Health Boards in Wales, one of 14 territorial NHS Scotland Health Boards, one of five geographical health and social care trusts in Northern Ireland or in one of the seven recently formed NHS regions in England. Political oversight and direction is maintained by a department of health that reports to the national government or assembly.

In the Republic of Ireland all public hospitals fall under the remit of the Health Service Executive. Acute hospital services are then divided into seven Hospital Groups. The hospitals making up each group work together to provide acute care for patients and work with health and social care services in the community [1].

Local organisation and structure

In essence, hospital services are organised in a hierarchical structure similar to multinational companies or armed forces. Any individual hospital or trust is a large, complex organisation and hence needs dividing into smaller, more manageable units. At its worst, hospital structure can appear to be layers of bureaucracy that present an insurmountable challenge to doctors wanting to develop services. At best, it provides an efficient way of helping direct communication between the shop floor and hospital or trust board.

The board

Leading every trust or hospital is a board, made up of executive directors and non-executive directors. The board is responsible for creating a strategy for the organisation; ensuring accountability (making clear who is meant to do what and taking action if they don't); and shaping the culture (best described by 'how we do things around here') [2].

Non-executive directors are often recruited from the local community and include individuals with a track record of managing companies or public sector organisations and clinicians from surrounding healthcare organisations. They are appointed by a national appointment commission on a part-time basis. The chair is one of the non-executive directors. In the past, many had the impression that non-executive directors were often retired individuals who were 'giving something back' to their local NHS. The investigation and inquiries into the Mid Staffordshire scandal highlighted the role of a board in overseeing safe delivery of services and that has emphasised the importance and responsibility of these positions.

Executive directors are usually full-time employees who run the business on a day-to-day basis. The chief executive officer leads a team of clinicians and managers who have responsibility for provision of safe, effective patient care. The team acts as the link between the trust and external partners such as surrounding trusts, the councils and MPs. The executive team comprises:

- Chief operating officer - responsible for making the hospital function and adhering to national operational standards and targets
- Medical director or chief medical officer - responsible jointly with the chief nurse for patient safety and governance. Professionally responsible for all doctors and is usually the GMC responsible officer
- Director of nursing or chief nursing officer - as above and has professional responsibility for all nurses and allied health professionals
- Director of finance or chief finance officer - has, some would say, a thankless task as it involves balancing the books! Helps to oversee financial management and provision of the right data to help guide clinical services
- Director of human resources (HR)/workforce/people - responsible for all things connected to the workforce and staffing, from recruitment to HR policies and disciplinary action

In addition, there may be a range of other executive director roles with portfolios such as strategy, transformation, communications, estates, IT, information and innovation.



The sub-board structure or 'middle layers'

Facilitating effective communication between frontline staff and the board (and vice versa) is the Holy Grail of healthcare management. The larger the organisation, the harder it is to maintain that link from 'ward to board'. As a result, except in the smallest hospitals, the organisation is commonly subdivided into groups that allow for more effective management of individual clinical services. The downside is that more layers between the board and frontline services can increase the sense of distance for staff; however, the reality is that effective management of teams requires regular interaction and that can only be achieved by creating units of manageable size. Nomenclature can vary between hospitals, but these collections of services are often known as divisions or groups. The way the services in acute hospitals are divided can vary, for example by geographical site, type of service provided (e.g. elective or emergency care), or specialty based (e.g. medicine, surgery, clinical support). Most hospitals have adopted a 'triumvirate' structure of leadership from this layer downwards so these teams are usually led by a doctor, nurse and manager.

Directorates or clinical services

This layer of the hospital structure is likely to feel more familiar to doctors as it includes many of the clinical specialty units that we rotated through whilst at medical school, for example general surgery, trauma and orthopaedics, paediatrics, cardiology and the emergency department.

Depending on the size of hospital, these directorates may bunch together a small number of similar services or be devoted to one service alone. The units are led by a directorate team of clinical director, matron and directorate manager. Within each directorate there are often doctors in the roles of clinical leads or clinical service leads to guide delivery of services and provide clinical expertise.

Anaesthesia and critical care team

It shouldn't surprise you that consultants working in anaesthesia and critical care typically make up around 20% of the total consultant workforce in an acute hospital. This is largely due to anaesthetist involvement in a wide range of other clinical subspecialties. The anaesthetic department you work in may be a directorate in its own right by virtue of the size and complexity of the team. Alternatively, management could be shared between anaesthesia and critical care and/or operating theatres. That directorate will be led by your clinical director, who will be responsible for overseeing the safe and efficient provision of care. The clinical director ordinarily has a team of clinicians who help to manage and guide services within the directorate. Individual subspecialty services will usually be represented by the clinical service leads, for example, obstetric, cardiac or paediatric anaesthesia, pain management, pre-operative assessment or peri-operative medicine. Others in the team include leads for governance or patient safety and the college tutor.

It can sometimes be confusing knowing who to approach if you have a problem in the workplace or with your contract, job plan or salary. Consultants, SAS, and specialty doctors will be managed by the clinical director, who should be the natural person to approach in the first instance for advice and assistance. Trainees would ordinarily approach their college tutor for training matters or issues with leave or rosters. Doctors on rotational training posts will have been appointed by their country's health education body and the local postgraduate dean will oversee their training; however, whilst on rotation to different hospitals, each hospital will hold the contract of employment for these doctors, so the clinical director will still maintain management responsibility for the doctors and should do so in full collaboration with the postgraduate dean.

Doctors in leadership

The need to have doctors involved in healthcare leadership is increasingly recognised as essential for delivery of safe, effective care. Doctors in positions of management responsibility should be able to act as translators between staff on the frontline of care delivery and the layers of hospital management up to the board of directors. There is a range of ways to get more involved in leadership and management, from courses provided nationally to regional training modules. Shadowing your clinical or divisional directors during a normal working day provides an insight into the workings of hospital management and is to be encouraged. Senior trainees may be able to undertake modules in leadership and management. In addition, the [Faculty of Medical Leadership and Management](#) has a range of resources and training options available [3].

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Core training



Core training

Core level training in anaesthesia is uncoupled from specialist training and comprises two years of focused training and assessment in basic clinical skills and fundamental theories of anaesthesia. In Wales, it can be done as a two-year or three-year programme.

Core Training Year 1 (CT1) begins with an initial 3–6 month 'novice' period. During this time, each trainee has clinical consultant-led teaching in order to gain the fundamental clinical, practical and theoretical competencies required to practice independently and safely participate in an on-call rota in a non-supernumerary role. Each trainee is allocated an educational supervisor and a college tutor is present in every department to update, support and offer guidance. Initial competencies include:

- Basic airway skills and airway emergencies
- Basic principles of anaesthesia
- Pre-operative assessment
- Induction and maintenance of anaesthesia for spontaneously breathing patients
- Induction and maintenance of anaesthesia for intubated patients
- Rapid sequence induction
- Introduction to acute pain
- Patient recovery
- Cardiopulmonary resuscitation
- Workplace-based assessment tools:
 - Anaesthesia Clinical Evaluation Exercise (A-CEX): 5
 - Case Based Discussion (CbD): 8
 - Direct Observation of Procedural Skill (DOPs): 6

On completion of a successful novice period, including a minimum of 19 individual workplace-based assessments, an Initial Assessment of Competency Certificate (IACC) is awarded. This deems the trainee safe to practice, with some autonomy, appropriate cases with consultant guidance. All assessments should be completed using the RCoA Lifelong Learning platform.

The remainder of the first year of training focuses on gaining more experience and confidence, building on the knowledge and skills outlined above, and preparing for the FRCA Primary examination. Further assessments will be required during this period and the trainee should complete the section of the curriculum known as Introduction to Anaesthesia.

The FRCA Primary MCQ exam may be taken by any anaesthetic or acute care common stem trainee. The IACC is required by the RCoA on applying to sit the FRCA Primary SOE. In order to progress to year 2 of Core Training (CT2), completion of a regional Annual Review of Competence Progression (ARCP) is compulsory. This may be done 'in absentia' without you needing to attend. Progress and achievements are evidenced by an ARCP report (educational supervisors structured report (ESSR)) and a trainee e-Portfolio, which should typically include:

- Anaesthetic logbook summary
- Teaching logbook
- Audit/quality improvement
- Courses
- Workplace-based assessments: DOPs, Anaes-CEX, CbDs and ALMATs
- Multisource feedback (compulsory for any ICM placement)
- Sign offs for each subsection of the curriculum completed

If any ARCP covers more than one hospital or placement, an interim educational supervisors assessment should be completed for each placement. Only the final placement should have a full ESSR. There is no restriction on completing assessments from CT2 during your first year and doing so when the opportunity arises may be beneficial.

During Core Training, the trainee will also undertake a three-month intensive care medicine attachment to obtain basic level competencies in intensive care medicine. The timing of this placement could be at any point in your two-year programme, and covers some of the basic principles of the specialty of intensive care medicine.

The main aim of year 2 is to obtain the Core Level Training Certificate (CLTC). For this to be issued, trainees must demonstrate basic level competencies in anaesthesia, intensive care medicine and obstetric anaesthesia as well as having the Primary FRCA. The section of the curriculum that covers CT2 is known as Core Anaesthesia and follows a similar format to Introduction to Anaesthesia for CT1.



Obstetric anaesthesia requires the trainee to have attended 20 sessions on the labour ward, not necessarily in a block. Although this is a minimum, it is recommended that more exposure to this environment may be needed for you to feel comfortable enough to cover obstetrics on-call. A similar style certificate is required for obstetric anaesthesia to the IACC. This is called the Initial Obstetric Anaesthesia Competency Certificate (IOACC).

To progress to intermediate training, the FRCA Primary examination must be passed and completion of the exam is a requirement for applying for specialist registrar posts. Interviews for these are usually held about 18 months into your training. This is a difficult exam and preparation time should not be underestimated, so you should allow 4-6 months of intensive revision in order to cover the diverse syllabus.

Not everyone is successful at the Primary FRCA during their two-year programme. If you do find yourself in this situation, it is important to complete all other curriculum requirements whilst still in post. If you do so, the exam can be completed out of training without any issues and your regional advisor will be able to complete your CLTC at a later date. You will then be eligible to apply for Specialist Registrar Training. During the whole of training, you are allowed one year of extension in total. This is best reserved for your Specialist Registrar time as failure to pass the Final FRCA in training will result in you losing your training number and you may not be eligible for a CCT.

Useful tips

- Membership of the RCoA is mandatory at the beginning of the training period
- Membership of the Association of Anaesthetists is encouraged
- Keep a logbook as you go along on the Lifelong Learning platform
- Courses for the FRCA Primary exam are usually of a very high standard and are offered by most deaneries. The majority of trainees find these very helpful, and indeed essential for the OSCE/SOE component. Trainees should book revision courses early as places are competitive
- e-Learning Anaesthesia (e-LA) is an excellent online resource to aid FRCA revision, utilising 20 minute e-learning sessions, complete with self-assessment
- Simulation courses are great fun

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Acute Care Common Stem

For those of you who may be considering a career in intensive care medicine (ICM) or feel you may want to develop an interest in peri-operative medicine then the Acute Care Common Stem (ACCS) entry to anaesthesia can be an attractive option. It is designed to give additional experience in both acute and emergency medicine compared to the core anaesthesia entry route. The ACCS training programme is the foundation of emergency medicine training and can also be part of an acute medicine programme.

Although there is some regional variation, the majority of trainees entering ACCS will spend their first year (CT1) doing six months of emergency medicine and six months of acute medicine. Many trainees will consider studying for the MRCP during this time. The second year, CT2, consists of anaesthetics and intensive care with most trainees doing six months of each. Finally, the third year, CT3, will be all anaesthetics.

The curriculum is designed to give ACCS training experience of the common conditions that are likely to be faced either in the emergency department or in the acute medicine setting. The assessments for these are grouped into major presentations, acute presentations, common competencies and practical procedures. Although some of these assessments are specific to one placement, many are generic and can be completed any time in the first two years when the opportunity arises.

The CT2 year is a mixture of anaesthetics and intensive care medicine. The requirements for anaesthetics are identical to the CT1 year of Core Training. The intensive care curriculum looks very different at first glance to that of Core Training but many of the competencies assigned to ICM in Core Training and ACCS will have been completed during the first year.

The CT3 year will vary depending on the parent specialty. For anaesthetic trainees, this will mean you will do a year that is identical to the CT2 year of Core Training. Because of this split, ACCS is often assessed as completed at the end of CT2. You may therefore need to have completed all requirements of the common two years by this stage.

One of the drawbacks to ACCS training is that, depending on the specific rotation, you may not start your first anaesthetics placement until 18 months into training. This can be an issue as it may leave trainees with only one year of anaesthetics prior to applying for specialist registrar posts and the requirement to have the exam. However, there is little evidence that trainees in this position are disadvantaged compared to those who start anaesthetics one year into training. The ability for trainees to sit the Primary FRCA MCQ at any time, provided they have registered with the RCoA, has helped with this.

The introduction of the Lifelong Learning platform has made a huge difference to anaesthetic ACCS trainees as their curriculum and assessments are now included. Previously everything except for anaesthetics assessments had to be completed on paper forms.

Finally, both Core and ACCS curricula are currently under review, and it is likely that the end result may look very different to the assessment-driven version currently in use. The final details of this are not yet decided, but it may be that the time for applying for Specialist Training will be moved one year further into overall training, amongst other changes.

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Developing your CV for...



Bariatrics

Bariatrics is the surgical subspecialty for the treatment of obesity. As a growing area in healthcare, and with the increasing prevalence of obesity globally in adult and paediatric populations, the skills of anaesthetising obese patients are not only essential for those with a subspecialty interest in bariatric anaesthesia, but for all anaesthetists.

Obesity has reached epidemic levels in the UK and continues to increase, with 26% of adults and 20% of children aged 10-11 years classified as obese [1]. Furthermore, in 2016/2017 there were 617,000 NHS hospital admissions where obesity was a factor [1]. Obesity significantly contributes to morbidity and mortality, having been identified as an important risk factor in NAP4 for airway complications [2] and NAP5 for accidental awareness [3]. Despite this, obesity and sleep medicine do not currently feature on the RCoA Curriculum for CCT in Anaesthetics [4].

The cost to the economy of being overweight and obese was estimated to be almost £16 billion in 2007, equivalent to over 1% of the gross domestic product [5]. A simulated model in 2011 predicted that there would be 11 million more obese adults in the UK by 2030, with the costs for treatment of associated diseases estimated to rise by up to £2 billion per year [6].

Bariatric surgery is usually undertaken laparoscopically, and includes gastric band insertion, sleeve gastrectomy and gastric bypass. Intra-gastric balloon insertions may be used as a means to expedite weight loss in the super obese prior to definitive surgery. It is offered to NHS patients with a BMI of $> 40 \text{ kg.m}^{-2}$ or between $35\text{-}40 \text{ kg.m}^{-2}$ if associated with a medical condition that would improve with weight loss, such as type 2 diabetes or hypertension. There needs to be evidence that other methods of weight loss have been attempted and failed [5]. Bariatric surgery is offered in over 50 NHS hospitals [7], with 6760 bariatric surgical procedures performed in 2016/2017 [8]. Of these cases, 78% of patients were aged between 35 and 64 years and 77% were female [8].

Increasingly, surgical practice is moving away from gastric bands towards gastric bypass and sleeve procedures, with the latter options providing a higher chance of diabetes remission following surgery [9, 10], such that bariatric surgery can also be considered as metabolic surgery. In fact, patients with a BMI $30\text{-}34.9 \text{ kg.m}^{-2}$ with recent-onset type 2 diabetes, as well as those of Asian family origin with recent-onset type 2 diabetes at lower BMIs are being considered for bariatric procedures, in accordance with National Institute for Health and Care Excellence (NICE) guidance [5]. Bariatric surgery leads to long-term weight loss, with over 90% of patients maintaining at least 50% excess body weight loss [9]. Additional to this, health is improved by reducing or resolving obesity-related conditions such as type 2 diabetes, hypertension, cardiovascular disease, obstructive sleep apnoea, asthma, fatty liver disease and arthritis, as well as improving psychological aspects, leading to improved quality of life and prolonged life expectancy. Surgical weight loss works by altering the anatomy and/or physiology of the gastrointestinal tract, endocrine function and metabolic pathways. Importantly, surgery is part of a multidisciplinary weight loss strategy, including nutrition, exercise, behaviour modification and psychological input [9].

The UK National Bariatric Surgery Registry demonstrates that from 2013 to 2016, patients presenting for primary bariatric surgery had an average BMI of 49.1 kg.m^{-2} and an average weight of 136.4 kg, twice the ideal weight for their height [11]. This patient cohort presented with an average of 3.59 obesity-related diseases and had a survival rate of 99.95%. The average length of hospital stay for all bariatric procedures was 2.6 days, reducing from the previous data set. This affirms that despite bariatric surgery being undertaken in a high-risk patient group, with high disease burden, the safety profile is good and length of hospital stay is reducing [11], which serves to emphasise the importance of anaesthetic and multidisciplinary peri-operative management and optimisation.

Bariatric anaesthesia and transferable skills

The requirements for specialist bariatric anaesthetists are highlighted by NHS Jobs requisite for subspecialty consultants in their job advertisements. A subspecialty interest in this field necessitates close multidisciplinary working and involvement as a peri-operative physician for high-risk patients with multiple comorbidities. Careful pre-operative assessment and understanding of sleep medicine are essential. Understanding and management of the metabolic syndrome, obstructive sleep apnoea and obesity hypoventilation syndrome are key. Good intra-operative care necessitates special consideration of safe manual handling, careful patient positioning and meticulous awareness of pressure points, as well as knowledge of altered pharmacokinetics and pharmacodynamics. This patient cohort is considered to have a higher incidence of difficult airway management as well as a gastro-oesophageal reflux [5], requiring increased familiarity with advanced airway techniques and equipment (e.g. videolaryngoscopy and transnasal humidified rapid-insufflation ventilatory exchange [12]). Regional anaesthesia, total intravenous anaesthesia and enhanced recovery also feature in the management of the morbidly obese patient, and are skills that can be adapted from other areas of anaesthetic practice.



Society for Obesity & Bariatric Anaesthesia

Bariatric anaesthesia is an expanding field. The Society of Bariatric Anaesthetists was established in 2008 'catering for the academic and professional needs of anaesthetists interested in the area of bariatric medicine', and is affiliated with the Association of Anaesthetists. In 2011, it rebranded as the [Society for Obesity & Bariatric Anaesthesia](#) (SOBA), reflecting the relevance of the subspecialty to all obesity, not simply bariatric surgery. SOBA hosts bi-annual meetings, launched an iOS app in 2021 and can be followed on Twitter @SOBAuk.

Bariatrics as a subspecialty

Even if you do not pursue a consultant career in anaesthesia for bariatric surgery, the skills learnt during bariatric training are widely applicable to all anaesthetic practice and peri-operative care. Future opportunities in the subspecialty are likely to expand as bariatric and metabolic surgery is further demonstrated to be a safe and effective way to manage the disease burden of obesity. However, at present, specialist bariatric centres remain niche, because the resources required to support them are extensive.

Additional training opportunities and strengthening your CV

- Fellowships - either as out-of-programme experience or in-programme
 - St Mary's Hospital, London; King's College Hospital, London; Homerton Hospital, London; Peninsula School of Anaesthesia, South West England; McGill University, Quebec, Canada
- Observerships
- Attending courses
 - SOBA Key Issues in Obesity Anaesthesia Course, twice annually
 - SOBA/European Society for Perioperative Care of the Obese Patient (ESPCOP) Key Issues course at ESA meetings
- Attending meetings, including international conferences
 - International Society for the Perioperative Care of the Obese Patient <https://ispcop.net>
- Bariatric/obesity related research/QI/audit, and presenting work at bariatric anaesthesia society conferences
- Become a SOBA trainee representative, appointed annually
- Join SOBA <https://www.sobaconference.com/join-soba>

Useful resources

- Association of Anaesthetists. Peri-operative management of the morbidly obese surgical patient. <https://anaesthetists.org/Home/Resources-publications/Guidelines/Peri-operative-management-of-the-obese-surgical-patient>
- Schumann R. Anaesthesia for the obese patient. UpToDate. <https://www.uptodate.com/contents/anesthesia-for-the-obese-patient>
- SOBA. Designing intelligent anaesthesia for a changing patient demographic. A consensus statement to provide guidance for specialist and non-specialist anaesthetists written by members of and endorsed by SOBA. https://www.dropbox.com/s/u6dwpw5yz93f5a6/SOBA_Consensus_Statement.pdf?dl=0
- SOBA single sheet guideline. <https://www.sobauk.co.uk/guidelines-1?lightbox=datattem-iit6ri461>
- SOBA OSA/OSHS guideline. <https://www.dropbox.com/s/7njcdrrjfgcyp1/SOBA%20OSA%20Guideline%202016.pdf?dl=0>
- SOBA obesity pack - be prepared. <http://www.sobauk.co.uk/downloads/obesity-pack>
- SOBA newsletter. <https://www.sobaconference.com/newsletter>
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Cardiothoracic anaesthesia and intensive care

Cardiothoracic anaesthesia and intensive care is an exciting, challenging and dynamic specialty choice. It requires specific and unique skills. A career choice in the specialty means you will be at the forefront of anaesthetic, surgical and technological advances.

We have seen a number of changes in the patient population including an increase in the number of patients, an increase in age, comorbidities and in the complexity of our procedures. However, this is coupled with improvements in outcome and mortality and a decrease in hospital stay. Our patients are the most audited group in medicine, pushing a continual drive to improve our practice. We have seen advances in cardiology procedures, particularly arrhythmia therapy and transcatheter valve implantation procedures. There has also been an increase in minimally invasive cardiac and thoracic surgery. The technological developments have been instrumental to the success of the specialty. We have led the way in peri-operative echocardiography, both transoesophageal (TOE) and transthoracic (TTE). The specialty has seen improvements in cardiopulmonary bypass techniques and the reduction in the use of blood and blood products in cardiac surgery with the development of cell salvage, synthetic clotting products and point-of-care testing. There have also been considerable advances in mechanical cardiorespiratory support such as extracorporeal membrane oxygenation (ECMO) and ventricular assist devices.

The RCoA Curriculum for Certificate of Completion of Training (CCT) in Anaesthesia lays out the requirements for training. Cardiothoracic anaesthesia is one of the seven essential units for intermediate level training in ST years 3-4 and one of the five for higher training in ST years 5-7. In each case, the minimum requirement of four weeks is really only a taster to allow trainees exposure to the issues and management of patients with cardiothoracic disease. Cardiothoracic anaesthesia is also one of the eight advanced units of training in ST years 5-7 with a maximum of one year in a single unit or six months in each of two units. Many trainees looking for a career in the specialty will follow this with a further fellowship, which commonly takes place post-CCT. Advanced training is vital to any trainee wishing to pursue a career in cardiothoracic anaesthesia.

In the Republic of Ireland cardiothoracic anaesthesia is a core module which must be completed in Specialist Anaesthesiology Trainee (SAT) years 3-6, and a 'Special Interest Year' may also be completed as an elective seventh year.

How do you build a CV to become a consultant in cardiothoracic anaesthesia and intensive care, and what will influence success?

Become a member of the [Association of Cardiothoracic Anaesthesia and Critical Care](#) (ACTACC). It holds an annual scientific meeting in the spring and educational academy meeting in the autumn. ACTACC is dedicated to its involvement in curriculum development and training of cardiothoracic anaesthetists and intensivists. ACTACC is an invaluable resource for providing career advice, fellowship opportunities and networking. It provides details of academic and educational meetings, a comprehensive list of courses and workshops in echocardiography, one-lung anaesthesia and all aspects of cardiothoracic anaesthesia. The website also provides a source of educational material and has an established trainee representative position on the committee as a direct link between the organisation and interested trainees.

TOE imaging is now a central component of cardiac anaesthesia and evidence of training and experience in TOE is essential for your CV. In the UK, there is an accreditation process run by the [British Society of Echocardiography](#) consisting of an exam (two multiple choice question papers), a practical assessment day and logbook submission of 125 cases over two years (including five video cases). Accreditation is also possible through the [European Association of Cardiothoracic Anaesthesiologists](#) (EACTA), [European Association of Cardiovascular Imaging](#) (EACVI) or the National Board of Echocardiography (NBE) Certification from the [American Society of Echocardiography](#) (ASE)/[Society of Cardiovascular Anaesthesiologists](#) (SCA). TOE accreditation requires not only time to study for the exam, but access to sufficient patients to undertake the required number of examinations.

An introduction to TOE can be gained by attending a course. A list can be found on the ACTACC website. Both EACTA and the SCA also run annual foundation courses in TOE, and there are an increasing number of meetings in the UK devoted to TOE. Registrar's case presentations are also now a part of ACTACC echo meetings and such a presentation would look good and get your name known in the ACTACC community.

Evidence of training in TTE is desirable. [Focused Ultrasound for Intensive Care](#) (FUSIC) accreditation involves attending a FICE-approved basic echo workshop, collecting a logbook of 50 cases over a one-year period followed by a final 'triggered assessment' by your mentor. Other 'focused' echo courses such as the [Association of Anaesthetists Basic TTE course](#), FEEL-UK (focused echo in emergency life support) or ICE-BLU (intensive care echo and basic lung ultrasound) are available. The British Society of Echocardiography and Intensive Care Society working group have defined criteria for advanced accreditation in critical care TTE, comprising a written exam and a logbook of 250 reports.



In the past, research experience, especially with publications in reputable scientific journals, would have been desirable. Although it remains a feature of an outstanding candidate, it is recognised that the opportunities for undertaking research during CCT training are now much more limited. However, scientific presentations, often based on audit rather than research, at specialty meetings such as the ACTACC or EACTA remain important for a successful applicant's CV. Co-authoring a book chapter or a review may be more readily achievable. Ask your senior colleagues if they have any opportunities available in these areas.

Clinical experience in cardiothoracic anaesthesia gained in more than one centre is desirable. It gives insight into different approaches to delivering the same healthcare; this may be valuable when service reconfiguration occurs in your future career. Furthermore, experience in specialised centres may benefit your CV, for example those offering ECMO, heart failure treatment and transplant services. Undoubtedly, valuable training will be gained in all the UK cardiothoracic centres, but experience in other countries, such as the USA, Canada or Australasia, adds to your CV. Although this may be possible as an out-of-programme experience during training, it is more likely that experience abroad will be obtained post-CCT.

Selection committees will be looking at what you can offer the department over and above your clinical skills. Teaching and management experience are two areas that may be valuable to a department. Formal qualification such as a Certificate in Medical Education would be ideal for teaching, but perhaps unrealistic for everyone to achieve during training in anaesthesia. Evidence of interest can be demonstrated by attendance at teaching or management courses. Supervising problem-based learning is a good way into undergraduate teaching, as it is now an important component of the undergraduate curriculum of many medical schools. Acting as faculty on in-house courses is also a way to gain teaching experience. Courses such as advanced life support (ALS), advanced trauma life support (ATLS) and care of the critically ill surgical patient (CCrISP) are ideal, but there are specific cardiothoracic courses such as cardiac advanced life support (CALS) that also exist. Qualifications in management may also be beneficial. Many universities now offer concise certificates or diplomas in healthcare management. Participation in committees is also desirable. These may include local, regional or national committees.

Cardiothoracic intensive care is an expanding specialty that has undergone significant changes and developments in the last 10 years. The increasing age and comorbidities of patients together with innovative surgical and cardiology techniques and expansion of ECMO, mechanical assist devices and transplantation services has significantly increased the workload. In many centres, there has been a shift from the traditional surgical-led recovery unit to an intensivist-led specialist critical care unit. It remains a substantial part of many cardiothoracic anaesthetists' job plans and the majority of cardiac intensivists will still also have some sessions in cardiothoracic anaesthesia. The ACTACC works closely with the [Faculty of Intensive Care Medicine](#) (FICM) to develop the field. At present, a dual CCT in anaesthesia and critical care is not essential but should be considered by those interested. Intermediate training in intensive care medicine should be obtained with experience in cardiothoracic intensive care during advanced or post-CCT specialty training.

Paediatric cardiac anaesthesia is a subspecialisation. Those interested in paediatric cardiac anaesthesia need to have sound training in both cardiac and paediatric anaesthesia. Anyone interested in a career in this area should seek out specialist advice early in their career to know how to develop the relevant experience. The CCT in the anaesthesia curriculum also advises that pre-CCT training for such posts has to be arranged on an individual trainee basis in conjunction with the medical secretary and training committee to ensure it complies with the requirements of a training programme leading to CCT.

A career in cardiothoracic anaesthesia is both challenging and enjoyable. If you are interested it would certainly be advisable to spend a bit of time in the specialty early in your training. The training you will receive will not go to waste, with the ability to manage high-risk patients, hone communication and team-working skills and develop advanced procedural, echocardiography and lung isolation techniques. All of which are very valuable and desirable skills in any field of anaesthesia or intensive care.

Good luck in whatever you choose to do!

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Day surgery

In recent years, elective day-case surgery has increased in terms of the number of cases performed as well as their range and complexity. The definition of day surgery in the UK and Ireland is clear: the patient is admitted and discharged on the same day, with day surgery as the intended management. As the complexity of procedures continues to increase, a wider range of patients are now considered suitable for day surgery [1]. Minimally invasive surgery is now well established, allowing more procedures to be performed as day surgery, including laparoscopic procedures, thyroidectomies and major joint arthroscopies. Shortened hospital stays and earlier mobilisation reduces the risks of hospital-acquired infections and venous thromboembolism. Fitness for a procedure should relate to the patient's functional status as determined at pre-anaesthetic assessment and not by ASA physical status, BMI or age. Obesity and obstructive sleep apnoea are not of themselves contraindications to day surgery, as morbidly obese patients can be managed safely by experts provided appropriate resources are available. Patients with stable chronic disease, such as diabetes, are often better managed as day cases because there is minimal disruption to their daily routine. Older patients are increasingly being listed for day-case surgery [2] and patients with advanced chronological age can safely be operated upon in the day surgery environment because it is increasingly appreciated that admission to hospital for elderly patients can trigger confusion resulting from disorientation and disruption of their usual routine. Local infiltration and nerve blocks can provide excellent anaesthesia and pain relief after day surgery; patients may safely be discharged home with residual motor or sensory blockade, provided the limb is protected and appropriate support is available for the patient at home. The use of ultrasound guidance continues to expand the role of regional anaesthesia in day surgery, enabling more accurate local anaesthetic placement, reducing the total dose administered and supporting the development of regional anaesthetic operating lists. Use of a 'block room' improves efficiency and allows confirmation of adequate nerve blockade before surgery commences. It is clear then that anaesthesia for day-case surgery forms an increasingly important part of most anaesthetists' working life.

Teaching and training

It is essential that you receive training in day-case anaesthesia. It is a core module in all three stages of anaesthetic training, basic, intermediate and higher, and can be selected as an advanced training module [3] with the expectation that you demonstrate maturation during each level of progression. The RCoA recommends that training in day surgery is delivered as part of core general duties and not only involves learning appropriate anaesthetic techniques, but encompasses the entire day surgery process. This should include teaching on appropriate patient selection, effective analgesic regimens, prevention of postoperative nausea and vomiting, requirements for safe discharge and the management of patients following discharge. There should also be emphasis on educating trainees on the necessity of providing a multidisciplinary service for day-case surgery. For advanced training, the greatest benefit will be gained from developing your management and leadership skills in relation to the organisation of a day surgery unit. This can be undertaken in an international centre of excellence abroad. I recommend you become a trainee member of the British Association of Day Surgery (www.bads.co.uk). Membership is currently £60 a year for trainees and this includes a discounted fee for attending the BADS Annual Conference. The quarterly Journal of One-Day Surgery is available online via the free BADS app. You will also have online access to a members-only section, which has up to date articles, multimedia presentations from recent annual conferences, an abstracts database and the Index of Day Surgery Units.

Developing your CV

I recommend you attend one or more of the meetings at BADS, the Association of Anaesthetists' Trainee Conference, Winter Scientific Meeting or Annual Congress (<https://anaesthetists.org>). Presenting a poster or giving an oral presentation may at first seem daunting, but demonstrates your enthusiasm and commitment as well as improving your CV in order to develop your unique selling point when it comes to applying for a consultant post. It also gives you the opportunity to mingle with other like-minded colleagues. There are various quality improvement projects that can be undertaken by trainees during their day surgery module, and suggestions can be found in the RCoA audit compendium [4], including audits of day surgery analgesia, postoperative nausea and vomiting and unplanned admission rates. There are also audits suggested in Section 13, which examine the adequacy of training, including consultant supervision. As well as the [RCoA audit recipe book](#) to help stimulate ideas, helpful advice can be obtained from your local day surgery lead. None of this effort will be wasted because most consultant posts have an element of day surgery in them.



Life as a consultant

As a consultant working in the day surgery unit you will have an exciting important role that incorporates multidisciplinary working, management and operational duties, teaching and training, quality improvement projects, as well as the opportunity to deliver first-class anaesthesia, including nerve blocks and regional techniques. You will be involved in consultant-led, nurse-run clinics. One-stop clinics, where pre-anaesthetic preparation occurs on the same day as the decision for surgery, offer significant advantages to patients (by avoiding an additional visit to hospital) and the hospital through ensuring that patients are prepared for surgery as early as possible in their care pathway, thereby allowing maximum time for optimisation, if required. Consultant anaesthetic pre-operative preparation clinics improve efficiency by enabling early review of the notes only in complex cases, ensuring appropriate investigations are performed and that patients are referred for a specialist opinion, if necessary. When you first start life as a consultant you will probably be given more clinical, than managerial, responsibilities but as you gain seniority you will utilise your management experience, as you will be expected to develop local policies, guidelines and engage in clinical governance. It is hugely enjoyable, enables interaction with so many other disciplines and is thoroughly rewarding. If you would like to have a chat and find out more please don't hesitate to contact me.

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ENT, head and neck and difficult airway

The 'head and neck' specialties of ear, nose and throat (ENT) and maxillofacial surgery are increasingly competitive subspecialties for consultant anaesthetists. Some of the most revolutionary changes in anaesthetic practice have been developed in this subspecialty, including techniques such as transnasal humidified rapid-insufflation ventilatory exchange (THRIVE). Patients and the types of surgery involved are hugely variable and range from otherwise fit and healthy young people undergoing functional and aesthetic procedures, to the elderly and medically compromised requiring extensive surgery for cancer. Major head and neck surgery may typically demand anaesthesia to suit the delicate haemodynamic requirements of free-flap construction while at the same time accommodating intermittently stimulating bone and soft-tissue resection. The skill mix required of the anaesthetist also takes account of the fact that not only the proximal airway, but in many cases (laryngeal surgery) the distal airway is shared with the surgeon. Airway management is often difficult from the outset because of pathology or previous surgery and awake tracheal intubation (ATI), either with a flexible bronchoscope or videolaryngoscope, is increasingly being seen as a staple airway management strategy in this cohort of patients [1]. The types and complexity of airway surgery taken on by hospitals depend largely on their size and whether or not they have ENT and maxillofacial surgery departments. The skills to deal with a difficult airway may nevertheless be called upon at any time in any hospital, and the anaesthetist with advanced airway skills becomes increasingly important.

Adequate members of staff specialising in advanced airway management must also be available to train others. Moreover, the RCoA now recognises the need for airway lead clinicians who should be responsible for ensuring that departments are stocked with appropriate airway management equipment and have local guidelines that are consistent with current national recommendations. In teaching hospitals and larger district general hospitals where consultants regularly manage complex major ENT and maxillofacial patients, it is natural for these same personnel to take on the above roles. That said, those working in other specialised areas of anaesthesia may regularly be involved in difficult airway management, and in particular, those in paediatric anaesthesia and neuroanaesthesia.

What would life be like as a consultant?

With an interest in head and neck anaesthesia there is the potential for a very stimulating consultant career, particularly if your job plan incorporates a degree of flexibility. Each week's lists might include ENT, maxillofacial and dental surgery, often involving elements of paediatric anaesthesia, anaesthesia for day surgery and anaesthesia for complex major surgery. As the airway is shared, surgeons take a particular interest in your skills and if you are involved in the management of major head and neck reconstructive surgery this interest extends even further. A sense of belonging always seems to develop in head and neck theatre teams. Moreover, novel equipment is constantly being developed and trialled in this subspecialty, giving consultants first-hand experience and the opportunity to use these new products. Novel techniques, such as THRIVE or the use of high-flow nasal oxygenation, give variation to clinical practice that would otherwise not be possible.

Once identified as someone with difficult airway skills, you might be called upon to assist other members of your department with complex cases; a situation that calls for a cool head and an agreed plan of action. Your support will also be needed by nursing staff in pre-operative assessment and sometimes by the multidisciplinary team caring for patients with head and neck cancer. Not only can you provide support, but there also exists the possibility to shape services.

Aside from direct clinical work, there is still much to do. Airway equipment requires organising and maintaining, trainees and other members of the department require airway training, guidelines and protocols must be written and airway practice requires auditing. It is also important to maintain your own skills through local, regional or national airway courses and through attendance at the annual meeting of the [Difficult Airway Society](#) (DAS). Indeed, contribution and involvement in DAS, at meetings, engagement with surveys or even via [Twitter](#), allows the modern airway anaesthetist to stay up to date and involved in the latest developments.

It can clearly be seen that life in head and neck anaesthesia is varied, progressive and fulfilling. If you also incorporate other branches of anaesthesia into your job plan, then your working life will never be dull.

Developing your CV

Since the introduction of the curriculum for a Certificate of Completion of Training (CCT) in anaesthesia, and its update in 2017, post-FRCA trainees are required to undertake a further period of training in difficult airway management. This is included in the 'general duties' essential unit of 'higher training' and is mandatory [2]. Also included in the 'general duties' unit is further training in ENT, maxillofacial and dental anaesthesia which, although not obligatory, is obviously desirable, if not essential, for anyone looking to incorporate a regular commitment to head and neck surgery into their work. Approximately one in three Schools of Anaesthesia offer fellowships in advanced airway management for senior trainees of between 3-12 months duration. Advanced airway fellows have considerably greater opportunity to become practised



in difficult airway techniques and to take on roles training others. These posts may also present the opportunity to become involved in airway management research, but are usually, as with other specialist fellowships, subject to tough competition either internally or externally. Some fellowships offer the opportunity to develop academically as well as clinically, and these opportunities should be actively sought regardless of location.

Regular attendance at airway meetings and courses are probably more readily attainable by the interested trainee. DAS was established in 1995 to further the development of difficult airway anaesthesia. Although not limited to those performing anaesthesia for major head and neck surgery, membership of the organisation is a good place to start for those aspiring to specialise in this branch of anaesthesia. The society has one academic meeting per year, usually in November, consisting of two days dedicated to lectures and presentations, but also an extra day of workshops for teaching difficult airway skills. Every four years, this meeting is combined with the meetings of other international airway societies to make up the World Airway Management Meeting (WAMM), which is held at different venues. Difficult airway courses are also now in abundance in most regions throughout the country. Many consist of workshops in which the use of equipment is taught on manikins; however, there are now also a number of courses on which candidates may go on to practise awake tracheal intubation on one another. It goes without saying that anything trainees can submit to national or regional meetings whether in poster, abstract or verbal form will count for a lot when it comes to competition for posts later. Virtually anything from case reports to audits or research may be accepted. Airway audits are very easily planned and carried out, even in hospitals that do not take on major head and neck work on a regular basis. All hospitals have policies and equipment for the unanticipated difficult airway and such things make for easy, yet important, local audit material. Publishing case reports in the peer-reviewed literature, such as [Anaesthesia Reports](#), helps to build up your CV, and involvement in research studies is always a good idea.

Having sought as much experience as possible in techniques for the management of the difficult airway, the natural progression is then to get involved in the teaching of others. Anaesthetic trainees in hospitals of all sizes have an important role to play in the teaching of many groups of people, e.g. medical students, who need training in basic airway techniques as well as others, e.g. paramedics who require regular updating of their intubation competencies. Trainees in airway fellow positions are likely to have a wider involvement in teaching and instruction and may be involved in courses run by the Association of Anaesthetists, the RCoA, and DAS, as well as research run either locally or nationally.

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General and upper gastrointestinal surgery

Subspecialty training in general surgery and upper gastrointestinal anaesthesia

No longer should the general anaesthetist be thought of as a 'Jack of all trades and master of none.' Gastrointestinal anaesthesia (GI) is an increasingly complex specialty and covers a multitude of areas, including elective and emergency abdominal, gynaecology and urology work. Training to develop knowledge and skills in these fields are considered core for any anaesthetist. However, upper GI anaesthesia as a subspecialty in its own right has challenges that necessitate further mastery.

How is anaesthesia tailored for upper gastrointestinal surgery?

There are three main streams of work in upper GI surgery; oesophago-gastric cancer, benign disease and bariatrics. The nature of the job means there is an element of overlap with bariatric, hepatobiliary and thoracic subspecialty anaesthesia. Patients and procedures are diverse and each has their own unique challenges. Individuals range from young ASA physical status 1 patients with achalasia or benign reflux disease, to elderly patients diagnosed with cancer, having multiple comorbidities, for whom major surgery is their only curative option.

An average day in the upper GI operating theatre is varied and can comprise a list of multiple short procedures (e.g. endoscopies, staging laparoscopies and cholecystectomies); or involve an all-day complex case (e.g. oesophagectomy) that requires an extensive skill set (e.g. siting invasive monitoring, providing epidural analgesia, performing one-lung ventilation, fluid optimisation including large-volume blood product transfusions and ensuring appropriate critical care transfer and management postoperatively).

The move towards minimally invasive surgery has revolutionised the way that upper GI surgery is performed. Today, open procedures are rarely practised in anti-reflux surgery and cholecystectomy, and many surgeons are starting to move towards minimally invasive laparoscopic-assisted surgery for oesophagectomy. This is an exciting time as the way in which upper GI anaesthesia is conducted is constantly evolving to suit current surgical requirements.

Major oesophago-gastric resections are long, complex procedures associated with high levels of morbidity and mortality. With an ageing population, older patients are being referred for such surgery who have greater levels of underlying comorbidity putting them at further risk of intra- and postoperative complications. In this context, the role of the upper GI anaesthetist as peri-operative physician comes to the forefront. Pre-operative assessment clinics with multidisciplinary team involvement and medical pre-optimisation are vital for improving patients' physiological condition to allow for the delivery of safe and effective anaesthesia.

Whilst specialising in upper GI anaesthesia in planned elective work, there is still the opportunity to retain a range of other skills and scope of practice through consultant on-calls covering general emergencies (e.g. urology, gynaecology, abdominal surgery). This is a demanding task and utilises not only our clinical knowledge and skill set, but also draws upon non-technical skills such as team-working, task management, situation awareness and decision-making.

There is the potential to get involved in national audit projects, quality improvement initiatives and research. For example, colorectal surgery was one of the first specialties to introduce enhanced recovery programmes into the UK in the early 2000s. Its success has encouraged other specialties to adopt similar quality improvement programmes. The [National Emergency Laparotomy Audit](#) (NELA; part of the National Clinical Audit and Patient Outcomes Programme, NCAPOP) is currently in its eighth year and released its fifth year of data in 2019. It aims to improve the quality of care for patients undergoing emergency laparotomy through the provision of high-quality comparative data from all providers of emergency laparotomy.

What are the advantages and disadvantages of this subspecialty area?

Advantages

The 'general' anaesthetist with a specific interest in upper GI surgery is a relatively new concept. It is one that we as trainees should embrace and look to promote as an advanced specialty training programme. It will produce an anaesthetist with an excellent procedural skill set and transferrable competencies. This together with exposure to a wide variety of complex elective and on-call emergency surgical cases will produce an anaesthetist with mastery in specialised, uncommon and difficult clinical work.

The crossover nature of the job with hepatobiliary, thoracic and bariatric anaesthesia provides a unique opportunity to work together with other specialties and draw on their knowledge and expertise. This multidisciplinary approach, together with



a mixed workload of theatre time and pre-operative anaesthetic clinics, helps develop not only the clinical ability of the anaesthetist but also the communication and team-working skills necessary to ensure that care delivered benefits both the patient and the organisation.

Disadvantages

Because general anaesthesia with a subspecialty interest in upper GI is in its infancy, there are no national societies to join, no diploma or fellowship to apply for and no specific conferences to attend. Therefore the trainee needs to think laterally about how they will tailor their continuing professional development plans to link with upper GI anaesthesia.

So how can a trainee build their CV for a job in this subspecialty?

Although there are no specific courses relating to upper GI anaesthesia per se, the following (some of which are RCoA approved*) are suggestions that will help target the key extended skill sets for the upper GI anaesthetist in training:

- One lung ventilation course (e.g. Success in Single Lung Ventilation, London)*
- [SOBAUK](#) (e.g. The Society for Obesity and Bariatric Anaesthesia UK key Issues annual conference)
- Blood transfusion course (e.g. [British Blood Transfusion Society](#) Annual Conference)
- Epidural/USS course (e.g. ultrasound guided epidural, spinal, TAP block course, Liverpool)*
- Human factors, management and leadership courses (e.g. Human Factors Training for Healthcare Professionals, Oxford)* (e.g. Clinical leadership and Management Course for Anaesthetists, Stoke on Trent)*
- Peri-operative course (e.g. The National Perioperative Medicine Roadshow TRIPOM (trainees with an interest in peri-operative medicine), Bristol*)

In addition, try to gain further experience by arranging some sessions with your local hepatobiliary, thoracic and bariatric anaesthetic service. Where possible, take the opportunity to get involved with local, regional or national research, quality improvement projects or audit relevant to upper GI anaesthesia. Finally look at the service needs of your department. Does it have a fellowship in general and upper GI anaesthesia in place? If not, could this be something to take the lead on and develop as an extension to advanced anaesthetic training?

Useful resources

- Royal College of Anaesthetists. Anaesthetists' non-technical Skills (ANTS) System Handbook v1.0. www.accs.ac.uk/system/files/AaE-ANTS-HANDBOOK.pdf
- Royal College of Anaesthetists. CCT in Anaesthetics - Advanced Level Training (Annex E) <https://www.rcoa.ac.uk/sites/default/files/documents/2019-08/TRG-CCT-ANNEXE.pdf>
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Hepatobiliary and liver transplantation

There are 38 liver units across the UK providing surgery for patients with hepatobiliary disease. The core of this hepatobiliary work is for cancer, either liver resection for colorectal metastases or pancreatic resection for primary pancreatic cancer [1]. The continual improvements in oncology care have seen an increase in patient selection and criteria for surgical and/or radiological intervention. The indications are expanding and increasingly the patient demographic trend is older patients with greater comorbidities. The increasing demand to provide expedient care for those diagnosed with pancreatic cancer has seen the development of 'fast track' services [2], which have improved patient outcomes, but provide the anaesthetist with some specific challenges.

There are seven centres that undertake adult liver transplantation (one of which is in Scotland) and three that provide paediatric liver transplantation [3]. Orthotopic liver transplantation remains the treatment of choice for end-stage liver disease and acute liver failure. Transplant numbers have increased over the last 10 years. In 2008, there were 657 adult liver transplants undertaken in the UK compared with 1014 in 2018 [4]. Nevertheless, demand continues to outstrip supply and death whilst on the waiting list for liver transplantation occurs. This has given rise to national discussions on organ donation and the 'opt-out donation' legislation came into place in England on 20 May 2020. This legislation already exists in Wales.

To give an idea of the scale of work in a larger unit, in our centre (University Hospital Birmingham, which has a combined adult hepatobiliary and liver transplant programme) we performed 300 major hepatic resections, 150 pancreatic resections, over 100 other hepatobiliary procedures and 230 adult orthotopic liver transplants in 2018 [5].

In addition to the theatre-based work, specialist liver anaesthetists are central to the emerging peri-operative role within anaesthesia. As the fields of surgery and anaesthesia continue to progress and advance, we are asked to provide anaesthesia for ever more complex interventions and procedures, with increasingly older patients.

Multidisciplinary working and 'shared decision-making' are both vital in this field. Our working group of hepatologists, surgeons, anaesthetists, intensivists and allied healthcare professionals work closely together to maintain and continue the improvements in patient outcomes in transplantation and hepatobiliary work.

The nature of liver surgery means working days can be long and always have the potential to become challenging. This dynamic and exciting subspecialty requires excellent practical skills and attention to detail. An understanding of coagulation and point-of-care testing is required, notably thromboelastography, in order to manage the not infrequent occurrence of massive haemorrhage. A sound grasp of cardiovascular monitoring, along with succinct yet meticulous vascular line insertion is paramount to hepatobiliary anaesthesia. The use of intra-operative transoesophageal echocardiography has become increasingly prevalent, especially during liver transplantation. The ability to provide the available array of multimodal analgesic options for major abdominal procedures is required. In addition to the above, selected patients often need to be provided with renal support in the form of continuous veno-venous haemofiltration intra-operatively. Sound non-technical skills, situational awareness and excellent communication skills are required in an environment where things can change rapidly.

Although most liver transplants occur during daylight hours, at least one-third occur at night. The timing is dictated by the available 'cold' ischaemic time from organ procurement, which is usually < 12 hours and can be < 6 hours. The development of organ perfusion techniques is evolving and has the potential to increase the available donor pool through organ resuscitation as well as reducing the number of transplants performed at night. This is an exciting new area of clinical research.

The mainstay of exposure to hepatobiliary surgery is during a rotation through a tertiary centre. Advanced training in hepatobiliary anaesthesia needs to be undertaken within these centres [5]. Early discussion with your training programme director is advised if you are wishing for liver transplant exposure, if that is not available within your region. There are [fellowship programmes](#) available in the UK as well as abroad, which can easily be found online. Prior preparation and early planning is advisable in mapping out your training. Although not essential, it is beneficial and desirable to have clinical experience of hepatobiliary and transplant anaesthesia in more than one centre. This provides awareness of the different approaches available in providing the same healthcare. Many centres welcome any individuals who are interested in gaining exposure to hepatobiliary and transplant anaesthesia, irrespective of their desired career path. There are numerous skills that can be acquired which are invaluable in managing the high-risk patient and are transferable to other areas of anaesthesia and intensive care.

The opportunities for undertaking research during CCT training can be limited, but this is not an essential requirement for a successful application. Involvement in either local or national patient quality improvement projects is achievable in a subspecialty where the 'accumulation of fine margins' is likely to improve patient outcomes. The tertiary nature of this work



means there are inevitably many opportunities for audit, teaching, governance and management development. There are several UK and international groups that have regular meetings and conferences that are of educational merit and can provide the opportunity to present your work:

- [British Association for the Study of the Liver](#)
- [Liver Intensive Care Group of Europe](#)
- [International Liver Transplantation Society](#)

A career in hepatobiliary and/or liver transplant anaesthesia is demanding but also rewarding and enjoyable. It provides the opportunity to be integrally involved in patient care early in the treatment path with involvement in 'pre-habilitation' and optimisation programmes as well as multidisciplinary team discussions in patient listing. The intra-operative management of a tricky transplant patient can only be described as 'one-to-one ITU care', and provides huge professional satisfaction in being part of a team that facilitates the patient receiving a lifesaving gift from another human.

This article scratches the surface of developing a CV for a career in hepatobiliary and transplant anaesthesia. Good luck and best wishes.

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Intensive care medicine

Why work in intensive care medicine?

There are numerous reasons to pursue a career in intensive care medicine (ICM). Each individual intensivist will have a particular aspect of the job they relish the most and that makes the job fulfilling. A few are listed below.

As a true generalist, the case mix and variety of the work are endless, and although naturally unpredictable at times, it always demands application of knowledge and skills from across multiple clinical disciplines. Diagnostic skills, such as point-of-care echocardiography and ultrasound, are now routine in the assessment and treatment of the critically ill patient. Patient response to treatments and interventions is quick and care is given in a complex environment by a dynamic and energetic team. This intervention and feedback loop is rewarding for a practitioner dealing with the extremes of physiology. The boundaries of what medicine can do are always being challenged within critical care as more radical and invasive treatments are offered to an older and more comorbid population.

As critical care is an essential and central hub of any acute hospital, teamwork is a crucial element to the delivery of the best possible care. Being an ICM consultant your role will extend into all areas and the ability to co-ordinate care from within the critical care areas, to outside into the wider hospital is a unique part of the role. Some would say this is among the most satisfying part of the job.

Decision-making is no longer made in isolation, and complex and ethically challenging decisions are shared between colleagues. Multidisciplinary teamwork with radiology, microbiology, trauma and pharmacy are now becoming routine and often planned into a consultant's regular schedule - this will only continue to increase.

Communication is another key skill and the ability to do this well can be hugely rewarding. An ICM consultant will talk to profoundly ill patients and their families during times of distress. An ability to present information clearly, with empathy and compassion is essential, and this allows an intensivist to deliver patient-focused care and ensure individual care needs are met; a role that often extends outside the critical care unit.

An intensivist is also uniquely placed within the hospital to use these skills in other aspects of professional working with heavy representation within education, research and management in most UK trusts, regionally and nationally.

What are the negatives?

Despite an expansion in beds and workforce as the demand on critical care has grown, often the resources needed to support this have not increased at the same pace. At times of surge an ICM consultant will have to manage resource capacity and balance competing demands of patients.

As a consultant-delivered and 24-hour service, demands upon consultant time have increased. Consultants in most hospitals now deliver ward rounds seven days a week and can often be resident until late evening. There should be reasonable expectation of being disturbed on-call, but this will depend on the size of your unit, the specialties offered and availability of middle-grade medical cover overnight. A very small minority of consultant intensivists are now resident, but this is confined to a few large urban centres.

This increased demand on time outside 'routine' hours is now recognised by trusts and is being job planned at enhanced rates from normal daytime work. Novel job planning includes partial shift working to increase consultant presence in evenings whilst limiting work duration and scheduling reciprocal rest periods after on-call. Often this can generate 'free' time off in the week, which can then be used to pursue interests outside work if desired.

The Faculty of Intensive Care Medicine (FICM) has various ongoing work streams set on increasing workforce numbers via more training posts, thus reducing on-call frequency and improving cover. This will continue to support sustainable and healthy work patterns to enable a long, successful and rewarding career within ICM until retirement.

Training in intensive care medicine

Since 2012, ICM has been recognised by the GMC as its own specialty and thus has its own specialist training programme leading to the award of a Certificate of Completion of Training (CCT). A number of doctors in training across the UK are currently pursuing single-stem ICM training; others have completed this and have since been appointed to full-time ICM consultant posts.



Most will choose to train with a partner specialty and curricula are combined with the recognition of both time and competence counting towards overall training. Training time is usually around seven years including core training but excluding foundation school. Partner specialties are anaesthesia, acute internal medicine, emergency medicine, and respiratory medicine. Although anaesthesia remains the most popular, around 20% of trainees are now single CCT or dual training with acute internal medicine, emergency medicine and respiratory medicine, so this is by no means uncommon. Both specialties have to be within the same deanery to access dual training.

Opportunities to experience ICM also occur before specialist training. Many deaneries offer ICM experience in foundation school, and ICM forms part of anaesthesia and Acute Care Common Stem (ACCS) training and, from August 2019, Internal Medicine training.

Trainees can join ICM training at any point from ST3 to the end of ST5. Recruitment to more than one specialty is performed in a stepwise fashion with only one specialty able to be accepted per round. The practicalities of this mean a trainee may be appointable to two specialties yet can only accept one. This is an issue FICM are working to improve.

Entry to ICM specialist training can be via core medicine, core anaesthesia or any theme of ACCS. Trainees considering ICM at an early stage of their careers should consider ACCS training as the most streamlined route into ICM training; however, training programme directors in ICM will provide all necessary blocks of training. Keen trainees may wish to familiarise themselves with the ICM competencies before they are appointed as all evidence from core training can be used.

The ICM training programme

ICM is a seven-year programme in total and split into three stages:

- Stage 1 is complete after a minimum of four years training during which every trainee must complete one year of ICM, one year of anaesthesia, one year of medicine (of which 6/12 can be emergency medicine) and another year of any of these specialist areas, usually this is the partner specialty. This time includes training time spent in a core programme prior to being appointed
- Stage 2 consists of a specialist ICM year (neurology, general, cardiac and paediatric intensive care) and a year during which a range of special skills can be further developed, e.g. research, cardiology, paediatrics, education. Dual trainees will undertake training in their second specialty instead of a special skills year. The prerequisite to enter Stage 3 ICM is the completion of the Fellowship exam of the FICM
- Stage 3 consists of a final year of general ICM during which the individual will be aiming to acquire all the skills required to be a consultant and should typically be working in a sub-consultant fashion

Less than full-time training

Less than full-time training is now common and widely supported across all deaneries. Less than full-time training must be approved prospectively by training programme directors and the local education and training board and advanced planning and notice is essential.

Recruitment and securing a post

ICM recruitment is performed via a national recruitment process held once a year with interviews in March. Eligibility details can be found on the [Intensive Care Medicine National Recruitment Office website](#) hosted by the West Midlands Deanery. In 2019 there were 164 posts in the UK and the latest published competition ratios in 2018 were 1.73.

The recruitment centre will test a candidate's attributes as suitable to train to become a consultant in ICM. As entry can be from ST3 to end of ST5 the process is designed so as not to disadvantage more junior applicants, thus the portfolio station, which looks at achievements, only accounts for a fifth of the total score. In order to be competitive, candidates should be familiar with the training programme, be able to demonstrate their enthusiasm about the specialty, perhaps by having attended and joined relevant courses or societies, and have completed some quality improvement work.



Once the shortlisting criteria are met, most gains can then be made by focusing on improving performance at the recruitment centre. Interview courses are now being run in a number of deaneries. Potential candidates are strongly encouraged to familiarise themselves with these stations and their requirements:

- Portfolio
- Clinical case discussion
- Task prioritisation
- Presentation
- Reflective writing

The FFICM exam

The FFICM exam is now an established part of ICM training and has to be completed by the end of Stage 2 training. The exam consists of a written multiple choice exam, which must be passed before sitting the oral sections comprising an OSCE and structured oral exam (SOE).

In summary ICM can offer an exciting and fulfilling career. Further Information on any aspect of the above and training can be found at <https://www.ficm.ac.uk>

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Leadership and management

Our NHS is clearly changing. We have all read the headlines: the most optimistic forecast predicts that an additional £8 billion per year will be needed to fund our healthcare system in 2020. There are multiple reasons behind this but they include the facts that healthcare is simply costing too much, compounded by an increasingly ageing population, further technological developments and increasing patient expectations. It is realistic to assume that the NHS will not see any real funding increases for the foreseeable future, which represents a dramatic change for a service used to 3-7% increases year on year in the past. It sounds all doom and gloom, but there has been a shift in thinking over the years that doctors can have a real contribution to developing high-quality care in the midst of these huge financial challenges.

Across all hospitals, doctors and consultants (in particular) command great clinical resources, and are already experiencing increased pressure to make clinically effective and cost-sustainable services. We all have a role in driving 'value', i.e. in striving to achieve the best outcome (and experience) whilst maintaining, or ideally reducing, the cost of achieving that outcome. Consultants, now and in the future, are expected to become managerially, even business, minded. Doctors need to understand how to ensure best value, be it through an integrated pathway, for example, or through effective use of competition in tendering services.

Common questions asked at consultant interviews are likely to challenge applicant knowledge about the bigger picture, asking how they would set about either generating revenue, or saving money, whilst maintaining or increasing the quality of care for patients. These types of questions are alien to doctors, who have often been led to expect that as long as they look after the patient in front of them, someone else will look after the system. Unbeknownst to most trainees, doctors, particularly consultants, are key players in improving and running 'the system'.

Medical training does not always prepare doctors for these types of roles. Clinicians are excellent at figuring out the solution to an individual puzzle, but are less happy dealing with 'problems', especially those within large complex organisations. It is often difficult for them to see the bigger picture; either because they do not fully understand the larger NHS culture or because they have not had the appropriate exposure within their trust. They are also less strategic in their thinking because they are less inclined to think in terms of long-term system impact, but doctors are highly intellectual, evidence-based creatures that excel in learning new things and in making difficult decisions. They are trained to deal with complex high-risk issues, and possess the necessary skills to manoeuvre through the complex and adaptive system that healthcare is. Being in constant contact with their patients enables doctors to be strong patient advocates, but also helps ensure that patients themselves are first and central to all decisions. Both doctors and their non-clinical manager counterparts have much to learn in co-operation with each other, but both need to come out of their comfort zones to challenge their own knowledge and behaviours.

The GMC already highlights that leadership is a part of a doctor's professional work. The GMC's Tomorrow's Doctors states: 'It is not enough for a clinician to act as a practitioner in their own discipline. They are expected to offer leadership and to work with others to change systems when it is necessary for the benefit of patients' but how does one 'change the system'? Will a one-day leadership course really prepare us to face the challenges within our own trusts, within our own NHS? A much more holistic approach is required to really gain the knowledge, skills and behaviours expected of a clinical leader of the future.

Luckily for us, leadership and management are not the dirty words that they used to be. The Royal Colleges, deaneries and most hospital trusts are all aware that an engaged clinician can really help to deliver a more effective and financially stable organisation, as well as enhance patient care and experience. There is an abundance of leadership and management programmes available if you are prepared to seek them out, and many trusts will jump at the chance to involve you in management and leadership challenges. Anaesthetists, in particular, are well placed to take up roles within senior management teams as they find themselves interacting with a wide variety of other specialty doctors and healthcare professionals. Furthermore, they are used to running a service with measurable outcomes, instinctively work in teams and have no 'turf' to lose, thus they are less likely to feel threatened by structural change.



Opportunities include

Formal fellowships or programmes:

- Darzi Fellowship or Clinical Leader Fellowships. Usually taken as an out-of-programme (OOP) experience over 12 months, they allow the fellow to undertake usually a large service improvement project within a hospital trust
- National Medical Director Clinical Fellowship Scheme. This is another 12-month fellowship, taken as an OOP experience. It allows the fellow to participate in a large project within a national healthcare-affiliated organisation such as the Department of Health, the Royal College of Physicians, National Institute for Health and Care Excellence (NICE), Medicines and Healthcare products Regulatory Agency (MRHA) and *British Medical Journal* (BMJ)

Both these schemes offer the individual the opportunity to develop their skills in leadership, strategy, project management and health policy.

NHS Leadership Academy programmes:

- Currently on offer are four programmes to which doctors can apply (Edward Jenner, Mary Seacole, Elizabeth Garrett Anderson and Nye Bevan). Doctors in training are suited to the first two as they often do not hold formal authority positions. These are both programmes that require the participant to complete online modules of learning, write formal dissertations and often participate and complete some form of 'leadership initiative'. All of which can be done in training
- The Edward Jenner programme leads to a NHS Academy Award in Leadership Foundations and is suitable for those getting to grips with leadership and management. At the time of writing, the Launch and Foundation levels of the Edward Jenner programme are free, and can be undertaken in the candidates' own time
- The Mary Seacole programme leads to a PG Certification in Healthcare Leadership with the opportunity to complete the Elizabeth Garrett Anderson programme and its Masters qualification in healthcare leadership. It is a six-month programme, ideally suited to those about to take up their first leadership role (e.g. medical consultant), taught in partnership with the Korn Ferry Hay Group to further develop knowledge and skills in leadership. At the time of writing, the cost per person is £995

Other formal qualification examples that can be found online:

- Postgraduate Certificate in Clinical Leadership, e.g. The Open University. Cost at time of writing is £295
- MBA or MSc in Medical Leadership, e.g. from Southampton or Birmingham Universities

Leadership and management courses (ranging from one to several days):

- The Association of Anaesthetists normally offers an interactive two-day course in leadership and management, which culminates in a networking dinner, and is mapped to the RCoA curriculum. A one-day virtual course is also offered.
- The Association of Anaesthetists also offers webinars in leadership and management, which can be found via its [website](#)
- The RCoA offers a two-day course in leadership and management aimed at senior anaesthetic trainees and consultants
- Leadership and management courses offered by The King's Fund can run from a few days to a year
- Local deaneries also offer programmes that can be found via their websites, although without an emphasis on anaesthesia

In-house training (do not be afraid to ask as people are more receptive than you think!):

- Get to know your trust and its management structure. This can be as easy as looking through your local trust's intranet site
- Ask to meet departmental leads, medical directors, operation managers. This will be a useful exercise when you come to making those important pre-consultant interview visits
- Your trust may operate a mentoring or shadowing programme in which you can observe the work of the trust behind the scenes, such as an executive shadowing programme or paired learning programme with a member of the junior management team
- Manage your department's rota and familiarise yourself with local and union employment policies
- Get involved in quality improvement projects to aid the trust change and management programmes. Note that this is part of the 2010 Anaesthetic Curriculum (see Annex G for more details)



Become a representative:

- Anaesthetic representative to a junior doctor forum
- Junior doctor representative on your trust's local negotiating committee
- Join the BMA and act as a representative at local or national level
- Apply for other representative roles within the RCoA, Association of Anaesthetists, FICM or similar societies

Join the faculty:

- The Faculty for Medical Leadership and Management (FMLM) was set up in January 2011. It has a wide-ranging membership from medical students to chief executives. There are a wide variety of resources to access including frequent webinars on leadership topics

Follow a curriculum:

- The Medical Leadership Competency Framework (MCLF) Curriculum offers a structured approach to learning. It also offers self-assessment tools, which are very useful to use as part of a personal development plan. This can be found in more detail on the FMLM website
- The RCoA curriculum (Annex G) gives guidance as to what they expect trainees to become familiar with

Read all about it online:

- Twitter is a great source of new information
- NHS Leadership Academy
- The King's Fund
- Institute for Healthcare Improvement
- FMLM
- BMA website, *BMJ*, *Anaesthesia News*, RCoA website

E-Learning:

- E-Learning for Healthcare (e-LfH) and LeAD
- FMLM 360 degree tool (multi-source feedback)

By flexing their leadership and management muscles, doctors may not only become more effective, but happier in their roles if they feel a renewed sense of loyalty and ownership of the NHS. This would not only benefit our profession, but more importantly, the patients we serve.

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Medical education

Medical education is an integral part of the career of an anaesthetist. There are education-related opportunities in our everyday practice, such as clinical supervision in theatres or on the critical care units, as well as more formal roles such as educational supervisor and college tutor in your departments or being the Director of Medical Education in your hospital through to roles within the RCoA. The opportunities are extensive and varied. Each of us will have different aspirations in what we hope to achieve as educators.

Rarely a day goes by in anaesthesia when we are not involved in some form of medical education, both as a learner and as an educator; trainees can learn from consultants as well as teaching juniors, students and allied health professionals. With current working patterns often leading to decreased exposure to teaching, excellence in medical education is of the utmost importance.

Education is one of the generic domains of advanced training in anaesthesia: something that all anaesthetists should attain prior to the completion of their training. However, some of you will want to achieve a greater level of understanding or experience in medical education and there are a variety of different ways you can achieve this.

How can you build up your CV?

There are a wide variety of ways in which you can tailor your career towards medical education, and these can vary dramatically in time and monetary commitment.

Teaching

From bedside teaching through to delivering courses and lectures, the possibilities are endless.

Departmental teaching is something we all undertake as part of our training and continue when we are consultants, but you can also get involved with regional anaesthetic training days (at intermediate or higher level), or in those for Acute Care Common Stem (ACCS) trainees, foundation doctors or even for other specialties. As well as delivering lectures or teaching, you can also get involved in planning their delivery (your school of anaesthesia or training programme director will be able to guide you on whom to approach).

Being an instructor on life support courses is also an excellent way to gain more experience as a medical educator. For courses, such as ALS/APLS/ATLS, instructor candidates are chosen from candidates on the courses (looking at a variety of criteria), so this is your time to shine as a candidate in the first instance. The instructor training allows for further understanding of teaching techniques to facilitate learning, skill evaluation and feedback delivery.

Facilitating simulation sessions and teaching is also popular. You can find locally or regionally provided training in simulation facilitation (trusts are often looking for those who can assist a simulation faculty). For those of you who have a keen interest in simulation and would like to do more than facilitate on courses, you can apply for simulation fellowships with time split between simulation and clinical duties.

Courses

There are many courses available to aid in the development of an anaesthetist who has an interest in medical education, from those first starting out along the journey to courses designed for those already with experience.

The RCoA runs several courses in this field under the title 'Anaesthetists as Educators'. These are designed to develop your skills and knowledge as an educator and include courses on teaching and training, non-technical skills and simulation. See the RCoA website for more details.

'Training the Trainers' courses. There is a variety of different courses available under the heading of Training the Trainer or Teaching the Teacher, all with the aim of expanding your knowledge in facilitating and delivering teaching, understanding learners and delivery of feedback. These can again vary in cost and may be free to trainees in some regions.



Social media

Social media can be a useful resource for medical education from blogs to podcasts to Twitter. You can learn new skills, follow along with conferences (via Twitter hashtags) or become the educator in authoring blog posts or producing podcasts.

Societies/academies

[Society for Education in Anaesthesia](#) (SEA (UK))

SEA (UK) runs an annual scientific meeting, where education-related research and quality-improvement abstracts can be submitted.

[Association for the Study of Medical Education](#) (ASME)

ASME publishes the journal *Clinical Teacher* and holds an annual meeting that accepts abstracts on all aspects of medical education.

[Association for Medical Educators in Europe](#) (AMEE)

AMEE publishes the journal *Medical Teacher* and guides related to medical education, including resources on teaching and learning methodology, understanding different exam methods, educational supervision, research, etc and it publishes many educational resources. It also holds an annual meeting that accepts abstracts on a variety of different educational themes.

[Academy of Medical Educators](#)

This is an organisation for doctors, dentists and vets. The Anaesthetists as Educators courses at the RCoA are accredited by the Academy and some can be used as part of the application for membership of the Academy (alongside coursework and recommendations).

[Advance HE](#)

This can be affiliated with institutions that provide qualifications in medical education and gaining these qualifications may provide fellowship of Advance HE.

Qualifications

For those of you wanting to gain a formal qualification, many universities offer part-time postgraduate study in medical education; from the year long postgraduate certificate, two-year diploma and three-year Masters courses. These courses will also vary in time commitment and face-to-face or distance learning components; it is important to choose the one that meets your needs most in terms of learning style and modules covered. The majority have a wide variety of medical professionals enrolled, but Dundee offers versions aimed at anaesthetists. Qualifications can prove costly and can eat up a lot of study budget, so ensure you have the ability to meet the time requirements (if you need leave to attend - as some will have compulsory attendance) and financial requirements before you apply.

Education fellowships are becoming more widely available. These will be advertised by the anaesthetic department of individual hospitals and involve the combination of clinical work and time spent working in medical education (such as running teaching programmes, developing course material and course direction). They also may involve research or quality improvement.

Combining both medical education and management

Another role for some medical educators is the design and development of courses. These may be local to your department or region, involving your school of anaesthesia or even wider reaching. These help to develop a broader range of educational skills, such as management, curriculum design, content development and even negotiation skills. You may want to get involved with pre-existing courses within your department or region, or set up your own courses if you find an area where you feel something is lacking - if you do, be prepared for a lot of admin along the way.

Pastoral care

Another facet of a consultant who is a medical educator is the pastoral care of those training within your specialty. If you aspire to be a future educational supervisor, college tutor or training programme director you are not only tasked with ensuring that training needs are being met, but with career development and helping trainees through many other non-clinical and non-work-related problems.



The ability to offer a friendly ear, to advise a trainee on where to get help or who to talk to is a great skill. This is something you can develop as a trainee, for example as a representative for trainees in your school of anaesthesia, or gaining training and experience in educational supervision, coaching or mentoring.

Medical education within anaesthesia as both a trainee and a consultant is diverse, challenging and extremely rewarding.

Useful resources

- Royal College of Anaesthetists. CCT in Anaesthetics, Annex E, Advanced Level Training. 2010. <https://www.rcoa.ac.uk/sites/default/files/documents/2019-08/TRG-CCT-ANNEXE.pdf>
- Royal College of Anaesthetists. Anaesthetists as Educators Programme. <https://www.rcoa.ac.uk/anaesthetists-educators-programme>
- AMEE Guides. <https://amee.org/AMEE/media/Documents/Amee-Guides-June-2017-web.pdf>

Podcast/blogs/social media

- <https://emcrit.org>
- <https://lifeinthefastlane.com>
- <https://www.smacc.net.au>
- #FOAM - Twitter hashtag (Free Open Access Meducation)

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Medico-legal expert

The term 'expert' is widely misunderstood. It absolutely does not mean 'this person knows more about anaesthesia than you do'. It does mean 'this person is considered an appropriate individual to advise the court on the standard of practice that would be expected from an anaesthetist in the particular circumstances which pertain to this case'. The standard of care the practitioner needs to have achieved to avoid being found negligent is that which is 'accepted as proper by a responsible body of medical men skilled in that particular art' (the well-known Bolam test) and which is amenable to logical analysis (the so-called Bolitho rider). It is the expert's job to represent the views of that responsible body to the highly intelligent but medically naive lawyers and judge.

Note, of course, that Bolam and Bolitho have fallen by the wayside in recent years when it comes to the specific question of consent. The legal benchmark is now clearly defined by the judgment of the Supreme Court in Montgomery, which finally brings the law into line with long-standing professional and ethical standards [1].

What do you need to be an expert? From the point of view of your CV, you only really need to show that you maintain a clinical practice in the field under scrutiny and, ideally but not critically, that you have been doing so successfully for some time. It is much more important to have the right skill set and personality traits for this sort of work.

- **Ability to work to deadlines** - time factors can be critical when submitting reports or comments
- **Ability to write clearly and concisely** - try explaining the relationship between vaporiser setting, MAC, end-tidal and arterial volatile agent concentrations to a lay person who is interested in anaesthetic awareness
- **A logical mind** - the legal process is relentlessly logical, and you will need to be as well
- **A thick skin** - the lawyers for whom you are preparing a report will try very hard to pick holes in it, but this is nothing compared to what can happen in court when the opposing barrister gets his teeth into you
- **Complete control of your temper** - see above
- **Knowledge of your limitations** - nothing diminishes an expert's standing more than when they stray outside their area of expertise
- **A degree of anal retentiveness** - when every comma counts, as it does in legal argument, then slapdash is not a good look
- **A working understanding of the law as it applies to clinical negligence** - see the above comments on Bolam, Bolitho and Montgomery if you doubt this

Although it used to be acceptable to learn on the job, nowadays some form of training is, understandably, considered useful. Bond Solon, a legal training firm, run one-day courses in report writing, courtroom skills and civil law and procedure [2]. Alternatively, Action against Medical Accidents (AvMA) [3] and the Academy of Experts [4] also provide training, usually for a lower fee.

Once trained, how do you get your first case(s)? Unless you are fortunate enough to find yourself on AvMA's recommended list, your best bet is to attach yourself to the coat-tails of an established expert. Ask them for a few cases to study and to prepare mock reports; they may well recommend you when they are offered a case with too short a deadline, an increasingly frequent occurrence as the workload builds up.

And you could actually use what you have learnt from your medico-legal cases to drive safety improvements, and so give back to the health community. After all, what better way to improve care than by systematically examining those cases where patients or their relatives have been so upset by the standard of care provided that they have gone on to seek legal redress [5, 6]?

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3. Action against Medical Accidents. Medical expert training. Experts and lawyers - working better together. <https://www.avma.org.uk/resources-for-professionals/>
4. Academy of Experts. Training Courses. Training Courses for Expert Witnesses & Mediators. <https://www.academyofexperts.org/training-courses>
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Neuroanaesthesia

There are 30 adult neurosurgical units based within teaching hospitals in major centres of the UK and Ireland, and a small number are standalone units. Additionally there are six specialist paediatric centres. These act as tertiary and quaternary referral centres within a geographical area. Many of the hospitals hosting neurosurgical units are major trauma centres, at the hub of a system of regional trauma networks that went live in April 2012.

If you are looking for a subspecialty that is dynamic and at the forefront of medical advancements, look no further. Neuroanaesthesia can have a real impact on both operative conditions and patient outcome. It encompasses advanced airway skills, multimodal monitoring and the management of challenging and complex cases, whilst bringing physiology and pharmacology to life. If you enjoy working as part of a dedicated team managing critically ill patients, neuroanaesthesia and/or neurocritical care may be the career choice for you. Many neuroanaesthetists will cover non-neurosurgical lists, as well as possibly working in intensive care.

Training

As with other subspecialties, the training in neuroanaesthesia and neurocritical care has been standardised following the introduction of competency based training. There are now intermediate, higher and advanced training modules, details of which can be viewed on the [RCoA website](#).

There are several neurosimulation courses running throughout the country, which cover the basics of neuroanaesthesia management and related emergencies. It is a really good idea to attend one of these whilst completing intermediate training. Details of some of these training days are on the [Neuro Anaesthesia & Critical Care Society of Great Britain and Ireland \(NACCS\) website](#) in the members area.

If neuroanaesthesia has appealed during your basic training then express an interest to your programme director at an early stage so you can arrange a placement for your advanced training.

Intermediate training

Most units deliver intermediate training in a single block of between one and three months, with many requiring a fixed number of half-day sessions (20). This builds on generic competencies and skills obtained during basic training (CT1 and CT2). Core clinical learning outcomes at this level are mapped to [Annex C of the RCoA curriculum](#), directed towards the development of knowledge and skills for elective and emergency surgery.

Higher training

Anaesthesia for neurosurgery, neuroradiology and neurocritical care is one of the essential units of higher training for the Certificate of Completion of Training (CCT) in anaesthesia. Between one and three months is spent becoming more independent in managing anaesthesia for a range of neurosurgical procedures, as well as interventional radiology and intensive care medicine (ICM). Learning outcomes are summarised in [Annex D of the RCoA curriculum](#).

Advanced training

Advanced training in neuroanaesthesia is 6-12 months, with the majority of the time spent in neuroanaesthesia, although some experience in neurocritical care is also desirable. This can be done as out-of-programme training (OOPT) or fellowship. Many national and international centres offer advanced training, as well as opportunities for research. Trainees are encouraged to gain experience in more than one neuroscience centre and if unable to do so should consider visiting other units. With this in mind, NACCS offers a travel fellowship, which is awarded annually to trainee or consultant members to help with travel and accommodation costs. NACCS also has a network of link people in each centre who can help arrange such visits. Clinical fellowships (in the UK and abroad) are often advertised on the [NACCS website](#). Core clinical learning outcomes focus on establishing independent expertise in a wide range of neurosurgical and neuroradiological procedures and are summarised in [Annex E of the RCoA curriculum](#).

For those considering subspecialising in paediatric neuroanaesthesia, the recommended route is to undertake advanced training in paediatric anaesthesia and either gain neuroanaesthetic experience during that programme or undertake a further six months of training. This is in recognition of the fact that knowledge of two major anaesthetic specialties is required.



All ICM trainees complete three months neurocritical care in stage 2. Trainees looking to specialise in neurocritical care under the new single specialty ICM training programme of the Faculty of Intensive Care Medicine can obtain specialist skills through a special skills year in stage 2. Further specialist training can be undertaken in a post-CCT capacity for dual training, including anaesthesia. Although the majority of neurocritical care is undertaken within general intensive care units, there are some single specialty units in the UK.

Developing your CV

You should get involved with projects in neuroanaesthesia or neurocritical care. Presenting topics on neuroanaesthesia at journal clubs and teaching days is a good starting point, as well as reading the relevant journals and other topical subjects from the Association of Anaesthetists guidelines and RCoA *Bulletin*. You could attend multidisciplinary meetings. The RCoA has an [audit recipe book](#), which has a chapter on ideas for neuroanaesthesia audit projects. Even if you are not currently in a neuroanaesthesia placement you could initiate related projects; for example, an audit of transfers of patients with severe traumatic brain injury. Anything leading to service improvement or improving patient pathways will allow you to develop key management competencies, and demonstrate that you are motivated and enthusiastic. NACCS co-ordinates national surveys and is always looking for ideas. Above all, you should be proactive; keep your eyes open for any interesting cases that could be written up and submitted for publication. Often the simplest ideas are the best. Apply for local and national prizes because you will be surprised how many trainees don't!

The ability to communicate effectively and sympathetically with patients and their relatives may be demonstrated through work-based assessments, such as A-CEX or ALMATs, or via cases during your ICU module. Working effectively in a multidisciplinary team, and leading this team when chaos is surrounding you, is another skill to try and demonstrate through case-based discussions.

How to use your study leave effectively

Take the initiative, make your CV different, and show you are interested and experienced in all aspects of neurosurgery. A few days spent in another centre looking at a specific area can be a very efficient use of your study leave. This will require early planning to set up an honorary contract, but should be quite easy to arrange, and has the advantage of being free. Look on the training section of the NACCS website where you will find information about what other neurology centres have to offer. Here are a few suggestions that will make it clear that you are serious about your neuroanaesthesia training:

- Improve your advanced airway skills: teach on a local airway course and make friends with a respiratory physician or maxillofacial team to increase your exposure to fiberoptic intubations. Do not forget to document these cases in your logbook
- Ensure you have broad experience of spinal surgery including major orthopaedic spinal surgery such as scoliosis repair
- Spend some time in an X-ray department that performs interventional radiology for aneurysms, arteriovenous malformations and stroke thrombectomy. This is a very specialised but fast expanding area
- Ensure you have done some paediatric cases even if this is not your intended area of practice; time spent broadening your training is never wasted
- Offer to organise pre- and post-fellowship study days on neuroanaesthesia. This will make you popular in your department and look good on your CV. You can teach juniors about the safe transport of head injury patients and the principles of neurosurgical anaesthesia while you are on-call
- Consider getting involved in a neurosimulation study day as faculty, or consider setting one up in your own neurology centre
- Multidisciplinary trauma teams in district general hospitals and major trauma centres may benefit from simulation-based training in neurosurgical emergencies. You may have been involved in neurosurgical cases in your obstetric module, and teaching the obstetric team and midwives could follow naturally

Become a trainee member of NACCS

Trainee membership is actively encouraged and costs £10 per year. NACCS exists as a forum for the discussion and exchange of ideas, the promotion of clinical excellence and the encouragement of research. The annual scientific meeting is a two-day conference, with a session dedicated to trainee presentations and posters. There are many prizes on offer. The Harvey Granat Prize is awarded to the best oral presentation, with two further prizes, for the runner up in the oral presentation and the best trainee poster. All short-listed oral presentations are published in the *Journal of Neurosurgical Anesthesiology*. All good stuff for smartening up your CV and it's a great place to network, put out feelers and socialise. There is now a



trainee representative who sits on the NACCS Council and attends the four meetings per year. As part of this, a network of link trainees is being developed across all the national units. Find out who your local rep is and get involved by considering taking on this role. There is a handbook on the NACCS homepage, compiled by our trainee rep, on some useful aspects of neuroanaesthesia.

In summary, neuroanaesthesia is a dynamic and rewarding subspecialty that offers opportunities for everyone. It encompasses patients of all ages, from the most straightforward to the most complex...so go for it!

Acknowledgement

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Why should I consider a career in obstetric anaesthesia?

An increasing multicultural maternal population, the complexity of medical problems, the obesity epidemic and the expectation of women to be able to successfully and safely give birth when they may not have done in the past, are all challenges to obstetric anaesthetists. Additionally, working with a wide range of professionals including midwives, obstetricians, neonatologists and obstetric physicians can test your communication and prioritisation skills. There are a range of interactions for the obstetric anaesthetist in the antenatal clinic, for labour analgesia, for operative delivery, and in the extreme emergency situations, meaning your professional life is not only demanding and varied, but ultimately very rewarding.

Person specification

The obstetric anaesthetist should:

- Be able to work with anyone, anywhere - this might include seeing selected women antenatally, liaising with specialist physicians and obstetricians, and working alongside midwives and obstetricians to care for women during labour, in theatres and on the postnatal ward
- Understand other people's concerns, as well as your own - knowing what the obstetricians and midwives are 'getting up to' will help you to head off trouble early! You need to understand the process of childbirth, learn how to read a cardiotocograph and be able to interpret fetal blood gases etc.
- Communicate effectively with people experiencing the whole range of human emotion - the mother in pain, the anxious partner, the stressed obstetrician and the busy midwife
- Be skilled with a needle - you'll need to be skilled at neuraxial anaesthesia and analgesia in some of the most challenging (and mobile!) subjects
- Keep your head when all around are losing theirs - providing safe and effective resuscitation, pain relief and general anaesthesia requires calmness under pressure, rapid decision-making, and leadership qualities
- Be a teacher/trainer - providing up-to-date guidelines for the labour ward staff and information for mothers
- Be committed to keeping up standards - audit has a large role to play in obstetrics, both locally, and with internationally established projects, such as *Mothers and Babies - Reducing Risk through Audits and Confidential Enquiries across the UK* ([MBRRACE-UK](#)) (formerly Centre for Maternal and Child Enquiries (CMACE))

Training

Obstetric anaesthesia is a core topic in anaesthetic training and as such every trainee spends a significant proportion of their training and on-calls dealing with pregnant women. However, a career in obstetric anaesthesia demands more. A trainee considering it should aim to complete an advanced obstetric anaesthetic training module, while securing a clinical or research fellowship for six or 12 months.

Arguably, of all the subspecialties, obstetric anaesthesia provides the most fascinating opportunities for out-of-programme training (OOPT), whether in the UK or overseas. If you do choose to go to a low- to middle-income country, keep in mind that it may have training implications. These positions are rarely advertised and often require a thorough internet search and/or a useful contact. Most of all, trainees should discuss their intentions with their training programme director or head of school early, as posts can be competitive to obtain and notice needs to be given to take up OOPT.

Trainees contemplating a career with a major commitment to obstetric anaesthesia should access [Advanced Level Training \(Annex E\)](#). The RCoA website also provides practical information on OOPT.

Audit

Audit is relatively easy to achieve in obstetrics and you should certainly aim to complete at least one audit project, which could have a major impact on clinical care during your obstetric training. Aim to complete the audit loop and, if possible, present this as a poster or oral presentation at a national or international conference, such as the [Obstetric Anaesthetists' Association](#) (OAA) or the [Society for Obstetric Anaesthesia and Perinatology](#) (SOAP), or a regional meeting such as Wessex Obstetric Anaesthetists (WOA) or the Society of Mersey Obstetric Anaesthetists (SOMOA).

Our subspecialty is actively involved in MBRRACE-UK, a perinatal audit that is the envy of the world. The philosophy of MBRRACE-UK is to recognise every maternal death as a young woman who died before her time and to use the lessons



to save future mothers and babies. Since 2014, it has produced an annual report to provide recommendations and guidance. The Report's recommendations rapidly become the gold standard for perinatal care across the UK, Ireland and internationally, so make sure you are up to date with them.

Research

Becoming involved in obstetric research can be difficult, as the availability of suitable obstetric patients does not occur on a regular basis, and ethical constraints make it difficult to complete research during a clinical fellowship. However, opportunities are highly sought after, so if a chance presents itself, grab it.

Research posts are usually 12 months long. They are becoming increasingly popular and are usually appointed by competitive interview. The OAA website is an excellent source of information for many of these fellowships in the UK, as well as abroad. Once you identify the fellowship you are interested in, contact the supervising consultant to declare an early interest. It is good practice to visit the hospital if you have not worked there before and talk to current and previous fellows, to give you more information about the post. This will help you confirm that this is the post for you, and will demonstrate you have a serious interest in the fellowship.

Courses and society memberships

You should certainly demonstrate your interest in obstetric anaesthesia by becoming a member of the OAA. It has a global membership of more than 2500 (of which over 350 are trainees) and aims to promote the highest standard of anaesthetic practice in the care of the mother and baby. In addition, the OAA has excellent links with SOAP (its equivalent organisation in North America) and many other countries around the world. Try to attend one of the SOAP annual meetings, which are normally hugely interesting and are usually held in very attractive venues in the USA.

The OAA offers preferential rates for trainees, and you should aim to present a paper or a poster at one of its annual meetings during your trainee years; the lucky trainee winner of the oral presentation wins a cash prize. Membership of the OAA also includes access to the *International Journal of Obstetric Anaesthesia*. In addition, do not forget about the [Royal College of Obstetricians and Gynaecologists' website](#). It provides excellent information, much of which is of interest to anaesthetists. Many regions have local obstetric anaesthetic societies, such as the Group of Obstetric Anaesthetists in London. It holds regular meetings on selected obstetric anaesthetic topics and membership is usually free of charge.

Perhaps the most important course to attend as a senior trainee with an interest in obstetric anaesthesia is the [Managing Medical and Obstetric Emergencies and Trauma](#) (mMOET) course. This is a tough but enjoyable course, aimed at post-fellowship trainees in obstetrics and anaesthetics.

Teaching

There are ample opportunities to get involved with teaching in and around the labour ward. Local teaching programmes often include small group discussions on analgesia in labour in antenatal classes, teaching on skills and drills for midwives, and getting involved in courses for novice and junior anaesthetists. Many hospitals now have simulation centres, which afford the chance to get involved in multidisciplinary training in obstetric emergencies and crisis resource management.

Management

This can be a bit tricky to achieve, as it usually has to be organised in your own time - not many hospitals can spare trainees to be allocated on 'management' days. However, you do not need many of these sessions - just attending a couple of meetings can give you a flavour of how things are run 'behind the scenes'. You can attend a Maternity Matters or an Obstetric Risk Management meeting. Not only will this be educational, but it will prepare you for the consultant interview. In addition, spending some time with the local maternity Clinical Negligence Scheme for Trusts specialist can give you an idea of the current management goals and aims of a given maternity service.

You can also attend guidelines meetings and get involved in updating or writing a guideline for your maternity department. An ideal opportunity would be to link this to an audit or quality improvement project. Get in touch with the obstetric lead at your hospital who will no doubt have a list of guidelines that need updating.



The future

The workload of maternity services has never been higher. The caesarean delivery rate has increased from 10% in the 1980s to nearer 30% today. However, changes to workforce deployment may be around the corner. The current 8-9 hour consultant anaesthetist cover on the labour ward may soon become 12 hours, and ultimately 24 hours, to match consultant obstetrician work patterns. The European Working Time Directive and the ongoing shortage of midwives will continue to impact on our ability to deliver an efficient and safe maternity service.

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Ophthalmics

Anaesthesia for ophthalmic surgery is an area of subspecialty practice requiring a unique set of anaesthetic skills including steady hands for local anaesthesia, specialist general anaesthesia and the ability to reassure patients and surgeons.

Patients presenting for ophthalmic surgery can range in age from premature neonates to the very old. The elderly in particular may have a number of coexisting medical complaints. Patients' eye diseases may be related to systemic disease, such as diabetes, and in children it may form part of a syndrome so it is not uncommon to encounter unusual medical conditions. Treatment of eye disease, such as glaucoma, may have systemic effects despite being administered as drops. Patients undergoing procedures under local anaesthetic blocks will need to be able to lie flat, keep still for potentially long periods and be able to tolerate the relatively claustrophobic conditions. For all these reasons, patients undergoing ophthalmic surgery will require careful pre-operative assessment and preparation for surgery whether it is under general anaesthesia, local anaesthesia alone or local anaesthesia with sedation.

The ophthalmic anaesthetist will need the manual dexterity skills to perform eye blocks such as sub-Tenon or peribulbar. They will also need to appreciate the particular requirements of general anaesthesia for eye surgery. Excellent communication skills are essential not only to reassure anxious patients, but also to communicate with the surgeon and theatre team to ensure optimal operating conditions. This is one area of practice where the anaesthetist can have a significant effect on the conditions presenting to the surgeon, and a good ophthalmic anaesthetist is highly valued by surgical colleagues.

The ophthalmic anaesthetist has a key role in the following areas:

- Pre-operative patient assessment – to assess patients and optimise existing medical conditions prior to surgery
- Provision of local anaesthesia, typically sub-Tenon's (blunt needle/cannula technique) or peribulbar (sharp needle technique) blocks
- Provision of general anaesthesia when appropriate
- Administration of intravenous sedation when indicated
- Patient monitoring during the operation, whether under local or general anaesthesia
- Management of any peri-operative complications, including sudden changes in intraocular pressure, management of any haemodynamic instability and cardiopulmonary resuscitation
- Teaching and training of other staff
- Participation in audit and research projects
- Development of the ophthalmic anaesthesia service for the future

Training in ophthalmic anaesthesia

The majority of ophthalmic procedures are now done under local anaesthesia as day-case surgery. To provide safe and effective anaesthesia, it is important to have an understanding of the relevant orbital anatomy, physiology and pharmacology as well as an appreciation of the range of ophthalmic conditions and the surgical procedures they require. The current RCoA curriculum [1] delivers training for ophthalmic anaesthesia at intermediate and higher levels. Although these are labelled as optional units, they are regarded as optional only if the school of anaesthesia is unable to deliver such training and not because ophthalmic anaesthesia is any less important than any other unit of training.

If you are looking for a consultant job with ophthalmic sessions in the job plan then it will be necessary to have completed intermediate training and desirable to have completed higher [2]. Some supra-regional tertiary referral units such as the Birmingham and Midland Eye Centre offer enhanced training in ophthalmic anaesthesia. Such advanced training provides specialist training opportunities for a senior trainee to gain further knowledge and experience in:

- General and regional anaesthesia for the range of ophthalmic surgical procedures including cataract, strabismus, glaucoma, vitreoretinal, oculoplastic and corneal transplant surgery
- Anaesthesia for elective and emergency ophthalmic surgery
- Safe and appropriate sedation for ophthalmic procedures
- Pre-operative ophthalmic patient assessment
- Audit and research
- Levels of service provision required in ophthalmic anaesthesia including staffing requirements, equipment, support services and facilities
- National guidelines and protocols in ophthalmic anaesthesia, such as the RCoA Guidelines for the Provision of Ophthalmic Anaesthesia Services 2018 [2] and the joint guidelines by the RCoA and Royal College of Ophthalmologists on Local Anaesthesia for Ophthalmic Surgery [3]



The [British Ophthalmic Anaesthesia Society](#) (BOAS) has collaborated with the RCoA and Health Education England eLearning for Health to produce an eLearning module in ophthalmic anaesthesia (e-LA Module 09 - Ophthalmic Anaesthesia) covering anatomy, physiology, pharmacology, pathology, regional anaesthesia and general anaesthesia. This is a very useful learning resource and trainees in ophthalmic anaesthesia are advised to complete all six sessions in this module. You can access these sessions by logging in or registering at <https://www.e-lfh.org.uk>.

Ophthalmic anaesthetists who intend to work regularly with children will need appropriate training in paediatric anaesthesia in addition to specialist experience in ophthalmic anaesthesia.

Any trainee who wishes to develop an interest in ophthalmic anaesthesia should make this known to their training programme director at the earliest opportunity so that appropriate training may be facilitated.

Improving your CV

BOAS organises an annual scientific meeting in the UK, which provides useful specialist continuing education and professional development. In addition, a World Congress of Ophthalmic Anaesthesia is held every four years. These events are also excellent opportunities for trainees to submit case reports and the results of audit or research work for verbal or poster presentation.

Anaesthesia and the *British Journal of Anaesthesia* publish articles and original research relating to ophthalmic anaesthesia. Attendance at specialist ophthalmic regional anaesthesia workshops on local anaesthesia for ophthalmic surgery will provide trainees with additional experience to further enhance and refine their local anaesthetic techniques.

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Orthopaedics and trauma

Anaesthesia for orthopaedics and trauma enables you to work with patients of all ages from the young to the elderly. It requires the anaesthetist to utilise a variety of different practical skills. You are likely to be using regional and neuraxial blocks, sedation techniques and general anaesthesia frequently. Patients can often have complex medical needs and in the context of trauma anaesthesia, very little time to optimise them for surgery. Working in this specialty regularly exposes you to complex decision-making, a wide range of practical procedures and team-working and therefore keeps your skills up to date. For most it provides a huge amount of satisfaction knowing you've made a difference for these patients.

Orthopaedics and trauma are a major part of both the elective and non-elective workload in the UK. It is one of the largest surgical specialties and is found in some guise in most hospitals that have operating facilities. There are more orthopaedic surgeons than any other consultant surgeon group, although they undertake the second most procedures [1]. Although orthopaedics and trauma have the same surgeons, there are marked differences in approach. The balance of risk and benefit is altered by the elective nature of orthopaedics, and trauma gives an alternative set of moral dilemmas and conundrums to discuss and solve with the multidisciplinary team, patient and their relatives. Regardless of which branch, excellent communication skills are important.

Elective orthopaedics

Orthopaedics has been an enthusiastic adopter of the principles of enhanced recovery after surgery. In most centres there will be well designed pathways for hip and knee arthroplasty patients. Where this is done well, it means a well prepared, educated, motivated and appropriate patient group that approach their surgery with anticipation, as it is designed to improve and enhance their life. The National Joint Registry records data from all elective hip and knee replacements [2] and this gives a raft of data that can be used to inform how well each centre is doing. In the age of big data, registries like this are an opportunity to improve and enhance care, benefitting patients and the medical team.

There is an increased interest in how well the patient feels the surgery went, which may be different to the view of the surgical team on the technical outcome of the procedure. Patient reported outcome measures [3] are recorded from information filled in by the patients after their procedure. This gives us ongoing and up to date information, which lets us know the success of the operation from the patient's perspective. This enables us to give factually correct and real-world information to the patient considering these procedures, in terms of how many people have improved pain and better overall quality of life afterwards. This helps patients to decide what is right for them.

The pioneering spirit and drive of the orthopaedic specialty has brought us Getting it Right First Time [4] (GIRFT). It was started by an orthopaedic surgeon, who was concerned by the wide variety of outcome measures and costs within the records from the National Joint Registry. Through hard work, communication and demonstrating and disseminating excellent processes he managed to save roughly £60m from an outlay of £220,000. This obviously caught the eye of those in charge of spending and GIRFT has expanded into 32 specialties and we are in the latest expansion.

Oncology

Oncology surgery is a subset of orthopaedics that is challenging and rewarding in many ways. It involves a wide range of ages, from young children to those approaching the end of life. It can be life-saving curative major resection, through to pain-relieving fixation in a terminal patient. The ethical dilemmas and decisions are multifaceted and complex, which can lead to satisfying truly co-operative team-working with the surgeons. Major resections can require management of massive blood loss and a dynamic response.

Spinal surgery

This subset of surgery has an overlap with the neurosurgeons and again involves a wide age range. Technically challenging scoliosis surgery in the young and adolescent group is an area that requires experience and additional learning. The teams that provide care for these patients are often highly dedicated and organised, and it can be very rewarding work.

As the population ages and their physiology wears out so do their joints. This mandates sensible, rational and careful shared decision-making. The amount of operations performed is increasing year on year and there is no reason to think this trend will reverse. The national drive for peri-operative medicine sits well with this as it is vital for the NHS as a whole that we utilise the money available in the best possible way. Deciding who will and who is unlikely to benefit from these operations is vital, for patients and for the economic pressures we are under. There are guidelines about who is eligible for arthroplasty, and patients will have gone through several non-operative procedures before being listed for joint replacement. This also allows the stratification and pre-optimisation of the patient group in order to get the best results.



Trauma

Trauma differs from this in that there is often little time to pre-optimize a patient. Trauma surgery may include simple manipulations to complex fixation of several fractures. It exposes the anaesthetists to a wide range of patient ages, from the very young to the very old. This means it is often a good way for a district general anaesthetist to keep their skills up with the paediatric population. It also alters the risk-benefit ratio as mentioned earlier.

Patients with hip fractures are likely to constitute a large proportion of your caseload as a trauma anaesthetist. They have a high postoperative mortality and you need to accept the fact that, despite your anaesthetic management, your postoperative mortality rate will be higher than a colleague who only anaesthetises for elective patients. Hip fractures do markedly less well if they have to wait for their surgery, so there is a considerable drive to fix fractures early to benefit the system and patients. Often this is done partly to allow rehabilitation in non-acute hospital settings. Decision-making in the elderly and frail is tricky and tests your judgment, skills and humanity. [The National Hip Fracture Database](#) is a clinical audit project collecting data to improve quality in care of these patients.

Regional anaesthesia is a huge part of elective and urgent work. The range of nerve blocks that can be utilised is huge, and gives both patient and operator a lot of satisfaction when things go well. It is fantastic to be able to keep your skills up in a wide range of blocks, and this makes for a rewarding day's work.

As part of the peri-operative medicine and enhanced recovery drive, orthopaedics has a long history of tailoring the anaesthetic to the surgery undertaken. Regional and neuraxial blocks are common, with the aim of improving patient experience and minimising morbidity and mortality.

Extra training

Orthopaedic anaesthesia requires excellent core skills, with an additional skill set of regional techniques. Scoliosis and spinal surgery requires knowledge and familiarity with one lung ventilation, total intravenous anaesthesia (TIVA) to not impair spinal cord monitoring, massive transfusion and the challenges of prone surgery in all age and weight groups.

It is useful to have experience working in pre-operative assessment clinics in which patients for elective arthroplasty are assessed and counselled about their upcoming procedures. You need to be comfortable evaluating the risks of surgery for patients with multiple comorbidities and to be able to tailor their peri-operative management to their specific needs.

Advanced modules are available in orthopaedics, trauma and regional anaesthesia.



Tailoring your CV

Useful things to demonstrate your interest and improve your success in this area include joining the [British Society of Orthopaedic Anaesthesia](#). There is a junior rep role available, which would give you experience and contacts with established consultants. Attendance and presentation at BSOA meetings would be a sensible addition to your CV. Involvement at either local or national level with the [Trauma Audit & Research Network](#) (TARN) would set you apart from your peers. Simple things such as getting involved in the process of enhanced recovery, either through audit, or by helping design or improve the pathway would be well worth the time invested.

As regional anaesthesia is such a core part of the job, the European Diploma in Regional Anaesthesia and Pain Management (EDRA) would demonstrate your commitment to the specialty. It is reasonable value at €600 for both parts. There is also an MSc in Regional Anaesthesia run through the University of East Anglia.

There are many fellowships available in regional anaesthesia both in the UK and abroad and the majority are listed on the [RA-UK website](#), although for some you may need to do some further investigation or organise your own.

Overall, anaesthesia for orthopaedics and trauma is wide-ranging, uses all of your skills and abilities and is a rewarding specialty to work in.

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2. National Joint Registry. Welcome from the National Joint Registry for England, Wales, Northern Ireland and the Isle of Man <http://www.njrcentre.org.uk/njrcentre/default.aspx>
3. NHS England. Patient Reported Outcome Measures (PROMs). <https://www.england.nhs.uk/statistics/statistical-work-areas/proms>
4. The King's Fund. Tackling variations in clinical care. Assessing the Getting It Right First Time (GIRFT) programme. https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/Getting_it_right_Kings_Fund_June_2017.pdf



Paediatrics

Paediatric anaesthesia involves the provision of anaesthetic and pain management services to the whole spectrum of the paediatric population, from extremely premature babies on the Special Care Baby Unit weighing around 500 g, to 16-18 year olds weighing 100 kg or more. The provision of, and training for, general paediatric intensive care medicine is usually obtained through a general paediatric training scheme via the national grid, the details of which are outside the scope of this article. It is possible to work entirely within the subspecialty of paediatric anaesthesia, or to combine it with adult anaesthesia as a special interest area. It enables you, as an anaesthetic trainee, to combine working with children on a regular basis without the need to complete general paediatric training or achieve a dual certificate of completion of training, but how do you know if it's for you?

Foundation training incorporating a paediatric job is available but limited, although it should be considered if you are reading this early enough in your medical career. It is often a challenge to arrange time out of structured training programmes to undertake additional specialty training. There is more flexibility offered at the end of each stage of training. There may be opportunities between foundation and core training posts, or between core and specialty training posts, to gain experience in paediatric posts. Many departments are very keen to accommodate motivated trainees and have busy rotas to fill. This experience is not essential, however, and there are many other places to start, such as with a CT1 post in anaesthetics.

There is no harm in declaring an early interest in paediatric anaesthesia, but first you must complete your basic and intermediate level training in anaesthetics. For more detail about the current Certificate of Completion of Training (CCT) in Anaesthetics Training Programme, please see the RCoA website. During these early years in your career, you will be developing your CV and there is ample opportunity to put a paediatric slant to it. Volunteer to help with as many paediatric cases and lists as you can to increase your general exposure and experience, and hence your logbook numbers, over and above those required to achieve your basic and intermediate level training certificates. Any previous paediatric jobs or student placements, including work with children outside the clinical environment, should be particularly emphasised.

Aim to get involved in a paediatric-based quality improvement project, and present it at a local or national meeting, preferably with an accompanying protocol or guideline that you have written. Explore local opportunities to participate in paediatric anaesthetic research; many deaneries have academic/research fellowship posts that could be invaluable in allowing you to pursue this in more depth. Along similar lines, try to get involved in a project that could lead to a publication. You can also read relevant journals such as *Pediatric Anaesthesia* and see if you can get involved in the correspondence pages. Ensure you have done the basic training courses - European Paediatric Life Support/Advanced Paediatric Life Support/Managing Emergencies in Paediatric Anaesthesia or other simulation courses - and become an instructor if you can. Get involved in local teaching; for example, can you help your trust resuscitation officers deliver basic paediatric life support updates? Join any relevant local societies and attend their meetings. Seize the initiative and if there is nothing relevant in your area then expand the management section of your CV and set something up. You should certainly join the [Association of Paediatric Anaesthetists of Great Britain and Ireland](#) (APAGBI), contact your local APA Linkman via the APAGBI website for more information, and explore the possibilities of their Annual Scientific Meeting, which is an excellent platform for exhibiting your work in either oral or poster format. There is a trainee representative on the APAGBI Council - could it be you one day? Don't forget the Association of Anaesthetists Trainee Conference is also a great national forum for presenting or displaying your hard work.

All anaesthetic trainees must complete the essential Higher Unit of Training in Paediatric Anaesthesia as per the [RCoA 2010 curriculum document](#). Undertaking this module as early as possible during higher training will allow you to confirm your own interest in this career path while increasing your clinical experience and exposure to audit and research opportunities. State your interest in paediatric anaesthesia early and liaise with your training programme director to organise this.

Whether you are a specialty trainee who is about to start the higher training module or a core trainee looking for inspiration, meet and befriend your local paediatric anaesthetists as soon as possible. This will allow you to get a feel for the job and whether it might suit you in years to come, and investigate the future potential within the paediatric anaesthesia workforce in your region. It is a subspecialty that is becoming increasingly centralised; some district general hospitals have reduced their paediatric workload with a resulting impact on the more traditional role of anaesthetic jobs 'with an interest in paediatrics'. However, these things often come full circle and there will be future development opportunities within your regional managed clinical network, something else about which your local paediatric anaesthetists may be able to inform you. An early insight into these longer-term issues should enable you to consider fully any conflicts of interest between subspecialisation and geographical location that may arise for you and your family and which could influence your career decisions. Along similar lines, you will also need to investigate whether your local education and training boards (LETBs) offer an Advanced Training Programme in Paediatric Anaesthesia, and if so, how to access it. Previously, it may have been



sufficient within some LETBs to declare an interest (backed up by your logbook and CV) and put your name down, but this is increasingly being superseded by competitive application and interview, especially for the 12-month posts within specialist paediatric centres. Not every LETB has the scope to offer an Advanced Training Programme, and if yours does not you will need to explore the feasibility of taking time out-of-programme and compete for a fellowship post. Overseas fellowship positions (commonly in Canada, the USA and Australia) require early application as there are often waiting lists, and must be prospectively approved by your regional advisor. There is a list of overseas fellowship posts on the APAGBI website. Evidence of long-term paediatric interest and commitment on your CV will support your application and increase your chances of success. If it turns out not to be a realistic option, then another consideration is one of the increasingly popular post-CCT Fellowships. If you consider all your options in advance, discuss them with the appropriate people and prepare properly, the choice could be yours.

Achieving your ultimate aim is a question of identifying it, declaring it, getting the relevant and important people on your side and listening to their advice and direction. Ensure you cover the basic essentials well in advance, and then any exciting extras you can add will be truly beneficial. If paediatric anaesthesia interests you, then go for it - it is an immensely challenging and rewarding job. Good luck!

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Pain medicine

Pain medicine is one of the more unusual subspecialties within anaesthetics, but can provide a stimulating career that is very different from the life of a general anaesthetist. It is often poorly understood. I am often asked questions like 'What's it like to be a consultant in pain medicine?', 'Is it better to combine pain and anaesthesia or should I do pure pain?', 'Do I have to sit an examination?' and 'Isn't it just sticking needles in people?'

Pain medicine crosses all branches of medicine and all age groups. It requires an inquisitive mind, a thirst for knowledge and diagnosis and a real interest in people. It 'describes the work of specially qualified medical practitioners who undertake the comprehensive management of patients with acute, chronic and cancer pain using physical, pharmacological, interventional and psychological techniques in a multidisciplinary setting' [1]. It is ideal for someone who wants a bit more variety and awake patient contact than with pure anaesthetics.

The Faculty of Pain Medicine at the RCoA is the professional body responsible for the training, assessment, practice and continuing professional development of specialist medical practitioners in the management of pain in the UK. It is there to make pain medicine, and pain training, better. All higher and advanced pain trainees are asked to register with faculty.

The RCoA [Faculty of Pain Medicine website](#) is the most useful resource for pain training. It contains all the information about how to apply for higher and advanced pain training, how to prepare before starting as well as career stories and training syllabuses. There are contact details for the faculty, local regional advisors for pain medicine and the current trainee representative, if you have any queries.

In the past it was possible to become a fellow of the faculty by having either a consultant post or by completing suitable pain fellowships. Nowadays, in order to produce consultants with internationally recognised skills, the training is much more formal and based heavily on the Australian system of pain training, which has been very successful. The FFPMRCA exam was introduced in 2012 to ensure standards were being met.

Pain doctors usually come from the specialty of anaesthesia. However, doctors from other specialties, such as neurology and palliative care, can undergo pain training and gain the diploma of the Faculty of Pain Medicine. This reflects the broader nature of the specialty. To be a good pain doctor, you must also be interested in people, be prepared to listen and develop skills in the 'talking therapies'. It is no longer sufficient just to perform a nerve block. You will work as a member of a multidisciplinary team; there is no room for paternalism.

All anaesthetists undertake a minimum of basic and intermediate pain training as part of their anaesthetic training. Basic training is done at CT1/2 and is mainly aimed at intra- and postoperative pain management with safe use of regional anaesthesia, analgesics, patient-controlled analgesia and epidurals. However, trainees are expected to gain a basic understanding of the management of chronic pain (especially acute on chronic) and pain in special circumstances, such as children, the older person and those with communication difficulties.

Intermediate pain training is a compulsory component of intermediate training. The experience extends outside of operating theatres and includes pain clinics, interventional procedure lists and, ideally, hospice visits. All trainees should have a good knowledge of the multidisciplinary management of pain and should be effective members of the acute pain team. After this they should be able to lead an acute pain ward round and deal with most in-hospital pain issues. If you wish to do chronic pain or any acute pain as part of your consultant role then you need to do three months of higher pain training at an accredited centre. As is often the case, competition for popular posts can be considerable, so it is sensible to demonstrate your enthusiasm for pain medicine with audit and research.

Those who want to specialise in pain medicine will then do a minimum 12 months advanced pain training in the final two years of anaesthetic training. This time is spent entirely in a pain department (except for on-calls). The trainee is there to learn, rather than providing service provision. This training time will equip the trainee with the necessary skills to be able to practice pain medicine as a consultant. During this time, it is essential to complete the advanced pain medicine syllabus, including the more specialised areas of cancer pain, paediatric pain, pain management programmes and spinal cord stimulation. If any of these are not provided in your region, external placements can be arranged.

As with the rest of the syllabus, there are mandatory workplace-based assessments during this time. All trainees must complete the FFPMRCA exam, which is divided into two parts: written and viva. The written exam is a multiple choice, single best answer and extended matching exam, based on the syllabus. The viva exam cannot be taken until six months of advanced training have been attained and after successful completion of the written exam. There are many exam resources available and the RCoA runs exam tutorials. Passing this examination is compulsory for those wanting to become fellows of the faculty, although the examination does not affect the award of your Certificate of Completion of Training (CCT).



Is it possible to seek a career in pain medicine without doing advanced pain training? This is not recommended unless you have gained substantial experience in other reputable pain training colleges, such as Australia and New Zealand, which are the only ones currently recognised by the RCoA. It is not mandatory for a trust to appoint a consultant with FFPMRCA at the present time, but the college advisor would strongly recommend it and candidates without it would be non-competitive.

The role of the acute pain consultant is changing; it is no longer sufficient just to perform a postoperative ward round as most of this routine work can be nurse-led. Many patients with acute pain that is difficult to manage have pre-existing chronic pain, and a detailed knowledge of pain medicine is required. Many trusts have merged acute and chronic pain and have consultants in pain medicine who all undertake a blend of complex acute and chronic work.

Pain management today has a strong emphasis on a multidisciplinary team approach and all training should include exposure to pain clinics, interventional sessions, physiotherapy and psychological therapies as well as formal pain management programmes. It is very useful to make time in your training to go to clinics with other related specialties such as neurology, rheumatology, orthopaedics and spinal surgeons. Trainees should seek out these opportunities if they are not immediately available. Options for subspecialisation within pain medicine include cancer pain, spinal cord stimulation, pelvic pain and paediatrics. These often require further training beyond the advanced syllabus and may require a post-CCT fellowship.

After training as an anaesthetist, most trainees will want to combine anaesthesia and pain medicine at the start of their consultant career. This is usually a good idea as it keeps all options open and is much more common in district general hospitals; however, keeping up to date in both areas is a significant challenge and you will have to revalidate in both subjects. In time, some pain doctors drop their anaesthetic commitment, although most do not. Relieving pain and distress is very rewarding, despite its challenges. It requires good technical and diagnostic skills and an ability to communicate effectively with patients and other specialties, often in areas of great uncertainty. To find out more visit the RCoA website and follow the links to the Faculty of Pain Medicine.

Useful resources

- Royal College of Anaesthetists. 2010 CCT Curriculum. <https://www.rcoa.ac.uk/sites/default/files/documents/2019-08/TRG-CU-CCT-ANAES2010.pdf>
- e-PAIN. <https://www.e-lfh.org.uk/programmes/pain-management/>

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Peri-operative medicine

Although peri-operative medicine is a relatively new specialty, it represents formal recognition of patient surgical pathway processes that have been established over many years, and has been aptly described as ‘the future of anaesthesia, if our specialty is to survive’ [1]. At its heart, it places the patient and their family who are involved in shared decision-making at every stage of this process, including the risks, benefits and alternatives of any proposed treatment. The importance attached to peri-operative medicine is demonstrated by its prominent place within the RCoA Curriculum for a CCT in Anaesthesia [2].

Peri-operative medicine recognises that the skills and training that our specialty have are not just limited to immediately prior to surgery, the operating theatre and the very immediate postoperative period, but may be used along the entire surgical pathway, from when an operation is planned until the patient leaves the hospital (and sometimes beyond).

There are a number of potential advantages for patients. Large numbers of operations take place within the NHS each year (10 million) and in particular the numbers of high-risk operations (250,000) require a structured, evidence-based and consistent approach to optimise patient outcomes. Given that life expectancy is increasing, many of our patients are not only elderly but also have an increasing number of comorbidities. This brings associated challenges such as frailty and dementia. Other challenges include the management of obesity, sarcopenia and cachexia, and those patients with substance abuse problems.

These concepts are not confined to peri-operative medicine alone; there is considerable overlap with other organisations, such as Enhanced Recovery after Surgery (ERAS), Perioperative Quality Improvement Programme (PQIP), National Emergency Laparotomy Audit (NELA), the Proactive Care of Older People (POPS), Getting it Right First Time (GIRFT), which aim to reduce unwanted healthcare variation, etc. There are new National Institute for Health and Care Excellence (NICE) guidelines entitled [Perioperative care in adults](#).

There are many areas to consider within peri-operative medicine, which continue to evolve as the evidence base changes. Examples include:

- Pre-operative care - the use of multimodal prehabilitation, high-risk anaesthetic clinic assessment, cardiopulmonary exercise testing, optimising medical conditions (e.g. diabetes), smoking cessation and alcohol cessation (and the use of nicotine replacement therapy), intravenous iron to correct pre-operative anaemia, carbohydrate loading
- Intra-operative care - the use of evidence-based, procedure and patient specific techniques for multimodal analgesia, intravenous fluid therapy, ensuring adherence to other care pathways (e.g. antibiotics, normothermia, glycaemic control), optimal ventilation strategies, monitoring of depth of anaesthesia, prevention of postoperative neuromuscular blockade, etc
- Early postoperative care - early ambulation, eating and drinking, thromboprophylaxis, etc. Early recognition of complications (aided by the use of scoring) and appropriate escalation are key. The avoidance of complications is pivotal as they not only impact on the immediate postoperative course, but for years afterwards [1]. Complications not only include ‘surgical complications’, such as wound dehiscence/infection and anastomotic leak, but also ‘medical complications’ such as myocardial (infarction, failure and arrhythmias), postoperative pulmonary complications, acute kidney injury and exacerbations of pre-existing conditions such as diabetes
- Later postoperative care - includes management up to and after hospital discharge, the return to normal physiological function, quality of life and where necessary, the co-ordination of care with other providers, such as primary care and/or social care. The current opioid crisis [3] has concentrated efforts here on appropriate short-term opioid use with deprescribing and safe disposal of opioid analgesics

Thus, for many anaesthetists our role has broadened considerably, with some within our specialty wishing anaesthetists to be replaced with peri-operative physicians [1]. In particular the pre-operative period has been revolutionised as patients’ health is optimised (not just for surgery but for future lifestyle too). The principle area here is to optimise health, nutrition and medical conditions, prepare the patient psychologically for surgery and risk-stratify patients. This enables the magnitude and timing of surgery and appropriate postoperative care to be planned. For example, some patients may benefit from bowel stenting rather than bowel resection, pre-operative percutaneous coronary interventions prior to the surgery, or dialysis. In addition, the appropriate level of care such as intensive care unit (ICU) admission can be planned.

The postoperative period, particularly once the patient has left ICU, remains a difficult area for anaesthetic involvement, but is nevertheless a vital area for peri-operative medicine. For some specialties, in particular orthopaedics, orthogeriatricians have revolutionised the care of frailty fractures. The increasing use of POPS [4] has also been rolled out for elderly and frail patients in some centres. Here anaesthetists and intensivists, together with their teams (e.g. outreach) play a key part in recognising and reacting to postoperative complications.



Much of the above may seem applicable to patients scheduled for elective surgery, but emergency surgery patients, in particular those undergoing laparotomy and hip fracture repair, are amongst the most challenging. Here again a number of evidenced-based pathways are in place to allow pre-operative optimisation (albeit on a shorter timescale and whilst not delaying surgery unnecessarily), rapid access to imaging, theatres with senior input from surgeons and anaesthetists, and high-quality postoperative care, as well as adherence to other care bundles such as the management of sepsis. There are many areas for involvement for trainees. Many of the large national meetings (e.g. the Association of Anaesthetists Annual Congress and Winter Scientific Meeting) cover many aspects of peri-operative medicine.

More specific areas of focus include the [RCoA peri-operative medicine programme](#) and the RCoA Fellowship in Peri-operative Medicine. Various academic institutions also offer courses such as massive online learning courses (UCL) and MSc in Peri-operative medicine (Brighton: MSc, PGDip, PGCert).

In addition, there are many relevant societies, conferences and educational resources for trainees to consider, for example:

- Evidence Based Perioperative Medicine. <https://www.ebpom.org>
- Perioperative Exercise Medicine and Training Society (POETTS) providing training for cardiopulmonary exercise testing interpretation. <https://www.poetts.co.uk/CPET-Courses>
- EBPPM and POETTS combine to host the Prehabilitation World Congress. <https://www.poetts.co.uk/Prehab-2019>
- Association of Anaesthetists specialist societies:
 - Preoperative Association. <https://www.pre-op.org>
 - Society for Obesity and Bariatric Anaesthesia. <http://www.sobauk.co.uk>
- Perioperative Quality Improvement Programme. <https://pqip.org.uk>
- National Emergency Laparotomy Audit. <https://data.nela.org.uk>
- ERAS and ERAS-UK. <http://erassociety.org> and <https://www.erasuk.net>

For many societies, the acceptance of an abstract will lead to a publication in a relevant peer-reviewed journal, for example, [Perioperative Medicine](#).

Peri-operative medicine is embraced within Europe too, for example [CPX International Inc.](#) (formerly the International Society for Exercise Intolerance Research and Education (ISEIRE)), which organises the annual European 'Practicum in Exercise Testing and Interpretation'.

The opportunities for research, quality improvement and audit in peri-operative medicine span the whole of anaesthetic practice and predates the RCoA *Raising the standard: a compendium of audit recipes* [5]. There are nevertheless relevant areas to target along the patient pathway. Examples of audits include percentages of patients who are seen in the high-risk anaesthetic clinic, appropriate pre-operative starvation, appropriate multimodal analgesia and postoperative nausea and vomiting prophylaxis, and eating, drinking and mobilisation of the first postoperative day. Quality improvement projects may follow on from audit results, to drive improvements where required.

Some hospitals also offer relevant fellowships in anaesthesia for high-risk and/or major surgical patients. Peri-operative medicine embraces all aspects of the patient pathway, both elective and emergency, providing patient-specific and procedure-specific care. Anaesthesia has the key role here both in the direct provision and also co-ordination of multidisciplinary input.

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Plastics and burns

Anaesthesia for burns and plastic surgery is varied and rewarding and there is huge potential to make a visible difference to the lives of children and adults. The caseload is mixed and not limited to any one age group or site. This is one of the few areas of anaesthesia where you meet the same patients many times over your career and develop your own professional relationship with them. It is frequently fast-moving, advanced and the anaesthetist often uses the latest technology and techniques. Developments such as the first facial transplant are making it an increasingly exciting area. This specialty is different and flourishes by forging collaborative links with a host of specialties including ENT, gynaecology, maxillofacial and orthopaedics. There is still the misconception that this is an aesthetic specialty; however, there is likely to be at least one area in your hospital in which you can carve a niche. Potential patient groups may include:

- Burns (resuscitation, intensive care management and transfer)
- Breast surgery (reconstruction following cancer, cosmetic breast surgery)
- Skin cancer (excision and reconstruction, management of metastasis)
- Head and neck (oral cancer reconstruction, craniofacial surgery)
- Children (cleft lip and palate, hypospadias, ear anomalies, congenital anomalies)
- Hand and upper limb surgery (hand trauma, degenerative conditions such as arthritis)
- Lower limb trauma reconstruction
- Microsurgery for bone and soft-tissue reconstruction and free-tissue transfer

How to develop your CV

Desirable qualities are an attention to detail and meticulous anaesthetic technique. The ability to balance an extremely varied workload and a capacity to foster good working relationships as part of a multidisciplinary team make this specialty a particular challenge. If you have an interest in plastics and burns, let your training programme director or clinical lead know early on. Training does not have to be in a dedicated block, it could be performed piecemeal over time. Some larger centres may offer dedicated blocks and one-year fellowships either as out-of-programme experience (OOPE) or post-Certificate of Completion of Training (CCT) positions. The RCoA provides general guidance and it may be possible to put together an interesting module yourself, which would look all the more impressive on the CV.

The Association of Anaesthetists and RCoA provide useful continuing professional development topic guidance. The National Burn Care Group is a useful resource and provides standards of burn care which are endorsed by the RCoA. Demonstrate commitment by presenting at journal clubs on relevant cases you have seen. There are regional and national meetings, such as the [British Burns Association](#) (BBA) annual meeting, which offers a trainee prize. The specialty is often underrepresented at departmental level, so offer to run some specific pre- and post-fellowship teaching sessions.

An interesting area may be the choice of fluids and how they may affect survival of free-tissue transfer. Audit activity is made easier as our surgical colleagues are only too keen to have an anaesthetist's collaboration. There are a number of collaborative areas to make a contribution to research and development such as pain relief following burns or the effects of anaesthesia on grafts.

You cannot be an excellent anaesthetist without knowing what the surgeons are up to; therefore, it is vital to work closely with and attend some local surgical teaching sessions so that you know the difference between a TRAM and a DIEP flap! The [British Association of Plastic and Reconstructive Surgeons](#) (BAPRAS) has twice yearly scientific meetings. The BBA meets annually during the spring for a multidisciplinary meeting and is another excellent meeting to aim for with either a poster or oral presentation. If the study budget allows, there is always the [European Burn Association](#) meeting.

Being a team player and the capacity to remain focused during long lists are essential. A background in paediatrics or intensive care would be useful for any list, but is particularly relevant if you are going to be working in a tertiary referral unit for reconstruction or major burns resuscitation. Similarly, plastics and burns patients have often suffered trauma, so it is useful to update your APLS and ATLS courses. Patients requiring head and neck surgery, those with face and neck scarring from burn injuries or congenital deformities will require an anaesthetist skilled in management of the difficult airway and time spent developing these skills will be invaluable. The BBA runs an Emergency Management of Severe Burns (EMSB) course, which is vital if you are to work with major burn patients. Some upper limb reconstructions are done entirely under regional anaesthesia, so it is advantageous to book yourself on an ultrasound course. Circumstances may allow travel overseas; for example, Smile Train is an international charity dealing with cleft lips and palates that welcomes specialty input.



It is worthwhile having an extra string to your bow. Educate your surgical colleagues on anaesthetic techniques on their study days, join paediatric airway lists and use your study leave to visit tertiary referral centres for burns and see how the dedicated intensive care is run. There is a National Burn Bed Bureau and burn patients are often transferred so make sure your transport skills are up to date in this area. Take the initiative, be pro-active and demonstrate interest and expertise.

The future

The specialty is a small one and many departments will be looking for candidates with an active interest. The number of consultant posts has increased in the last 20 years and plastics and burns anaesthetics has become an integral part of hospital practice. This rise is expected to continue as demand grows, which in turn will open up additional posts in the future to one of the most innovative and exciting specialties, which you could become part of. Good luck!

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Pre-hospital emergency medicine

This subspecialty training, open to anaesthesia, emergency medicine, intensive care and acute medicine trainees, was approved by the GMC in July 2011. The first trainees started training in February 2013 and have since completed the programme successfully. There are currently eight regions within the UK offering training places, and more may open in time. At the time of writing, completion of pre-hospital emergency medicine (PHEM) training is rapidly becoming a requirement for application to posts in many of the UK air ambulance and pre-hospital services.

The role of the pre-hospital physician

PHEM training aims to supply knowledge, technical and non-technical skills to doctors to allow them to reliably provide optimal care to severely injured or critically ill patients in the challenging pre-hospital environment. This early delivery of advanced care and management allows teams to deliver such patients to definitive care quickly, safely and in the best physiological condition possible. Specific examples of treatment include the provision of procedural sedation, pre-hospital emergency anaesthesia and delivery of surgical techniques such as thoracostomy, thoracotomy or amputation if the circumstances demand it. This level of clinical care is beyond the current scope of most paramedic practice. The ability to operate in environmentally challenging and resource-poor locations, and make decisions with limited information demands a high level of additional experience and training.

Throughout the programme, the PHEM trainee will attend incident scenes by land or air, initiate immediate critical care and then facilitate a safe transfer to the most appropriate hospital, which may not be the closest. In some cases, the PHEM team may need to organise and/or conduct a secondary transfer from one hospital to another to allow access to specialist or definitive care.

The PHEM role extends well beyond direct clinical care - the PHEM physician will also be expected to provide remote clinical advice to ambulance and hospital colleagues, respond to major incidents in a clinical or command role, and support development of policy and procedures in a rapidly changing area of medicine. There is also a significant research, management and education role built into the training and this will be evidenced within the portfolio.

The training

Training involves spending one year, whole-time equivalent, in the pre-hospital environment during higher or advanced anaesthetic training (ST5+). Typically the programme runs over two years with trainees spending some time in their base specialty and some time in PHEM. The way it is delivered will depend on the local education and training board and the ambulance/air ambulance services to which it is attached.

The training is separated into different phases. Trainees start in Phase 1A, which typically lasts a month. There is an intense period of training both within their local PHEM organisation and at a national level. There will also be operational shifts under direct supervision. At the end of Phase 1A trainees undergo a Local Formative Assessment, which is similar to the Initial Assessment of Competence in anaesthetic training. It usually entails a locally administered written assessment, an objective structured practical examination and high-fidelity case simulations.

On passing this assessment, Phase 1B commences, during which trainees undertake predominantly clinical duties with exposure to governance, case review and educational meetings. Supervision varies between regions with some offering ongoing 100% consultant supervision until fully 'signed off'. Once the service providing the training is confident in the abilities and knowledge of the trainee, they may authorise indirectly supervised shifts where the trainee can access immediate advice from a PHEM consultant by radio or by telephone. Even at this stage, a proportion of the duty periods (minimum of 20%) will still involve direct supervision to enable formative workplace-based assessments to take place.

Duty shifts usually involve being available for primary response to incidents by rapid-response vehicle or air ambulance. There will also be exposure to secondary response involving the critical care transfer of patients from local hospitals to regional centres. At the end of Phase 1, the trainee will sit the National Summative Assessment (NSA) Part 1. This is now the Diploma in Immediate Medical Care administered by the [Royal College of Surgeons of Edinburgh](#). It is held twice a year and costs approximately £680.

Successful completion of the NSA Part 1 will enable the trainee to enter Phase 2 of training during which they build and expand on areas learnt in Phase 1. Phase 2 also contains some distinct and specialist areas that are not covered in Phase 1.



These include training in the provision of remote clinical advice and fulfilment of a Medical Incident Officer role at major incidents. This second stage will also allow the opportunity for solo practice, education and research experience. At the end of Phase 2, NSA Part 2 is taken. This is the Fellowship of Immediate Medical Care, again administered by the [Royal College of Surgeons of Edinburgh](#) at a cost of around £1050. This two-day exam consists of a written knowledge test and an objective structured practical examination with a complex high-fidelity case simulation assessment. Successful completion of this examination and a sufficient number of workplace-based assessments (minimum of 117) will allow the trainee to apply for subspecialty recognition.

How to develop your CV for a PHEM post

Start by looking at the personal specification for the advertised posts, which are subject to an annual national recruitment process. Before undertaking PHEM training, anaesthetic trainees must have done at least six months of emergency medicine in an approved training post at CT1 or above.

Previous experience in pre-hospital care is desirable but can be difficult to gain at a junior level. There may be opportunities for observer roles with your local ambulance trust or the [British Association for Immediate Care Scheme](#) (BASICS). Motorsport or event medicine experience can also provide a limited introduction to the pre-hospital environment. It is recognised that experience outside of PHEM is difficult to achieve, but even with no actual experience the candidate must be able to demonstrate an understanding of the role, the environment and the challenges of emergency medicine outside the hospital.

Applicants should be current providers in Advanced Life Support, Advanced Trauma Life Support/European Trauma Course and Advanced Paediatric Life Support. Instructing on these courses is another way of demonstrating some of the non-technical skills required so it is worth mentioning your interest in being an instructor to the faculty at the start of such a course.

There are several relevant training courses you might consider, such as the Pre-Hospital Emergency Care course run by BASICS, the Pre-hospital Trauma Life Support Course run by the Royal College of Surgeons, the Safe Transfer and Retrieval course or a Major Incident Medical Management and Support course, both hosted by the Advanced Life Support Group. Take any opportunity to be involved in audit or research in pre-hospital care.

If you are interested in doing PHEM training you should discuss this with your educational supervisor, anaesthetic training programme director and contact your local PHEM training programme director. These are listed on the [Intercollegiate Board for Training in PHEM website](#). It would be very worthwhile meeting with current PHEM trainees to discuss application and training. It will certainly take time to organise your training opportunities and it may be necessary to arrange a temporary inter-deanery transfer if the PHEM training is offered away from your core scheme. Speaking to the RCoA and/or the Intercollegiate Board for Training in PHEM can be very helpful.

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Regional anaesthesia

Shared decision-making

Shared decision-making is the collaboration between clinician and patient so that the most appropriate treatment plan is undertaken. It takes into account the patient's preferences, medical background and goals and the clinician's expertise and assessment of the risks and benefits. Can we currently say we (individually and departmentally) practise shared decision-making 24/7?

Regional anaesthesia has become the victim of its own success with improved technology and more sophisticated techniques. It is now quite easy for an anaesthetist to turn around and say 'I don't do blocks'. However, with greater engagement with patients and embracing shared decision-making, if a patient asks for, or would benefit from, a regional technique then are we doing them a disservice by not making it available?

Shonfeld and Harrop-Griffiths described 'desert island blocks' in the *Oxford Handbook of Anaesthesia* [1]. These are five key blocks that the anaesthetist can utilise to target the whole body:

- Interscalene
- Axillary
- Spinal
- Femoral
- Sciatic

In 2017, I asked the Association of Anaesthetists Trainee Committee and trainees in my own deanery if they would be happy performing all of the above 'desert island blocks'. Hardly any said yes, which is a reflection of the training postcode lottery. Being able to perform key nerve blocks (such as the aforementioned) should be a basic prerequisite for achieving the Certificate of Completion of Training (CCT), and this is currently being championed by national and international societies including RA-UK.

Regional anaesthesia courses

There are a number of courses out there for regional anaesthesia; the secret is knowing what you need and what the courses offer. Most courses offer model scanning, where a medical student is scanned mercilessly. This is good for recognising the sono-anatomy and is in some way the first step on the path to regional anaesthesia practice. Additions beyond this involve cadaveric prosection - where the underlying anatomy is shown to you by an expert. I feel this is something all anaesthetists should do once as it gives a better appreciation of the underlying anatomy. Lastly some courses offer cadaveric needling. This involves undertaking ultrasound-guided nerve blocks with freshly thawed or soft-embalmed cadavers. In Dundee, this is taken to the extreme where their mastery course has one student to one tutor and at least 7 hours of needling is conducted expediting the delegate through a mastery process.

For those who wish to specialise in regional anaesthesia

European Society of Regional Anaesthesia and Pain Therapy (ESRA) Diploma in Regional Anaesthesia

The [ESRA Diploma in Regional Anaesthesia](#) is a popular method for UK-based trainees to demonstrate their continued enthusiasm for regional anaesthesia. It consists of a written multiple choice question and oral examination sat one year apart. Prerequisites to sit the exam include having a number of regional techniques, attendance at several regional anaesthesia workshops and two ESRA annual scientific meetings. A basic requirement of being a tutor on ESRA courses is to have the ESRA Diploma.

University of East Anglia (UEA) MSc in Regional Anaesthesia

The UEA offers a number of distant learning courses in regional anaesthesia including individual modules, a postgraduate certificate, diploma and master's degree [2,3]. The aim of the programme is to create the next generation of experts in regional anaesthesia. The programme was developed by regional anaesthesia enthusiasts and is supported by RA-UK and ESRA. Topics include anatomy, neurophysiology and pharmacology, education in regional anaesthesia, human factors, research and leadership and management. Entry is in January, May and September each year and is open to training and career-grade anaesthetists from across the world.



Advanced training and Fellowship programmes

Most deaneries have centres of excellence in regional anaesthesia where trainees can take advanced training in regional anaesthesia. Going overseas to undertake a regional fellowship used to be part and parcel of becoming an expert in regional anaesthesia; however, many UK centres have now upped their game and offer fellowship programmes that boost hands-on regional anaesthesia experience whilst engaging in research:

- Countess of Chester Hospital NHS Trust, Cheshire
- Derriford Hospital, University Hospitals Plymouth NHS Trust, Plymouth
- Frimley Park, Surrey
- Hull and East Yorkshire Hospitals NHS Trust, Hull
- Norfolk and Norwich University Hospitals NHS Trust, Norwich
- Queens Medical Centre, Nottingham University Hospitals NHS Trust, Nottingham
- Southmead Hospital, North Bristol NHS Trust, Bristol
- St George's Hospital NHS Trust, London
- St Mary's and Chelsea and Westminster Hospital, London
- University College London Hospitals NHS Trust, London

Society memberships

[RA-UK](#) is the national representative organisation of regional anaesthesia and holds an Annual Scientific Meeting each spring. Members are invited to the Annual General Meeting where the future of the specialty is shaped. Members also get discounts for RA-UK and RA-UK-approved courses, eligibility for small grant awards and a copy of the textbook *A Pocket Guide to Ultrasound Guided Regional Anaesthesia*.

[ESRA](#) was founded to further regional anaesthesia throughout Europe and currently boasts a membership of 4700 throughout Europe (with the majority from the UK). Members of ESRA receive the *Regional Anaesthesia and Pain Medicine* journal, access to the ESRA academy (a virtual learning platform) and discounts on courses and conferences.

Both RA-UK and ESRA accept poster and oral presentations at their annual meetings.

Twitter

There is a growing body of regionally minded individuals on Twitter who, amongst other things love to talk blocks. Below are the Twitter handles of the current RA-UK Board, which you can follow to engage in the discussion:

@ajrmacfarlane
@amit_pawa
@ashwani_doc
@benjaminlukefox
@docmorne
@jim_parry
@LLoydTurbitt
@nathaslam
@rosie_hogg
@uclhregional

Where can you work as a consultant with an interest in regional anaesthesia?

One of the many good things about regional anaesthesia is that, in contrast to 'centralised' subspecialties such as neuro, cardiac, transplant or vascular, regional anaesthesia expertise can be equally valued in teaching hospitals and district centres, allowing a greater degree of flexibility when targeting a potential consultant job. Any hospital, whether it is a district or a teaching hospital, can become a regional anaesthesia centre with your help; you can either build on an existing team or strive to put the hospital on the national/international map yourself.



What can a job as a regional anaesthetist offer you?

- On day one of being a consultant, you will have a skill set that your department and hospital will find invaluable
- Your patients will greatly benefit from the peri-operative analgesia you can provide them with and the raft of anaesthetic options at your disposal
- Transferable skills that can be utilised for point-of-care ultrasound and vascular access

What will the job require from you?

Communication skills	One of the most important skills. Successful regional techniques require communication with the patient, surgeon and theatre staff, and unlike other areas of anaesthesia, you will commonly have an awake patient to chat with
Knowledge	Thorough knowledge of applied anatomy, neurophysiology, neuropharmacology and acute pain management is essential
Technical and non-technical skills	To ensure you block the correct nerve, in the correct place, with the correct agent
Management	You will need to be able to plan your lists, including knowing how long your nerve blocks will take to cook, what to do when the nerve blocks do not work and engineer lists to fully utilise the benefits regional anaesthesia
Leadership	Many quality-improvement projects and enhanced recovery pathways will hinge on regional anaesthesia. For example, many centres now utilise ambulatory perineural catheters for same-day major orthopaedic surgery
Training and assessment	You will be expected to train and assess anaesthetists at all stages of their career ranging from those who have little interest in the field to those who have a passion for it

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Renal and urology

Urology is the third biggest surgical specialty in the UK in terms of numbers of procedures performed, which means many advertised consultant anaesthetist job plans will include urology lists even if it is not commonly seen as an anaesthetic specialty in its own right. A large proportion of the work involves patients at the younger and older end of the spectrum, and the surgery ranges from minor day-case procedures to complex surgery.

From a paediatric point of view, most district general hospitals will perform circumcisions and simple orchidopexies, while some complex congenital urology problems may have associated cardiac and respiratory defects and necessitate reconstructive surgery in paediatric centres under specialist paediatric urology and paediatric anaesthetic care.

In adults, centralisation of urology cancer services has meant that major pelvic surgery is now carried out by specialist urology cancer teams, while minor endoscopic resections may be performed by local cancer teams in most district general hospital day-case units. District general hospitals may still include a specialist urology cancer team, so anaesthetists here may provide care for nephrectomy, prostatectomy and even cystectomy patients. A simple laparoscopic nephrectomy may be straightforward to anaesthetise and a few have even been performed as day-case patients in some centres. Open and partial nephrectomies provide a greater surgical insult and will need more attention to blood loss and analgesia afterwards, especially if a tumour is found to be invading the renal veins, while an open cystectomy with or without bladder reconstruction may need full invasive monitoring, epidural analgesia and routine critical care admission postoperatively even in previously well patients.

However minor some of the procedures, the challenge for the anaesthetist is often the age and comorbidities of the patients that are listed for urological surgery. The good urology anaesthetist will have a sound knowledge of pre-operative assessment and be able to spot which patients among a rapid high-turnover list might need some extra care and attention. Most cancer cases need a pragmatic approach, but for occasional high-risk elective cases the anaesthetist may need to be able to assess all the pre-operative information, sometimes including cardiopulmonary exercise testing, and have a full and frank discussion with the patient and surgeon to explain the risks and benefits of continuing with surgery.

This can all provide a highly satisfying variety of work for the anaesthetist, who needs to be able to give a good simple day-case anaesthetic for some patients, while others will require invasive monitoring, neuraxial anaesthesia, and liaising with critical care. Major complex cases may suffer heavy blood loss and the anaesthetist should be ready to use intra-operative cell salvage and major haemorrhage protocols on occasion.

Renal transplant surgery is the most commonly performed solid organ transplant, and every region will have a renal transplant service at one of its major centres. Non-specialist anaesthetists may therefore be involved with these cases, which require thorough attention to fluid balance, blood pressure and electrolytes. Patients will have been pre-operatively assessed when listed for transplant, but this may occur in a different hospital to the transplant surgery, so the history and some investigations may need to be collected again. Common associated comorbidities include hypertension, ischaemic heart disease and anaemia. An assessment of the patient's native urine output, acid-base and electrolyte status is necessary, and a decision made on whether pre-operative dialysis is necessary – dialysis may correct some of these abnormalities but render the patient intravascularly deplete for surgery. Some patients may need a central line to help with assessment of fluid balance intra- and postoperatively and enable vasopressor support if needed. The anaesthetist needs to be aware of any existing arteriovenous fistula and protect this during surgery, while avoiding unnecessary arterial cannulation in case of future fistula formation. Insertion of transversus abdominis plane blocks or spinal anaesthesia are potentially useful techniques for reducing opioid requirements postoperatively in a group of patients who may be at risk of retaining active metabolites. The anaesthetist also needs to be aware of local immunosuppression regimes, which they will be tasked with administering – it is particularly important to be aware of potential reactions to the biological group of immunosuppressants.

Urology has been at the forefront of developing minimally invasive and robotic surgery. Most specialist urological cancer centres will perform robotic surgery, with benefits for the patient including reduced pain and length of stay, reduced blood loss and a reduction in the number of cases requiring conversion to open surgery. For the anaesthetist, these advantages may be offset slightly by significantly increased operating time, and there are particular challenges for the anaesthetist including limited access to the patient in emergencies, steep head-down position potentially causing cerebral and airway oedema, and potential for pressure injuries, which all require meticulous attention to technique. Its success means potentially higher-risk patients may be considered for surgery, with additional anaesthetic implications. Some patients may benefit from a trial of Trendelenburg positioning before robot docking to ensure they will tolerate it intra-operatively.



Developing your CV

Within the training curriculum, anaesthesia for urology falls within the general, urological and gynaecological (G/U/G) surgery part of general duties. Higher training expects 12 months of general duties (with a minimum of only 6 months), and G/U/G is only one of 14 units, so it would be possible to complete training with very little experience of major urology. Those interested in applying for a consultant job covering this specialty should aim to start gathering logbook evidence of cases during higher training and then consider an Advanced Level general duties training block. The RCoA curriculum recognises that some trainees will wish to combine six months of Advanced Level general duties with six months in another Advanced Level unit, giving the trainee the chance to develop a well-rounded CV. Advanced training in obstetric anaesthesia, hepatobiliary, vascular and even day surgery anaesthesia will all provide transferable skills for the urology anaesthetist.

During any Advanced Level G/U/G training, the trainee should aim to request exposure to major urology cases, including robotic surgery and renal transplantation while working in the tertiary referral units. Higher or Advanced paediatric anaesthesia training should provide suitable experience for consultants covering paediatric day surgery urology lists, and familiarity with caudal and penile blocks will be useful. These blocks can easily be learned during minor general and urology lists as a trainee, and it is worth asking the urology surgeons for tips on performing penile blocks as they will have extensive experience.

Fellowships relevant to urology and renal anaesthesia are not widely undertaken, but a small number of renal transplant fellowships exist in London, recently at Guy's and St Thomas' Hospital Trust, and specific interests may be catered for as part of peri-operative medicine fellowships, for example at St George's University Hospitals Trust. See <http://www.anaestheticfellowships.org/fellowships-by-country/europe/uk> for up-to-date information and contact details.

The rapid development of robotic urological surgery over the last few years has meant there are some unresolved questions regarding anaesthetic techniques, which are evolving in parallel. This may give trainees the opportunity to be involved with local audit and research into urological anaesthesia, which will look good on a job application form or CV. The [British Association of Urological Surgeons](#) has issued guidelines on implementation of [enhanced recovery protocols](#) for major urology surgery, but these have not been universally embraced, so trainees with an interest in urology may be able to help with the design, introduction and auditing of such pathways in their trusts. Due to the obvious environmental difficulties and required teamwork necessary in case of emergencies during robotic surgery, it has been suggested that simulation training would be useful for improving efficiency – delivering this training would be a worthwhile quality improvement project for senior trainees.

No specific urology anaesthesia societies exist but, given the age range of many urology patients, membership of the [Age Anaesthesia Association](#) may provide access to suitable educational events. Likewise, although specific to urology, the [British Association of Day Surgery](#) may be able to support quality improvement projects to increase the amount of urology surgery performed on a short-stay basis.

Useful resources

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Transplant

Organ transplantation increased over the second part of the 20th century and is now routine practice in modern medicine. With the advances in organ preservation, immunosuppression and some improvement in surgical techniques, many organs can be transplanted and offer near-normal life to their recipients for a long time. In 2019-2020, there were a total of 4761 transplant operations in the UK [1], which represents sustained growth in recent years. Transplant medicine is a separate specialty already. Not surprisingly, transplant anaesthesia is already forming as a subspecialty in the UK. This reflects the specific knowledge, skills, expertise, and commitment necessary to work within transplant teams.

The current routine transplantation of solid organs includes kidney, pancreas, liver, intestines, multivisceral, and cardiothoracic transplantation. Each of these organs (or combination of organs) requires specific expertise from the anaesthesia team, but they all have one in common: immunosuppression and managing the consequences of it. Anaesthetists are involved in managing transplant recipients from the time of decision for listing through the surgical period, and the immediate postoperative period. In addition, many anaesthetists are now involved in organ procurement and organ preservation.

Specific skills are required for each different organ transplantation anaesthetic; however, some of the salient features are listed below:

- Kidney transplantation - management of the uraemic patient, meticulous care of hypo- and hyperkalaemia, as well as fluid balance
- Pancreas transplantation - careful monitoring and management of glycaemic control and potassium balance
- Intestinal and multivisceral transplantation - as above, plus managing very long operations with heat and fluid losses
- Liver transplantation - management of blood loss and coagulation, as well as volume shifts
- Cardiothoracic transplantation - expertise in peri-operative echocardiography and extracorporeal support

Trainees wishing to dedicate their professional life to transplant anaesthesia are currently encouraged to do a fellowship in the respective transplant area. Understandably, team-working with these high-risk patients is essential and out-of-hours work still constitutes a major part of it. As transplant anaesthesia has a significant impact on personal life, it is useful to undertake a transplant fellowship as a test prior to long-term commitment. Normally such fellowships take place in the later stage of training, and many trainees use this opportunity to combine such a fellowship with a year abroad.

For abdominal organ transplantation, there are many UK centres that offer advanced training and they provide the opportunity for involvement in recipient selection and pre-operative selection as well as participation in multidisciplinary teams. Research in these areas is expanding and frequently involves anaesthetic trainees too. In depth knowledge of acid-base balance control and postoperative care is acquired during these fellowships, and there is also increasing interest in peri-operative echocardiography. Thoracic organ transplantation teaching is normally delivered as a part of cardiothoracic anaesthesia advanced training. However, there are six thoracic organ transplant centres in the UK. Training in this area mandates peri-operative echocardiography expertise and cardiothoracic intensive care experience.

How to build your CV for a job in transplant anaesthesia

Trainees who have a developed interest in transplant anaesthesia are encouraged to join specialist societies and attend their meetings (e.g. [European Society of Organ Transplantation](#) (ESOT), [International Society for Heart and Lung Transplantation](#) (ISHLT)). These offer an insight into the future of such work as these meetings debate the frontiers of transplant medicine. Training in peri-operative transoesophageal echocardiography as well as accreditation by either the [British Society of Echocardiography](#) (BSE) or [European Association of Cardiothoracic Anaesthetists](#) (EACTA) has been mandatory for cardiothoracic anaesthetists, and in recent years transoesophageal skills have also become important in liver transplantation. Extracorporeal membrane oxygenation (ECMO) support for recipients pre-, intra-, and postoperatively is becoming more common, and hence many trainees interested in a transplant career are now attending ECMO courses as well as international meetings (e.g. [Extracorporeal Life Support Organisation](#) (ELSO), EuroELSO). Finally, research into organ perfusion for donors is expanding, and some anaesthetists choose to be involved in research projects. Trainees wishing to declare an interest in transplant anaesthesia when searching for consultant appointments often join the organ donor register as the ultimate declaration that they themselves believe in transplant medicine.

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Trauma

Trauma is injury caused by the transfer of physical energy to the body from an outside force. Trauma mechanisms include blunt and penetrating kinetic energy, pressure and thermal energies. Major trauma can be defined as multiple, serious injuries that could result in disability or death. It is the leading cause of death in people under the age of 45, a significant cause of long-term morbidity and an important public health problem [1].

In 2012, 27 regional major trauma networks were established in England, based on the London Trauma System model. Each network consists of a major trauma centre, trauma units and local emergency hospitals [2]. Patients with the most severe injuries are taken directly to a major trauma centre, which have consultant-led multidisciplinary trauma teams and the facilities to provide massive transfusion and immediate access to operating theatres or interventional radiology for emergency procedures. Patients with less severe injuries are taken to trauma units, which lack tertiary services such as neurosurgery or cardiothoracic surgery, but are capable of treating and stabilising patients for onward transfer to the major trauma centre. Local emergency hospitals provide general accident and emergency services, but do not have the facilities for receiving patients with major trauma. The major trauma networks continue to develop, but the reorganisation of trauma care provision has improved patient outcomes.

There are many opportunities for anaesthetists in trauma care and the nature of the injuries you will manage are dependent on where in the network you work and, to a certain degree, which network. A consultant anaesthetist with an interest in trauma and resuscitation working in a major trauma centre is a true generalist. They must be able to manage patients of all ages, from highly fit athletes to those with multiple comorbidities, with injuries to any part of the body, which are regularly immediately life-threatening. Major trauma patients can require procedures ranging from fracture manipulation in the emergency department to emergency thoracotomies, laparotomies and craniectomies, under time pressure, often in changing circumstances and with incomplete information. In addition to the acute work, major trauma patients often have repeat visits to theatre for reconstructive surgery, and there is the opportunity to build rapport individually, and as a department, with injured people. Interested individuals may also have a role in developing major incident pathways within theatres or the hospital. Pre-hospital emergency medicine (PHEM) is now a recognised subspecialty and, for those who lead the major trauma centre teams, a new subspecialty of trauma resuscitation anaesthesia is developing [3].

The major trauma anaesthetist must be an expert in damage control resuscitation, management of major haemorrhage and resuscitation, sedation and analgesia, transfer of unstable patients and familiar with working in remote sites, interventional radiology and theatre. There is no particular personality 'type' for trauma, with consultants maintaining a variety of other interests inside and outside the hospital; however, excellent interpersonal skills are necessary to work effectively with many multidisciplinary teams in both the acute and ongoing phases. A typical job plan might include some vascular work, orthopaedic or plastic trauma sessions, as well as some less intense lists, in addition to the major trauma on-call role.

Anaesthetists enjoy a pivotal role in the management of major trauma because they are present for the patient's full acute journey from initial presentation at hospital, to theatre and then on to the intensive care unit and are familiar with working with teams in each area. Postoperatively, in addition to ensuring the patient is alive and pain-free in recovery, anaesthetists have roles in managing difficult conversations with families and often provide vital contributions to trauma patients' ongoing medical management. There are also opportunities to take on education and governance roles.

We have outlined the many positive aspects of working in trauma care, but these are always topped by the satisfaction of seeing patients we have looked after walk out of hospital. However, before committing to this career path, consideration of the potential downsides is wise. Trauma care is unpredictable in nature and on-call work can often be busy, particularly out of hours and around public holidays - consider how this may work for you in 20-30 years. Additionally, there is inevitably an emotional toll to experiencing other people's tragedies on a daily basis, so a degree of internal resilience and good support networks are useful.

The anaesthetic curriculum and trauma

Obtaining the advanced sign-off for trauma may initially appear daunting, but should be achievable in a trauma fellowship lasting at least six months. 'Mastery' of resuscitative thoracotomy is currently available to a handful of individuals nationwide, and for the purposes of the curriculum can be achieved with a trauma thoracotomy course. Equally the requirement for experience of handling the media can be achieved with online or face-to-face media training, as most doctors will not have the opportunity to face the media directly.

The Certificate of Completion of Training (CCT) curriculum is, at the time of writing, undergoing a substantial review, and it is likely that the advanced trauma module will look very different from 2021 onwards. The new format of three years core training, two years at intermediate level followed by two years of fellowships and the removal of spiral learning components will aid the trauma anaesthetist to complete their training within the CCT programme.



How to develop your CV

Here are some suggestions for how you might demonstrate that you have an interest in trauma and so increase your chances of being short-listed for a consultant post with a commitment to major trauma:

- Perform a relevant quality improvement project. There are many possibilities to review and improve your hospital's practice against published standards of care from the Major Trauma Peer Review or Trauma Audit and Research Network (TARN). TARN data identifies rates of survival and other key indicators, such as use of tranexamic acid and time to intubation data, for your hospital and network hospitals
- Attend a trauma course (or courses). Advanced Trauma Life Support (ATLS) is the traditional course and provides a useful introduction to the language of trauma; however, the course content and structure has not been updated adequately and therefore has become increasingly irrelevant to the current practice of managing trauma cases, particularly in major trauma centres [4]. More recent courses such as Anaesthesia Trauma and Critical Care and European Trauma place more importance on management principles and team-working. Many networks also run simulation-based trauma courses for their staff
- Complete an MSc in Trauma Sciences. Several centres offer courses nationwide enabling you to develop a rounded understanding of trauma principles and the opportunity to complete a high-quality thesis project over 1-2 years
- Undertake training in leadership and/or human factors, as team-working and good communication skills are essential to the provision of safe and effective trauma care
- Complete a paediatric resuscitation course, such as European Paediatric Advanced Life Support (EPALS), Advanced Paediatric Life Support (APLS) or the Association of Anaesthetists' SAFE Paediatrics UK, as these will help your confidence in managing basic emergency paediatric care
- Acute Care Common Stem (ACCS) training or gaining additional general medical experience by working in an acute medicine, accident and emergency or intensive care unit post will help you manage medical problems in the peri-operative period
- Take a fellowship; this could be at a major trauma centre, in PHEM or even abroad in a level 1 trauma centre. Alternatively, time in the developing world demonstrates an ability to practice independently with limited resources. There are some useful resources for organising a year abroad on the Association of Anaesthetists' website
- Obtain training in a skill that is useful in trauma anaesthesia, such as focused transthoracic echocardiography or an interest in regional anaesthesia

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Vascular anaesthesia

Vascular anaesthesia is a dynamic subspecialty often involving urgent surgery in patients with extensive comorbidity. There is overlap with the competencies of the general anaesthetist, and many of the skills overlap with other areas of subspecialisation.

There are three core surgical categories: aortic aneurysm repair, carotid endarterectomy and limb revascularisation, which all pose unique challenges. Increasingly, management can involve interventional radiology, and the vascular anaesthetist will often find themselves in a hybrid theatre, potentially remote from the main theatre complex. Many aortic aneurysms are treated endovascularly and peripheral vascular disease can be managed with ever more complex angiographic techniques.

While limb revascularisation and carotid endarterectomy are usually urgent (for the latter the target is surgery within 2 weeks of index event [1]), aortic surgery is usually elective, with many patients now being identified through the national screening programme [2]. The pre-operative assessment of these patients is usually performed by a vascular anaesthetist, and often includes cardiopulmonary exercise testing (CPET). Vascular anaesthetists are frequently skilled in CPET conduct and interpretation.

Data from CPET and shared decision-making techniques [3] are used to facilitate patient autonomy and choice. Frequently, vascular anaesthetists may use these skills to develop wider roles within the scope of peri-operative medicine. As peri-operative physicians, vascular anaesthetists are skilled in the management of multi-morbidity including diabetes, cardiovascular and pulmonary disease. It is commonplace for an anaesthetist to attend multidisciplinary meetings to contribute toward the management plans.

The multi-morbid patient cohort presenting for vascular surgery dictates the vascular anaesthetist to become expert at a range of skills. Undertaking advanced training will allow you to build a catalogue of cases and learn the required skill set.

Anaesthesia may involve general, neuraxial or peripheral nerve blockade, either alone or in combination. Often the most difficult decision is opting for the technique(s) that will cause the least harm, frequently in patients who are septic and/or anticoagulated. Discussion with anaesthetic colleagues and the operating surgeon and/or interventional radiologist is invaluable. Having good communication skills are key.

Surgery to the aortic arch or carotid artery often involves enhanced monitoring techniques for cerebral perfusion such as near-infrared spectroscopy. The vascular anaesthetist should have good ultrasound skills in order to establish invasive vascular access, which is frequently a necessity for surgery. Skills in ultrasound are also useful for peripheral nerve blocks. Vascular anaesthetists should be confident with brachial plexus, cervical plexus, femoral and sciatic blocks. Substantial blood loss is commonplace, thus vascular anaesthetists must be expert in massive transfusion, cell salvage and point-of-care coagulation test interpretation. Postoperatively many patients require level 2 care and some intensive care medicine training is of great benefit.

Summary of the common skill set of a vascular anaesthetist

- Good communication skills with patients and the wider multidisciplinary team to facilitate shared decision-making
- Understanding indications for and interpreting results of investigations such as echocardiogram, ECG, pulmonary function, advanced cardiac imaging and CPET
- Confidence with neuraxial anaesthesia and regional blocks
- Establishing and using invasive monitoring
- Management of major haemorrhage
- Maintenance of body temperature
- Assessment and preservation of cerebral perfusion
- Management of aortic cross clamping and un-cross clamping
- Use and interpretation of point-of-care coagulation testing
- Management of anticoagulation and antiplatelet drugs
- Management of vasoactive agents, with haemodynamic optimisation
- Peri-operative management and optimisation of chronic medical conditions such as diabetes, hypertension, anaemia and smoking
- Postoperative intensive and high-dependency care
- Overlap with cardiac anaesthesia if working in a centre managing thoracic aortic aneurysms



What are the advantages and disadvantages of vascular anaesthesia?

Advantages

- Wide range of practical procedures with varied types of anaesthesia
- Incorporate skills of a peri-operative physician including performing and interpreting CPET
- Multidisciplinary team-working
- Overlap with intensive care skill set
- Many transferable skills to other 'general' subspecialties
- Emergency vascular anaesthesia can involve the sickest patients, which is both challenging and rewarding

Disadvantages

- High-risk patient population
- Patients burdened with substantial comorbid disease
- Prolonged cases
- Isolation in remote sites for interventional radiology cases

How to build your CV for a career in vascular anaesthesia?

Training in vascular anaesthesia can be done from intermediate level as an optional module to gain experience in the specialty. Thereafter, undertaking higher and advanced training will ensure you meet the person specification for a consultant post with a specialist interest in vascular anaesthesia.

Quality improvement projects and audits are another good thing to add to your CV. There are many areas of the patient pathway that open themselves up to quality improvement, from pre-admission to intra-operative management and post-procedure care. Ask yourself: is there anything that could be improved in this process? Can we make patients safer by adapting the way we practice, however big or small the change may be? Talk to vascular anaesthetists in your department and look at national guidance such as that produced by the RCoA [4], [NCEPOD](#) and [Vascular Society](#) for inspiration.

Ask the vascular anaesthetists in your department if there are any local guidelines that need writing or updating. This is an excellent way to demonstrate service development and patient safety. If your hospital does not perform vascular surgery, there will be a regional hub into which patients are transferred.

Look out for any locally run courses in peri-operative medicine and those pertaining to the aforementioned skill set required of a vascular anaesthetist. Nationally, look out for courses run by the [Vascular Anaesthesia Society of Great Britain and Ireland](#) (VASGBI) and the [Perioperative Exercise Testing & Training Society](#) (POETTS).

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Overseas training



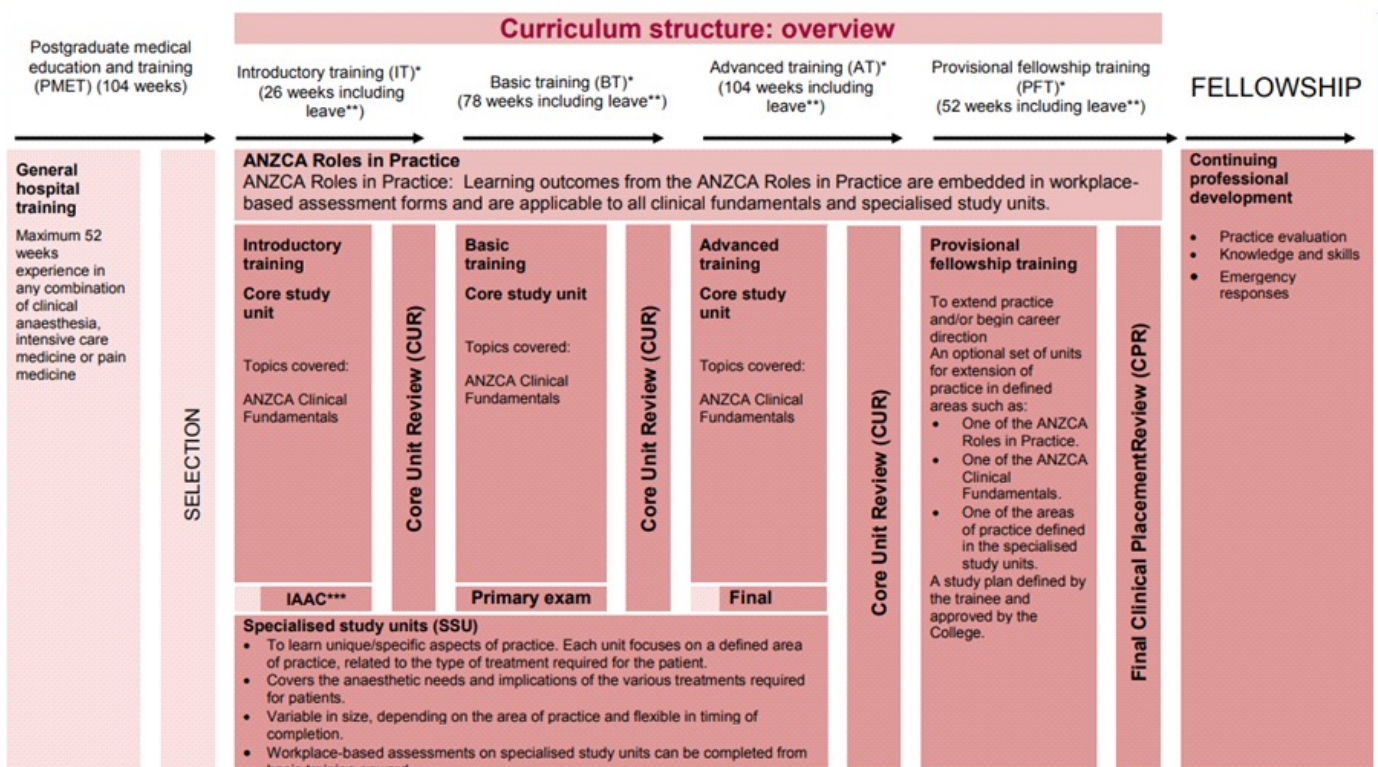
Australia and the Trainee Members Group

The Trainee Members Group (TMG) is the representative body for anaesthetists in training within the Australian Society of Anaesthetists. Our aims are to support, represent and educate trainee anaesthetists, and to provide an official independent voice for trainees. Our committee comprises two trainee representatives from each state/territory in Australia and a national Chair. Collectively, we act as a voice for Australian trainees at state and national levels both within the Australian Society of Anaesthetists and in dealing with other trainee bodies, such as the New Zealand Society of Anaesthetists (NZSA), the Australian and New Zealand College of Anaesthetists (ANZCA) Trainee Committee, and the Australian Medical Association (AMA) Council of Doctors in Training. Our activities include advocacy on issues affecting trainees, running courses for trainees, co-ordinating trainee scholarships, and ensuring regular communication with our members.

Anaesthesia training in Australia

Anaesthesia training in Australia and New Zealand is well-regarded locally and internationally. The body responsible for education, training and continuing professional development is ANZCA. Although all ANZCA trainees rotate through intensive care for a minimum of 3 months, the College of Intensive Care Medicine (CICM) is a separate and independent college with its own training programme and trainees.

There are undergraduate and graduate basic medical degrees with varying models in Australia - traditionally these have resulted in a Bachelor of Medicine and Bachelor of Surgery (MBBS); however, in recent years, there has been a trend towards Doctor of Medicine (MD) courses. The first 12 months of postgraduate training is spent as an intern and is hospital based, with mandatory rotations through medicine, surgery and emergency medicine. A further 12 months of pre-vocational medical education and training is required before commencing approved training in anaesthesia. This is typically undertaken as a resident medical officer or hospital medical officer. Many trainees complete more than the minimum two years of postgraduate resident years, and it is increasingly common to undertake a year or two as an anaesthetic or critical care resident before entering the anaesthetic training programme - especially given the large increase in numbers of graduating medical students over the last 5-10 years.



*Introductory training (IT) comprises of a minimum 26 weeks including a maximum 3 weeks leave; basic training (BT) comprises a minimum 78 weeks including a maximum of 16 weeks leave for introductory training plus basic training combined; advanced training comprises a minimum 104 weeks including a maximum of 16 weeks leave; provisional fellowship training (PFT) comprises a minimum 52 weeks including a maximum of 8 weeks leave.

Leave is defined as annual leave, sick leave, parental leave or study and examination leave. *IAAC = initial assessment of anaesthetic competence: sign-off will normally be undertaken during the last four weeks of introductory training, however may be undertaken after 13 weeks if the supervisor of training has assessed and approved recent anaesthetic experience (RAE). RAE = recent anaesthetic experience: defined as full-time anaesthetic experience in the 52 weeks prior to the commencement of introductory training and approved for this purpose by the supervisor of training (SOT).



Anaesthesia training requires a minimum of five years and comprises six months introductory training and 18 months basic training, two years advanced training and one provisional fellowship year. It is not uncommon to undertake further fellowship time after this. There are two major examinations: the Primary exam, undertaken during basic training, and the Final exam, which can be sat after completing at least six months of advanced training.

The Primary exam covers applied physiology, pharmacology, anatomy, measurement, equipment, and quality and safety. The exam comprises a written paper (MCQ and SAQ), followed, for those achieving an adequate score, by three 20 minute viva sessions. This is commonly seen as the main barrier to progression through training and has historically had a pass rate approximating 60%.

The Final exam comprises MCQ and SAQ papers and two medical vivas, followed, if successful, by eight anaesthetic vivas. This exam focuses on practical integration and application of knowledge in clinical practice. Both exams have two sittings a year.

There are 12 specialised study units that must be completed during training and a number of workplace-based assessments for each training period, in addition to minimum volume of practice requirements. There is a set of mandatory scholar role activities, such as undertaking an audit and attending quality assurance meetings.

Working in Australia during your anaesthetic training: why go?

Many trainees make the journey from the UK or Ireland to Australia during their training and most training schemes in Australia have UK/Irish trainees working within them. There are a wide variety of reasons to spend time in Australia. Motivations are often multifactorial and include new and unique experiences, CV buffing, change of scenery, weather and lifestyle.

A common theme is the increasingly competitive job market. Work experience in a different country can demonstrate that you have the initiative to undertake and follow through with the big task of moving countries, welcoming change and being able to adapt and adjust to a new environment, people and culture. In addition, being exposed to new healthcare systems may provide you with valuable insights into alternative organisational and managerial approaches to training and service provision. From a clinical perspective, you should ensure that the fellowship covers something you have not already done at fellowship level - there are a number of regional anaesthesia fellowships and peri-operative medicine fellowships, for example.

There is no need to look exclusively towards the anaesthetic departments of the 'flagship hospitals' - these are big and tend to be similar to the hospitals with which you are accustomed. There is the option of working in regional and remote Australia where the work is challenging and the tyranny of distance that plagues Aussie medicine can be appreciated. Being immersed in a regional community can be a very rewarding experience and a real change to urban medicine. The medical retrieval networks within Australia are also very well organised and equipped to accept overseas trainees. Just make sure that any department you work in is accredited by ANZCA so you know it is suitably supervised.

Urban Australia is much like the UK - similar culture, language, etc. There are links between some centres in the UK/Ireland and Australia, and you most likely have colleagues who have been to Australia previously. Australian cities and states are often dissimilar, though, and vary in terms of their regulations, pay, conditions and climates. In general, pay is greater than in other countries.

It is also worth noting that not all parts of Australia offer the iconic beach lifestyle for which we are known. Of the cities, Melbourne is probably the most similar to European cities. It has abundant good coffee and a cosmopolitan buzz, but is not as warm as the more northern states. Western Australia, Queensland and New South Wales probably have the best sun and beach lifestyles on offer, if that is what attracted your attention.

Australia is a great place to travel to with a family. Fellows who come with families can often arrange to put kids in playgroups and settle into the community. Organising childcare can be difficult and waiting lists can exist in some centres. It is sensible to enquire beforehand, once you know where you might choose to live. Finding a house to live in once you get here can take some time - allow three to four weeks. There are limited furnished properties, with most rentals being unfurnished. You may be able to find accommodation or advice through the [Fellowship Life Transplant Services Facebook group](#)

Pay and cost of living

Australian trainees are paid according to their hours rather than a set salary. The number of hours is based around a standard fortnight, which varies between states but is usually around a 38- or 43-hour week over the fortnightly cycle. Compared to



the UK, there are similar clinical hours, which vary with the position, but you may also get paid non-clinical or training time. There are some extra perks, such as salary packaging (tax offsetting), which can increase your real income quite substantially. Going out to dinner, coffee or having a car here can be cheaper than in the UK, but previous trainees have found their weekly shopping more expensive.

Organising a year in Australia

There will be a lot of paperwork and it is expensive. An approximate figure is £1000 (in paperwork alone), which covers application fees, credentialing, witnessing of documents, etc – allow at least six months for this process.

- **When do you want to come?**
Australians have a provisional fellowship year in their final year of training, designated advance training year 3. For UK trainees, you should probably be at ST5 level or above. The Australian academic year runs from January or February through the calendar year. Many postings in Australia can work on six-month rotations, so a start date in July or August may be possible.
- **Which state do you want to go to? Which city? Which hospital?**
You will need a 'sponsorship contract' before you can get a visa. Contact the medical workforce unit at the hospital you want to work at early.
- **Australian Medical Council**
Overseas trained doctors must be credentialed with the Australian Medical Council to practice as a medical practitioner in Australia. This can be complicated, expensive and time-consuming. You will need lots of copies of forms and credentials, which may have to be sent backwards and forwards to the UK for verification. Allow about 12 months for this process, which can all be completed before you have a confirmed job.
- **Medical registration**
There is now a single national medical board. This makes things a little easier if you plan to work in more than one place, as previously each state/territory had a different medical practitioner's board.
- **English certification**
English competency is required. There is an exam, although exemptions from sitting this may be granted for those from English-speaking countries. For this, you need to be able to prove your GCSE in English.
- **Medical indemnity cover**
This can be obtained once you get here, and some have noted that it may be (much) cheaper in Australia than the UK or Ireland.
- **Finances**
It is recommended that you see an Australian accountant soon after you get here to facilitate your tax return, maximise tax deductions and advise on salary packaging advantages.
- **Training time**
For some fellowships in Australia, it may be possible to get recognition towards UK training time if organised and signed off well in advance. You will need to check this though.

Many UK trainees have been to Australia before you and so this may make the transition process smoother. In some places, hospital administration and human resources staff will be familiar with the processes required and may be able to advise you.

Broadening your experience can be valuable both personally and professionally. Australia is well-known for its laid-back attitude, sporting culture, outback centre and urban coast. There are many reasons to come as a trainee and it is understandably a popular destination.

Useful resources

- [Australian Society of Anaesthetists TMG](#)
- [ANZCA Training](#)
- [Medical Board of Australia](#)

Richard Seglenieks

Australian Society of Anaesthetists TMG Chair



Canada

Canada has a population of 37 million, spread across a geographical area of 3.9 million miles. In contrast, the UK population is 66 million across an area of 95,000 miles. Equity of access to healthcare in remote and rural areas remains a challenge, particularly for First Nation communities, with the provision of anaesthetic services being no exception. Canada is an extremely multicultural country, one-fifth of the population being foreign-born, with most immigrants arriving from Asia, and more recently Africa, the Caribbean and Central and South America.

Canada has 10 provinces and three territories, with a [publicly funded healthcare system](#) provided in each province and territory through separate health insurance plans instead of a single national plan. All Canadian residents should have free access to medically necessary hospital and physician services; however, this does not include out-of-hospital dental, prescriptions, vision care, ambulance services, and home care, which can be costly if not covered by private insurance plans.

In 2018, the male : female ratio of practising anaesthesiologists in Canada was 67 : 33, with the majority of consultant anaesthesiologists (usually referred to as 'staff' or 'attendings') working in academic centres and community hospitals (in UK terms, teaching vs. district general hospital). Although the healthcare system is publicly funded, attending doctors in Canada are remunerated through a 'fee for service' model by their provincial government. The average annual gross fee for service in 2017 was reported as Can\$370,000 (£211,000) for an anaesthesiologist; however, this is extremely variable depending on province, centre/hospital and hours worked. Although such an income is markedly higher than what we would expect in the UK, attending doctors in Canada are deemed to be 'self-employed', therefore there is no paid maternity/paternity/adoption/sick leave and no statutory pension.

There are currently 17 universities across Canada providing accredited anaesthetic training programmes. Typically, a Canadian applicant would apply in their final year of medical school through the Canadian Resident Matching Service ([CaRMS](#)), which places residents in training programmes according to resident and programme rank order lists and availability. A successful applicant would go straight into year 1 of their chosen specialty (no Foundation or House Officer years!). Graduating students from international medical schools can [apply for residency training](#) through this system, as long as specific eligibility criteria are met. Applicants who are not matched with a training programme during the first round of matching will go through a second round, with the aim of placing all applicants and filling all posts. There are [fees](#) associated with the application process, which commences in September of the year prior to training commencement.

Each province has different [resident salaries](#) (generally Can\$50–60,000 (£28,510–£34,212) in year 1, incrementing up to Can\$70–80,000 (£39,914–£45,614) in year 5), and variable associated benefits (e.g. maternity leave, dental plans and extended health insurance). Training in anaesthesia is usually five years duration and regulated by the [Royal College of Physicians and Surgeons of Canada](#) (RCPSC), using the recently initiated 'Competence by Design'. Trainees receive competency-based teaching mapped to the [anaesthesia curriculum](#), and are assessed at different stages of training through the performance of entrustable professional activities and gaining of milestones. This is not dissimilar to the workplace-based assessment system used in the UK. Residents sit their RCPSC anaesthesiology examination in the fifth and final year of training: a written paper comprising MCQs and SAQs in early spring; and an oral examination in early summer. Written examination results are not available prior to taking the oral component and both parts of the examination must be passed for success. Failure to pass one part unfortunately means re-sitting both parts the next year. Many final year residents have organised subsequent attending positions, which are dependent on passing the exam, required for the granting of an independent practice license. The final year is generally very stressful for this reason. A good study group, support from the training programme and plenty of practice, are key!

Fellowships in anaesthesia are generally 1–2 years in duration at academic hospitals and can sometimes be extended. They are usually designed for those who have completed their anaesthesia training and wish to gain additional generalist or subspecialty experience. Examples include cardiothoracic, transplant, obstetrics, regional, paediatric, hepatobiliary, advanced clinical practice/general clinical, trauma, neuroanaesthesia, peri-operative medicine, simulation and pain medicine. Fellowships are an excellent opportunity to develop specific skills (e.g. peri-operative ultrasound) and undertake research, teaching and other academic projects. The key to success is organisation and development of an academic plan prior to commencing your post (or even prior to interview). It can take many months to settle into a new country, home and job. Identifying supervisors and projects and devising and initiating an academic plan at this time can be difficult, and may take longer than you think.

To find out what fellowships are available and when, a good starting point is this [excellent resource](#) from the Canadian Anesthesiologists' Society. Simply searching 'anaesthesia fellowships Canada' on your preferred search engine also yields a large amount of information and contacts. Application deadlines for fellowships across Canada are variable, but generally, you should apply around 1–3 years in advance. You will need at least 6 months to gain the necessary paperwork to allow for the required work permit, medical licence and registration with the corresponding university. Through this process, you will require a medical examination, proof of vaccination status, a criminal record check either before or on arrival in Canada



and to provide notarised copies of various documents (medical degree, Certificate of Completion of Training (CCT)) and certificates of good standing from every country/province in which you have worked. You should be guided through this by your department and the postgraduate medical education (PGME) department of the university; however, asking previous and current fellows for advice is also extremely useful.

There is no uniform Canadian medical licence; therefore each province has its own application and licensure process for fellows. It is not unusual, despite best intentions, for licensure to be delayed, and many fellows (myself included!) have been unable to start clinical work on time. Generally, this will not come as a surprise to your department, who will likely have a back-up plan in place, and may invite you to observe and/or undertake academic work until your licence is active.

Don't be shy to contact your department and previous/current fellows for advice on anything related to your fellowship, including expectations of call schedule, potential for less than-full-time training, immigration, rental advice, finding a GP, childcare and vacation. Most fellows, having been through the process, are only too happy to help. Look for fellowship forums, pages or contacts on social media (e.g. Facebook and Twitter) and ask if there is a WhatsApp group of fellows at your centre that you can join.

Although undertaking a fellowship has many clinical, personal and academic benefits, be aware that it is an expensive process initially, and you should be prepared to take a pay cut. Anaesthesia fellowship salaries vary greatly depending on hospital and province but are generally around \$70-100,000 (£39,922-£57,032) per year before tax. There is also (surprise surprise!) no European Working Time Directive (EWTD) in Canada, so you may find that your call shifts are 24 hours and may be as frequent as 1:3.

Most fellows come to Canada to gain experience, boost their CV, travel, make new friends and return home; however, many (myself included!) don't quite make it home. Sometimes one year turns into two, two turns into three, and before you know it, you realise you want to stay. Equally, some arrive in Canada with the intention of staying. This can be a complicated (and expensive) process, but manageable with organisation, advice from others who have paved the way and support from your current or future department. It is helpful to decide early whether you wish to practise in an academic or community setting so that you can begin conversations and planning early. Many academic centres prefer you to have completed, or be in the process of completing, higher training, usually in the form of a Masters degree or PhD.

There are different routes for gaining licensure allowing you to practice as an attending anaesthesiologist, and it varies between provinces. Independent practice licensure (which allows you the freedom to work anywhere in your province of choice) requires that you undertake the RCPSC anaesthesiology examination, and in some provinces the [Licentiate of the Medical Council of Canada](#) examination - those old medical school notes may come in handy. Restricted licensure can be offered to those who have not yet undertaken all the necessary examinations, but have been deemed eligible for examination. To gain a permanent job in Canada, you will also need [permanent resident](#) status, which can be applied for through the Department of Immigration, Refugees and Citizenship Canada. Be aware that an English examination is mandatory as part of this process.

To undertake the RCPSC anaesthesiology examination, you will require your UK training to be accredited to ensure your training has been completed and is substantially equivalent to Canadian training. This is an expensive process, and from the time of granting accreditation you will have three years and three attempts to complete the examination.

Undertaking anaesthesia training in Canada is a great way to enhance your clinical and academic skills, broaden your horizons, make new friends or just take a year or two to figure out your life plan. However, it can be a complicated and stressful process initially, with some costs involved. My advice would be to do your research, make a clinical/academic plan early, keep in touch with your department and the PGME throughout the application and licensure/immigration process, contact previous/current fellows, and don't be afraid to ask for help.

Oh, and most importantly, make sure you get a good winter coat!

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New Zealand

New Zealand (or Aotearoa - Maori for 'Land of the long white cloud') may be a little country but it has a lot to offer. It has the benefits of an established and well-resourced public health system as well as a fantastic lifestyle with good work-life balance.

In most cities and towns you are always within a short drive of beautiful beaches, snow-capped mountains and regional parks where you can explore this land of hidden treasures and unspoilt beauty. New Zealand's urban centres have all the excitement and convenience you would expect from a thriving city: fabulous food festivals, shopping, arts and culture, sports, museums and everything in between.

Many overseas health professionals, who have come across to New Zealand, have chosen to make this their home. New Zealand has a truly multicultural society where everybody is welcome, and our workforce reflects this amazing diversity; here knowledge and skills are openly shared and gained.

The [New Zealand Society of Anaesthetists](#) (NZSA) is the New Zealand equivalent of the Association of Anaesthetists and is a membership-based organisation that has supported and represented the interests of anaesthetists in New Zealand since its inception in 1948. Its tasks include advocacy, supporting research, political representation and overseas aid work.

Overview of anaesthetic training in New Zealand

There are four anaesthesia training rotations in New Zealand - Northern, Midland, Central and Southern. Commencing training involves two initial tasks: getting an anaesthetic resident medical officer position with one of the 20 district health boards (DHBs) in an accredited hospital, and registering with the [Australian and New Zealand College of Anaesthetists](#) (ANZCA) which administers training. Please note that not all hospitals are accredited for training by ANZCA - see link at end.

It is usual to have completed two years of Prevocational Medical Education and Training (PMET) and have secured a job in an ANZCA-accredited hospital before registering with ANZCA. However, applying to ANZCA after only one year of PMET is acceptable and this can streamline the registration process and allows access to some online resources prior to registration.

In New Zealand, there are no 'non-training jobs' for registrars, but there are some for senior house officers. Junior registrars in New Zealand are the equivalent of more senior core trainees in the UK/Ireland, and it is possible to become a junior registrar as early as in the third postgraduate year.

Anaesthesia specialisation consists of a minimum of five years of supervised training, which is divided into four periods:

- Introductory training (26 weeks/6 months)
- Basic training (78 weeks/18 months)
- Advanced training (104 weeks/2 years)
- Provisional Fellowship (52 weeks/1 year)

After the initial six months of introductory training, a formal sign off is required (Initial Assessment of Anaesthetic Competence) before passing onto less supervised practice. The Primary exam needs to be completed prior to commencing advanced training and the Final exam must be completed before you can move onto a provisional fellow position. Your 'letters' are only awarded at the end of training and not immediately after completion of the Final exam.

The curriculum is based around the completion of a number of competencies that have to be achieved to complete training, as well as completing five years of recognised training time as described above. These competencies can be broadly classified as relating to one of three areas:

1. ANZCA Roles in Practice - abilities and attitudes that you are to develop during training. There are seven roles based on the CanMeds approach, which is a framework that describes the abilities a physician requires to provide effective medical care. Examples include medical expert, communicator, health advocate and scholar.
2. ANZCA Clinical Fundamentals - these are clinical skills and knowledge that are required of anaesthetists across all areas of anaesthesia. Examples include airway management, general anaesthesia and sedation, and resuscitation.
3. Specialised Study Units - skills and knowledge relating to subspecialty areas of anaesthesia, such as obstetrics, paediatrics or cardiac.

Each of the Roles in Practice, Clinical Fundamentals, and Specialised Study Unit areas has a list of requirements associated with it that must be met during training. These include formative and summative assessments such as workplace-based assessments, mini-clinical examinations, case-based discussions, and volumes of practice.



Progression through the training years also requires a number of core unit reviews, clinical performance reviews, as well as exam completion. Trainees keep track of their training progression and log cases on the online training portfolio system.

Getting overseas time accredited

If applying part way through training in the UK/Ireland, some training time may be accredited. Completion of the RCoA Primary exam does not exempt you from sitting the ANZCA Primary. However, completion of the RCoA Primary and Final exams may allow exemption from the ANZCA Primary but not the Final. Completion of all UK training requirements allows registration in New Zealand as a Specialist, usually requiring an interview with the Medical Council and ANZCA.

It would be advisable to apply and register with ANZCA prior to starting your position in New Zealand. This will allow you to get any retrospective time accredited and will mean you will not commence your time in New Zealand in introductory training. Check out the [ANZCA website](#) for further information.

Benefits of training in New Zealand

Rostering practices and supervision are generally very good within the New Zealand anaesthesia fraternity, with some variation from department to department. The vast majority of trainees will be granted leave as requested, but with the priority being for courses and exams. The majority of consultants are approachable, keen to teach and supportive of trainees. The operating theatre environment is welcoming and there are no steep hierarchical boundaries in communication between anaesthetists, nurses or other allied health staff.

Currently DHBs employ junior doctors under the Multi-Employer Collective Agreement (MECA), which is negotiated between the [Resident Doctors Association](#) (RDA), our union and the DHBs. Although 98% of the junior doctor workforce is RDA members, it is not compulsory to join. Non-RDA members retain the option of negotiating their own contract with individual DHBs.

In its current form, the MECA entitles junior doctors, including those on a work visa, to the following:

- Paid meals while on duty
- 30 days annual leave
- Full reimbursement of the cost of your Annual Practising Certificate from the Medical Council
- Full reimbursement of annual medical indemnity insurance fee
- 12 weeks of paid study leave for the duration of your specialty training
- Full reimbursement of all costs of specialty training (textbooks, college fees, exam fees, course fees, travel and accommodation for courses/exams)

Salaries are competitive and are based on a set amount rather than on hours worked, which is detailed in the MECA contract. This is based on where you work, with different urban and rural rates, and according to seniority by postgraduate years. Annual salary progression is built into the contract and increases each hospital year. Additional un-rostered duties, such as if a colleague is sick or away on unexpected leave, are paid at an additional rate.

Although medical indemnity insurance is compulsory, annual fees (which are reimbursed by the DHBs) are kept low by New Zealand legislation that prevents patients from taking direct legal action against medical practitioners. Cases of medical negligence are referred to the Health and Disability Commission and recommendations may range from an apology to being struck off the Medical Register. Affected patients are classified as having a 'treatment injury' and their care will be handled by the Accident and Compensation Corporation, a government agency that provides comprehensive, no-fault injury cover. Criminal practice will attract the attention of the police.

When to apply for a job

The working year in New Zealand starts in the final week of November for interns, house officers and senior house officers, and two weeks later (early December) for registrars. Jobs for the next working year are usually advertised in April or May, although many departments welcome enquiries throughout the year. Applications are made to individual DHBs, but be aware that not all anaesthetic departments in New Zealand are accredited for training by ANZCA.

Registration

To practise as a doctor in New Zealand you will require a Practising Certificate from the [Medical Council of New Zealand](#) (MCNZ). Graduates of medical schools accredited by the GMC or Irish Medical Council will be eligible for registration after their FY1 or intern year spent working under the jurisdiction of that Council. Doctors without UK/Irish medical degrees who



have worked for three of the last four years in the UK/Ireland and have full (unconditional) registration with the GMC or Irish Medical Council will usually also be eligible. The 'provisional general scope of practice' registration category that is awarded to the two groups above allows entry into vocational training in anaesthesia in New Zealand. Some applicants may need to sit an English test depending on their background. For more information and to register, contact the MCNZ.

Work visas

To work in New Zealand requires a visa, and there are a number of different visas depending on whether residency is planned as permanent or on a temporary basis. These are issued by the [New Zealand Immigration Service](#) and can be obtained by applying to the nearest New Zealand High Commission or Embassy.

To work and live in New Zealand permanently, an application under the Skilled Migrant Category could be appropriate and many doctors come to New Zealand as skilled migrants. The Work-to-Residence visa allows application for a temporary work visa as a step towards gaining permanent residence. Alternatively, if you are planning to work temporarily in New Zealand, a work visa is all that is required. For more information about the requirements needed, go to the Immigration [New Zealand website](#).

Coming to New Zealand from the UK and Ireland can be a daunting process for many as it is about as far as you can travel from home! However, there have been many who have made the journey and loved the adventure, experiencing a new place and culture, broadening their skills and have made many new friends along the way. So don't let the distance stop you, the summers here are long, the winters mild (relatively speaking) and there really is no place quite like it.

Kia ora!

Useful resources

- To view the list of accredited departments, go to <http://www.anzca.edu.au/training/rotations-and-training-sites/new-zealand-hospitals>
- Health Careers. Contact details can be found at www.healthcareers.org.nz/rmo under the 'RMOs apply now' tab

Ghassan Talab

Trainee Representative

New Zealand Society of Anaesthetists





The consultant post



The consultant post

In general, there are two main approaches to securing a consultant post: going for your dream job or going for a job in your dream location. Ideally, your preparation should begin during training, rather than in ST7 when your Certificate of Completion of Training (CCT) date is looming. Each approach requires dedication and a time commitment similar to that of revising for a professional exam.

Going for your dream job

This means it's all about the job description and location becomes secondary. You may be more likely to have a specialist interest such as ITU, cardiac, paediatrics or pain. Securing your dream job requires a CV that is bursting at the seams with skills and experience specific to your chosen specialty. It may be more difficult to apply for such posts outside your region of training, as you will often be competing against internal candidates. In this situation, working as a locum consultant or post-CCT fellow within the department may be of significant benefit, providing you with an understanding of how the department functions and what the substantive post may entail. Obtaining a locum consultant job is usually a less formal process, and although this undoubtedly becomes a prolonged audition you are in a strong position by working in the hospital to which you are applying. In addition, applying for a locum post provides invaluable insight into the whole application process before the real deal.

Going for a job in your dream location

This usually means you are more of a generalist and requires a different approach. Your dream location will often be the place of your training, and therefore you will have been on an extended interview over the past five years or more, although you may not have realised this at the time! Existing consultants will have a very definite view on whether they would like you as a colleague, but in order to successfully secure the job, you must ensure you are the best candidate 'for the trust' and the best candidate at interview on the day. In this situation, it may be more difficult to have a 'stand-out CV' from the outset and your approach must address how you can fill a service requirement for that trust. This may come about fortuitously or it may be planned, because you have asked the trust what is happening to service provision over the next few years - the latter is the better approach as most successful appointments solve a problem for the trust.

Regardless of whether you are going for your dream job or dream location, the crucial message is that the application/interview process for a consultant post is unlike any other you will have experienced during your training. Specialist training is about meeting a standard; the consultant interview involves a trust employing an individual for the skills and experience that make them stand out, so your CV must exemplify this. Unfortunately, even if you have been a fantastic trainee, excelled in a locum or post-CCT fellow post and have an appropriate CV, on the day of the interview you may still not be successful. There are two main reasons for this: you may perform suboptimally (which usually means you haven't prepared properly) or the best candidate in the world may apply from out of region (and that's just unlucky!). Below are some tips for putting the most into the application and interview process.

CV

Update your CV early; ideally, 6-12 months ahead of your CCT date because editing may take longer than you first anticipate. This will also enable you to identify and improve any weak sections to an appropriate standard in good time. In addition, your perfect job may be advertised at short notice and you will be eligible for interview six months prior to CCT. Having an updated CV may also save time when completing your application form and can highlight your strengths for pre-interview visits.

Borrow CVs from recently successful candidates to determine the structure, layout and content that appeal to you. We have all done much more than we think and it is essential to present this information in a clear, logical manner that sells your skills appropriately. For a small fee, numerous websites provide detailed advice on structure, formatting and useful descriptive phrases and it may be worth investing if you need help in this area. Ask a few trusted colleagues or friends to proofread your CV, but be realistic about making changes - there will always be improvements suggested and at some point you need to stop! Very few people will scrutinise your CV in intense detail; most will only flick through it, so be mindful of devoting adequate time to the other parts of the application process.

Application form

Most consultant posts are advertised through [NHS Jobs](#) and this website also hosts the online application process. As with your CV, it's worth setting aside adequate time for completion. Start by entering your personal details and employment history (which may well be extensive) and be sure to save your profile. This will prevent you from wasting time and duplication re-entering the same information should you apply for subsequent posts. Otherwise, each individual trust has



a set application form, with a word limit for each section. It may be difficult to fit all your achievements into a particular category, but as far as possible, mention everything relevant to each area even if you have mentioned it in previous sections of the form, because it may only be seen in separate parts by different people during short-listing.

Although a word limit will be specified, there is no limit to spacing allowed. You should therefore layout your answers in a clear and logical format, making the most of your strengths. You can double check your layout by printing out your application form prior to submission to gauge how potential those responsible for short-listing will view it. There can be a huge difference between one continuous paragraph of prose and a bulleted list of your achievements. Crucially, you must relate your application to the person specification of that job and include all essential and desirable criteria that you can legitimately claim to possess.

Pre-interview visits

These can be a daunting prospect, from how to arrange visits to what to say! You need to ask to meet everyone on the panel except the RCoA representative and chair and try to meet as many members of the department as possible. It is sensible and efficient to email those you know and request meetings, while going through the personal assistants of executive board members to make appointments. Often clinical staff will say you don't need to meet them unless you especially feel you need to - this is not a trick and it can be annoying if you then push for an appointment with no real reason. Having questions prepared is useful in case conversation dries up, but as far as possible try to chat naturally. It is much easier to gain a rapport if you are not continuously writing things down during the meeting, but do jot down notes sparingly or immediately after the meeting to remember for the interview. Try to research the person you are meeting (often there is information on the trust website). If there is a presentation to give, this is an important topic to gather opinions on during your visits and can be an easy way to get conversation flowing.

Presentation

Often you may be asked to give a presentation prior to the interview. This is rarely required to be longer than 10 minutes but tends to take up a disproportionate amount of time in terms of your preparation. Although jobs rarely hinge on the presentation, this is the one part of the interview that you can control; practise it and make it perfect. If it goes well, it can generate significant confidence in the less predictable interview. Limit the number of slides and keep them simple (minimal writing). Everyone's presentation skills vary, but practice as many times as possible to ensure a polished delivery and accurate timing.

Interview practice

This is vital. The answers that are best received are those that are patient-centred, so try to think of a few cases and scenarios that have been good and bad and be able to talk about them concisely, as they will often come in handy when your mind is otherwise blank. With adequate preparation, you should also be able to talk about the NHS, management and clinical issues in a simple and believable way that relates to everyday working and always refers back to your CV. This comes across infinitely better than dry descriptions of processes. You are trying to demonstrate that you are not just regurgitating NHS documents you have read, but you understand them and have implemented them in your practice. Again, there are useful websites that offer excellent ways of structuring answers, but you often need a few weeks to work through and get the best out of them.

Although it is by no means essential, some may benefit from attending one of the many consultant interview courses available. These provide additional interview practice and often incorporate a summary of the current political issues and hot topics in the NHS - especially useful for those who have not managed to keep up to date with the many changes that have occurred nationally in recent years. It is most useful to get as much interview practice from consultants as possible and crucially to watch and listen to their responses to certain questions. This can often refresh your own style of answering. Practise in the mirror or car and have useful phrases to discuss any part of your CV in an interesting and natural way.

On the day

Look smart and smile! If you don't understand or know the answer to a question, say so. Bluffing is usually obvious and rarely works. In fact, asking for the question to be repeated or admitting you don't know once in an otherwise good performance can be a likeable quality and demonstrates integrity. Good luck!

Natasha Joshi and Kajan Kamalanathan

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Ten top tips for your first year as a consultant

1. Try to enjoy yourself as you embrace your new role. Some people will take time off before starting, which can be a useful cooling off period. This isn't always possible, but it is worth asking your department lead if this is something you would like to do, as most trusts will try to accommodate your request if possible. When you start, take some time to adjust and think about what responsibilities may suit you. Often members of the department will suggest roles for you and it is important not to overload yourself. Take on anything you are comfortable with, but remember it is also acceptable to concentrate on settling in while indicating that you may be interested in a few months. Remember that you may have ongoing projects that need to be completed before getting involved in something new.
2. Be open-minded. There are some roles you may never have imagined yourself doing while you were training and there are roles that may be perceived as being ones that are given to the 'new recruits' as nobody else wants to do them. Remember that everyone has their niche and you may find that as a consultant you might have a bit more freedom and influence to really make some roles work for you. You can always have a chat with the person who has performed this role previously and then make a decision about whether it suits you.
3. Keep a work diary. Try to start from day 1 and log all clinical AND non-clinical activity. The BMA work diary is widely used, but there are other versions, and it is worth asking colleagues which diary they use. It is a helpful tool for you to record exactly what you are doing and whether you need to ask for exposure to other areas of practice. It is also useful for appraisal/revalidation and future job planning.
4. Check your contract and job plan. It is recommended you have your contract checked by the BMA if you are a member. The BMA and Association of Anaesthetists have published guidance on working as a consultant, which can be easily accessed online.
5. You will revalidate with your final Annual Review of Competence Progression (ARCP), but you must keep up to date with annual appraisals and record all supporting evidence towards these. Most trusts use, or are introducing, an e-Portfolio, and it is easier to become familiar with the system from the beginning. As with the ARCP process, it is stressful if you leave collecting all the necessary evidence until two weeks before your appraisal.
6. Ask for help. You may well find you are asking more questions in your first few months as a consultant than when you were finishing your training. This is normal as you settle into your new role and/or new department. It is expected that you will continue to take advice or need an extra pair of hands on occasion. During the initial period of joining the on-call rota, colleagues will often offer to be available for help with difficult decisions. Most are happy to be called out of hours for advice too.
7. Get to know the department, especially the secretaries, as they will be organising your work life for the next 30 plus years! Early on is when you can easily introduce yourself to new faces, but after some time it can get embarrassing when you can't remember names. It is good to try and make an effort to meet all your co-workers and participate in departmental social occasions.
8. Book away days. These are an excellent way to get to know colleagues better and dates are planned well in advance requiring leave applications. They tend to cover a large proportion of essential training, and therefore will keep you up to date with what the trust feels is important knowledge.
9. You will have to work with trainees who you will potentially know well. In fact, due to people undertaking fellowships, sickness and flexible training you may find yourself with a trainee who actually used to be more senior to you, which can sometimes lead to difficulty. You must remember you are the consultant and the best thing to do is chat at the start of the day about what you're happy for them to do. Usually they will be quite senior and will be able to manage most things with you there as backup.
10. Don't get rid of your interview paperwork and preparation. It is always useful to hang on to these things for several reasons. It is unusual for consultants to move jobs, but it does happen occasionally, especially for family reasons. Future colleagues may greatly appreciate your advice and insights, and you may one day be invited to write an article on the process of becoming a new consultant!

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Academic anaesthesia



Getting started in research

Anaesthesia, pain and intensive care medicine are specialties in which instant results are often sought: administer some vasopressor to increase the blood pressure; modify ventilatory parameters to improve gas exchange; inject a local anaesthetic to anaesthetise an area of the body. However, there remains much to be said for investment into something that takes time and effort to obtain a more sustained equally gratifying result. This investment can take the form of research, where the outputs not only last for far longer than a single patient episode but can lead to a wealth of opportunities. Getting involved in research transcends the hunt for CV points to secure the best job you can in a full market. What you will potentially gain from this participation includes:

- Learning analytical skills that can help guide your own and others' evidence-based practice
- Project management skills
- Learning from, working with and developing friendships with a diverse group of colleagues
- True expertise in a particular field
- Developing the academic base of our specialty
- Improvements in the quality of care for patients beyond your own; and
- Having fun!

There was a time that research was engrained in anaesthetic training; when all senior registrars needed to be involved in multiple published studies to get a job; when all teaching hospitals were recruiting to multiple clinical trials; and when all consultants had a wealth of research experience. Anaesthesia was a specialty built upon academia. For a variety of reasons, these days petered out, and academic anaesthesia became the preserve of a few. Indeed, there were predictions just 12 years ago that there would no longer be any publications from UK anaesthesia by 2020 and the specialty would become one of solely service provision.

Fortunately, this crisis was faced head-on by our specialty and the demise appears to have been, to a certain extent, reversed. The Department of Health set up the [National Institute for Health Research](#) (NIHR) with ring-fenced funding for health research, and our own specialty founded the [National Institute for Academic Anaesthesia](#) (NIAA). This body brings together key stakeholder organisations, such as the Association of Anaesthetists, the RCoA, the journals *Anaesthesia* and the *British Journal of Anaesthesia*, and many subspecialty organisations, to support, develop, and fund research deemed of value to our specialty and our patients. Similarly, trainee networks have been forged to crowd-source grassroots research and inspire a generation of trainees. This concept has spanned beyond regions and specialties, and represents the envy of other nations. The reach of academic anaesthesia has continued to increase, with publications influencing national and international policies, and journals with impact factors that continue to rise. It is safe to say that the crisis has at least been averted, and academic anaesthesia has a bright future.

With this in mind, there has never been a better time to get involved in research. There are many ways you can get started, and by being committed, engaged and pro-active, some of these tips will be critical to your success in academic anaesthesia:

- Find a mentor: This could be anyone who is involved with, or has experience of, research; ideally, an enthusiastic consultant
- Get involved with established teams: Find any active research teams on your patch that need a pair of hands. Talk to people
- Embrace trainee networks: These are a fantastic opportunity to work with like-minded individuals and deliver large-scale projects collaboratively
- Apply for Editorial fellowships: Journals like *Anaesthesia* host a trainee fellow each year, and this is an opportunity to become a member of an academic journal team. *Anaesthesia Reports* also invites Assistant Editors who could be trainees, and the *British Journal of Anaesthesia* has a trainee representative
- Get involved with specialist societies: Many specialist societies have trainee representatives and present academic opportunities
- Apply for a local research fellowship: Most centres have a number of these posts. They are ideal for the research novice or someone who wishes to develop their academic experiences further
- Apply for a small grant: The NIAA awards several grants suitable for small projects and holds meetings for those interested in research. Have a look at the website and make an application with your mentor
- Consider working in the laboratory: Laboratory work is demanding and satisfying; it can be scheduled more easily than clinical research
- Get writing: Start with simple case reports, then move on to review articles, and finally see if you can write up some project work. Always be vigilant for opportunities to write
- Show commitment: Research does not fit well with inflexible timetabling. Be prepared to go the extra mile when contributing to a research team



- NIHR research training scheme: Those of you who have serious academic ambitions should get involved in this. You will need to talk to your local academics and have a look at the website. However, remember you can still have a rewarding academic career in the NHS without being enrolled in this scheme
- Collaborate: This is the name of the game, and in the modern academic landscape, finding a team that believes in collaboration will open doors for you

Trainees are the future of our specialty. You must become the new generation of research active consultants who will safeguard the academic base of anaesthesia and its related specialties. Most importantly, the time for collaboration for the development of yourselves and the specialty is well and truly here.

And don't forget: *If you want to go fast, go alone. If you want to go far, go together.*

Acknowledgement

Derived from 'Getting started in research' by Ravi Mahajan, *GAT Handbook 2016-17*

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What is an academic clinician?

The Medical Schools Council describes academic clinicians as ‘doctors who spend part of their time treating patients in the NHS and part of their time undertaking research and educating the next generation of doctors’ [1]. Although this definition may describe many anaesthetists who have an interest in research or medical education, this section of the handbook focuses on careers with a formal commitment to university work. The structure of clinical academic posts is highly variable. It may include, for example, employment by a medical school with an honorary contract to work in the NHS, or vice-versa, or holding separate contracts of employment with two different institutions. Likewise, the amount of time spent in each element of a clinical academic post is often specific to the needs of the individual and their employer(s).

Academic anaesthesia

Anaesthesia remains under-represented in clinical academia, with just under 0.5% of anaesthetists’ time spent in senior university posts, compared to around 3% for doctors overall [2,3]; however, the number of academic anaesthetists in the UK has steadily increased from a low of 51 full-time equivalent senior clinical academics in 2011, to 64 full-time equivalents in 2018 [2].

The National Institute of Academic Anaesthesia (NIAA) was founded in 2008 with the aims of improving patient care through the translation of research into practice; raising the profile of academic anaesthesia; facilitating high-profile influential research and supporting academic training and continuing professional development. As well as administering research grants, the NIAA hosts meetings and events and maintains a [researchers’ database](#) with the contact details and interests of many academic anaesthetists. The [NIAA trainees’](#) web page provides resources for those considering, or already undertaking, clinical academic training.

The pros and cons of a clinical academic career

A clinical academic career is interesting and rewarding, but it is not without its drawbacks and may not be suited to everyone:

Pros	Cons
High degree of autonomy	High degree of uncertainty, e.g. grant applications, financial security, research outputs
Opportunities to discover new knowledge and change clinical practice	Can be challenging to maintain clinical skills whilst pursuing an academic career
The ability to work with researchers from different disciplines	Can be challenging to maintain academic skills whilst pursuing a clinical career
Involvement with education beyond teaching, e.g. curriculum design, leadership	Greater administrative burden; can limit time available for research
Intellectually stimulating and varied	Prolongs time in training
Opportunities for travel, e.g. conferences and research collaborations	

Despite the challenges of a clinical academic career, it remains an attractive option primarily because of the capacity of research and education to make important impacts on the future of healthcare.

Training in academic anaesthesia

Academic clinical training involves undertaking research under the guidance of experienced academic supervisors at the same time as clinical training. It may also entail studying for a higher degree such as a Master of Science (MSc), Doctor of Medicine (MD) or Doctor of Philosophy (PhD). A GMC-accredited integrated academic training pathway exists to provide academic clinical training at successively higher levels (e.g. Fig. 1). In England, this includes academic clinical fellowships at core and specialty training level, and postdoctoral clinical lectureships at a higher specialty level. Trainees may join at any stage, and it is common to leave the pathway temporarily, for example, to undertake doctoral training out-of-programme.



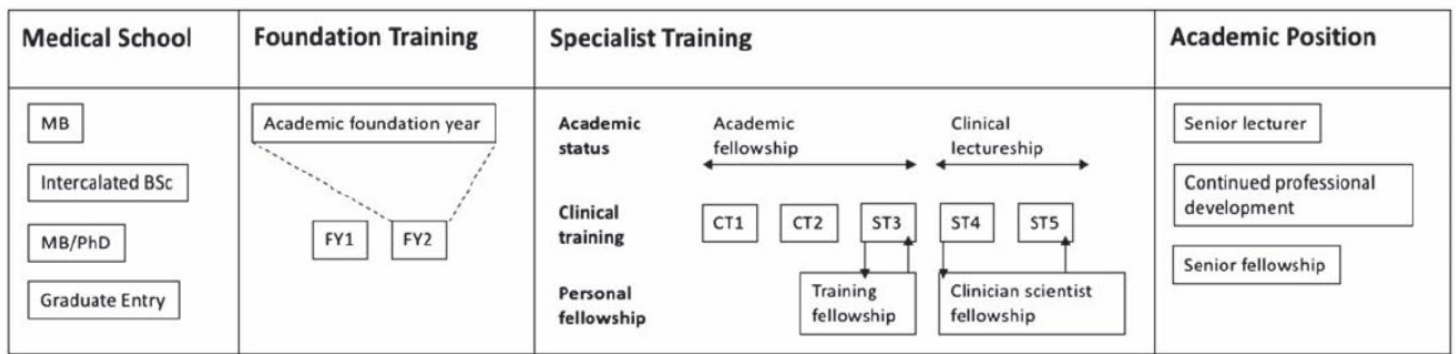


Figure 1 The integrated academic training pathway.

Academic clinical fellowships are three-year posts, usually funded by the National Institute for Health Research (NIHR), which may be commenced between the first and third years of specialist training. In anaesthesia, they tend to be offered at ST3 level because of the demands of core training, but this is not always the case. An academic clinical fellow will receive three months per year of protected research time, a bursary (currently £1000 per year) to fund research training and conferences, and formal training in research methods, usually in the form of a Masters degree. Because training is competency-based, undertaking an academic clinical fellowship does not necessarily extend the duration of training, although it is not uncommon for some extra time to be required for clinical competencies to be achieved. Academic clinical fellowship recruitment is administered by Health Education England and takes place several months earlier than recruitment to specialty training posts; applications are normally open between October and November (ST recruitment is usually between January and February).

Clinical lectureships may last up to four years, with 50% of the trainee’s time spent in the university setting, usually in a combination of research and developing the next stage of their academic career. Like academic clinical fellowships, these posts are usually funded by the NIHR and a bursary is available to support training and conference attendance. Doctoral training (i.e. a PhD or MD) is required in order to apply for a clinical lectureship, and appointments are usually made at ST4 level or above. Recruitment is more flexible than for academic clinical fellowships; it is administered by universities and spread throughout the year. Because of the high proportion of research time, competency-based training will often be extended as a result of undertaking a clinical lectureship.

Doctoral training is usually undertaken out-of-programme, and therefore requires the permission of the local education and training board and the RCoA. Although it is possible to self-fund doctoral training, there are obvious advantages to receiving a salary and expenses. This can be accomplished in several ways, including through locally funded posts at hospitals or universities, and fellowships including those provided by the NIHR, the Medical Research Council (MRC) and the Wellcome Trust. National fellowships are highly competitive and the application process can be challenging; however, this is useful experience in a career where success in competitive funding applications is essential, and appointees will often have access to additional training and mentorship.

Similar integrated clinical academic training opportunities are available in Scotland, Wales and Ireland (Table 1). The Scottish Clinical Research Excellence Development Scheme (SCREDS) is similar in structure to the English programme, but the whole scheme is co-ordinated by universities, the recruitment timetable is flexible, and the term ‘clinical lecturer’ is used for both pre- and postdoctoral academic training posts. In Ireland and Wales, funded doctoral training is included as part of clinical academic fellowships, although arrangements for time out-of-programme will still need to be made.

Table 2 National variations in integrated clinical academic training.

	England	Scotland	Ireland*	Wales
Pre-doctoral	NIHR Academic Clinical Fellowship	SCREDS Clinical Lectureship		
Doctoral	Doctoral training fellowship (e.g. NIHR, MRC, Wellcome)	Doctoral training fellowship (e.g. MRC, Wellcome)	Irish Clinical Academic Training Fellowship	Welsh Clinical Academic Training Fellowship
Postdoctoral	NIHR Clinical Lectureship	SCREDS Clinical Lectureship		

*Includes Northern Ireland and the Republic of Ireland.



In addition to the integrated academic training pathways, there are numerous other routes into academic anaesthesia. These include engaging with research whilst in clinical training, e.g. through trainee research networks, and arranging time out-of-programme, e.g. to undertake a standalone research fellowship or study for a degree [4]. There are also a number of in-training academic posts which may focus on research, medical education, or leadership and management. In anaesthesia, these may take the form of 'advanced training' and are usually advertised by Schools of Anaesthesia alongside advanced clinical training opportunities.

Information and guidance about clinical academic training

- [National Institute for Academic Anaesthesia \(NIAA\) trainees'](#)
- [Irish Clinical Academic Training Fellowships](#)
- [National Institute for Health Research \(NIHR\) integrated academic training](#)
- [Scottish Clinical Research Excellence Development Scheme \(SCREDS\)](#)
- [Welsh Clinical Academic Training](#)

Research courses

A basic grounding in research methods can help to guide study design, research ethics applications and data analysis, and is invaluable when writing research papers. It can also help demonstrate commitment to an academic career, which may be useful when applying for clinical academic training posts or fellowships. Examples include:

- **Good Clinical Practice** is an internationally recognised set of scientific and ethical principles that clinical studies should adhere to. Attending a Good Clinical Practice course is mandatory for individuals working in clinical trials. This free course is offered by the NIHR and may be done in person or online
- The **Scientific Methods and Research Techniques (SMART)** course is a three-day research methodology course for anaesthesia trainees organised by the Cambridge University Division of Anaesthesia
- **Master of Clinical Research** courses are available at many universities, and can often be taken on a modular basis, with the option to graduate with a postgraduate certificate, diploma or master's degree, depending on the number of modules taken

Sources of research funding

The amount of funding required depends on the requirements of the project. Where salary costs or complex equipment are involved, large sums of money can be required. However, research undertaken as part of an existing role can be economical and may require only a small project grant. Regardless of the costs involved, applying for funding is time-consuming, so decide carefully where to apply and start the process early. Major funders include:

- The [Medical Research Council \(MRC\)](#) is one of seven UK research councils and part of Research and Innovation UK. It typically funds research in basic sciences or the pre-clinical setting. It also supports clinical research training fellowships, which include PhD funding, as well as a range of fellowships for more senior clinical academics
- The [NIHR](#) is funded by the Department of Health and Social Care to support health and care research, typically in the clinical setting. It also supports academic clinical fellowship and clinical lecture posts, doctoral fellowships for clinicians, and a range of awards and career development programmes for more senior clinical academics
- The [Wellcome Trust](#) is a major independent medical research charity with a broad remit of funding areas. It also supports PhD training fellowships for clinicians at institutions throughout the UK and Republic of Ireland and a range of awards and fellowships for more senior clinical academics
- The [NIAA](#) administers a number of research grants in association with partner organisations including the RCoA, the Association of Anaesthetists, the journals *Anaesthesia* and the *British Journal of Anaesthesia*, and specialist anaesthetic societies. Many of these are smaller project grants, but large grants, doctoral studentships and fellowships are sometimes offered
- Charities may fund research that is particularly relevant to the condition or group of patients that they represent. Details of many charities can be found on the [Association of Medical Research Charities](#) website. Some hospital trusts also have charitable funds that may be able to support small research projects

Acknowledgement

Derived from 'What is an academic clinician' by Eleanor Carter, *GAT Handbook 2016-2017*

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Executive Editor, *Anaesthesia Reports*



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Lifelong Learning platform

Background

The original RCoA e-Portfolio was launched in August 2011. This coincided with the move of the majority of trainees from the 2007 to the 2010 Curriculum. For the first time, this allowed trainees in anaesthesia to collect evidence of their training electronically. This e-Portfolio, however, did not support trainees undertaking the emergency medicine or acute medicine components of Acute Care Common Stem (ACCS) and the evidence from these posts still had to be collected on paper.

In December 2016, the RCoA embarked on a project in collaboration with its members to develop a replacement platform with the aim of improving the experience for anaesthetists in training, trainers, consultants and SAS doctors, and, in the longer term, support users throughout their whole career by integrating elements of the RCoA continuing professional development system into the platform.

The Lifelong Learning platform was officially launched in August 2018. The new system, which has been designed and built from scratch, now supports ACCS (Anaes) trainees undertaking their emergency medicine/acute medicine placements and contains the ACCS curriculum as well as allowing all trainees to send workplace-based assessment to trainers who are not registered on the Lifelong Learning platform (a big change from the previous e-Portfolio).

Trainees who commenced ACCS1, CT1, ST3 and ST5 in August 2018 were the initial users with the remainder of trainees being transferred before August 2019.

How do I get access to the Lifelong Learning platform?

Accounts for new trainees are created by the Lifelong Learning team at the RCoA on receipt of the appropriate trainee registration form. Existing trainees who were in post prior to August 2018 will be sent login details directly.

Trainers who held an active e-Portfolio account should have automatically had a Lifelong Learning platform account created, those who are already registered with the RCoA and who require an account should have a request made to the Lifelong Learning platform team via their college tutor, training programme director, regional advisor or local administrator with details of access required. For ACCS Trainers in emergency medicine and acute medicine they are required to complete a registration form: <https://www.rcoa.ac.uk/training-careers/lifelong-learning/request-access-lifelong-learning-platform>.

There are multiple roles identified within the Lifelong Learning platform which allow varying degrees of access to the trainees in a particular school of anaesthesia, e.g. training programme director or regional advisor roles can view the e-Portfolio of all the trainees, whereas CTs can view trainees who have assigned themselves to a specific hospital. Educational supervisors can view only trainees whom they are supervising. A list of people who have access to your portfolio is visible in your profile.

Logging in for the first time

On first login you will need to check your deanery and school of anaesthesia are correct; this is found within your profile. You then need to create a placement and select an educational supervisor. Without an educational supervisor and a placement, the platform does not let you create and complete forms. Selecting the placement enables your college tutor to access your portfolio.

What's what in the Lifelong Learning platform?

The different sections of the Lifelong Learning platform for trainees are located within the 'Learning' tab. This contains four main sections: Logbook, New Entry, Development and Progress and, at the bottom of the dashboard, Placement.

Logbook

The Lifelong Learning platform contains an integrated logbook. This allows trainees to record data for anaesthetic cases, intensive care unit (ICU), pain, procedures as well as a session log, e.g. a session in pre-assessment clinic (sessions within a specialty are recorded as part of the anaesthetic case log so do not need duplicating). The anaesthetic case logbook generates the summary report as defined in the curriculum for ARCP. It is possible to download all the data to an Excel spreadsheet if required. It is not possible to upload data from other available logbooks. Offline functionality is now available for the logbook, which can also be accessed by a smartphone, making it easy to keep a record of cases as you go.



New entry

Workplace-based assessment: In this section requests for assessments are created. ACCS trainees will have four sections: Emergency Medicine, Acute Medicine, Anaesthetics and Intensive Care Medicine, whilst Core trainees will only see Anaesthetics and Intensive Care Medicine. Trainees can send workplace-based assessments to trainers who do not have a Lifelong Learning platform account as a 'guest' assessor. It is also possible to recall and resend assessments to trainers if they have not been completed and this will generate another email to the assessor. Linking to the curriculum is done within the workplace-based assessment before sending to the assessor as links cannot be changed once the assessment has been approved. Although all the curriculum competencies are listed and available to link to, in anaesthesia with the exception of the intensive care medicine (ICM) unit, trainees are not expected to have evidence for each individual competence.

Personal Activity: Details of any activities or events undertaken are created and recorded in this section. A reflective practice log can also be created and linked to the activity if required. Supporting evidence can be attached directly to the activity, e.g. a continuing professional development certificate and the activity linked to a Unit of Training so that the activity will be visible on a Completion of Unit of Training form and in the curriculum. Any document or evidence that you wish to link to the curriculum should be uploaded to a personal activity and linked from within the activity.

Unlike other e-Portfolios, the Lifelong Learning platform currently does not have separate forms for meetings with your educational supervisor. You can record them in the activities section, or individual schools of anaesthesia may have documents that can be uploaded within a personal activity and associated as a supervisor meeting.

Personal Reflection: Within this section, reflective practice can be recorded. It is possible to link the reflective piece to a unit of training if required. Trainees are advised to read the guidance provided by the [Academy of Medical Royal Colleges](#).

Development

Personal Development Plan: This section allows creation of personal development plans (PDPs) and any associated goals. Once the goal has been marked as 'set', it cannot be edited, although progress towards the goal and evidence of completion can be added, either until the goal is marked as complete or the end completion date has been reached, at which point the goal cannot be edited.

Milestones and Certificates: This section records the trainee's progress against the IAC, IAOC, CLTC or ILTC requirements, and once all the mandatory components are complete, allows the trainee to send the certificate to the appropriate trainers for signature. It is possible to upload other certificates into this area.

Multi-source Feedback (MSF): This has been updated in the new Lifelong Learning platform to allow trainees to add additional MSF assessors whilst the MSF is in progress and no longer has a minimum or maximum time to run. Once the trainee has an appropriate number of responses, they can request closure from their educational supervisor. It is important to note that MSF requests to assessors with a Lifelong Learning platform account will not appear in the 'Assessing' tab and can only be accessed via an email link.

ESSR Records: The educational supervisor structured report (ESSR) is one of the major changes within the Lifelong Learning platform. Previously trainees could complete only one ESSR a year, the dates of which were set within an ARCP Record window. Trainees can now create multiple ESSRs and, therefore, it can be utilised for mid-point meetings or to summarise a block of training, e.g. ICM/neuro/cardiac. The ESSR automatically populates the relevant sections with activities/workplace-based assessment, etc, undertaken during the dates selected. Once completed by the trainee, it is sent to the educational supervisor and college tutor for further comments.

ARCP Outcomes: The Lifelong Learning platform has electronic ARCP Outcome forms and these can be found in this section. Following an ARCP the Outcome forms are created, signed by the panel chair and sent to the trainee to accept.

Document Store: This section lists documents that have been uploaded into the Lifelong Learning platform either as an attachment to a Personal Activity with a link to the activity, via the certificates section or directly into the Document Store. Whilst it is possible to upload items directly into this area it is not possible to associate a document to the curriculum unless it is uploaded within a personal activity.



Progress

This section indicates progress towards the specific stage of training. The stage is set under the 'Stage' when entering your post details. Clicking on the links within this section of the dashboard will take you to the curriculum where you can review the curriculum requirements, and any workplace-based assessment/activities that have already been associated with the Unit of Training. It is recommended that Completion of Unit of Training forms are created from this Curriculum view.

Where to get help

Multiple guides and videos have been produced to help trainees and trainers with various sections of the Lifelong Learning platform: <https://www.rcoa.ac.uk/training-careers/lifelong-learning/guidance-material>

Most schools of anaesthesia have a named trainee and clinical lead who can offer advice: <https://www.rcoa.ac.uk/training-careers/lifelong-learning/support-contacts>

Contact more senior colleagues or your college tutor. If you have a problem, it is likely that someone else has had a similar problem and they may be able to help you.

If all else fails, the Lifelong Learning Support Team is available Monday to Friday from 9.00 am-5.00 pm (excluding public holidays). Tel.: 0207 092 1556 or email: lifelong@rcoa.ac.uk

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How to...



How to design a study

The strength of a study depends on its design. Rather than classify the different types of study and get bogged down in statistics, I am going to approach it from a practical point of view.

The idea

Some ideas arise from clinical cases (e.g. 'Is my anaesthetic technique better than yours?'), while others come from reading or discussing published papers, conferences, or just out of the blue. Sometimes a small-scale project such as a local audit becomes much more interesting than expected and can be expanded into a full paper. Many ideas fall by the wayside because of the practicalities (see below), and it is always worth testing the idea to see whether it has a good chance of running before investing too much time and energy. Sometimes an idea stands up to all the challenges, only to fall at the 'PubMed hurdle' - someone has done it before (not that this is a fatal flaw; most studies are worth repeating. In fact, an easy way to think of a project is to repeat someone else's).

The question

It may be surprisingly difficult to narrow down a general idea to a specific question or questions that might be answerable by a study. For example, 'Is my anaesthetic technique better than yours?' could raise questions about individual drugs, combinations of drugs, practical procedures and even individual anaesthetists. Even if one were to decide upon 'Is drug A better than drug B?', the matter of what 'better' means must also be defined (e.g. less pain, faster recovery, shorter hospital stay, lower cost, etc). For most outcomes there are also different measurements from which to choose, e.g. 'less pain' might be measured as lower pain scores, less morphine requested, or a longer time before requests. Defining the question is crucial as it determines the type of data collected and therefore sets the scene for the entire project.

The design

By 'design' I mean what is actually done during the study. For example, is any intervention happening (e.g. giving a drug) or is it simply observational, with measurements being recorded but nothing 'done' to the participants? Is data collection prospective or retrospective? The latter is weaker as the data were collected without the study in mind, so one can be less certain about the accuracy or completeness of the data. An important consideration is the choice of appropriate controls, for example drug A vs. drug B, where drug B is the standard treatment (thus control) and drug A the newer (experimental) one, but even here, unless there is good evidence that drug B is effective, a finding that drugs A and B have similar effects could mean either that they are equally effective or that they are equally ineffective.

The practicalities

Many a good idea has to be abandoned because the study is just impractical in that setting. For example, anything involving extensive data collection by other parties (e.g. ward nurses, midwives) is likely to fail because such people are busy and furthermore have no interest (in the 'ownership' sense) in the study. Studies of rare outcomes require huge sample sizes and are probably not worth the effort on a local level. Some measurements are just too difficult to obtain. I always tell those embarking on a project that there are three golden rules of research: everything takes four (not three or even two) times longer than you think it will as times are getting harder; you cannot rely on other people to do anything for you; and life gets in the way. You have to be realistic about being able to complete the study before starting, as giving up halfway through is a waste of everyone's time.

The numbers

This is not the place for an account of statistical methods but it is worth considering a few basic questions. The first is 'How many participants?', and for a comparison study, in order to answer it you need to decide: what you are expecting to see in your control group and what difference is worth looking for in the experimental group. This, and subsequent questions like how to present or compare the data, really do require the input of someone who has done it before - and not necessarily a statistician. Time spent discussing the statistics is not only useful - it's vital. Sometimes the complexity of the statistics or the sample size required is such that a study has to be abandoned at this stage because the practicalities do not stack up.



The regulations

These are increasingly seen (by investigators) as barriers put in the way of honest folk whose only wish is to improve the world, but history is littered with dreadful abuses of research and publication ethics, as well as plenty of bad science. The most useful advice, as before, is to seek useful advice from someone who has done it before. In general, most studies require one or more of: ethical approval, hospital R&D approval, Caldicott Guardian approval, audit department approval and directorate/department approval, depending on the type of study. Funding requirements add another layer of paperwork.

Revised, with permission, from *Anaesthesia News* 2009, **267**: 13-4.

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How to conduct an audit

What is clinical audit?

Clinical audit is a quality improvement process that seeks to improve patient care outcomes through systematic review of care against explicit criteria... where indicated, changes are implemented... and further monitoring is used to confirm improvement in healthcare delivery.

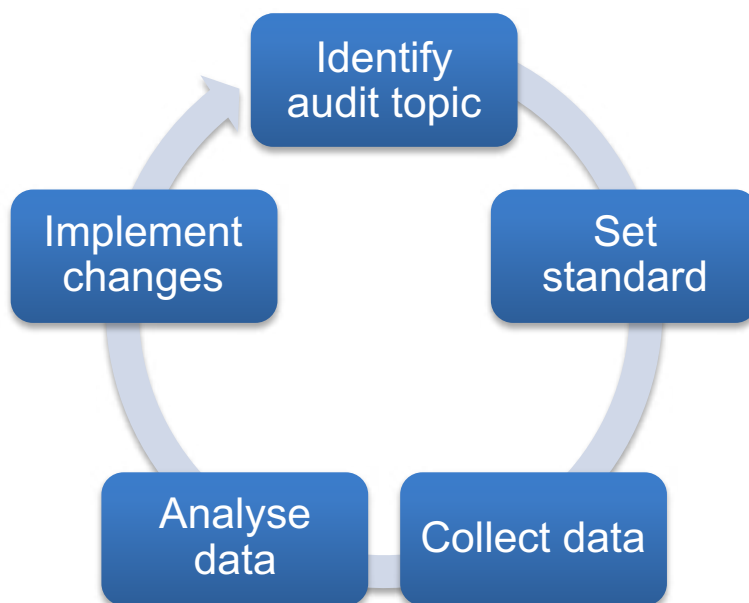
National Institute for Clinical Excellence, 2002

Audit is an established pillar of clinical governance, in which current practice and processes are reviewed, and changes are made with the intention of improving clinical care.

The audit cycle

Clinical audit is a cyclical process by which a topic is selected, standards agreed and data are collected and analysed (Fig. 1). If analysis reveals that agreed standards are not being met, then changes can be implemented and data re-collected to determine if there has been an improvement. A single data collection does not constitute audit, as it is important to implement change and re-collect data to see if an improvement has been made. This is called 'closing the audit loop'.

Figure 1



Why undertake an audit?

As clinicians, we should always strive to provide the best care possible to our patients. Audit, along with a quality improvement project (see next chapter), is an important method for analysing current performance and identifying possible clinical improvement. There is an expectation from the RCoA that anaesthetists in training should complete at least one audit or quality improvement project a year. Permanent NHS staff, including consultants, are expected to achieve service improvement through either audit or quality improvement projects. It is therefore extremely worthwhile becoming as proficient as possible in the audit process.

Audit vs. research

Audit and research can occasionally appear confusingly similar; however, there is a clear difference. Research is a process by which we determine what we should be doing to patients. Audit is a process by which we determine whether we are doing what we are supposed to be doing to our patients. Research seeks to identify new, or refine existing, knowledge; audits review current practice.



Planning an audit

Careful planning of an audit is important to completing a successful audit cycle. Any component of clinical care can be audited. It is possible to design a new audit, or join an existing audit within your department. As audit should be a continuous process, it may be possible to take over an audit from another colleague who is moving on from the department. [Raising the Standards: RCoA Quality Improvement Compendium](#), produced by the RCoA, is a useful resource to look at when thinking about performing an audit. An important place to start when planning an audit should be the clinical lead for audit within the department. They are individuals who have been given the responsibility of supporting and co-ordinating audits. They will have ideas regarding areas of clinical practice that require audit or re-audit, as well as knowledge of all ongoing audits within a department, which may help prevent duplication of work. As implementing clinical change requires a team approach, it is also a good idea to involve other members of clinical staff in planning an audit. Although ethical approval for audit projects is rarely needed, you should follow your local trust's policy regarding audit approval. It is usually necessary to seek approval from your local audit department.

Undertaking an audit

It is important that audit is done in an open and transparent way. Avoid confrontation with colleagues by getting as many viewpoints as possible, and involving others in the project. You need to carry your colleagues with you on this journey. This is especially important if changes you implement will have an effect on colleagues' clinical practice. Keep the aims and possible outcome of the project focused. Avoid unnecessary data collection as this can make projects counterproductive, unwieldy and wasteful. Try to select a clinically relevant topic, with clear benefits to patients, the department or the hospital. High-risk, high-turnover and high-cost practices are particularly rewarding to audit as improving them can have a profound impact on quality of care and services. Do not audit a topic where the likelihood of improvement is questionable or is beyond the control of the department or yourself. Make sure you stick to a clear time frame as incomplete audits are a waste of time, effort and resources. If an audit cannot be completed by you due to moving onto a different placement, recruit a colleague to complete the project.

What next?

If you have identified areas for improvement and have ideas for implementation of changes, then it is time to ensure these changes can be implemented. This will require the support of colleagues, so it is important to present your work to your department at local audit meetings. You will also need to involve senior clinicians and managers to implement at a high level. This can take time but gives the best chance of achieving lasting change. It is important that any changes in practice are re-evaluated given a period of time. You will be completing the audit cycle in doing so. If you feel that your audit has wider lessons, then make sure it is submitted for presentation at regional or national meetings. As well as allowing others to learn about what you found and the changes you made, it also looks great on your CV!

Audit remains an important tool for achieving improvement in a clinical environment, and you should aim to become proficient in its use. Finally, good luck with any audit projects you decide to undertake!

Acknowledgement

Thanks to Satinder Dalay and Sean Chadwick, from whose chapter in the *GAT Handbook 2016-2017* this chapter has been derived.

Rhys Clyburn

Elected Member, Association of Anaesthetists Trainee Committee



How to conduct a quality improvement project

Every system is perfectly designed to get the results it gets, the only way to get real change is to change the system; to do this you need will, ideas and execution.

*You must have the **will** to make the system better - this may be because you have identified poor performance or outcome through audit or patient experience*

*You must have **ideas** about how you could change things for the better*

*You must have **skills** to make it happen - **execution***

Paul Batalden, Institute for Healthcare Improvement [1]

What is quality?

There is no universally accepted definition of healthcare quality [2]; however, the Institute of Medicine recognises the following six domains of healthcare quality: safe, effective, patient-centred, timely, efficient and equitable [2]. When setting priorities for improvement, these domains should be actively considered [2]. In the 2008 High Quality Care For All - NHS Next Stage Review Final Report, Lord Ara Darzi defined three core areas for quality in the NHS: patient safety, clinical effectiveness and patient experience [3, 4, 5]. The Care Quality Commission currently uses these quality indicators amongst its key lines of enquiry for healthcare regulation in England [3, 6].

What is quality improvement?

Quality improvement is an umbrella term describing the continuous, systematic and formal approach to the analysis and subsequent efforts to improve healthcare performance, processes and patient care using a range of tools and techniques [1, 3]. Quality improvement is by no means a new concept; however, it has attained greater prominence in recent years. Continuous quality improvement methodologies focus on making *improvements* in outcomes [7]. This is in contrast to audit, where making a *change* is one of the key cornerstones in the audit cycle, regardless of whether there has been any real improvement in outcome [7]. Although within quality improvement changes are often made, these are less important than the improvement itself [7]. The RCoA recognises this shift away from audit towards quality improvement, such that the concept of improvement was introduced in the latest edition of [Raising the Standards: RCoA Quality Improvement Compendium](#).

Why get involved with quality improvement?

The NHS has problems, yet 'it is not always clear who should be responsible for fixing the system...managers see a clinical system that they don't understand...doctors see a "system problem" and hope that managers will sort it out' [3, 8]. 'For the quality of care to improve, it is imperative that clinicians understand and engage with quality improvement as part of their daily work' [3].

Models for improvement

Several models and tools exist for continuous quality improvement; however, one method is yet to prove superior [3]. The most commonly quoted model is the Model for Improvement, which was developed by Associates in Process Improvement [1]. Part of the model uses a simple 'plan-do-study-act' (PDSA) cycle [1]. This is analogous to a rapid-cycle audit [7]. Before performing your PDSA cycle, first you must answer three questions:

- What are we trying to accomplish? (Aim)
- How will we know that a change is an improvement? (Measures)
- What changes can we make that will result in improvement? (Identify changes)

In order to answer these questions, you will need to collect and analyse data, study the system, and identify changes. Once you have identified a change, it is time to test it using a PDSA cycle. Before repeating the cycle, learning from the previous cycle is used to refine the next test of change, thus allowing for small tests of change in a controlled fashion [3, 7]. These small, frequent samples allow more proactive changes to be made regularly until improvement in outcome is attained [7].

A comprehensive description of improvement science and models for improvement are beyond the scope of this chapter; however, the [Institute for Healthcare Improvement's](#) website and the RCoA's [Quality Improvement in Anaesthesia](#) provide valuable resources for those interested.



How to get involved in a quality improvement project

Most trainees are expected to complete at least one audit or quality improvement project per year. You may decide to get involved in an ongoing quality improvement project within your department or start a new project. When thinking of a new topic, try to choose an area that has been identified as being a problem, poses a risk to patient safety or where processes are inefficient and waste resources. In addition, choose a topic area where you as an anaesthetist can have the most influence. Discuss your project with a senior colleague who may be able to help drive the needed change.

Unlike an audit, the key to a quality improvement project is an understanding that each project is unique to the hospital it takes place in, and that what works well in one hospital may not in another. Ensure you speak to staff involved in the area that you wish to make changes; they may have ideas regarding possible changes, and any changes that you do make are more likely to last if staff buy-in to what you are trying to do.

The most important factors in success of your quality improvement project are your perseverance, motivation, commitment and ownership of the project. Although the PDSA cycle requires organisation and resources, the improvement in outcome should lead to the sustained success and ultimate longevity of the project.

Recommended reading

- Weekes L, Lawson T, Hill M. How to start a quality improvement project. *BJA Education* 2018; **18**: 122-7.
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The Research and Audit Federation of Trainees

In 2012 the first anaesthetic trainee research network (TRN) was established and since then this has grown such that there are now 18 regional networks (see Fig. 1) and three subspecialty networks: paediatrics (PATRN), Military (TriSTAR) and pain (PAINTRAIN). The Research and Audit Federation of Trainees (RAFT) is an umbrella organisation that links all of these networks together as a national collaborative.

The aim of RAFT and the individual networks is to provide all anaesthetists in training with the opportunity to engage in high-quality audit, quality improvement and research projects. Often for many, research is seen as something quite removed from everyday clinical practice, typically involving randomised controlled trials with extensive ethical paperwork, which take so long that it is not realistically achievable alongside clinical training; however, the National Audit Projects and the national studies completed by RAFT to date, have demonstrated the power of collaboration and the meaningful high-quality information that can be gained from such big-data studies, with participation in these projects within easy reach for all and achievable alongside training.

To date, RAFT has led three national projects: COMS (Cardiac Output Monitoring Study - looking at the availability of cardiac output monitors and the impact of National Institute for Health and Care Excellence guidance and the Commissioning for Quality and Innovation (CQUIN payment scheme)); iHYPE (Intra-operative Hypotension in the Elderly); and most recently DALES (Drug Allergy Labels in the Elective Surgical population). Each project has been chosen, developed and led by anaesthetic trainees, with each project relevant, topical and aiming to achieve something meaningful for both patients and anaesthetists.

To date, DALES [1] is the largest ever consenting anaesthetic study in the UK, with recruitment across England, Scotland, Wales and Northern Ireland, in which 1500 local investigators at 214 sites recruited 21,000 patients and 5000 anaesthetists. As a NIHR portfolio study, this large-scale recruitment translated into significant financial gain in the form of accruals for each site. The project was also the first to utilise real-time secure data uploading online using REDcap software on such a large scale. For each site, the actual data collection was undertaken on three days within a set time frame; these days were chosen by the local data collection teams. A key feature of RAFT projects is that they are time efficient; it is well recognised that trainee time is a precious commodity.

The individual TRNs are listed below with website details, and Fig. 1 shows their geographical area. The TRNs vary in size and organisation; SWARM is the longest running TRN, whereas MERCAT is relatively new. Each TRN aims to develop its own projects, but often the TRNs collaborate, for example, the SWeAT project, looking at satisfaction and wellbeing in anaesthetic training, was a collaboration between the STAR, SWARM and WAAREN networks.

A number of the TRNs now offer educational meetings and RAFT hopes to develop a more educational role in the future, developing knowledge and skills in line with curriculum requirements and with respect to the conduct of high-quality audit, quality improvement and research techniques.

RAFT national project selection

RAFT is currently reviewing the process of RAFT national project selection. The projects will continue to be chosen by trainees, but we wish to structure the process of development and implementation such that it is a sustainable workload alongside training commitments.

RAFT national meetings

RAFT hosts a national Winter Scientific and AGM meeting at the RCoA. We aim for this to be educational but also an opportunity for the various TRN members to come together, network and socialise.

RAFT structure

RAFT is formed of an executive committee with Chair and Leads for Anaesthesia, Intensive Care Medicine, & IT/Education. We are entirely trainee-led, as are all of the TRNs, although consultants are associated with RAFT and the TRNs for advice and support.



Benefits of joining your local TRN and RAFT

Many trainees have found participation with projects and committee activities, either at a regional TRN level or national with RAFT, to be highly beneficial and interesting, meeting many of the curriculum requirements. Participation is recognised by most deaneries and therefore, can fulfil ARCP targets with respect to audit, quality improvement, teaching, leadership and management and help meet module requirements.

For some trainees it has enabled them to explore the idea of research, to help determine whether this is something they wish to develop further through fellowship positions or postdoctoral degrees.

Ultimately, it also helps to address the research section of your CV and help prepare for consultant interviews.

What lies ahead for RAFT?

The long-term sustainability of the TRNs and RAFT is a key concern for all those involved; therefore, we are reviewing the structure of RAFT and how RAFT and the TRNs work together. The aim remains the same: we want to help promote trainee access to good-quality audit, quality improvement projects and research. Education is important and the provision of this within the TRNs is gradually growing and has proven to be welcomed by trainees. We hope to strengthen our current relationships with the RCoA, the Association and NIAA and form new relationships, for example, with links to POM CTN to ensure that we can open up opportunities in research and training to all trainees.

Regarding RAFT projects, currently we are looking to choose our next national project.

Looking back; the growth of the TRNs, and the national RAFT projects are a great trainee achievement. It is solely down to the hard work and support of trainees from right across the country. As described this has enabled trainees on a personal level to meet many of the curriculum and CV requirements; however, on a more global scale this has demonstrated the power of collaboration, improved the profile of anaesthetic trainees in the UK and most importantly, has assisted in the development of good evidence-based medical practice to the benefit of our patients.

If you would like to be involved, please refer to Fig. 1 and the list of TRNs below to find your local network or check out the website <https://www.raftrainees.org>. Please get in touch with RAFT via our email address RAFTnetwork@mail.com, and we are also active on Twitter (@RAFTtrainees) and Facebook.

Figure 1: This map depicts the various trainee research networks (TRNs) across the country.



Trainee Research Networks

- [AARMY: Anaesthetic Audit and Research Matrix of Yorkshire.](#)
- ARNni: Anaesthetic Audit & Research Network, Northern Ireland. The TRN is undergoing development, in the meantime please contact RAFT directly for further contact details
- [INCARNNET: Intensive Care & Anaesthesia Research Network North East Trainees.](#)
- MAGIQ: Merseyside Anaesthetic Group for Improving Quality
- [MERCAT: Midlands East Research by Critical Care & Anaesthetic Trainees.](#)
- [NWRAG: North West Research and Audit Group.](#)
- [OxCCARE: Oxford Critical Care & Anaesthetics Research Enterprise.](#)
- [PLAN: Pan-London Perioperative Audit & research Network.](#)
- [SEARCH: South East Anaesthetics Research Chain.](#)
- SHARC: South Yorkshire Hospitals Audit and Research Collaboration. New website in development, contact RAFT directly for information in the meantime
- [SPARC: Southwest Perioperative Audit & Research Collaboration.](#)
- [SQUARES NET: South East School of Anaesthesia \(SESSA\) Quality Improvement and Research Network.](#)
- [STAR Group: Severn Trainee Anaesthetic Research. Collaborative Anaesthesia and Intensive Care Research in the Severn Deanery.](#)
- [SWARM: South West Anaesthesia Research Matrix.](#)
- [WAAREN: Welsh Anaesthetic Audit, Research & Engagement Network.](#)
- [WMTRAIN: West Midlands Trainee Research in Anaesthesia and Intensive Care network.](#)

Subspecialty national networks

- TriSTAR: *Tri-Service Trainee Audit and Research Group, supporting military anaesthetic research.* No website yet, contact RAFT directly for contact information
- PATRN: *Paediatric Anaesthesia Trainee Research Network.* Link on [APAGBI website.](#)
- [PAINTRAIN: Network of pain trainees interested in research & audit.](#)

Laura Carrick

RAFT Secretary

MERCAT Chair

East Midlands Anaesthetic Trainee

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How to write a paper

You've done the easy and interesting part and completed your study, but now you have to sit down, put fingers to the keyboard and write the paper! Perhaps you see this as a daunting task, but it shouldn't be because you've actually already written most of the paper. A well-written protocol should have the introduction, methodology and a lot of the discussion ready for a bit of cutting, pasting and editing. Your literature search should contain most of the references you'll need and hopefully they have been entered into a reference management system ready to merge with your manuscript.

Where to begin? Before sitting at your computer, you should first give careful consideration as to which journal you intend to submit to; take advice from experienced colleagues on this question. In addition, ask yourself who is the intended audience for your paper? Is it for a broad church of anaesthetists (think *Anaesthesia*, *British Journal of Anaesthesia* or *European Journal of Anaesthesiology*), or only of interest to a small subspecialty group (either an anaesthetic subspecialty journal or a relevant surgical journal)? Is it basic science or animal work (consider a basic science journal such as *Nature*)? Is it of interest to non-anaesthetists (perhaps suitable for the *BMJ* or *Lancet*)?

Once you've chosen the journal, read it, get an idea of its style and layout and, most important of all, carefully read the journal's guidance for authors. Then read the guidance for authors **again** and keep a copy handy to consult frequently during writing; it should become worn and dog-eared by the end.

Although acceptance of your paper will depend on its scientific value, it is helpful to make a good impression with reviewers. A poorly written paper with careless typos, misspellings and a disregard of the guidance for authors will leave a bad impression on reviewers (see next chapter...). A sloppily written paper will suggest the study has been carelessly conducted, lowering its scientific value.

A common misconception of budding authors is that a long paper is more impressive than a short one. Like many things in life, size isn't everything! Keep your writing succinct, use plain English, avoid over use of the passive voice, (e.g. we administered fentanyl to the patients...' is better than fentanyl was administered to the patients...'), take care with punctuation and avoid excessive abbreviations; all of which will help to make the paper easier to read.

Now it's down to the writing. Start with the Introduction, which should have three clear messages: what is already known about the subject, what is not yet known, i.e. the questions needing answering, and what does your study intend to answer? Keep it simple: three short paragraphs answering these questions.

The Methods section should already have been written and can be lifted directly from the protocol and edited, keeping it simple so that it contains enough detail for anyone else to repeat your study. If someone has described part of the methodology before, you do not need to repeat the description but clearly reference it. Include at the end a succinct but accurate description of the statistical methods you used for your analysis. Where relevant, you should include enough detail of your power analysis to allow the reader to confirm how you arrived at your sample size.

Clarity is essential in the Results section. Use clear group names (e.g. morphine group and fentanyl group rather than groups A and B or groups M and F). Make sure you retain a consistent order of reporting, particularly when there are more than two groups. Avoid unnecessary duplication of results: perhaps use a table to provide details of numbers and simply give a brief summary of main or important findings in the text. It is important to ensure that tables are laid out as per guidance for authors. If there are figures or photographs, make sure they are of sufficient resolution for printing (again refer to the guidance). Most journals reproduce images in black and white, and it is important to check that the image remains clear with important detail retained when it is converted from colour.

Keep the Discussion simple; don't be tempted to draw it out believing that a long discussion is more impressive. You should consider what your results mean, how they fit in with existing knowledge, and if they don't fit then explain why. It is important to be up front and point out the flaws in your study as no study is perfect and it is better to acknowledge these flaws and try to convince the reader why they do not distract from the validity of your findings. Finish your Discussion with a concluding paragraph, reinforcing the main findings and suggesting areas for future research.

Inserting references should be straightforward, especially if you've been entering the results of your literature search into Reference Manager or Endnote, which should allow you to format the references correctly for any journal with the click of a mouse. Don't feel you have to use every reference in your search; keep to those that are directly relevant to your paper and discussion.

Finally, think of a simple, accurate title (avoid newspaper headline style titles) and write the abstract using a structured or unstructured format as prescribed by the journal. Your abstract is the gateway to your paper; it may in fact be the only thing



read by many, but can also draw the reader into exploring further. It therefore needs to summarise why you did the study, your methods, main results and conclusions, keeping the order of groups as described in the paper and ensuring that the results are the same. It's surprising how often there are discrepancies because of transcription errors.

There, it's all done and ready to be sent off to your chosen journal. No...not yet; re-read your paper, get all co-authors to read and edit in turn and, lastly, get a lay person to read it (partner or friend); they may not be able to understand the technical aspect of the paper, but they will be able to tell you whether it is clearly written.

After submission, you can heave a big sigh of relief and await the verdict. If it is not accepted, do not despair or take it as a personal rejection. It does not necessarily mean it is worthless; there are many reasons for rejection. Despite your careful selection, it may be felt inappropriate for that particular journal, or you may have just been unlucky with the choice of reviewers; the difference between acceptance and rejection is sometimes a fine one and quite subjective. Hopefully, the Editor has given you constructive comments and an explanation of why it was rejected. If not, it is worth writing back and politely requesting feedback. Use these comments to revise your paper and prepare for submission elsewhere, but only after you've carefully read the new journal's guidance for authors!

Paul Clyburn

Past President, Association of Anaesthetists



How to please the editor

The best ways to please an editor are to write well and follow author guidelines. Editors are much like your English teacher from school – they get grumpy when presented with a badly written, sloppy paper with lots of spelling and grammatical mistakes, and hate it when papers are not formatted according to the standard instructions for the journal. Put the editor in a good mood and you have already won half the battle!

I won't go into the reasons why it's important to conduct and write up projects, or how to design studies; let's assume you've completed your study and are now preparing it for the final challenge: convincing the reviewers/editors that it's worthy of inclusion in a reputable journal. First, a little about how the process works.

How to submit a manuscript and what happens when you do

Nowadays submissions are all electronic, and most journals use a web-based system of filling in blank boxes and uploading files. Once you have checked and submitted your manuscript, you should receive a notification confirming receipt and giving you the number assigned to your manuscript; make sure you quote this number whenever you contact the editorial office.

Your manuscript will then be reviewed by a number of people, depending on the journal. For some journals, the editor-in-chief will screen all manuscripts first and reject the hopeless, unethical and unintelligible ones at this stage. For others, they'll all be reviewed by two or more editors and/or external reviewers, with the final verdict made by the editor-in-chief, taking the others' opinions into account. This process can be lengthy, especially if the paper is complicated; there are only a few experts in the topic to ask for an opinion and they're all busy; external reviewers are slow to provide an opinion; reviewers disagree and it has to go for a further opinion(s); the editorial office is dealing with a large backlog or even a crisis (e.g. technical); or your email (or the one to/from reviewers) gets lost in the ether. Most journals should be able to give you a verdict within 1-2 months at the most; in general, if you've not heard anything then a polite enquiring email to the editorial office won't offend anyone.

Rejection

Rejection is never easy to take and one usually goes through the classic stages of shock, denial, anger, depression and acceptance. There are two bits of advice I can offer at this stage: first, remember that reviewers and editors do miss the point sometimes, but they are very experienced at what they do and have seen hundreds of manuscripts. If they have missed the hidden value of your manuscript then it's probably because you haven't made it clear enough. Take the comments you receive, use them to improve your manuscript, and submit it somewhere else – or even to the same journal if you feel strongly enough. Second, the good journals have a very low acceptance rate (for *Anaesthesia* it's about 10-15%), so there may well be nothing actually wrong with your manuscript, it's just that it's not quite as good (or interesting) as other submissions.

Acceptance

If your manuscript is accepted, the work doesn't stop there. You'll get a list of requirements from the editor, e.g. removing this or explaining that – do exactly as the editor asks, and don't take too long. Despite the conviction of many authors that journals are slow, ponderous beasts (admittedly, some are; mind you, so are some editors), the most common reason for delays in publishing papers is a lack of response, or a very slow response, from the authors. The same applies to proofs, which will usually be sent to you a month or so after the final version of your manuscript has been sent to the publishers.

How to do it

Having rambled on about the process, I'll now give you my guide to how to please the editors.

1. Follow the author guidelines

You'd have thought this was self-evident, wouldn't you? Amazingly, it's very common for authors to send in manuscripts with the wrong reference style and the wrong units, with American spelling, and the graphs and tables in the wrong format. At best, this will irritate everyone at the journal and could influence the verdict; at worst, it might even lead to an instant rejection. All journals have instructions/guidance on their websites: find them and read them. Then read them again. Then download or print them and read them at intervals while preparing your manuscript. Then read them once more before you send it in. If there's a checklist to complete before submission, use it and make sure you've done everything required.



2. Construct your paper well

I won't go on here about what to say in each section of the manuscript; go and take a look at [Anaesthesia's Author Guidelines](#). Or you could look at any other journal's guidance; they all tend to say the same thing. At *Anaesthesia*, we've tried to make our guidance helpful too, rather than just prescriptive. Remember, the aim of your writing is to explain clearly to the editor/reviewer/reader what you did and why it might be important; if it's not clear then that in itself can be a reason for rejection, or at best it'll lead to a request(s) to clarify various aspects of your work. The best papers are simple and easy to follow; they avoid complicated sentence structures and refer to the groups and outcomes in the same order throughout including in the abstract, methods, results, tables and figures. Avoid all but the most common abbreviations - most three-letter (and more) acronyms annoy reviewers and make reading and following your paper more difficult. Call a spade a spade - dexamethasone group as opposed to Group D etc. Write in simple, plain English - be concise, use the active voice and the past tense. Remember the Abstract or Summary is the bit that people will read the most (after the title) so this should be the whole report in miniature - with key points from each section condensed into the word limit (250 words in *Anaesthesia*). The Introduction should consist of three sub-sections: what is the problem? Why is it important? What solution do you propose (study aim)? The Methods should state: How did you study the problem? What did you use? How did you proceed? And statistics in detail. In the Results, describe what you observed, without interpreting it and don't repeat data from tables in the Results (in other words, you only need to describe data once). Finally, the Discussion needs to be succinct and well laid out: What did you conclude from your observations? How do the results fit into a broader context? Quality and limitations of data. Implications for future clinical practice and research. And then Conclusions. That's it! Oh, apart from designing good table and figures (simple; informative; minimally formatted; scalable; separate page for each; do not put them in the middle of the text; and not too small). Finally, don't forget the References - these are more important than you might think, they should be accurate and in the correct format for the journal and try using a reference manager software - this will make your life a lot easier when it comes to referencing.

3. Seek help

You simply must seek the advice of someone who has done it before. What else can I say?

4. Give yourself time, but get on with it

Most people cannot churn out good, readable text in a day. If you've set out in the right way, you'll have written a decent protocol before you started the study and can use that as a basis for constructing the final manuscript, but it takes time. My advice is always to start off by writing stuff down as it comes to you, and not to worry too much about structure, etc to begin with - just get it down. You can shape it later, with an experienced person's input. Often, it is helpful to leave it alone for a couple of weeks and then take a fresh look. Having said that, you cannot leave it too long - first, because someone else may publish on the same topic before you, and second, because a study done several years ago will be of less relevance and, therefore, interest to the reviewers/editors. Third, you will not please your co-authors, especially the one guiding and mentoring you. I speak from experience: there are few things more irritating than junior colleagues who promise to write up their study but then disappear overseas without even starting, taking all the data with them.

5. Be ethical

I'm referring to two areas that cause problems: first, research ethics: ensuring your study has the appropriate ethical approval; and second, publication ethics: making sure you haven't copied any text from another source, haven't left out authors who should be included, or included those who shouldn't and certainly haven't made up or manipulated any data. You can get into serious trouble for this kind of thing, as can your colleagues, so take care.

6. Follow the instructions

7. FOLLOW THE INSTRUCTIONS!

8. Have fun

Yes, it is possible. And good luck.

Andrew Klein

Editor-in-Chief, Anaesthesia



Keeping out of trouble

It is time for a confession – even I have been in trouble during my 35-year career in anaesthesia. There have of course been lots of minor episodes of trouble, like the time I accidentally dissolved an antibiotic in a non-depolarising neuromuscular blocking drug instead of water and gave the resulting mixture five minutes before the end of the operation. I was stuck in PACU ventilating the patient's lungs for some time afterwards and was the butt of not a small amount of ridicule from my peers, and subsequently, the subject of a trip to the Lead Clinician's office for a 'little chat'. There have also been more serious episodes, including an accusation of gross professional misconduct, an accusation of attempted murder, and a threat from a senior College manager to strip me of my FRCA. The precise details of these excerpts from my otherwise successful career will have to await the publication of my autobiography, but suffice it to say, I was found innocent of all charges and learned a lot about life in the process of defending myself. The truth in anaesthesia (and critical care and pain medicine and any other medical subspecialty), is that it is much better to keep out of trouble than it is to learn to be adept at getting out of trouble once you are in it. I have a few tips for keeping out of trouble that I will share with you.

Look after your patient and yourself

Although a relatively recent novice into the motorcycling fraternity (I started riding at 40), I have learnt some of its more important mantras. One of my favourites is: don't ride drunk, don't ride tired, don't ride hungry, don't ride sick and don't ride upset. The principle is that riding a motorbike requires a great deal of concentration if you are going to stay on it and avoid an impromptu flying lesson that will undoubtedly end in pain and physical damage. You cannot concentrate on this important task if you are drunk, tired, hungry, sick or distressed. There are obvious parallels to treating patients, with one difference. With motorcycling, you risk your own life, when treating patients you risk their lives – but you also risk your career and thereby your own health. If you find yourself required to work but are feeling impaired for whatever reason, tell someone and see if you can find a way of not treating patients until you feel well enough to do so. As a trainee, there should always be a consultant to whom you can turn and who can rearrange service cover to make sure that patients are protected and that you are given the chance to recover.

Looking after yourself goes beyond just making sure you are fit to work on a particular day. It extends to developing a lifestyle that means that you are as fit as you can be all the time. You need enough sleep, a reasonable amount of exercise, time for friends and family, a good diet, a passion outside of medicine and a lifestyle free from drugs, smoking and anything more than a modest amount of alcohol. These may seem like trite recommendations, but a visit to the GMC's website, and in particular, the judgments of the Fitness to Practise Panel, will show you that many of the doctors who go off the rails ignore these seemingly trite recommendations. Your health and sanity is very much conducive to the wellbeing of your patients. If you find yourself failing to live up to these recommendations, I would strongly advise you to seek help of some sort, even if it is talking to a sympathetic friend who knows you well enough to support you and point you in the right direction.

Don't get out of your depth

No anaesthetist can do everything and no anaesthetist can be expected to be able to do everything. This is true for all anaesthetists, but is particularly true for trainees. There will be times in the professional career of every anaesthetist, whether they are a consultant, SAS doctor or trainee, that their skills, knowledge and experience will not be sufficient to provide a patient with the best care available. When this happens to you (and note that I say 'when', not 'if'), you must seek help and advice from others. There should be a consultant available to you 24/7 to offer advice and physical support. Okay, some consultants get a little grouchy when called at 4.00 am; however, just think how much grouchier they will be if you call them at 6.00 am having messed up a case with which they could easily have helped you. Practise within the boundaries of your abilities and when you think you may be getting out of your depth, be completely honest about it. Both you and your patients will benefit as a result.

'Fess up

This is an obvious one: if you mess up, 'fess up. Take responsibility for your victories and your mistakes. It is an entirely natural tendency to avoid contact with a patient whom you may have harmed or annoyed as a result of an error. Do not do this. Patients and their relatives will understandably see this as you being evasive and defensive. Talk to a consultant about what happened and then go and see the patient and their relatives, and explain the situation honestly. Sometimes, it may be appropriate for you to face the patient alone; sometimes you should have a consultant or other senior member of staff with you. At this meeting, you should apologise for what happened, if this is appropriate. This does not amount to an admission of negligence, and your honesty and openness will often satisfy the patient and persuade them not to take any further action. Doctors had a duty of candour even before the Duty of Candour legislation [1], and your responsibility to go back and talk to your patients should be driven not just by recent legislation, but also by a sense of duty to giving patients the information that they deserve, even if this hurts a little on occasion.



No one is perfect

This follows on from the above point. No one is perfect: everyone makes mistakes. Making a mistake does not usually mean you are a bad person or a bad doctor; it just means you are human. By all means make every effort to avoid mistakes, but do not be too hard on yourself if you do make a mistake under difficult circumstances. Similarly, be understanding of others who make honest mistakes.

Don't get proud

A wise man (my father-in-law) once told me: 'never ever think you are the best anaesthetist in the world, just be very grateful indeed that you are not the worst - there will always be people better and worse than you are'. Even if you are very good indeed, there will be days when nothing goes right - when it feels like you are wearing boxing gloves and none of the lines will go in. Don't get proud - get someone else to help you. The person you ask to help you does not always have to be more experienced than you. I have often had difficulty putting a line in and have asked a trainee to help, only to watch the trainee put it in at their first attempt. This is good for the trainee and good for the patient and, after a while, your pride will get immune to the odd dent, which will do it a deal of good.

Keep good records

When you make clinical decisions, you are - I am sure - going through a problem-solving process and reaching logical conclusions that dictate your management. However, years down the line, if something goes wrong and you have to defend your practice, your memory will have faded. If you are a good practitioner, then good, contemporaneous record keeping is your best protection. Good records will also mean that the next doctor who sees your patient will know what's going on and will be able to provide continuity - especially important in an age of shift working and frequent handovers. A good rule of thumb is that an anaesthetist who does not know you but who has read your anaesthetic chart should be able to give an identical anaesthetic based on the information in the chart. A good, tidy and complete anaesthetic chart, in particular, is often the mark of a good, tidy and complete anaesthetist. Electronic records are increasingly taking over from paper records, but you would be unwise to presume that these automatically record every event accurately. You should take the time to ensure that they are an accurate record of what actually happened.

Treat consent seriously

From both the ethical and legal viewpoint, the process of consent is very important. You are responsible for explaining what you are going to do to your patient, telling them what you hope to achieve by it, what might go wrong, and what the alternatives are. Be guided by this simple question: 'If I were this patient, in their position and with their concerns, what would I want to know in order to make a decision about this treatment?'. The debate between written and verbal consent is too complex to consider here (read the Association of Anaesthetists guidance on the subject [2]), but the most important precaution is to keep a record of what has been discussed. Patients have notoriously terrible memories about what they have been told and, if a recognised complication occurs, you will want to be able to demonstrate that you warned them about it in advance.

Follow guidelines

You may think you know best - and, to be fair, sometimes you do - but a lot of experts went to a lot of trouble to draw up those guidelines, and it is their support that you want and need when things go wrong. They are more likely to look favourably on you if you were not following some maverick path at the time. Of course you are a professional, and of course guidelines cannot deal with every situation, but if you are going to deviate, make sure that (a) it is for a good reason and (b) you make a good note of why you did it.

Communicate

No anaesthetist is an island. We can only work well if we work with others, so ensure that lines of communication between you, the surgeon, the theatre staff, the wards, the labs and the myriad of other essential members of the team do not break down. The anaesthetist is arguably best placed to act as the hub for sharing and disseminating information. It is a noble and important role; fill it with distinction.



Never refuse a coffee break

When I started anaesthesia, I was told that there were three golden rules (in the following order):

- Never refuse a coffee break
- Maintain a clear airway
- Give oxygen

I have often thought the order might not be entirely correct, but I have never knowingly refused a coffee break when it was safe to leave the patient with another anaesthetist. You never know when your next break will come and you will function better if you have frequent breaks.

Be nice

It is a fact of life that the nice doctor who makes an error is far more likely to come out of it smelling of roses than the nasty doctor. You are bound to need the help and support of your colleagues at times, and they will not rush to help you if you have alienated them. The same applies to patients, who seem to be far more forgiving if they like you.

Listen to the GMC (really)

The very first line of the GMC's key document *Good Medical Practice* [3] says this: 'Make the care of your patient your first concern'. This is the best advice available if you wish to keep out of trouble.

I am sure you could add to this list pieces of advice that will help others keep out of trouble. However, I will leave you with one more morsel of advice that is worth heeding if you want to stay out of trouble: treat others as you would wish to be treated yourself – and this holds true for both your patients and those with whom you work.

Be safe out there!

William Harrop-Griffiths

Vice President, RCoA

Past President, Association of Anaesthetists

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Taking care of yourself



Becoming a parent

This chapter aims to clarify some of the main issues facing the parent to be and provide guidance on your rights and responsibilities towards your employer.

Maternity leave and pay

You are entitled to 52 weeks of maternity leave. The two weeks in the period immediately after the birth is compulsory. You may be entitled to both statutory maternity pay and NHS occupational maternity pay (the latter if you are planning on returning to work). The former is a statutory right [1] and the latter a contractual right [2], the details of which are summarised below. If you have changed trusts within the early weeks of being pregnant, then you may not be eligible for statutory maternity pay but maternity allowance instead.

You must notify your employer in writing before the end of your 25th week of pregnancy of your intention to take maternity leave, and the date you wish this to commence. This can be any date after the beginning of week 29 of your pregnancy. You can change the start date provided you give your employer 28 days notice.

It will be the assumption of your employer that you will be taking 52 weeks maternity leave, so if you are not intending taking the full 52 weeks then you must also inform your employer of when you plan to return to work. You can change your mind about this date later on as long as you give eight weeks notice.

You should also show your employer the original copy of your Maternity Certificate (MAT B1), along with any documentation. This states your expected date of delivery. Your midwife or GP can issue it from the 21st week of your pregnancy. Proof of pregnancy is needed to claim statutory maternity pay.

- Statutory maternity pay is claimed by your employer on your behalf. They can only do this if you have 26 weeks continuous service within your current employing trust by the end of your 25th week of pregnancy. This entitles you to 39 weeks statutory maternity pay paid regardless of whether you intend to return to work or not
- If you have rotated trusts and do not qualify for statutory maternity pay, then you are entitled to claim maternity allowance via your local Job Centre Plus and online, as long as you have been employed for 26 of the 66 weeks up to the week before your due date. The amount of maternity allowance is the lesser of either 90% of average weekly earnings or statutory maternity pay
- If you take shared parental leave you will get statutory shared parental pay
- To be eligible for NHS occupational maternity pay you must have one year of continuous service in the NHS (but this can include a break of up to three months) by week 29 of your pregnancy. If you have rotated trusts during this time, but have continuous NHS service, you will remain eligible for occupational maternity pay. This entitles you to eight weeks full pay followed by 18 weeks half pay, then 26 weeks unpaid leave. By prior arrangement this can be paid in a different way, e.g. a fixed monthly amount over the entire leave period [3]
- During maternity leave you retain all your contractual rights and benefits except pay
- You are entitled to a reasonable amount of paid time off to attend antenatal appointments. What is considered reasonable is not defined in law, and so common sense and consideration to the working of your department should be applied
- You can work up to 10 days during maternity leave. These 'keeping in touch days' are optional and both employer and employee must agree to them; you can be paid for these if they are taken during unpaid maternity leave
- Annual leave continues to accrue during maternity leave, but you may not be able to carry leave over into the next leave year. It is common for people to add annual leave to the start or end of maternity leave, but you need to discuss this in advance with your employer
- If, after maternity leave, you do not wish to return to work, your NHS employer is entitled to retrieve the occupational maternity pay awarded. To avoid this you must return to work for at least three months within 15 months of the start of your maternity leave
- Be aware that salary sacrifice schemes may affect the amount of statutory maternity pay and occupational maternity pay. The relevant period for the calculations is usually the eight weeks prior to the qualifying week (i.e. weeks 17-25) [4]. It may be worth stopping these schemes during this time to maximise occupational maternity pay



Employer's responsibilities

- The laws that protect you at work only apply once your employer knows you are pregnant. A risk assessment should then be conducted, and if any risks are identified, they must be removed or alternative working arrangements agreed to protect the safety of you and your baby at work. It is important to do this, otherwise you may expose your baby to an illness that is devastating to a fetus (e.g. cytomegalovirus)
- Once you have informed your employer in writing of your intention to take maternity leave, they are obliged to confirm in writing within 28 days your paid and unpaid leave entitlements, annual leave owed and expected date of return to work

Occupational hazards

- **Shift working/on-call commitments:** On-call commitments can be very demanding for the pregnant anaesthetist. In some cases, it may be necessary to give up on-call commitments at an earlier gestation to ensure a healthy pregnancy. A letter from your midwife or GP will support your case for a change to your working pattern. Many trainees continue to work long days until they start their maternity leave, but stop doing nightshifts. Most employers require occupational health assessment if you wish to come off the on-call rota entirely; however, some trusts require you to continue with on-calls until you take maternity leave. If you do not participate in an out-of-hours rota, those months without an on-call commitment do not count towards your Certificate of Completion of Training (CCT) and this should be discussed with your training programme director
- **Anaesthetic gases:** With the advent of scavenging, the risks associated with anaesthetic gases, spontaneous abortion and pre-term labour have reduced considerably [5, 6]. Exposure may be increased in certain areas, such as paediatrics and anaesthetic recovery areas, where there is no scavenging. The most significant period is the first eight weeks of pregnancy [7]
- **Radiation:** Ionising radiation is both toxic and teratogenic. The most dangerous period is the first eight weeks of gestation. The Ionising Radiation Regulations Act [8] states that once your employer knows you are pregnant, your occupational exposure should be controlled so that the dose to your baby is less than 1 mSv for the remainder of your pregnancy (one chest X-ray is approximately 0.1 mSv). In practice, if normal safety precautions are followed, the exposure at work is likely to be considerably less than this even for staff such as radiographers. A 5 mm lead apron should be worn if within 6 feet of an X-ray source. If in doubt, consult your local occupational health department for advice, some hospitals will have lists that they prefer pregnant anaesthetists not to do. No evidence of any harmful effects of magnetic resonance imaging to the fetus has been demonstrated; however, there is lack of evidence regarding the long-term effects of this [9]
- **Methyl methacrylate (bone cement):** There have been concerns regarding the possible teratogenic effects of exposure to bone cement, although there is little evidence in humans to support this [9]
- **Manual handling:** The hormonal changes of pregnancy make the pregnant body more susceptible to injury. It is also associated with a small risk to the fetus. Manual handling should be avoided where possible. Prolonged standing should also be limited [10]

Medical defence/General Medical Council/Association of Anaesthetists/pensions

- The medical defence organisations (Medical Defence Union, Medical Protection Society, Medical and Dental Defence Union of Scotland) regard maternity leave as a career break, and therefore, you are not required to pay your subscription fee as you are not undertaking any medical practice. It may be possible to claim this retrospectively if you were unaware of this. You must remember to reinstate your cover on your return to work following maternity leave. If you undertake any keeping in touch days it is important to inform your defence union or you will not be covered. A minimal fee may be charged for these days
- The Association of Anaesthetists offers a reduced subscription rate for members on maternity leave. Contact the membership department at members@anaesthetists.org
- It is also worth contacting the GMC and RCoA to find out if you are entitled to a reduced fee/subscription rate for the period of your maternity leave
- You and your employer continue to contribute to the NHS Pension Scheme for the period of your maternity leave if you are a member



Maternity support, paternity pay and leave

- If eligible, this entitles fathers, or the mother's spouse/partner who will be responsible for the baby, to one or two weeks paid paternity leave [11]
- This needs to be taken in one go, starting after the birth and ending within 56 days of it
- To be eligible for leave, you must be an employee and have worked for your employer continuously for at least 26 weeks by the end of the 15th week before the expected week of birth
- To be eligible for pay you must also be employed by your employer up to the date of birth
- To claim, you need to inform your employer at least 15 weeks before the week the baby is due, when you want the leave to commence (e.g. the birth day or a set time after), and if you want one or two weeks leave
- Employers need 28 days of notice if you wish to change the start date
- If you have 12 months continuous NHS service at the start of the week in which the baby is due, you are entitled to two weeks of occupational ordinary maternity support pay (full pay less any statutory pay received) [11]
- You are entitled to time off to accompany the mother to two antenatal appointments of up to six hours each (it may be unpaid)

Shared parental leave

- If eligible you can end maternity leave early and take the rest of the 52 weeks as shared parental leave [12] and the rest of the 39 weeks of maternity pay as statutory shared parental pay
- Shared parental leave can be taken in up to three blocks each rather than in one go. It does not have to be shared with a partner, but if it is, each can take leave at different times or both together
- Up to 20 optional 'shared parental leave in touch' days each can be taken but these need to be agreed by your employer [13]

Adoption and surrogacy [14]

- Statutory adoption leave is 52 weeks and pay for up to 39 weeks in line with maternity arrangements
- Only one person in an eligible couple may take it
- It can start up to 14 days before the child starts living with you, or within 28 days of the child arriving in the UK in overseas adoptions. If using a surrogate, it is the day or the day after the child is born
- Shared parental leave (as above) could be applied for
- For hospital doctors employed under national terms and conditions, adoption leave and pay will be in line with the maternity leave and pay provisions documented earlier
- Adoption of a family member, stepchild or private adoptions do not qualify



Loss of a baby

You can claim leave and/or pay if your baby is stillborn from 24 weeks of pregnancy or born alive at any point in pregnancy [1]. It is important you consider making use of this [15].

For more information on maternity rights, the following provide useful up-to-date information:

- BMA. Guidance for working parents. <https://www.bma.org.uk/advice/work-life-support/working-parents>
- GOV.UK. <https://www.gov.uk/maternity-pay-leave>
- NHS Staff Council. NHS terms and conditions of service handbook. <https://www.nhsemployers.org/tchandbook>

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Training with a long-term illness

By and large, young doctors enjoy the privilege of good health, so most have little experience of what it is like to be a patient with a condition that has a bearing on the future months or years of their life. Most will be unaccustomed to this role or the multitude of, often conflicting, emotions and anxieties that illness brings with it. For many it will be the first time these feelings are confronted despite dealing with patients every day of our working lives. For those anaesthetists unfortunate enough to be in this situation, I hope this chapter will address some of the concerns you have about your absence from work and getting back to work where possible. Some of it is the nuts and bolts of your responsibilities and rights as an employee, some of it is just common sense and what was helpful to me.

Contractual obligations

You are able to self-certify a leave of absence due to illness of up to seven calendar days. This should be submitted after the absence extends beyond the third calendar day. Beyond this you are required to submit medical certificates, completed by a doctor other than yourself, covering the duration of your absence. You should inform your line manager of your expected duration of absence as soon as possible. Timely communication will greatly facilitate the rearranging of rota commitments and other responsibilities.

Although the details of your illness are entirely confidential, if you can, it is helpful to communicate with your employer in a transparent and honest way. It is much easier for people to help you when they know and understand your situation.

You are not obliged to involve occupational health at the outset, although your line manager might suggest it. From experience, there is much to be gained from involving the occupational physicians early. Details of your situation are strictly confidential, unless you give express permission for the sharing of this information. Only the impact of your illness on your ability to carry out your duties will be communicated, and this will be undertaken directly with your line manager. Your line manager is entitled to refer you to occupational health for an assessment, particularly with regard to your return to work.

For specialist training programmes, the GMC has determined that within each 12-month period where a trainee has been absent for a total of 14 days or more (when a trainee would normally be at work), a review will be triggered of whether the trainee needs to have their core training programme end date or CCT/CESR(CP)/CEGPR(CP) date extended. This review would normally occur at the ARCP.

Sick leave entitlement

This is formally laid out in the terms and conditions of service of your contract:

- In general, sick leave entitlement depends on your duration of service. The maximum benefit within the NHS is achieved after five years of completed service. This entitles you to six months' full pay (including supplements, e.g. banding) and six months' half pay
- Injury on duty, accidents sustained due to sport (professional) or a case in which contributory negligence is proved, are dealt with individually. Specific conditions apply to absence where an injury has occurred resulting from violent crime
- Unpaid sick leave may be negotiated
- Due to the relatively short period during which you are entitled to full pay on sick leave, it is important to consider an income protection policy that will serve to top up your salary when, and if, your organisational benefit expires. Long-term illness is usually unexpected so, particularly if you have dependants, please consider this seriously

Psycho-social considerations

- Serious illness can be very isolating. The world around you carries on apparently seamlessly without you, despite the significant events taking place in your life. This happens at a time when you have new anxieties and are physically frail and can lead to a profound sense of loneliness, loss of confidence, feelings of worthlessness and depression
- For a multitude of reasons, the impact of your illness may precipitate strain in your closest relationships, thus your usual support systems become fragile at a time when you need them most
- Do not underestimate the knock-on effects of all of this on you and your life as it was. Be open to the idea of talking to someone neutral about how you are feeling. It might be your training scheme mentor or a senior medical colleague. You may consider approaching the BMA's wellbeing support services, or you may choose a professional counsellor



- Occupational health can assist you in accessing the services available within your trust and local education and training board, e.g. confidential in-house counselling sessions with a clinical psychologist that are free of charge to employees

Getting back to work

- Your health, recovery and wellbeing should undoubtedly be your priority. Your responsibilities to your family, your friends, your colleagues and your employer will weigh heavily on you, but without your health you will not be able to sustain or fulfil any of these
- Do not even consider returning to work before you feel completely ready. Take your time. Doctors, particularly, are prey to an irrational sense of indispensability. The truth is that when you are back, it is as if you were never away. Once you are present on the shop floor, the work environment will overtake you and, in practice, there is simply no half measure in clinical medicine
- I would strongly recommend you undertake a phased return to work. In this regard, advice from occupational health is essential. The people there do know what they are talking about, even if you think that a month (or several) building up to full-time duties is ludicrous. Listen to them
- You do not have to resume working in an identical role. Occupational health can assist and advise you. Less than full-time training or specific exclusions to your duties might be appropriate
- You are not going to be operating at your usual peak performance immediately. Do not place yourself under undue pressure by committing to new projects or taking on new responsibilities. For a period of time, just adjust to working again, and coping with it physically. In my experience, it took longer than I thought.

Useful resources

- [Terms and Conditions of Service: NHS Medical and Dental Staff \(England\) amendment 39, 2018.](#)
- [BMA Junior Doctors' Handbook.](#)
- [Reference Guide for Postgraduate Specialty Training in the UK. The Gold Guide version 8.](#)
- [BMA wellbeing support services](#) or telephone 0330 123 1245 (this is now a 24/7 service)
- [Association of Anaesthetists. Wellbeing and Support.](#)

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Returning to practice following a prolonged absence

If you have ever taken a two-week holiday, you will recognise that rusty feeling as you give your first anaesthetic after your return. When that break is longer, due to parental leave, sickness, research or a non-anaesthetic placement; the prospect of on-calls, solo lists and practical procedures can be a little daunting. Thankfully, it has now been recognised that this period of time requires additional support, and guidelines have been published by both the Academy of Medical Royal Colleges (AoMRC) and RCoA [1] with Association of Anaesthetists' guidance due out later in 2021. Evidence gathered by the GMC [2], Health Education England (HEE) [3] and several regional surveys has shown that a break of over three months can lead to a reduction in knowledge, clinical skills and confidence, which can take up to six months to regain [4,5]. Further guidance can also be found on the Association of Anaesthetists [6] and BMA [7] websites, and for trainees in England, in the Supported Return to Training (SuppoRTT) section of deanery websites.

Return to work programmes

Return to work programmes provide structure to discussions and planning for a leave period and resulting re-introduction. The original recommendations from the AoMRC define a prolonged absence as more than three months and give examples of checklists which should be used pre and post absence to allow an individualised action plan to be formulated to support the doctor's return to practice. The RCoA guidelines build on AoMRC recommendations and suggest anaesthesia-specific modifications.

For trainees working within England, HEE has funded the SuppoRTT initiative, which is now running across all HEE offices in England [4]. This project 'aims to remove as far as possible the disadvantage of those who take time out (of training)' as suggested by the 2016 ACAS junior doctors contract agreement [8]. It incorporates the structure recommended by the AoMRC, as well as providing other supporting activities either in the form of funding or by the HEE local office or school of anaesthesia. Details can be found on the local HEE SuppoRTT web pages.

There are several stages to a return to work programme, each involving a meeting between a returning doctor and their supervisor. For anticipated leave, a pre-leave planning meeting is scheduled to discuss ways of keeping in touch. Prior to return, a meeting should occur at least a month prior to the return date to discuss the preparation required and confirm arrangements for the return to work period. Guidance for planning the re-introduction period can be found within the RCoA Return to Work guidance. A record should be kept of the re-introduction period, which should be reviewed at a final meeting where all parties confirm readiness to resume normal duties. This process should allow identification of individual training needs and enable development of a mutually agreeable plan for both the individual and the department. Paperwork is likely to vary across regions and schools of anaesthesia. Trainees in England may have specific SuppoRTT paperwork/online forms.

Planned absence

In the past, this has most often been for maternity leave, but could also be for shared parental leave or out-of-programme experience or research or in another area of clinical practice. For planned absence, it is worth giving your return to work some thought even before you leave. This could include some in depth thought about areas you might predict will be difficult on return, and whether you plan to return to work less than full-time (LTFT) as the application for this may take some time (see chapter on Less than full-time training).

You might also wish to consider what you can do during your absence to keep up to date. This may simply be making the effort to do some reading. However, you may also wish to attend some courses, meetings or, in the case of parental leave, take advantage of keeping in touch days. Maternity leave entitles you to up to 10 keeping in touch days and shared parental leave up to 20 shared parental leave in touch days. These must be agreed prospectively with your employer and can be used to have some supervised clinical time or to attend courses appropriate to your stage of training. You can negotiate with your employer to be paid at the basic daily rate for each keeping in touch day taken. If you decide to complete a course during your leave you should still be able to access the study leave budget, or for courses supporting return to work, trainees in England may be able to claim funds through SuppoRTT. For those contemplating leave for out-of-programme experience or research, it may be worth arranging regular clinical contact whilst you are out of your normal clinical environment in order to maintain skills.

Prior to your return to work, it is important you make contact with your training programme director and college tutor/ educational supervisor at the hospital you will be working at to ensure your return is as smooth as possible. The level of support you will require will depend on various factors including length of absence and stage of training. You should agree an appropriate period of supervised practice prior to returning to out-of-hours work, and it is helpful to identify your training needs early to ensure you receive the correct training placement. The RCoA guidance gives some useful advice for planning this period, and if you are returning to work LTFT, it may take you longer than you expect to regain your clinical confidence - this is not unusual.



The *Bulletin* of the RCoA has published articles with more advice on preparing for maternity leave [9] and a personal view of returning to work following maternity leave [10].

Unplanned leave

Returning to work following an illness or with a disability is more complex, and trainees in this situation often need more support than those returning from maternity leave. The type of absence is likely to be unpredictable in its onset and length and pre-planning will not be possible. Early and regular communication with your training programme director and human resources department is advisable. It is also important to involve your local education and training board as further support may be available to you through the professional support unit.

Occupational health will deal with your situation in confidence and may prove very useful in helping to arrange an individually tailored return to work programme. The chapter 'Training with a long-term illness' and the website www.disableddoctorsnetwork.com both offer further advice. In addition, there have been several articles detailing a return to work following illness or disability through the eyes of those who have experienced it: Returning to work in a wheelchair [11], Returning to work - as a disabled anaesthetist [12], Returning to work - a personal view [13].

Return to work courses

There are increasing numbers of courses specifically for anaesthetists returning to work after a break. The Giving Anaesthesia Safely Again (GASagain) course is a national multicentre (London, Bradford, Bournemouth) return to work course focusing on confidence building through scenario-based simulation and interactive tutorials. More information can be found on the GASagain website [14]. Many regions have now developed their own return to work course, and if you would like help finding out where these are run please contact the Association via the email lftf@anaesthetists.org

As part of the SuppoRTT initiative, there may also be non-specialty specific courses covering confidence, resilience and human factors, which are also worth considering.

Your CCT date

The RCoA will need to be informed of your intention/need to take leave. Your Certificate of Completion of Training (CCT) date will be suspended until your actual return to work, allowing any unplanned extension to be factored in. Upon returning to work you must notify the training department of your return date and whether you are returning on a LTFT basis. A review of any absence of more than 14 days within 12 months will occur at your Annual Review of Competency Progression (ARCP) and local education and training boards will administrate the process in consultation with the RCoA. As training is competency based, this review will reflect the nature of absence, the timing and the effect of the absence on the individual's progress through training [15].

Tips to improve your return to work

As mentioned above, returning to work is likely to be associated with some degree of apprehension. We would recommend you use a structured return to work programme to help ensure you are supported at this time. You might also want to consider approaching a trained mentor. The GMC recommends that structured support opportunities, such as mentoring, are used at periods when your role changes during your career and we would suggest that this is one such period [16]. The Association of Anaesthetists mentoring scheme can be accessed via the website, and there may be schemes available through your school of anaesthesia or SuppoRTT office. Support from family, friends and colleagues is invaluable and if the Trainee Committee can help you with anything then please get in touch by emailing trainees@anaesthetists.org

Good Luck.

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HEE Clinical Fellow Supported Return to Training

Sarah Gibb

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What to do when you don't feel well, or when you think someone you know isn't well

If you need help, please call someone to talk about how you are feeling. There are many people who want to help and have the expertise and training to guide you.

- The BMA Doctors for Doctors helpline is open 24 hours and you do not need to be a BMA member. Call 0330 1231245
- You can also call the Samaritans on 116123 (you do not need to feel suicidal to call them for support)

For a list of other helplines and listening services please visit the Mind website <https://www.mind.org.uk/need-urgent-help/finding-out-what-support-is-out-there>

Please know that you are a valued member of the anaesthetic community. A community of like-minded individuals with shared stresses and challenges, who wish to look out for and look after each other.

You can also find a list of useful links at the end of this chapter.

There remains a significant amount of societal stigma about mental health, although hopefully this is changing. There is increasing recognition that as well as physiological needs, such as rest, nutrition and exercise, we also have psychological needs, such as connection, belonging, purpose and support. Being mentally unwell does not mean you are weak or broken, but rather that your psychological needs are not being met.

This chapter primarily discusses those times when you or a colleague might be feeling psychologically unwell, including problems such as anxiety, depression, stress and burnout. It builds on the chapter about wellbeing and should be read in conjunction with this.

Why is it important we talk about this?

Mental illness is highly prevalent in the general population. Data suggests that one in four people in the general population will experience mental illness [1], but the numbers could be higher given the reluctance to discuss mental health and the stigma behind it. Working in healthcare does not protect us from this; the latest information from the 2018 NHS staff survey reveals 40% of staff reported feeling unwell due to work-related stress in the last 12 months [2]. Rates of depression and suicide in doctors are at least as prevalent as in the general population and other professional groups [3, 4], and there is also concern that due to the availability of drugs, the risk of suicide in anaesthetists may be higher. This has prompted the publication of recent guidance about reducing this risk [5]. Sadly, there are anaesthetists who have taken their own lives and each loss is a tragedy. We must do all we can to reduce the risk of further tragic events.

Burnout is also a growing concern. The results of the 2019 GMC National Training Survey showed that there were comparable levels of burnout in anaesthetists to the national average, with 40% of trainees at moderate or high risk of burnout [6]. Using a different tool, the 2017 RCoA Morale and Welfare Survey found 86% of their respondents were at a "higher risk" of burnout [7].

Even if we are fortunate enough not to experience mental ill health personally, its prevalence suggests that we will know people who are suffering or who have suffered. There are many environmental and systemic problems within the workplace, which contribute to an individual's stress, burnout and mental health issues, and improving the resilience of individuals must not be seen as the sole solution to the generic, infrastructure problems faced by the NHS. We believe the contributory factors to mental ill health must be acknowledged and mitigated by leaders in the NHS and welcome the recent work calling for improvements in this area [8, 9].

All of us will encounter challenging life events at home and at work. How we cope with them depends on many things: what else is going on in our life, what support we have (at home and at work), what personal techniques we have developed to help us and to a certain extent, personality traits. It has been suggested that the same characteristics that make for successful entry to medical school and academic performance thereafter (high achieving, intelligent, self-critical, conscientious, perfectionist) also predispose to mental illness, which may explain why the medical profession may be especially at risk [10].



Anxiety and depression

There are numerous causes of anxiety and depression and it is not as simple as a genetic predisposition or a chemical imbalance, although these may be factors. Johann Hari describes three groups of causes of anxiety and depression [11, 12]:

1. Biological causes (e.g. serotonin deficiency)
2. Psychological causes (such as trauma or neglect)
3. Societal causes (like loneliness or 'junk values')

Some factors of our work might increase our risk of depression and anxiety. For example, it has been suggested that lack of control over your job can contribute to these and some elements of our work are outside our immediate control: rotas, list allocation and limitations to planning annual leave for example. Work is getting busier and more pressured and has a tendency to spread beyond the confines of time in hospital. Access to work emails and messages at all hours can make creating a boundary between work and home life difficult and reduce our time to switch off and re-charge. Loneliness is another significant contributory cause of depression. Shift patterns, rotation through hospitals, moving areas and sole working can exacerbate doctors' loneliness.

Many of these factors are beyond our individual control and, as mentioned above, national work to improve the working conditions of junior doctors (and all healthcare professionals) is crucial. It also remains important for us as individuals to understand potential risk factors for mental ill health and, where possible, allow us to identify steps that we can take to reduce our risk.

Burnout and stress

Burnout has recently been recognised with an International Classification of Diseases code, which reflects a growing recognition of its prevalence and importance. It is described as being an occupational phenomenon [13] and having three aspects:

1. Emotional exhaustion
2. Increased mental distance from the job, or feelings of negativism or cynicism related to the job
3. Reduced personal efficacy

It is often a reaction to chronic overwhelming stress, but is different from stress; stress is about things feeling 'too much', and people who are stressed tend to feel that if they can get things under control then they will feel better. Burnout is about feeling 'not enough', all dried up, without energy or hope of things improving. The warning signs of burnout include feeling exhausted, feeling that you no longer care (about work or home), feeling that nothing you do makes a difference, feeling like a failure and finding tasks either incredibly dull or overwhelmingly stressful. The tricky thing about burnout is that it creeps up on you gradually, which means we need to learn to recognise and manage our stress as much as possible and prevent it becoming unmanageable [14].

How to recognise when you are unwell

Recognising and acknowledging you are unwell is difficult. Psychological illness is often insidious in onset and can be hard to recognise. Here is a list of signs that you might be unwell or that someone you know might be struggling [15, 16]:

- Not being able to stop worrying. Everyone worries to some degree, but if you are constantly worrying about everything and finding it hard to get perspective, it is a sign you need help
- Feeling overwhelmed and/or not feeling able to cope with daily life
- Feeling persistently sad or tearful. Not being able to see anything positive or having anything to look forward to is a worrying sign
- Disordered thinking including paranoia and/or detachment from reality
- Problems concentrating or learning
- Changes in sleeping patterns, energy or appetite
- Excessive anger, hostility or irritability
- Withdrawal from social situations, family and friends
- Suicidal thoughts or expressions of suicidal ideation. If you have thoughts of hurting yourself, you need immediate help: please call one of the numbers at the top of the page.



When does the presence of these signs mean that you are unwell?

This is a difficult question and is likely to be different for each of us, as the feelings will vary with intensity and frequency. A reasonable guide would be if any of these symptoms are preventing your ability to function, then they are significant enough to mean you are not well. If you are in any doubt, please err on the side of asking a professional. They will be able to give some perspective, and point you in the right direction of what to do next.

What to do if you feel unwell

Despite the fact that we work in healthcare, it can often feel particularly daunting to reach out to people at work for fear of judgement of capability; however, often the judgement comes from ourselves even though we know that if we were the one approached we would want to listen.

Talk to someone. Please. This is the first step, and it can feel huge. You may want to talk with someone who knows you well, or someone totally unknown to you. Below are some suggestions.

- BMA Doctors for Doctors counselling service. Call 0300 123 1245 <https://www.bma.org.uk/advice/work-life-support/your-wellbeing/counselling-and-peer-support>
- The professional support unit at your deanery/local education and training board. Anyone involved with a trainee's education programme can refer a trainee and there is a move towards self-referral also being possible
- Your GP
- The Practitioner Health Programme: this is now available to all doctors across the country. Outside of London, any doctor or dentist can request a referral from their GP, but the website states to call them directly if you have concerns about speaking to your GP. Call 0300 030 3300; <https://www.practitionerhealth.nhs.uk>
- Occupational health: every organisation will have access to an occupational health physician and many organisations will have a staff counselling programme. These are people experienced in helping medical professionals and understanding their challenges
- Your educational supervisor, college tutor or training programme director. We recognise it can be hard to go to those people who are in supervisory roles when you are not feeling at your best, an example of the perfectionist trait at work; however, these people have experience and an interest in supporting trainees and are there to help you
- A mentor: you may have access to local mentoring schemes within your department or school or you may wish to approach someone outside your organisation. The Association of Anaesthetists has a mentoring scheme open to members, which will connect you with mentors in your region. They also offer mentoring taster sessions offered at all conferences. Find out more here: <https://anaesthetists.org/Home/Wellbeing-support/Mentoring>
- A friend, a family member or a colleague

How to keep yourself well

Even if you currently feel well in yourself, it may be worth thinking about what things you could do if you feel like you are becoming unwell. Who could you talk to? Who will be supportive, non-judgemental and help you work out what is best for you? This might be a family member or a friend or it might be a trained volunteer or professional. In addition, think about what you need to do to keep yourself well. What activities are good for your wellbeing and how can you make sure you find time to prioritise them? We have included some tips to improve your mental wellbeing here, and you can find out more in the wellbeing chapter and in the useful links at the end.

Tips to improve your mental wellbeing [14]

- Connect with others: those closest to you, your co-workers or your community. Try to minimise your contact with negative people. Giving to others can be helpful and, although this is difficult when you are feeling overwhelmed, even just some positive feedback or thanks is a start
- Reframe your work: focus on the value of your work and the bits you enjoy and try to connect with colleagues as mentioned above. Also remember the importance of your time away from work and don't feel guilty about prioritising that, it makes you better at doing your job
- Set wellbeing priorities: exercise, sleep, diet, 'off-time' from technology, spending time outdoors, taking time to relax and doing something creative. These are all important to help us get well and stay well. You don't need to do all of these, all of the time; this list is not meant to overwhelm, but if you can work out ways to build these into your week it will help you feel better



What to do if you think someone else is unwell

People often wonder whether it is okay to ask someone if they are okay. What if you don't know what to say? Could you make things worse? Will you make them (or yourself) feel uncomfortable? What if they don't want to talk about things? The simple answer is that if you approach the situation with sincerity, empathy and a non-judgemental attitude, you cannot go wrong. You do not need to fix the person or the situation, you just need to listen and create a safe space for that person to feel heard. You have all the skills to help someone who is unwell. Not because you are a doctor, but because you are a kind and compassionate human. We are aware of many examples when a check in with a colleague or friend has made a huge difference and potentially even averted a tragedy. An opening question could be 'I have noticed you are not yourself, is everything okay?' or 'I notice you seem subdued, is there anything you want to talk about, or anything I could help with?'

What about involving others? This decision is also not easy; you might be worried about making things more difficult for the person or having misinterpreted how they are feeling. If someone confides in you that they are not feeling well, what is your responsibility in ensuring they are safe at work? Again, every situation will have its own nuances, but here are some general points that you may find useful to consider.

- If possible, it is better to help the person involved seek the help they need (please see the list above for options). When someone is not feeling well, they can struggle to practically access help even though they want to. If there is an opportunity when you are talking to them, encourage them to make that first step with you. For example, if they wish to see their GP, you could suggest they call the surgery and make an appointment whilst you are there to support them. If this does not seem possible, an alternative is to talk about how and when they might be able to seek help. Being engaged with seeking support is seen as a positive sign if health concerns are raised to those in supervisory or regulatory roles. There won't always be opportunity for this though, and the priority is to maintain a sensitive balance between supporting someone without overwhelming them.
- If you are worried about their safety then it might help to tell them you are worried and ask if there is a friend or family member they would like you to contact. It can sometimes help to know that mental health problems are common amongst doctors, with very good recovery rates for those that get professional help. The hardest part is taking the first step.
- Wherever possible you should maintain the confidentiality of the individual.
- If you are worried about patient safety, then you have a responsibility to raise concerns according to the channels in your organisation. This would usually be with the person's educational supervisor for trainees or clinical lead for others, but please consider all the other points here too.
- Please be open with the person involved about whatever action you take. This is respectful and will help to maintain trust. Saying something like, 'I might be wrong, but I am concerned that you don't seem your usual self', and describing what you have noticed, gives them the option to explain your error.
- You might find it helpful to talk through the situation in an anonymous way with a colleague experienced in helping others, such as a mentor or an experienced college tutor, training programme director or clinical lead. You could even rehearse how you might approach the person in a supportive way. Being involved in a situation like this can be stressful for the person helping, and it is important to recognise this. A consultant occupational physician can be a helpful source of advice if you do not want to raise the matter with seniors. If you choose to do this, please remember to maintain confidentiality.

Where can you find out more?

As well as the resources mentioned in the article above and the references below, here are some other documents and websites you may find useful:

- There is a comprehensive collection of resources about mental health and sources of support in [Appendix S1 of the Guidelines on suicide amongst anaesthetists](#)
- The Association of Anaesthetists has a [wellbeing section on its website](#) with lots of useful information and links
- [The Samaritans](#): a charity that aims to support people experiencing emotional distress and reduce the risk of suicide
- [Every Mind Matters](#): a public health campaign to promote mental wellness, resources to help you and to assist you helping others
- [Mind](#): the mental health charity
- NHS website: [5 steps to mental wellbeing](#)
- [Action for happiness](#)



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Wellbeing

Wellbeing is described as a state in which 'individuals have the psychological, social and physical resources they need to meet a particular challenge' [1], in essence, feeling up to the job and in command of the situation. Organisations that prioritise staff health and wellbeing perform better, with improved patient satisfaction, stronger quality scores, better outcomes, better staff retention and less sickness absence [2]. People who work in such organisations are more engaged and innovative, more thoughtful and patient-centred, feel more valued and respected and as a result are kinder and happier. Without strong employee wellbeing, employee engagement declines, retention suffers, motivation and performance are affected [3, 4], and burnout is more common.

It is important that we look after ourselves and our colleagues and work together to create a good work atmosphere. Good staff wellbeing and morale are now recognised as a vital component of high-quality healthcare. Indeed Deming states that 'Management's overall aim should be to create a system in which everybody may take joy in [their] work.' [5]. Doing this requires effective systems, good technical support, effective, open and respectful communication to give people a sense of camaraderie, purpose and confidence that they are trusted.

This chapter looks at what we can do as individuals and departments and what role schools of anaesthesia can have in wellbeing.

What the individual can do

Anaesthetics is a busy and demanding career, with long hours and significant challenges along the way. To deal with the stress of the job and ensure we reach our full potential, it is essential we look after ourselves. Whilst departments, schools of anaesthesia and the Association of Anaesthetists can help, we must make time and take responsibility for our own wellbeing. Four elements seem to make a difference: being active, being mindful, keep learning and give to others.

Hobbies and interests should be regarded as more than token CV fillers as there is good evidence that taking part in various activities can have a positive impact on your wellbeing. Getting involved can make us feel more satisfied with life, happier, less anxious and burned out. Examples for which there is a positive evidence base [6] include:

- Yoga
- Aerobics and hip-hop dance
- Group singing and music ensembles
- Listening to music
- Visual arts
- Hobbies

But it doesn't matter what your hobby is; what matters is you do something that interests you and takes your mind off work.

Keeping physically active, eating well, avoiding the temptation to reach for alcohol or other drugs when stressed and prioritising sleep is also recommended to improve physical and mental health, concentration and memory and reduce irritability.

Individual wellbeing priorities:

- Work-life balance
- Pursuing hobbies or activities
- Keeping physically fit: 30 minute sessions at least five times per week [7]
- Eating well
- Sleep hygiene: for more details see the Association's [Fight Fatigue](#) resources.

What your department can do

We should all encourage a warm and welcoming environment at work, which in turn supports happier and healthier staff. We can all think of departments that are more pleasant to work in than others. Stop and think: what do they look like? As trainees who frequently rotate around hospitals in the region, what good practices do we see that we can share? Departments have a huge impact on their trainees and there is much that can be done.

From a departmental point of view, rotas should be provided in a timely fashion prior to trainees arriving (the 2016 contract recommends 6 weeks in its Code of Practice [8]). It is useful if the people writing the overnight rota understand circadian physiology and which rota patterns best mitigate the impact of night work. Departments have a need for trainees to be flexible to cover rota gaps, sickness, etc, and we would encourage this flexibility to work both ways. We also encourage



departments to include our fatigue presentation during the induction and ensure trainees are aware of what rest facilities exist in the hospital and how to access them. Departments can score themselves with the traffic light system included in the Association's [Fight Fatigue](#) resources.

Good educational supervision should include conversations about wellbeing. Many departments are now developing a 'Wellbeing Lead' consultant role, enhancing pastoral care available to the department as a whole and nurturing a more supportive work environment. These leads can act as an additional point of contact for trainees wishing to have confidential conversations about wellbeing matters.

National initiatives can be adapted and hosted locally, such as [#coffeeandagas](#) to provide opportunities for departments to meet and chat on an informal basis. Wellbeing Leads also help departments identify changes that would improve their working lives, and ways of putting these into practice. These might be big or small, such as having someone on the rota to provide coffee and lunch relief, or improving car parking; they all help to develop a sense of collegiality. The Association of Anaesthetists can support new 'Wellbeing Leads' to develop their role and encourage their own departments.

Departmental educational events

Protected teaching time can include sessions promoting healthy work practices, mindfulness and skills for dealing with difficult situations. The new RCoA Curriculum will include a section on wellbeing. Educational aims for departmental learning could include:

- People understanding why this is important
- People generating ideas about how the situation could be improved
- People identifying what they can do to help themselves/their colleagues
- People feeling empowered to bring about change for themselves/in their work

A wellbeing notice board, displaying information of where to seek help, and other local and national initiatives helps to publicise events and opportunities. The Association of Anaesthetists runs a mentoring course and has an ever-growing network of trained mentors (<https://anaesthetists.org/Home/Wellbeing-support/Mentoring>). We would suggest a list of local mentors be displayed for trainees to contact. Mentoring is about achieving our full potential so a conversation with a mentor is helpful in developing an opportunity as well as when managing a difficult situation or a dilemma. The GMC advises us to use a trained mentor whenever we change roles throughout our careers.

The cost of incivility in the healthcare setting is becoming increasingly apparent, with research suggesting diagnostic and procedural skills are impaired in an in-civil environment [9]. Simple measures such as greeting your colleagues and thanking staff can inspire a more joyful work place. In contrast, there is more work showing the positive impact of 'Appreciative Enquiry', with schemes such as [learning from excellence](#) and the 'Greatix' encouraging reporting of excellence.

Departmental wellbeing priorities:

- Timely publication of rotas
- Rota flexibility to allow for study and annual leave, sickness, etc
- Inclusion of fatigue at induction and provision of rest facilities
- Protected teaching time
- Consultant Wellbeing Lead
- Provision for mentoring
- Use of 'Learning from excellence' tools e.g. 'Greatix'

What your school of anaesthesia can do

Research shows that support for wellbeing in the workplace is beneficial for staff, business and organisations. It can help to reduce absenteeism, presenteeism and increase productivity [10]. Health professionals who are more engaged have also been shown to make fewer mistakes and greater engagement also leads to better patient outcomes [11].

Your school of anaesthesia can help by making wellness an organisational priority and engaging trainees. This could be by supporting the delivery of wellbeing-related initiatives, practically or financially and should ideally also involve a measure of their impact, so that the efficacy of interventions can be reviewed. Including education around wellbeing as part of formal teaching programmes, as has been done in South Yorkshire, is one way to increase engagement.

Schools of anaesthesia can also help by providing rapid access to support services for trainees, including physiotherapy and talking therapies. We suggest appointing a training programme director for trainees for differing needs to act as a point of referral and to oversee delivery of support. Schools of anaesthesia should also ensure that local consultant-led occupational health services are utilised.



Examples of wellbeing initiatives with school support include [WOW \(Working Out Wellbeing\)](#), an annual training day dedicated to the wellbeing of anaesthetic and critical care staff, held in the Northern deanery and [SCReAM \(Surrey Crisis Resource Management\)](#), in the South West.

Schools of anaesthesia wellbeing priorities:

- Trainee engagement
- Support for wellbeing initiatives
- Wellbeing and practical ways of improving culture at work included in formal teaching
- Rapid access to trainee support services
- Training programme director for trainees with differing needs
- Regular audit of trainee engagement and impact of wellbeing initiatives
- Regular audit of available rest facilities in each training location during and after night shift work

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Social media

In the future, everyone will be world-famous for 15 minutes

Andy Warhol

Social media is now well embedded in medicine as a method of sharing up-to-date information and for professional networking. It has become so engrained into our way of working that almost all our professional bodies have a social media profile and the GMC has produced guidelines on how we should run our avatars [1].

Key features of the guidance include:

- If identifying yourself as a doctor, you should identify yourself by name
- Maintaining patient confidentiality
- Treating colleagues fairly and with respect - you should assume that the professionals you network with are well-trained and well-intended

When using social media you should weigh up your priorities. Is your aim social or professional? If posting lots of work-related content you may find your school friends cull you quite promptly. On the other side of the spectrum, if your profile is mainly made up of YouTube cat videos and food selfies then professional posts may not be taken seriously.

TED speaker Juan Enriquez likened social media to a digital tattoo [2]. More permanent than an actual tattoo and so widespread that Andy Warhol's 15 minutes of fame has now flipped on its head and it is 15 minutes of *anonymity* that we can claim. This highlights an important warning of social media - posts tend to be permanent, even if deleted.

Technology is constantly evolving and so it is likely that the next big thing may replace some of the tools discussed below. Nevertheless, the following covers some of the popular ones at the moment.

Facebook

The strength of Facebook is that it is one of the most popular social media platforms. Many schools of anaesthesia have capitalised on this popularity and have set up regional groups where arrangements for teaching sessions or plans for social events can be shared. Beyond this organisational role, Facebook can act as an important wellbeing forum - check out the *Tea and Empathy* public group for a nice example.

Twitter

Twitter is a fantastic way to share hot-off-the-press information within the limits of 280 characters. The content can range from how to do a particular procedure through to sharing the most up-to-date study. A good example of the power of Twitter is the distribution of knowledge at medical conferences [3]. Information that was previously restricted to the delegates in attendance, and whatever trickled back via word-of-mouth, can now be shared at that moment in time around the world. Discussions and debates can be started with individuals with whom you may not have normally crossed paths. Indeed one of my first discussions was with an anaesthesiologist in Tennessee on the topic of enhanced recovery while I was working in Bedfordshire.



Below is an infographic by Sandra Viggers (@StatSkaterDK) on how to set up a Twitter account and how the various functions work.

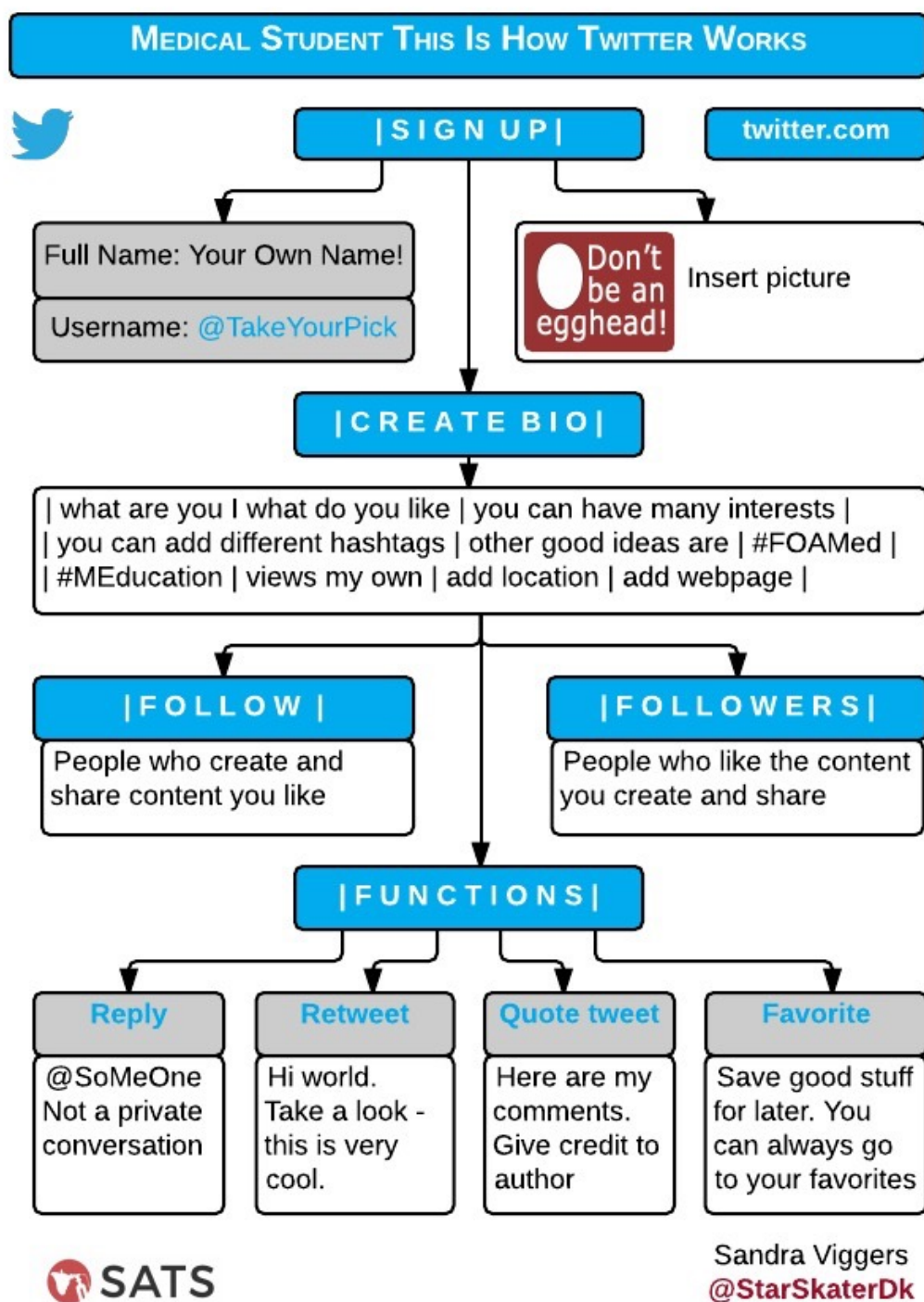


Figure 1 Twitter: getting started. Viggers S. Reproduced with permission.

Hashtags (#) go hand-in-hand with Twitter. When added to the body of your text, a hashtag groups tweets together. People that are interested can search for, and then keep an eye on, that particular hashtag. For example, #GATASM19 was used to group all the tweets that pertained to that conference. Those that wanted to keep abreast of the conference (even if stuck at work), could tune in by searching for #GATASM19.

YouTube

When I was at medical school 'see one, do one, teach one' was still in force. We are now in the world of 'YouTube one, do one, tweet one'. Whilst educational material on YouTube can be fantastic, it is currently not peer reviewed or benchmarked in any way. If you are using it, make sure it is done in conjunction with, and not instead of, more traditional educational methodologies. For the filmmakers amongst you, if you do end up posting your own videos on YouTube make sure you have consent (if using patients) and have the rights to all media you utilise on the video.



WhatsApp

WhatsApp is a cross platform end-to-end encrypted instant messaging system. The system is incredibly popular and many clinicians use it at work either between another individual or as part of a group [4]. Uses include:

- Departmental management (e.g. rota updates)
- Co-ordinating critical incidents (e.g. mobilising clinicians for major emergencies)
- Clinical discussions

The GMC does not give specific guidance on the use of WhatsApp. This is both a blessing and a curse. On the one hand, we are currently able to use this incredibly useful tool with a degree of freedom. On the other hand, the lack of guidance has meant we have had to use our own judgement and create our own guidance. However you use WhatsApp keep in mind the worse-case scenario - someone loses his or her phone and the conversation is accessed. If you can justify your conversations then you are golden.

Problematic internet use

When I wrote the first edition of this chapter a few years ago my enthusiasm for social media was unrivalled. Skip a few years and I'm a little more measured. Although social media has many benefits to the clinician, it does come with a physical and mental health warning (look up *texting while walking fails*). Psychologists now have a term for zombie scrolling syndrome - problematic internet use [5]. This in turn may be linked to conditions such as anxiety, depression, narcissism and addictive behaviour [5, 6]. I'm not saying social media is evil - it's just how you use it. From personal experience, if you find yourself needing a Facebook eye opener, get angry because your tweet didn't get enough likes or suffer guilt when you realise you are never physically in the room with anyone you may just need a #SoMeVacation.

Final tips

- Treat everyone (including your workplace) with respect
- Assume all your data are in the public domain regardless of your privacy settings
- Be able to justify anything that is found on your smartphone, tablet or computer
- Before posting something ask yourself, 'How would this look in a tabloid newspaper?'
- Focusing on external validation (likes, retweets, follows, etc) is unhealthy
- Regardless of what you are doing, having your phone out in front of a patient looks just like that

Association of Anaesthetists social media account links

- [Trainee Committee](#)
- [Association of Anaesthetists](#)
- [Anaesthesia journal](#)
- [Anaesthesia Reports](#)
- [Anaesthesia News](#)
- [Association Heritage Centre](#)
- [SAS Committee](#)

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Medico-legal advice and support

The law and how anaesthetists might fall foul of it

The legal system in the UK and Ireland has grown organically over hundreds of years, mostly taking its cue from the situation in England (hence the following summary is based on the English system, although the principles apply in the devolved nations and Ireland). In brief, there are two broad divisions in law: the civil system, which is all about relationships between parties and whether one party owes the other one compensation; and the criminal system, which is all about breaking the law and whether the person doing the law-breaking should be prosecuted and punished with a fine or jail sentence. There are other processes that might also be involved, e.g. the coronial and regulatory systems. Many managers and older clinicians may not appreciate the pressure that modern junior staff may be under, feeling that these processes are lurking in the shadows and waiting for them to slip up - especially in the light of the recent [Bawa-Garba case](#).

Civil actions

The primary type of medical civil action is a claim of negligence, in which a patient (the Claimant) claims that the provider (the Defendant) has failed to provide an adequate standard of care, as a result of which harm has occurred. In the NHS, it is the employing trust that is the Defendant, since the clinicians are acting as agents of the trust; in the private sector the clinicians and/or hospital may be the Defendants. If the claim is successful, or settled out of Court, the Defendant will have to cover costs and pay the Claimant compensation, the size of which is also decided through the legal process. If the patient dies, then it may still fall within a negligence claim, unless the standard of care is so poor that it might be considered gross negligence (see below).

Criminal charges

This may include gross negligence manslaughter, in which a patient dies through negligence that is considered so great (standard of care so poor) as to meet the as-yet undefined trigger of gross - often reckless - negligence. Unlike a negligence claim, it is the individual clinician who faces a charge of manslaughter (unless it is claimed that the trust and/or its senior managers have failed to act appropriately to correct a major identified risk - in which case a charge of corporate manslaughter may be brought against the trust and executives). At worst (for the doctor or nurse, etc), he/she may have to serve a jail sentence if found guilty. It is generally accepted within (and increasingly, outside) the medical profession that the law around gross negligence manslaughter is counter-productive and unhelpful, although two recent enquiries (one for the Secretary of State for Health, and one for the GMC) have sought to 'clarify' the law rather than suggest its modification. The recent Bawa-Garba case has highlighted many issues of specific concern to trainees, such as induction into new units (or return after a period of leave), the level and reliability of senior support, and the place and purpose of reflective feedback.

Prosecutions may also arise from breaches of other laws, e.g. Data Protection Act, Human Rights Act, or Health and Safety legislation. Those involved in end-of-life care (e.g. intensivists) may find themselves facing a charge of murder if they are considered to be hastening the death of another person as their primary intent, and so all clinicians involved in such care should be aware of this risk.

Coroners Court

Through the nature of their work, anaesthetists and intensivists are often involved in the care of patients who die, and whose death may be reported to the coroner. Inquests are meant to be fact-finding exercises, and not adversarial, but Coroners Courts are often seen as a testing ground by potential Claimants. Thus it is not uncommon for barristers and solicitors to represent the deceased's family to 'test the waters' before deciding whether to pursue a claim, and coroners vary in their willingness to moderate their enthusiasm. Appearing at an inquest may therefore be a very stressful experience, especially if the deceased's relatives are allowed to question the staff directly.

Regulatory proceedings

The GMC is a statutory body charged with protecting the public, not with supporting doctors. It therefore has a duty to investigate doctors who are convicted of offences and/or referred to it. The GMC has tried very hard to be as open and supportive as possible, following criticism around recent high-profile cases (in particular, the Bawa-Garba case), although with varying success, and a lot of dissatisfaction with the GMC persists within the profession. The vast majority of GMC referrals do not end in sanctions (and most do not even go as far as hearings), and summary statistics and guidance are freely available from its website (see <https://www.gmc-uk.org/about/what-we-do-and-why/data-and-research/medical-practice-statistics-and-reports> and <https://www.gmc-uk.org/concerns/information-for-doctors-under-investigation/how-we-investigate-concerns>).



When the **** hits the fan

Being involved in any kind of legal proceedings can be incredibly stressful, even if one's role is merely as a witness of events, without any criticism of one's own actions. For someone who is facing direct criticism, it is easy to see how a spiral of self-doubt, distress over any harm suffered by the patient, potential loss of colleagues' support and even of one's own income and/or career, a possible custodial sentence, etc, can develop for any doctor, let alone a trainee with limited experience or security of employment. Intrusion by the media and/or involvement of the police if a criminal charge is being considered (neither of which are renowned for their gentle handling of such matters), possible exclusion by the employer, and the fact that the above processes may occur in succession and are usually drawn out over many months or years, invariably place a huge burden on the individual doctor and his/her family and friends.

What you can do

Here are my top tips for reducing the risks of getting into trouble, for dealing with the fallout when trouble comes despite one's best efforts, and for supporting oneself and each other through potentially horrendous times.

- **Generally try to stay out of trouble**
All the obvious stuff, e.g. practising to the best possible standard, being courteous and professional at all times, proper handover of cases, good communication, and clear record-keeping.
- **Join a medical defence organisation**
You simply must join one of these. Although anyone working within the NHS has indemnity for that work (e.g. should a patient sue the trust), the trust legal department's emphasis will be on protecting the trust, not you or your reputation. Medical defence organisations will provide advice and/or assistance should you be involved in a negligence claim, inquest and - unlike your trust - a criminal charge or GMC referral, and will help you deal with the legal process and your trust should that be required.
- **Understand (a bit) about the legal process**
There are two reasons for suggesting this: first, because it always helps to have an understanding of the processes around your work, especially those that may come into play if/when things go badly, and second, because it's really important to understand that even if, for example, your actions lead to a successful claim of negligence against the trust, it doesn't mean you must therefore be a bad person or a bad doctor. Good people can still make mistakes or errors of judgement, and sometimes even what may be argued as acceptable practice may have a decision go against it in the Courts. Understanding this may be an important factor in avoiding becoming too bitter from the experience - or even worse, becoming a worse doctor.
- **Bring wellbeing into the mainstream of your working life, and keep an eye on each other**
Having an eye to general wellbeing principles and looking after oneself and one's colleagues has rightly acquired increasing emphasis in recent years. The Association of Anaesthetists has had a major part to play in this area (see <https://anaesthetists.org/Home/Wellbeing-support>). The link between impending legal action/regulatory investigation and mental distress is well reported, and involvement in such proceedings must be recognised and acknowledged as a time of great stress for the person(s) involved. (Sometimes this may affect a whole department.) Trainees have an important part to play in supporting their colleagues - both senior and junior - at such times, whilst remembering that a department's permanent staff may feel a sense of ownership of the department that may not be so apparent for trainees passing through, and may therefore be more sensitive to criticism, especially that spread via social media, in the event of an adverse event or enquiry/proceedings.
- **Keep off Twitter**
By all means use social media to comment on public cases, but take care: venting one's feelings on Twitter can be both cruel and extremely destructive, as well as potentially breaching professional guidance (see <https://www.gmc-uk.org/ethical-guidance/ethical-guidance-for-doctors/doctors-use-of-social-media/doctors-use-of-social-media> and <https://www.bma.org.uk/advice/employment/ethics/social-media-guidance-for-doctors>).
- **Share the learning**
There is no adverse event that cannot produce some good in the form of learning from the experience. As well as sharing the lessons, this also provides an opportunity for giving and receiving support from colleagues.

Competing interests

I provide expert reports on behalf of Claimants and Defendants, and occasionally the GMC, for which I am paid. I have run an Association of Anaesthetists seminar, Anaesthetists and the Law, since 2007, for which I am not paid.

Steve Yentis

Consultant Anaesthetist (ret.), Chelsea and Westminster Hospital



Consent and UK legislation

Principle of consent

'It is a general legal and ethical principle that valid consent must be obtained before starting treatment, physical investigation, or providing personal care' for a patient [1]. Health professionals who carry out procedures without valid consent are liable to legal action by the patient and investigation by the GMC or equivalent professional bodies.

Consent is an important part of the process of discussion and decision-making by patients and their doctors. You should 'share information in a way the patient can understand and, whenever possible, in a place and at a time when they are best able to understand and retain it' [2]. When deciding how much to disclose to individual patients you should take account of their wishes, but ensure all relevant information and the nature and level of risk are included to enable them to make an informed decision. In addition, it is good practice to provide written information leaflets for patients prior to admission for elective surgery and anaesthesia. Doctors should check patients have understood all the information and encourage them to ask questions, which should be answered fully and honestly. This was further reinforced by the Montgomery vs. Lanarkshire Health Board Supreme Court ruling [3]: 'A risk should be considered material if a reasonable person in the patient's position would be likely to attach significance to it.' When discussing the addition of say a regional technique as either the sole anaesthetic or in addition to general anaesthesia, the risks of the technique should be fully explored along with the option of 'no block'.

The consent process should be reinforced on the day of procedure, but it would be considered poor practice to introduce a new procedure at that time. Valid consent implies that a competent and informed person gives it voluntarily and not under duress. All adults should be presumed to have the capacity to consent unless there is contrary evidence. To have capacity for consent, the patient must be able to comprehend and remember the information provided, weigh up the risks and benefits of the proposed procedure, and consider the consequences of not having the procedure in order to make a balanced decision. They must also be able to communicate this decision [4, 5]. Doctors must respect patient autonomy and their right to be involved in decisions that affect them. You must respect a patient's decision regarding treatment even if you think it is irrational or unwise and 'may result in death of the patient (and/or the death of an unborn child, whatever the stage of the pregnancy)' [1, 6].

Consent may be expressed as written, verbal or implied, e.g. holding out one's arm for a blood test. At present, a separate formal written consent form for anaesthesia is not required if part of another treatment, but anaesthetists should record details of their pre-operative discussion with patients in the medical record, 'noting what risks, benefits and alternatives were explained' [7].

Patients who lack capacity

The treatment of patients who lack capacity is governed in England and Wales by the Mental Capacity Act 2005 [5], and in Scotland by the Adults with Incapacity (Scotland) Act 2000 [8]. In Northern Ireland, decision making for these patients is currently governed by common law, requiring decisions to be made in the patient's best interests.

In the Mental Capacity Act there is a two stage test of capacity, namely:

1. Does the person have an impairment of the mind or brain or is there some sort of disturbance affecting the way their mind or brain works, whether temporary or permanent?
2. If so, does that impairment or disturbance mean the person is unable to make the decision in question at the time it needs to be made?

If the patient lacks capacity, then it is lawful for treatment to be given if it is in the patient's best interests. The definition of 'best interests' is assumed not to be limited to best medical interests, but considered to include welfare, social, emotional, psychological and other interests.

The Independent Mental Capacity Advocate Service in England and Wales supports vulnerable people who lack capacity to make decisions about providing, withholding or stopping 'serious treatment' (e.g. major surgery) where there are no friends or family members available, or willing, to be consulted about those decisions. Responsibility for instructing an Independent Mental Capacity Advocate in a case of serious medical treatment lies with the NHS organisation providing the patient's healthcare. However, in an emergency, treatment can proceed if it is in the patient's best interests without instructing an Independent Mental Capacity Advocate [9].

Lasting powers of attorney may be appointed by a person with capacity to act on their behalf in health decisions should they lose capacity in the future, including 'giving or refusing consent to the carrying out or continuation of a treatment by a person providing healthcare' (England and Wales) [5]. When an attorney is uncontactable, if an urgent healthcare decision



is required in relation to a patient with a lasting power of attorney, treatment should proceed if it is in the patient's best interests.

Advance decisions, previously termed living wills or advance directives, are legally binding advance refusals of specific treatments by a competent individual of 18 years or older in case of future incapacity. They may be verbal or written. Refusal of life-sustaining treatments must be in writing and signed in the presence of a witness. In an emergency, treatment should not be delayed by looking for an advance decision but if one has been made, and is likely to be relevant, the healthcare professional should 'endeavour to assess its validity and applicability as soon as possible' [5, 8].

Children and young adults

The RCoA has updated its advice on consent and safeguarding children in 'Safeguarding Plus' [10]. This provides useful definitions and advice on safeguarding matters in children. Doctors must safeguard and protect the health and wellbeing of children and young people. The law relating to children and young people is complex and differs across the UK. The capacity to consent depends more on young people's ability to understand and consider options than on their age. You should involve children and young people as much as possible in discussions about their care and treatment [11]. In England and Wales, the Children's Act 1989 summarises who may have parental responsibility and can give consent on behalf of a child [1, 12]. Those with parental responsibility include the child's mother or father, a legal guardian, the local authority or a person with an emergency protection order for the child.

In England and Wales, young adults over the age of 16 are automatically presumed competent in law to give consent for any treatment without obtaining separate consent from a person with parental responsibility, unless it involves research (in which case consent by a person with parental responsibility may be required until the age of 18). However, you should encourage young people to involve someone with parental responsibility when appropriate. In Scotland there is no requirement to gain additional consent from a parent as long as the young person is deemed competent and understands what is being proposed [12]. If the young person is not considered competent (e.g. has learning difficulties), then in England, Wales and Northern Ireland a parent may give consent until the child turns 18, but in Scottish law the concept of parental responsibility ceases at when the child is 16 years old [13].

Children aged under 16 who demonstrate the ability to fully appreciate the risks and benefits of the planned intervention, can also be considered competent to give consent - so called 'Gillick competency' [14]. The decision of a competent child to accept treatment cannot be overridden by a person with parental responsibility [15]. Children with capacity, and young adults who refuse treatment, may have their decision overridden in the courts 'if it would in all probability lead to the death of the child/young person or to severe permanent injury' [1]. If a competent child refuses treatment, the courts have said that, in exceptional cases, persons with parental responsibility may consent on their behalf and the treatment can lawfully be given. For young adults, the law on parents and/or medical professionals overriding young people's competent refusal is complex and you should seek legal advice [9].

If a child lacks the capacity to consent, you should ask for consent from a person with parental responsibility or from the court [9]. For children who lack capacity, the law only requires consent from one person with parental responsibility even if another person withholds consent. However, clinicians should try to obtain a consensus if persons with parental responsibility disagree. If it is still unclear as to whether a procedure is in the child's best interests then it is advisable to refer the decision to the courts. When the child is a ward of court, any significant medical intervention requires prior consent from the court [1].

In an emergency, if treatment is vital to the survival or health of the child and it is impossible to obtain consent in time, a child who lacks capacity may be treated without the consent of a person with parental responsibility. It is good practice to fully document this process in the medical notes [15].

Doctors have a responsibility to respect the confidentiality of competent young people and to not generally disclose information, e.g. to a parent, without permission to do so. Doctors have a professional, legal and ethical obligation to respect patient autonomy and obtain valid consent for medical treatment. The consent process in individual cases may be complicated and a sound understanding of the law is essential to know how to proceed. Documentation of discussions and decisions on consent are important and should include how the decision was made, who was present and what was said, as clearly as possible.

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What consultants really earn and how they do it

Few medical students chose their career on the basis of what they're going to earn, but most are probably quietly confident they will not be poor. As you approach attaining your Certificate of Completion of Training (CCT) you need to start thinking about what sort of job you want: teaching or general hospital? Subspecialty? Location? What is generally not well known amongst trainees is the silent 'M' - money! NHS consultants are well paid; even on appointment at around £75,000 basic a year this is in the top 5% of earnings. The top of the scale extends to about £100,000 - well above the 97th centile. So you will be comfortable. However, in common with all public workers 'austerity' has resulted in consultants receiving below inflation (or no) annual pay rises each year since 2010, although there has been variation between the four UK health departments. The BMA estimates this has led to a 19% real-terms reduction in take-home pay.

But how can you earn more than the basic scale? There are four main ways of doing this: private practice, Clinical Excellence Awards (CEAs), additional NHS work and medico-legal practice. Whichever you choose, if any, take sound financial advice, do not live beyond your means, and remember that all good things can come to end (a bad fall on the ski trip could stop you earning for months). Any additional income can quickly lead to additional tax liability due to tax changes (reduced annual allowance, and tapered tax relief on pension contributions) - take careful professional advice.

Private practice

Approximately 60% of consultants who are members of the Association of Anaesthetists undertake some independent practice. How much will depend on where you are based, which surgeons you work with and whether you want to do it. It is not the land of milk and honey though and can be unpredictable. There may be a syndicate or partnership in your hospital or it may be that each anaesthetist does their own thing. The role of anaesthetic groups was recently reviewed by the Competition and Markets Authority, then subjected to an appeal by private medical insurers, and are deemed not to be anti-competitive - the Association of Anaesthetists played a major role in achieving this outcome. You will need to pay additional professional indemnity insurance (related to your income), keep good figures and get an accountant (definitely advised). You must be certain to ensure no conflict with your NHS commitments (SPA time is not time for private patients), ensure your availability to your patients postoperatively or arrange cross-cover. If private practice is something you are considering, make sure to ask (discreetly) while investigating any possible jobs. Probably not during the interview...

Clinical Excellence Awards

These recognise significant contributions over and above contracted work. Different systems operate within the four NHS organisations, but in general terms they are divided into employer-based and national awards. Application is by self-nomination on a standard form (the CVQ) and awards are competitive between all specialties. Contributions to the NHS are assessed in the areas of care delivery, development, management, research and education. Local awards (Levels 1-9) are worth between just under £3000 to about £35,000 per year. There are no local awards in Wales, where a system of seniority payments exists. National awards (Levels 9-12) are worth between £35,000 and £75,000 a year; all are currently pensionable. Approximately 40% of consultants have no award, 40% have 1-4 points and just less than 9% have 5-8 points. At the higher awards the numbers fall away quickly: approximately 8% have Level 9, approximately 4% have Levels 10/11, and less than 1% have Level 12/13.

Competition for these awards is fierce, and they are not given out lightly. They are not bonuses, but additional payment for significant and sustained contributions to the NHS. There is as much skill needed in completing the form as there is in delivering the work. The best way to improve your chances of obtaining an award is to become an academic and/or a physician - they are four times more likely to have one than anaesthetists! Anaesthetists *pro rata* have always done badly in local and national awards, something that the Association of Anaesthetists has made representations about to the Advisory Committee on CEA (ACCEA, responsible for the national scheme) at length and for many years, but with little evidence of improvement.

The future for these awards is extremely uncertain. The Review Body on Doctors' and Dentists' Remuneration reported on the CEA Scheme in December 2012 and made wide-ranging recommendations. The number of national CEAs has approximately halved for England and Wales in 2010 and there have been no new national awards in Scotland or Northern Ireland for many years. Many trusts in England have not run Employer Award Rounds for one or more years, but the BMA negotiated new arrangements for local awards (in England); from December 2018 these awards became part of the Terms and Conditions of Service and funding has been increased. New local awards from this date will not be pensionable (existing employer, and national awards remain pensionable). Further changes to the National Award scheme may yet emerge from the negotiations. A consultation process is underway for a new scheme in 2021/2022.

There is now greater risk in applying for national awards. Since 2014, and the removal of pay protection, failure to successfully renew a national award has resulted in the loss of the entire award. However, it is now possible to renew a national award at a lower level. This results in an obvious loss of earnings, but will also impact on the final salary element



of your pension if this occurs more than three years before retirement. Such a change will have less impact on a career averaged pension. Applicants whose national award is not renewed, may not lose everything as they may receive a 7 or 8 point (non-pensionable) employer award, if they score well enough.

Changes to pension rules (the lifetime and annual allowances) mean that receipt of a CEA may result in a significant additional tax liability, especially if it occurs within three years of a pay increment. Together with tapered tax relief of pension contributions for 'high earners' (above £200,000) means many consultants are facing unwelcome tax demands. The impact this has on the NHS is yet to be seen, but there is evidence that more senior consultants may be reluctant to take on paid management roles, or may prefer to reduce their working hours, or even retire early. This particular combination of pension and tax changes has had an exaggerated effect on consultants in the armed services, despite their non-contributory pensions; these doctors have very little ability to change their working hours.

Additional NHS work

Often known as 'waiting list initiatives' this is work for the NHS, on NHS patients, although not necessarily carried out on NHS premises. It should all be covered by the NHS Litigation Authority, so should not affect your indemnity payments (but check that managers arranging the contracts know this). It is Department of Health policy, supported strongly by the Association of Anaesthetists, that payments for additional NHS work should be on the basis of parity (equal pay for equal work), but there are often attempts to introduce pay differentials between surgeons and anaesthetists. Further advice can be obtained from the Association of Anaesthetists. Additional NHS work is unpredictable and may be one of the first things to be cut in times of economic pressure.

Medico-legal work

This may include work related to civil claims or the coronial system. It is not to be entered into lightly. The role of the expert is to provide advice to the court, and anyone considering this should prepare themselves carefully as to their duties and obligations. Familiarity with the legal process and the rules of evidence is essential, as is the ability to write accurate and logical reports, and to give evidence. Professional training courses are available, and for those with an interest, it can be a fascinating experience. You are as professionally liable for medico-legal work as you are for your clinical practice, and the witness box can be a lonely place if you are unprepared.

Despite what you may hear in the coffee room, there are no poor consultants, although some may not be as well off as they would like, they may not be as well off as they were, and nostalgia is not what it used to be. There are a number of ways of augmenting the consultant salary, all with their advantages and disadvantages. The benefits of one against the other may be subject to significant change in the near future. Never assume any additional income will last forever, keep good records and get an accountant. And whatever you choose to do or not to do, be nice about it; there are two things that cause disharmony in departments and they are both money!

Consultants in the Republic of Ireland are remunerated differently to those in the UK, as over 40% of the population has private health insurance. More detailed guidance on pay and contracts should be taken from the Irish Standing Committee.

Useful resources

- Independent Practice <https://anaesthetists.org/Home/Membership/Independentpractice>

Andrew Hartle

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Payslips

It is not uncommon to hear about problems with pay amongst junior doctors. Rotating every 6-12 months (sometimes even more frequently) can lead to errors in pay scales, banding and tax codes. Being paid incorrectly can be stressful, with significant time required to make corrections with medical staffing, payroll departments and HM Revenue and Customs (HMRC). The BMA has reported increases in pay queries since the introduction of the new contract [1] and the joint Association of Anaesthetists and RCoA salary survey highlighted issues amongst anaesthetic trainees [2].

In August 2017, anaesthetic trainees in England moved to the new 2016 Junior Doctor contract. The new terms and conditions of service are now adopted by all England-based trainees, but those who were ST3 and above on 2 August 2016 are pay protected. This means they continue to be paid under the 'old system' of increments and banding [3].

This article aims to explain what all the numbers on that little piece of paper mean and where you can find the correct information if you spot any errors. It focuses on the payslips of employees of England and Wales 2002 and 2016 (England and Wales share a common payslip, but only trainees in England are on the 2016 contract). There are differences for trainees in Scotland and Northern Ireland and information regarding this can be found on the BMA website.

Payslip 2002

1.ASSIGNMENT NUMBER		EMPLOYEE NAME			LOCATION		
DEPARTMENT		JOB TITLE			5.PAYSCALE DESCRIPTION		
NHS		3.SAL/WAGE	4.INC. DATE		STANDARD HRS	PT SAL/WAGE	
		TAX OFFICE NAME	TAX OFFICE REF		6.TAX CODE	2.NI NUMBER	
7.PAY AND ALLOWANCE (- = MINUS AMOUNT)					8.DEDUCTIONS (R INDICATES REFUND)		
DESCRIPTION	WKD/EARNED	PAID/DUE	RATE	AMOUNT	DESCRIPTION	AMOUNT	BALANCE C/F
9.Year to date balances (This employment only)					This Payslip Summary		
GROSS PAY		TAXABLE PAY			PENSIONABLE PAY		TAXABLE PAY
NI LETTER		TAX PAID			TAX PERIOD		NON-TAXABLE PAY
NI PAY	OTHER NI PAY	PREVIOUS TAXABLE PAY			FREQUENCY		TOTAL PAYMENTS
NI CONTS	OTHER NI CONTS	PREVIOUS TAX PAID			PERIOD END DATE		TOTAL DEDUCTIONS
PENSIONABLE PAY		PENSION CONTS			PAY DATE		10.NET PAY
		EMPLOYEE NO.			PAY METHOD		

Assignment number

This is specific to the trust you are working in; it is your own unique 'ID number'. HMRC has access to this too. If you have joined the hospital's 'bank', then you may have another assignment number. Often it is the same as your main one, but ends in -2 or -3, etc.

NI number

Your national insurance (NI) number. Pretty obvious, but worth checking it is correct.

Salary/wage

Your basic salary is based on 40 hours of work (or the hours specified in the 'Standard Hrs' box); this excludes banding supplements or any other allowances (e.g. London allowance). It is not uncommon for doctors to be paid the incorrect basic salary unknowingly. It is worth checking that what you see on your payslip is what you should be receiving [4, 5].

Pay and conditions circulars for medical and dental staff are published by NHS employers every year [6]. This tells you of any changes to basic pay that have been made. Since October 2018, there has been a move away from the previous increase cap of 1% when doctors-in-training salaries were increased by 2%.

Inc. date

This refers to the Increment Date, i.e. the date you go up the pay scale or the date you reached the maximum point (for those long-serving registrars and specialty doctors out there!). This is commonly August, but depends on your date of entry into training. Another reason for incorrect pay is not having received your increment, so it is important to check this.

Pay scale description

This is commonly 'Specialty Registrar' for those in training, or 'Specialty Doctor', depending on whether you are in or out of training.



Tax code

Your tax code is important. It tells your employer how much tax to deduct from your pay. If it is wrong you could end up paying too little or too much tax. The numbers in your tax code refer to how much tax-free income you get in that tax year (April to April) [7]. For example, as of April 2020, you do not pay any tax on the first £12,500 of earnings. This is referred to as your 'Personal allowance' [8]. This equates to a tax code of 1250L (L meaning you are entitled to the standard tax-free allowance) and is the most common code seen.

The emergency tax code is often given to employees when they change jobs and the new employer has no details of their previous code. This emergency code usually has W1 or M1 at the end. A common scenario is being on an emergency tax code for the first month of employment and then reverting to your previous one in the next month. This is either because you yourself have contacted HMRC to inform them of an incorrect code or Medical Staffing has updated your records via HMRC.

Tax is then paid at 20% on earnings £12,501–£50,000, 40% on £50,001–£150,000 and 45% on earnings over £150,000 [8]. For example, if you earn £55,000, you pay 20% tax on your earnings from £12,501–£50,000 and 40% on £50,001–£55,000.

Your personal allowance decreases when you earn over £100,000 and is removed completely when you earn more than £125,000. Details of how much tax you have paid in the tax year are found on the P60 form sent to you in the spring.

Your personal allowance can be increased by claiming for tax relief on 'professional fees and subscriptions' [9], meaning you can claim if you have used your own money to buy things that are needed to do your job. Common relevant subscriptions include: GMC, BMA, RCoA, Association of Anaesthetists, MDU and MPS. There are others listed, but these are the most common amongst anaesthetists. Totals of up to £2500 can be reflected in your tax code, thereby increasing your personal allowance. Above this, which is not that common for fees and subscriptions, the completion of a tax return is required, which does involve more effort.

Claiming is actually very straightforward and can be done by either phoning HMRC or completing a P87 form. You can also claim for the previous four tax years. It is important to have all the fees to hand.

Pay and allowances

These are the payments you receive. Often seen are your basic pay, banding, additional hours, study leave reimbursement, mileage and London allowance (if applicable). 'Wkd/earned' refers to the hours you have worked, 'Paid/due' show the hours you have been paid for and 'Rate' is the hourly rate you receive.

Deductions

Statutory and other deductions are listed here. PAYE (pay as you earn - income tax), NI and Pension are all seen. Additionally, student loan, car parking permit and mess fees might also be listed. The presence of an 'R' indicates a refund from a previous amendment (you lucky thing!).

Year to date balances

This refers to the totals in this tax year to date and shows your total gross pay (money earned the before tax), NI contributions, pension contributions and tax paid.

And finally,

Net Pay

What you get in your bank at the end of the month. Happy spending!

Payslip 2016

The skeleton of the new payslip is essentially the same as the 2002 one, but with differences when it comes to the way your pay is broken down using the 2016 contract's pay calculations. What is essential is to meticulously go through all the same elements outlined and numbered in the 2002 payslip example above.



Description

Under this heading you will see a breakdown of how much you get paid for the work you do. As anaesthetists, you are likely to see:

- Basic pay: this is calculated based on an average of 40 hours of work per week and corresponds to the relevant nodal pay point for your grade. CT1 = nodal point 3, ST3 = nodal point 4 [4]. Try not to get too depressed when you see what your basic hourly rate is!
- Additional rostered hours: any additional contracted hours over 40 (most commonly, up to a maximum of 48 in total)
- Night duty: unfortunately (fortunately?!), the majority of us do night duty and night-time hours receive an enhanced rate of 137% of your hourly basic pay
- Weekend allowance: this is a set percentage of your basic salary for the weekend work that you do, spread over the year's 12 payslips. Most trainees will get 7.5% on a standard trainee rota. This equates to <1:2 up to and including 1:4 weekends. You should see this breakdown clearly. The maximum is an additional 10% for working 1:2 weekends
- Cash floor protection: your protected cash floor amount, calculated as your basic salary the day before transitioned onto the new TCS, plus a banding supplement for the rota you were working the day before transition

The problems that have surrounded pay have only added to the frustrations and low morale that is felt by a large portion of junior doctors. Unfortunately, the current guidance regarding exception reporting does not include the reporting of pay problems [10], but in-house advice and support should come from departments in the form of clinical leads, educational supervisors and college tutors. The BMA also offers employment advice and support for its members, and trainees should seek out this service if required.

Failure to pay you properly is essentially a breach of contract and can be pursued for you through formal channels. Change is often difficult without the evidence. I would encourage discussions with both your departments and medical staffing and follow up any conversations with a quick email. Payroll departments are capable of paying people weekly and can make 'emergency' payments if required, so do not let yourself be fobbed off 'until next month'! Being paid correctly should not be viewed as being 'lucky', it is something we have a right to and therefore any problems should be escalated accordingly.

Acknowledgements

I wrote an article titled 'Knowing your payslip' for *Anaesthesia News* published in June 2018. It has been used as the basis of this chapter.

Tom Wojcikiewicz

Elected member, Association of Anaesthetists Trainee Committee 2017-2019

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Financial planning and pensions

In today's fast paced world, managing your finances and negotiating the financial barriers that inevitably arise at every stage of your life and career can be a challenge. Having a financial expert who understands you, your career, and your NHS pension and, most importantly, is someone you can trust, is essential. Excellent quality, holistic advice should be a given, but this is not always the case and choosing your financial advisor has never been as important. A good financial advisor will guide you and assist you in taking advantage of their advice and expertise, but also offer a range of ongoing services to assist you in achieving and maintaining your long-term goals and objectives.

There are essentially two types of financial advisor. Those who are independent and have thus met the requirements to provide unbiased advice based on a comprehensive and fair analysis of the whole of the market and restricted advisors who can generally only recommend certain products, product providers, or both. In my experience, the vast majority of doctors tend to select the independent route so they can benefit from unrestricted advice, which in my opinion has to be the preferred option.

January 2013 saw the biggest ever change to the way financial advice is provided as the Retail Distribution Review was implemented. This now embedded change was the brainchild of the industry regulator and, in simple terms, its objective is to ensure that consumers are offered a transparent and fair charging structure for the advice they receive, that they are clear about the services they are paying for and that the advice is delivered by highly qualified professionals. It is indeed difficult to argue with that rationale.

So what should you be considering as part of a financial plan for life?

We will start with the fundamentals: your NHS pension. This should be the foundation not only for your future retirement, but also needs to be considered when you are looking to protect your loved ones. The NHS as an employer and being a member of the NHS pension scheme offers generous benefits. However, whenever we are looking at holistic financial planning these benefits need to be considered alongside any other complementary arrangements you may have in place, or may need to put in place. The key then is to identify any shortfalls or gaps in your financial arrangements and this should be done using a thorough advice process with a financial advisor who holds specialist NHS knowledge.

The NHS pension scheme

The NHS pension scheme saw its biggest ever change on 1 April 2015 with the introduction of a brand new pension scheme known as 'The 2015 Scheme'. When this was introduced, for those members within 10 years of normal pension age as at 1 April 2012, the changes in 2015 had no impact. There was some transitional protection for those who were within 10 and 13 years and 5 months of their normal pension age on 1 April 2012 and the plan for these individuals was to transfer to the new scheme at a later stage on a transitional basis giving them additional protection. Anyone younger than this will have transferred to the new NHS pension scheme automatically on 1 April 2015. However, on 4 February 2021 the Government issued a final response to a landmark court ruling that the transitional protections offered by public sector pension scheme reforms breached age discrimination laws.

Many members of the NHS pension scheme will be affected by the Government's response to the consultation on changes to the transitional arrangements to the 2015 schemes within public service pension schemes. Although no immediate action is required, the decision gives members some valuable options on retirement, but it will be important to work through these carefully.

This issue dates from reforms to public sector pension schemes - including the NHS pension scheme - implemented by the Government in 2015, as mentioned above. These reforms were challenged - and in 2018, the courts ruled the reforms discriminated against younger members of the judicial and firefighters' pension schemes as the protection was only offered to older members. Since then, the Government has been working on plans to address this ruling, known as the McCloud judgement.

The detail of these plans announced by the Government on 4 February indicated that it would allow affected members the choice of whether they want to be a member of the legacy (1995/2008) scheme or the reformed 2015 scheme for the period 1 April 2015-31 March 2022. Affected members are those who were members of the NHS pension scheme in service on or before 31 March 2012 **and** on or after 1 April 2015. That includes those with a qualifying break in their service, as long as this was less than five years.



Importantly the Government has indicated that this choice will be made at the point of retirement, as this enables greater certainty on the value of the final pension. This means that members can make choices about their pension based on actual figures as opposed to assumptions about what might happen to their NHS pension in the future. Allowing members to make this choice is referred to as Deferred Choice Underpin or DCU for short. Members may assume they will be better off in the legacy (1995/2008 scheme; however, pension calculations are complicated and highly individual, so it is important that affected members assess their position and do not assume they are better off in the legacy scheme.

Although the choice of which scheme you will ultimately be a member of for the remedy period (1 April 2015–31 March 2022), will be made at retirement, the Government is obliged to correct the age discrimination at the earliest opportunity. In order to do this, all members impacted by unlawful age discrimination and moved to the 2015 scheme will have their membership during the remedy period changed back to their legacy (1995/2008) scheme. This has implications for those members impacted by annual allowance taxation as the pension input amounts for each year of the remedy period will need to be recalculated. All scheme members regardless of their age will then move to the reformed 2015 scheme on the 1 April 2022. Then under DCU, at the time of retirement members can choose whether to remain with their legacy scheme benefits for the remedy period or take the reformed scheme benefits.

The changes require new legislation, with the Government committed to implementing the provisions by 1 October 2023. Pension schemes also have the option of putting their own arrangements in place sooner, if this is possible.

Nevertheless, some members may retire before the law changes or their scheme takes action, but still have some relevant service between 1 April 2015 and 31 March 2022. In which case, they will be able to make the same choice once the DCU comes into force, and have their benefits backdated to the point at which they began taking them.

By and large, it is good news that NHS pension scheme members will have a choice about how the reforms affect them; however, for some members where pension benefits are changed retrospectively, this could affect their annual allowance charge – a tax on pension benefits above a certain value accrued over the course of a single tax year. Typically, the charge should be reduced for most, but this will not always be the case.

Anyone whose tax liability increases because of the DCU will need to pay the bill in line with the usual statutory time limits, going back four previous tax years. Equally, anyone who has overpaid tax will be compensated for the whole of the remedy period. This could mean a refund of tax, if the member paid the annual allowance charge directly from savings, or an adjustment to their pension benefits if they asked the NHS pension scheme to pay the charge under the ‘scheme pays’ facility, as this will be refunded to the scheme. However, the Government has stated that at the time of choice, it will ensure members do not bear the cost of any additional annual allowance charge that is directly caused by the member making their choice. It is important to understand though that the calculation and submission of any changes to a members annual allowance liability is the responsibility of the individual.

For now, NHS pension scheme members do not need to do anything – you should hear from your respective pension scheme in time. You need to continue to adhere to current deadlines including those for scheme pays.

The basics of the NHS pension scheme

Irrespective of the above judgement, the date at which you originally joined the scheme determines the section of which you will be a member. If you joined the NHS pension scheme for the first time before 1 April 2008, then you will be a member of the 1995 section. If you joined after this date, then you will be a member of the 2008 section. All 1995 members were given the choice of moving to the 2008 section when it was first introduced, and 1995 members who had not got ‘full protection’ under the original rules of the 2015 scheme were given a second chance to retrospectively move their 1995 service to the 2008 section. They would then have service in the 2008 section up to moving into the new 2015 scheme.

Although the 1995 and 2008 sections have some specific variables, they are widely similar and are final salary defined benefit schemes. This means that your pension at retirement is based on two key factors: your whole time equivalent pensionable income in the years leading to retirement, and your years of scaled service. The benefits are guaranteed, index-linked and carry no investment element. Overall both sections offer excellent benefits. As well as offering a superb pension income in retirement, both sections offer additional benefits for spouses, partners and dependents. In addition, in the event of permanent illness that renders you unable to work, an enhanced pension can be payable for life, and in the event of a terminal illness, your whole pension can be taken as a lump sum, which is normally tax free.

Although there are some small variations, the key differences between the 1995 and 2008 sections of the NHS pension scheme are the age at which you can draw benefits without penalty and also the way in which the benefits accrue.



In the 1995 section, you can draw your benefits without penalty at age 60, albeit you have a protected right to draw these benefits from the age of 50, with an actuarial penalty, as long as you were an active member of the pension scheme on 5 April 2006. These taxable benefits accrue at a rate of 1/80th of your pensionable pay for each year of service. Your pensionable pay is deemed to be the best of the last three years' notional whole-time pay. In addition, you will receive a tax-free lump sum of three times the amount of your pension. Each day of service is counted towards this, and if you are working part-time you can rest assured that you are not penalised, as your part-time service is scaled to its whole-time equivalent. This gives great options for those who want more flexible careers. At retirement, you can take a larger lump sum if you wish, but in doing so you will forego part of your pension. This decision is not taken until retirement so you can determine the best course of action at that time depending on your personal circumstances and wishes.

In the 2008 section, you can draw benefits without penalty at age 65; albeit you can take these at any time from age 55 if you are prepared to accept a penalty for doing so. These taxable benefits accrue at a rate of 1/60th of your reckonable pay at retirement and there is no automatic lump sum payable although, as with the 1995 section, you can give up part of your pension for a tax-free lump sum. Reckonable pay is the average of the best three consecutive years in the last 10, increased in line with inflation.

The benefits you built up prior to moving to the 2015 scheme will remain in the 1995 section or 2008 section as appropriate. At retirement, these benefits will be treated separately and calculated in accordance with the rules of the 1995 or 2008 section as stated above. If you choose to draw your 1995 benefits, you will not be able to continue membership of the 2015 scheme; however, if you have benefits in the 2008 section, and choose to draw these, further membership in the 2015 scheme can continue.

Anyone who has added years in place will be able to continue with this arrangement until the normal contract end date at age 60 or 65. You will be able to draw these benefits in isolation and continue to accrue benefits in the 2015 scheme if you wish.

The 2015 pension scheme will have a normal pension age, which is linked to your state pension age, which for some will be 68 (this can of course change in the future), and your benefits at retirement will be calculated based on your career average earnings rather than your final salary. These earnings will be revalued by inflation which is currently the consumer price index plus 1.5%.

It is very important to note that all benefits accrued up to the point of joining the 2015 Scheme are fully protected and will continue to be linked to your final salary at or near retirement unless you have a continuous break in service of five years or more. This is known as final salary linking. The final salary is the best of the last three years' pensionable pay in the 1995 section or the average of the best three consecutive years' pensionable pay out of the last 10 in the 2008 section.

With careful forward planning, this means you can still retire at a time of your choosing but you really do need to start thinking ahead. The 2015 Scheme offers an option to enable retirement at age 65 known as ERRBO (early retirement reduction buy out). This is an option to pay additional contributions to buy out the reduction that would apply if benefits were claimed before normal pension age. Normal pension age in the 2015 scheme is the same as state pension age and as such can rise during membership if the state pension age rises. The agreement can be for early retirement up to three years before your normal pension age but no earlier than age 65. The rate of additional contributions is based on your age at the effective date of your agreement and costs can be sought from the relevant NHS Pension Agency.

ERRBO is only one of a number of planning considerations, which may or may not be appropriate, and a combination of solutions may offer the most flexible outcome. This is particularly the case if you would like to retain the flexibility or choice to retire at age 60.

The benefits available in the 2015 scheme in the event of ill health and death are broadly similar to those available in the 1995 and 2008 sections. However, any lump sum and/or any adult or survivor pensions payable are calculated using relevant earnings in the 2015 scheme only, rather than in accordance with the relevant 1995 or 2008 section regulations. This means that any complementary protection you have arranged privately will need to be reviewed to ensure it is still at an appropriate level.

On a separate, but related, point there were further announcements in the Chancellor's 2014 Autumn Statement and 2015 Budgets around the way in which pension benefits are taxed. Although many assume that these changes known as 'tapering to the annual allowance' only affect the very high earners or those nearing retirement this is certainly not the case.

There are two key allowances we need to consider: the lifetime allowance and the annual allowance.

The lifetime allowance does not have an impact until retirement and is measured based on the amount of pension benefits you build up over your lifetime. This allowance was reduced to £1m on 6 April 2016. It then increased by inflation (with the consumer price index being the measure of inflation) until April 2020. The first inflationary increase took effect on 6 April 2018. The allowance is now frozen at £1,073,100 until April 2026. Although on first observation this seems like a significant amount of pension benefit, for a member of the 1995 section retiring after 5 April 2020 this equates to a maximum pension of £46,656 per annum before the lifetime allowance is exceeded and a charge applied. Although no one will argue that this is a healthy pension, it is now below the average pension for an anaesthetist, and does not make any allowance for any private pension arrangements, added years, or additional pension purchase you may have. If you are making any private pension arrangements, it is therefore essential that you assess the future suitability of these plans. Rash decisions to cancel plans should not be made, but you must check your current position to ensure you do not incur any unnecessary and unexpected tax charge at retirement. Various protections are available against reductions to the lifetime allowance and advice should be sought if you believe you could be affected by these changes.

The annual allowance is potentially more of a concern for all ages of doctor. The annual allowance limits the amount of tax efficient pension benefits you can accrue each tax year and the method of calculating this in the NHS pension scheme is complex. The annual allowance limit was reduced to £40,000 on 6 April 2014. Although a tax charge for a doctor in training is not common, those individuals who receive an increment or promotion will need to check their position carefully.

The NHS pension scheme will inform any member who exceeds their annual allowance by the 6 October so they can incorporate this information on their self-assessment tax return. It is possible to utilise any unused allowance from up to three previous years and for the vast majority of trainees this should cover any excess and as a result avoid a tax charge. If, however, anyone is in the position where they have incurred a tax charge that is unaffordable, they can opt to have this tax charge taken from their future pension benefits at retirement. This process, known as 'scheme pays', should not be a decision that is taken lightly as there are interest charges applied and any decision, once taken, is irreversible.

A further and more complex announcement was made in the 2015 Summer Budget for those with higher levels of taxable income*. In April 2016, a tapered reduction to the annual allowance was introduced where an individual meets two specific criteria. The first is if the 'threshold income' (total income before tax less individual pension contributions) exceeds £200,000 (previously £110,000 for tax years 2016/17–2019/20). The second is if the 'adjusted income' (threshold income plus pension accrual, i.e. growth in your NHS pension as shown on your annual allowance statement plus any private pension contributions) exceeds £240,000 (previously £150,000 for tax years 2016/17–2019/20). If both of these criteria are met, the individual will have their annual allowance tapered down. For every £2 of adjusted income in excess of the adjusted income threshold, which is currently £240,000, the annual allowance will be reduced by £1 down to a minimum of £4,000 (£10,000 for tax years 2016/17–2019/20). In other words, anyone with a current adjusted income of £312,000 or more will have a reduced annual allowance of £4,000.

*It is worth noting that total taxable income encompasses income from all sources. Including, for example, additional programmed activities, rental income, private income, savings interest and dividend income.

In addition, for all pension scheme members, all pension input periods are now aligned with the tax year. A pension input period is the period over which the amount of pension saving (pension input amount) under an arrangement is measured. Previously within the NHS pension scheme this period was 1 April–31 March.

In recent press coverage there has been lots of talk of members leaving the NHS pension scheme and considering alternative solutions; however, this is certainly NOT the most appropriate choice for the majority of people and should only be considered in the most exceptional of circumstances.

The NHS pension scheme (and the equivalent Scottish and Northern Ireland versions) and the legislation surrounding them, are extremely complex. It is essential when choosing your financial advisor that they understand the benefits provided and how they will impact on your long-term financial future. Your career path will undoubtedly have an impact on your future pension entitlement and taking advice from a specialist who understands the intricacies of this is paramount.

Other areas for consideration

Financial planning should always be viewed on a holistic basis as when any plan of action is implemented it will almost certainly have an impact on other areas. Protecting yourself and your loved ones is of vital importance. Ask yourself the question, how would you or your family cope financially if you were seriously ill or even passed away?



So what do you have in place already?

You will be entitled to a period of sick pay from your employer depending on your length of service. This builds up to a maximum of six months of full pay followed by six months of half pay once you have attained five years of continuous service within the NHS. If you are still incapacitated after this point, you can be assessed for a long-term ill-health pension, but the illness must be deemed to be of a permanent nature.

In the event of your death, your NHS pension also provides your family with some excellent additional benefits such as a death in service lump sum, plus a short-term pension of six months of pensionable pay. If you have more than two years of pensionable service, your spouse, partner and dependent children will also subsequently be entitled to a long-term pension, which can be invaluable. If you are not in a legally recognised relationship (i.e. marriage or civil partnership) and want to ensure your partner receives these benefits, it is recommended that you complete a nomination form and register this with the NHS pension scheme.

Although these benefits are excellent, will they be enough?

A quality financial advisor will calculate the financial value of the above benefits and discuss and determine with you whether these are sufficient to maintain your lifestyle in the event of an illness, or even death.

It is often necessary to protect yourself further, and equally as important to consider protection needs for your spouse or partner, even if they are not working themselves.

- Mortgage protection - you will almost certainly need to consider ensuring any mortgage and liabilities are protected against death and/or critical illness
- Income protection - as a priority in the event of any long-term illness that stops you working, you should consider protecting your income with a plan that complements your NHS sick pay benefits. This should certainly offer 'own occupation' terms, which reflect your career as an anaesthetist, and in the event of a claim will continue until you are fit enough to return to work, reach retirement age under the plan, or die. If you have transferred, or will be transferring, to the 2015 pension scheme, any existing income protection should be reviewed to ensure it is still at an appropriate level. This is simply because the method of calculating any ill health retirement benefits has changed under the new scheme, and in addition your pension benefits will not be paid until you are older meaning your income protection will need to cover you for longer
- Serious illness cover - this complements your income protection cover and pays out a lump sum on diagnosis of one of a specific list of serious illnesses. This will pay out even if you are able to continue working. If, however, you are not able to work, a long-term or permanent illness means your pension will not continue to accrue, and you may need to consider providing yourself with a means to maintain your lifestyle and income in retirement, once your income protection plan's benefits cease. This type of cover also gives you significant lifestyle choices. If you recover, you may want additional time off work to recuperate from a serious illness such as cancer, or may want the option to return to work in a part-time capacity until you feel stronger; for example, following a heart attack
- Life insurance to protect your loved ones - although the NHS provides a death in service benefit, you need to ensure this is sufficient to maintain the lifestyle of your family should you pass away

Finally, it is very important to ensure you have made a will. Many assume that their estate will pass to their loved ones automatically in the event of their death. This is not always the case, and in any event dying intestate causes much unnecessary stress for those left behind.

As you can see, financial advice can be complex, but a well-qualified, independent financial advisor who is a specialist in dealing with doctors will be able to guide you and assist you in making a plan for life.

Phil Bowler

Head of Technical Support for Chase de Vere Medical

All details correct as at 18 May 2021



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