



THE CCT IN ANAESTHETICS

IV: Competency Based

**Higher and Advanced Level
(Specialty Training (ST) Years 5, 6 & 7)**

Training and Assessment

A manual for trainees and trainers

Interim Edition: January 2007

Amendment 2: April 2009

1ST Edition dated: 26 January 2007

Replacing *The CCST in Anaesthesia IV* Edition 1 dated: April 2003

This edition of *The CCT in Anaesthetics IV: Higher and Advanced Level Training and Assessment* revises *The CCST in Anaesthesia IV: SpR Years 3, 4 and 5 Training and Assessment* 1st Edition dated April 2003.

The term “sub-specialty” to describe the options available at the higher and advanced levels of training has been replaced with “special interest” to conform with PMETB terminology.

The neuroanaesthesia advanced level syllabus has been revised.

The majority of the other changes have been made to reflect the introduction of seamless training in August 2007.

Amendment 1 dated: 1 August 2008

Amendments are minor and reflect the experience gained in the first year of the new programme and the publication of ***Modernising Medical Careers: The Gold Guide to Specialty Registrar Training***.

Because the titles of trainees keep on changing as MMC evolves, the term Specialty Registrar (StR) is used throughout these manuals to encompass trainees with contracts as Specialist Registrars (SpR).

StR4 = SpR2

StR5 = SpR3

StR6 = SpR4

Amendment 2 dated: 6 April 2009

This amendment introduces an optional higher level syllabus for:

- Conscious sedation for dentistry



PREFACE

This is the fourth volume in a series of four training guides published by the Royal College of Anaesthetists (RCoA) which describe the programme of training leading to a Certificate of Completion of Training (CCT) in Anaesthetics.

***The CCT in Anaesthetics I: General Principles* contains generic material that is relevant to all parts of the training programme. Part IV must be read in conjunction with Part I.**

The manuals were originally published as *The CCST in Anaesthesia* following consultation and feedback from Specialist Societies, Regional Advisers, RCoA Tutors, Programme Directors, RCoA Council Members and individual anaesthetists which was reviewed and developed by working parties that reported to the RCoA Training Committee and College Council. This edition was approved by the Postgraduate Medical Education and Training Board on 18 January 2007.

The RCoA Training Committee consists of members from College Council, the lead Dean for anaesthesia, the Bernard Johnson Advisers for flexible trainees and overseas trainees, and representatives from England, Northern Ireland, Scotland and Wales, the Regional Advisers and the Intercollegiate Board for Intensive Care Medicine.

The RCoA will be pleased to receive comments on this Higher and Advanced Level Training Programme from both trainers and trainees. These should be addressed to the Medical Secretary of the RCoA Training Committee at medsec@rcoa.ac.uk.

This manual is reviewed regularly with an implementation date for any changes being not less than 6 months after their publication date. Please work from the latest version.

Occasionally Council or the Training Committee have to take decisions that may affect the immediate interpretation or application of specific topics in these manuals. These will be published in *Guidance for Trainers* and, if necessary, earlier by letter to all Regional Advisers, College Tutors and Programme Directors.

ACKNOWLEDGEMENTS

The Royal College of Anaesthetists acknowledges the wide support that it has received from groups and individuals in the development of this programme of Competency Based Training. In particular, several templates were based upon the Northern Schools of Anaesthesia Training Manual edited by Dr J D Greaves and Prof C P Dodds.

Assistance and advice received from specialist societies and other bodies in the writing of all four manuals is acknowledged in *The CCT in Anaesthetics I: General Principles*.

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1: INTRODUCTION

This manual replaces all existing Royal College of Anaesthetists (RCoA) documentation on higher and advanced level training. It sets out the competences required of any trainee before he/she is eligible, with the possession of a RITA G, to obtain a Certificate of Completion of Training (CCT) in Anaesthetics and it should be read in conjunction with *The CCT in Anaesthetics I: General Principles*.

2: ENTRY TO HIGHER AND ADVANCED LEVEL TRAINING

2.1: Intermediate Level Training Certificate (ILTC)

All trainees must have an ILTC and supporting records of workplace based assessments before they can progress to higher and advanced level training. The ILTC (indicating deferrals where relevant¹) must be signed by the Royal College of Anaesthetists' Regional Adviser and another designated consultant. This document also records the attainment of the various Fundamental Transferable Skills by the trainee. A copy of the ILTC should be sent to the Training Department at the Royal College of Anaesthetists as an indication of when the trainee entered higher and advanced training. Possession of this certificate indicates that the trainee has:

- passed all the required workplace assessments for intermediate level training;
- demonstrated appropriate attitudes and behaviour; and
- has passed the RCoA Final Examination or the Final examination of the College of Anaesthetists, Royal College of Surgeons in Ireland.

SAS grades returning to training who do not have an ILTC will be assessed individually by the local Regional Adviser prior to applying for higher level training. If appropriate the Regional Adviser will issue a letter in lieu of the ILTC.

2.2: Start date for entry to higher and advanced level training

For the purpose of defining the start of ST year 5 for trainees who have taken more than 2 years of intermediate level training to pass the formal assessment of knowledge i.e. the FRCA Final Examination or a prospectively approved equivalent qualification, the earliest date for entry to higher and advanced training is the day following the date on which the trainee passed the assessment of knowledge.

2.3: Re-entering training after a break

The policy on doctors who want to re-enter training after a break is described in Section 3.5 of *The CCT in Anaesthetics I: General Principles*.

¹ Arrangements exist for individual Schools of Anaesthesia to defer specific intermediate level Units of Training to StR year 5. See Section 4.1 for more details.

3: OBJECTIVES OF HIGHER AND ADVANCED LEVEL TRAINING

3.1: Aim

The aim of higher and advanced level training is to produce trainees competent for *Independent Professional Practice* in their chosen consultant career path.

Professional Practice Professional practice means more than the performance of clinical skills, no matter how complex. It very importantly carries an inbuilt commitment to standards, and the attitudes, which will maintain those standards throughout life.

Competence in a Consultant Competence in a consultant requires the possession of the knowledge, skills and attitudes necessary for independent professional practice. It is recognised that whilst achieving competence for independent professional practice will be achieved, it does not mean that the doctor will be “expert”. Greater proficiency and, eventually, expertise will be acquired during subsequent consultant practice and will be underpinned by continuing education and professional development.

3.2: General

The objective of the RCoA is to allow trainees, as far as possible, to achieve their career aspirations. However it is recognised that training opportunities must be balanced with anticipated career vacancies. For this reason trainees should recognise the need to maintain flexibility in their choices. The RCoA's website publishes an annual survey of vacancies for consultant anaesthetists to assist trainees with their career planning.

When formal discussions take place with trainees about their career aspirations and training objectives, it is necessary that they should be open and based on a dialogue between trainers and trainee. When decisions are made, however, it is essential that they and the reasoning behind them, are formally recorded. Failure to do so could lead to subsequent misunderstanding. *Copies of these records should be sent to the Training Department at the RCoA to assist in monitoring the progress of individual trainees.*

3.3: Higher training for those pursuing a generalist career

Not all trainees will wish to base their future careers on a specific special interest therefore it is essential that a generalist pattern of training should be available for them. The training of a general anaesthetist is based on the assumption that such a specialist will normally be employed in a general hospital and must be capable of dealing with any patient who might be admitted whilst they are on-call, until specialist assistance becomes available or until transfer. This also encompasses supporting trainees who might find themselves dealing with a situation beyond their competence.

For the majority of trainees pursuing a generalist career, higher training gives the opportunity to become further skilled in aspects of anaesthesia that were introduced during intermediate training and, in addition, to acquire many of the other clinical, practical and managerial skills necessary to be a successful consultant anaesthetist. Additionally the trainee will manage the anaesthetic care of sicker patients with significant co-morbidity

Those seeking generalist training should receive a broad and balanced programme of higher level training. Clearly, within the time available, not all special interests can be covered but given that the attainment of skills in one area will contribute to the more rapid achievement of skill in others, many later attachments may be shorter. Training for the generalist, however, should normally include obstetric, paediatric (see Section 4.7), neuro and cardiothoracic anaesthesia. In addition the trainee must have completed a minimum of 6 months ICM

training at intermediate level. With this training the intention would be for the successful trainee to seek a consultant post in a hospital where this broad range of anaesthetic skills would be of particular value.

Decisions in relation to this balance in training can only be made locally and within Schools of Anaesthesia where account can also be taken of the availability of specific training opportunities and the level of supervision required by trainees as they develop their experience.

3.4: Advanced training to become an expert in a special interest area

Special interests except ICM and Paediatric ICM Many consultant posts in anaesthesia are set around a particular special interest. Some trainees will therefore wish to train specifically towards such a consultant post. It is necessary to arrange training within Schools so that longer periods of advanced training in specific major special interests can be undertaken. However, it is essential that there should be a balance between those undertaking this training and the career opportunities available. Equally, given the time available, it is unlikely that trainees would obtain training, such that they become expert and thereby suitable for a consultant post, in more than one or exceptionally two special interests. Although it will be for Schools to decide the number and balance between training opportunities in different special interests, the annual analysis of anaesthetic consultant vacancies published on the College website may be helpful to trainers and trainees when making these decisions.

Joint CCT in Anaesthetics and ICM Trainees intending to obtain a joint CCT in ICM and anaesthesia should seek the advice of their educational supervisor and the local RA in ICM at the earliest opportunity, preferably during ST years 3 and 4 and certainly before they complete their intermediate level ICM training.

Paediatric ICM Trainees intending to pursue a special interest in paediatric ICM should seek advice from the College's Training Department at an early stage of their intermediate level training, certainly before they spend longer than 3 months in the special interest area.

3.5: Professionalism

Generic training includes:

- communication skills, attitudes and behaviour;
- the responsibilities of professional life;
- teaching and medical education;
- health care management;
- information technology; and
- medical ethics and law.

The competences that have to be achieved by the end of the CCT programme are described in *The CCT in Anaesthetics Part I: General Principles* Appendixes E to J. The level at which these skills should be taught, acquired and assessed depends on the progress and level of training of each trainee and the arrangements in place within individual Schools of Anaesthesia. There is considerable overlap in the competences described in each of the areas listed above

During the higher and advanced levels of training trainees are required to complete and be assessed in any of the competences described in *The CCT in Anaesthetics Part I: General Principles* Appendixes E to J which have not been satisfactorily assessed during earlier stages of training; these will vary between trainees. The competences that are considered

appropriate for trainees to achieve by the end of basic and intermediate levels of training are described in *The CCT in Anaesthetics Parts II and III*.

Attitudes and behaviour At this stage of training any problems identified with a trainee's attitudes or behaviour must be discussed with the trainee as a matter of urgency and appropriate remedial action taken and recorded. Assessments of attitudes and behaviour are integral to workplace assessments and in addition a formal assessment should be carried out at least annually as described in Section 6.7 of *The CCT in Anaesthetics I: General Principles*.

4: ORGANISATION AND SEQUENCE OF TRAINING

4.1: Higher and advanced level competency-based training

In setting out the requirements for basic and intermediate training, the RCoA Competency Based Programmes for Training and Assessment adopted a prescriptive approach. However, it is recognised that on entry to higher and advanced training, and in gaining the broader competences required for a consultant post, a more flexible approach is necessary. Those involved in the planning and supervision of training should regard this period (with an indicative period of 3 years) as a continuum allowing trainees to rotate between district general and central (university) hospitals to provide them with the appropriate experience. Trainees must be allowed to some degree to follow their own differing paths of training. For some trainees whose progress has been slower during the period of intermediate level training, ST year 5 will afford an opportunity to consolidate some of the earlier training. For others ST year 5 may be a time to start an attachment in a more formal research post.

It therefore falls to Schools of Anaesthesia and those supervising training within them - Regional Advisers, Training Programme Directors, Flexible Training Co-ordinators, Educational Supervisors and College Tutors - to apply, at the local level, this balance of flexibility and rigidity to the programmes of individual trainees. There are however, some specific requirements:

- Every trainee must complete the full higher and/or advanced programme of training.
- Every trainee must complete a total of 9 months training in ICM: 3 months at basic level and 6 months at intermediate level. If less than 6 months of the intermediate ICM training has been undertaken in ST years 3 and 4, the balance should be completed in ST year 5 (only exceptionally may this be completed in ST years 4 or 5). In certain circumstances the final 3 months may be devoted to paediatric instead of adult ICM – see Section 4.8
- Units of training deferred from ST years 3 and 4 must be completed in ST year 5.
- During these years of higher and advanced level training trainees should *normally* undertake an aggregate of 12 months 'general duties'² where they have increased autonomy for their own work together with increased responsibility for the activities and distribution of more junior staff; in addition to daytime duties this will also include on call or shift work depending on local arrangements. Whatever the agreed programme, *all* trainees *must* undertake a minimum of 6 months of this type of training.
- At least 2 years must be spent in approved training or research posts in the UK.
- Up to 1 year can be taken outside the UK as prospectively approved clinical training or research.³
- Up to 1 year can be taken as full-time dedicated work in a single special interest area.⁴
- Only 1 year of full time research can be counted towards the CCT.

4.2: Local dispensations

The basis of competency and outcome based training is the concept that having acquired the basic knowledge and skills, and then been introduced to the intermediate level "key units of training" trainees will continue to develop higher and advanced level skills and knowledge as generalists or sub-specialists during their final years of training. The College is committed to

² 'General duties' means that a variety of elective surgery plus the core topics agreed by the Union of European Medical Specialists (UEMS) in 1998 are substantially covered; these include: airway management, acute pain relief, major trauma, transfers, obstetrics, ICM, regional techniques, paediatrics > 2 yrs, preoperative assessment, recognition of postoperative complications, emergencies (including haemorrhage), resuscitation (adult and paediatric) and interpretation of relevant diagnostic tests.

³ Special conditions apply to ICM; advice should be sought from the Regional Adviser.

⁴ Special conditions apply to special interest training in paediatric ICM.

this pattern of training and it cannot be modified without re-negotiation with the PMETB. Occasionally, however, due to local circumstances a School may need flexibility in the implementation of the programme. The College thus accepts that some flexibility of timing maybe needed within ST years 3, 4 and 5 without destroying the fundamental concepts that have been agreed with the PMETB. The College will, therefore, consider requests from Schools for the deferral of specific “key units of training” from ST years 3 and 4 to ST year 5 and/or the delivery of certain units of higher training during ST years 3 and 4.

Such deferrals may only occur after formal agreement between the School and the College, are time limited and will be subject to regular review. Where a deferral has been agreed for a specific School, this must be available to all trainees within the School but deferrals will not be available on the basis of requests from individual trainees in other Schools.

4.3: The training programme

This manual sets out the pattern of higher and advanced training required for trainees to become skilled anaesthetists and for some to become expert in specific special interest areas. It may appear that what is being put forward is an inflexible programme which will create many difficulties for those responsible for its local implementation. The RCoA would wish to make clear that whilst for the purposes of administration and documentation it may be necessary to differentiate particular aspects of training as taking place within a specific period of training, the reality may be much more variable.

The years of higher and advanced levels of training are intended to be a continuum. The designation to ST year 5, for instance, should not be regarded as falling within a strict chronological period. The skills set out under this heading may be delayed to a later period of training but can be counted back to ST year 5. Similarly aspects listed in ST years 6 and 7 may be taken in Year 5. The exception to this is that units of training deferred from ST years 3 and 4 must be completed in ST year 5.

There is not, therefore, one standard model of training for these years. The College has set some broad criteria to ensure that training has an appropriate balance. Within these criteria there is considerable latitude for Schools and individual trainees, with the support of their trainers, to adopt differing approaches. ST years 5, 6 and 7 will seek to develop:

- the transition from basic competency to becoming skilled in specific aspects of anaesthesia;
- the ability to manage patients with significant co-morbidities; and
- as trainees’ become able to work with less direct supervision, so the number of accompanied lists might be expected to fall. In parallel with this, trainees will develop organisational skills so that they can contribute to an operating list as part of a team, ensuring continuity and smooth running of cases by anticipating problems and planning ahead.

4.4: Assessment

Assessment of trainees will be done in the workplace in accordance with the principles laid out in Section 6 of The CCT in Anaesthetics, Part I: General Principles. A blueprint mapping the CCT higher level competences against the standard workplace based assessment tools that could be used to assess them is at Appendix C. A similar map against the advanced level competences is at Appendix D. Updated guidance on their use can be found in the training pages of the RCoA website.

4.5: Higher and advanced training in District General Hospitals

Some District General Hospitals offer excellent training opportunities in certain specialist areas in addition to more generalist experience.

Management opportunities District General Hospitals present an ideal opportunity to acquire many of the organisational and managerial skills necessary for a successful consultant career. It is often possible to create a “management” training module in which senior trainees can work closely with clinical directors and other members of the management team, in a way that is less readily available in many larger teaching hospitals.

On-call duties Whenever possible the on-call duties of trainees during higher and advanced training should take account of their role and skills as senior trainees. It is recognised, however, that because of service needs in small hospitals and specialist units, the on-call rota of such trainees may have to be linked with those of more junior trainees. The responsibilities undertaken when on-call, including the supervision of more junior trainees and the need for recourse to consultant help, should always be compatible with the trainees’ experience. This implies that trainees sharing the same rota can nevertheless undertake different levels of responsibility.

4.6: Higher training

Appendix A sets out some indicative programmes for trainees to become skilled at a higher level in particular aspects of anaesthetic practice including:

- Cardiac/Thoracic
- Day surgery
- Ear, Nose and Throat (Otorhinolaryngology)
- General surgery
- Intensive Care Medicine
- Maxillo-facial/Dental
- Military anaesthesia
- Neuroanaesthesia
- Obstetrics
- Orthopaedics
- Ophthalmic
- Paediatrics
- Pain Management
- Plastics/Burns
- Trauma and accidents
- Vascular

These programmes should not be seen as a syllabus. The availability of clinical material will very often determine what can be achieved. The selection is therefore related to clinical practice and, for instance, regional anaesthesia is not separately identified. This does not mean that it is not an essential part of the training, but rather that it will naturally be covered as the trainee progresses. It is envisaged that higher training will be achieved in attachments of up to 3 months with the emphasis increasingly moving to the trainee working with local or distant supervision as they apply the already obtained basic competence to day-to-day anaesthesia. For some these attachments may be shortened, whilst other trainees may wish to extend the period of their training. Clearly, within the time available, not all special interests can be covered but given that the attainment of skills in one area will contribute to the more rapid achievement of skill in others, many later attachments may be shorter. Guidelines on the balance of higher training needed for trainees intending to pursue a generalist career can be found in Section 3.3.

4.7: Advanced Training

Some trainees will wish for an opportunity to gain advanced training in specific special interest areas of anaesthesia, intensive care and pain management.

Major anaesthesia special interests In Appendix B five anaesthesia special interest areas are identified for advanced training, based on the demand for consultants trained in these fields. For these special interests a period of training of at least 6 months and up to 12 months can be followed which will allow the trainee to become expert in that particular field and consequently be able to apply for a consultant post with a significant clinical commitment in the special interest. Given the time constraints on anaesthetic training an individual trainee would only be able to gain such expertise in one, or very exceptionally, two special interest areas. The special interest areas are:

- Cardiac/Thoracic.
- Neuroanaesthesia.
- Obstetrics.
- Paediatric Anaesthesia.
- Pain management.

Intensive Care Medicine

- Those who aspire to a consultant post with a substantial or whole time commitment in ICM may be directing themselves towards a *joint* CCT in Anaesthetics and ICM, or towards Intercollegiate Board for Training in ICM (the Board) certification of their training at “Intermediate” or “Advanced”⁵ level.
- As early as possible in their training, and in any event before starting their second 3 months of intermediate ICM training, trainees aiming for a joint CCT or Board recognition of their “Intermediate” or “Advanced” training should liaise with their local educational supervisor and their RA in ICM to clarify the acceptability of their proposed ICM training programme. Training in ICM at this level will be guided by the Board’s syllabus. If the training conforms in *all* respects to the requirements of the Board (including the length of training blocks) it may be recognised towards a joint CCT in Anaesthetics and ICM, or towards Board-recognised “Intermediate” or “Advanced” Training Certification.
- Up to 6 months intermediate ICM training (as defined in *The CCT in Anaesthetics III* Appendix A) completed as part of the anaesthetic CCT programme can be counted towards the joint CCT, provided it conforms to the Board’s standards which include: 3 month minimum length of training blocks, the on-call component not having excessive time devoted to non-ICM duties and completion of the Board’s Educational Training Record which includes 10 extended case summaries. Thus, with careful forward planning, the RCoA’s recommended minimum of 3 months and maximum of 6 months ICM training in ST years 3 and 4 may be counted towards joint CCT training. Full details can be found in the Board’s documentation⁶.

Paediatric Intensive Care Medicine

- Unlike advanced training in adult ICM, training in paediatric ICM *does not* lead to a joint CCT in anaesthetics and paediatric ICM. At the end of their training anaesthetic trainees will be awarded a CCT in Anaesthetics and, depending on the duration and content of their paediatric ICM training, may be issued with a letter from the Inter-Collegiate Committee for Training in Paediatric Intensive Care Medicine (ICTPICM) confirming their training.
- Trainees who aspire to a consultant post in paediatric ICM should seek the advice of ICTPICM at the College, before commencing higher level training. Unless paediatric

⁵ NB The Board’s definitions and use of the terms intermediate and advanced training differ slightly from those used to describe training leading towards a CCT in anaesthesia.

⁶ *The CCT in ICM Competency-Based Training and Assessment Part I: A reference manual for trainees and trainers* (can be downloaded from www.ics.ac.uk)

ICM training is carefully planned and prospectively sanctioned the CCT date may be delayed by up to one year to ensure that a balanced programme of training is completed for the award of a CCT in Anaesthetics.

- Normally the College will accept one year of training in paediatric ICM provided that the remaining two years of training produce a *balanced* programme. If, however, a trainee wants to combine one year of paediatric ICM with a block of higher training in paediatric anaesthesia prospective approval must be obtained from the Medical Secretary.
- Exceptionally the College may approve a block of two years training in paediatric ICM to allow those who so wish to receive training comparable to special interest training for paediatricians. Such trainees however should be aware that this may severely limit their employment prospects outside paediatric ICM and may delay the award of a CCT in Anaesthetics. Each case will be considered on its merits.

Other special interest areas The identification of the five anaesthesia special interests, ICM and paediatric ICM does not preclude trainees undertaking periods of advanced training in other special interests, such as anaesthesia for maxillo-facial surgery or plastic surgery and burns anaesthesia, which exceed 3 months. However, this can only be when the trainee specifically wishes to extend the training in the particular topic and when the opportunity exists without impairing the training of others. In the general planning of training within a School the RCoA recommends that periods of training will normally follow the pattern set out in this manual.

4.8: Paediatric anaesthesia: specific training requirements

Paediatric ICM Paediatric ICM is not a major part of training in *paediatric anaesthesia* at either higher or advanced level. Except for those trainees who have chosen paediatric ICM as their special interest training (see Section 4.6), time spent in paediatric ICM should be strictly limited during units of paediatric anaesthetic training within the anaesthetic CCT programme. Employment in paediatric ICM *during paediatric anaesthesia rotations* should not exceed the following proportion:

- rotations \leq 3 month NIL
- 6 month rotations 33%
- 12 month rotations 25%

Paediatric anaesthesia for those intending to work in non-tertiary hospitals

- All trainees aspiring to be generalists should acquire the competences listed for higher training in paediatric anaesthesia. Normally this will require a period of higher training in paediatric anaesthesia during ST years 5, 6 and 7. This training does not have to be taken as a single block; the important thing is to acquire the necessary competences.
- Trainees whose career plan includes taking the role of lead paediatric anaesthetist in a non-tertiary hospital will normally complete a 3 month module of higher level paediatric ICM training. However in exceptional circumstances, with the agreement of the Regional Adviser and Training Programme Director they may spend the final 3 months of their mandatory 9 months ICM training, training in paediatric rather than adult ICM – see Section 4.1.

4.9: Continuing Professional Development

Trainees in ST years 3, 4 and 5 continue to be eligible for study leave. It is important that this should be used to develop trainees professionally and support the professional portfolio in order to meet the requirements for annual appraisal and re-validation.

Clinical CPD Whilst most clinical learning will occur in the workplace, as trainees identify the areas in which they want to specialise (including those who want to be generalists) attendance at specialist meetings and courses might be an appropriate use of study leave.

CPD for professional knowledge skills and attitude

- In addition to gaining the necessary competences in anaesthesia, intensive care and pain management, senior trainees are also required to develop their understanding of the broader professional competences required of a consultant. Senior trainees should therefore include in their annual personal development plan details of how they will complete the generic competences detailed in Appendixes E to J in *The CCT in Anaesthetics I: General Principles*:
 - Understanding the responsibilities of Professional Life
 - Teaching and Medical Education
 - Health Care Management
 - Information Technology.
 - Medical Ethics and Law
- The topics listed above are not intended to be a comprehensive syllabus but rather a guide to trainees and trainers of what might be covered. Some Schools may wish to make them the basis for formal study days; others may consider that much can be covered by trainees without direct guidance but within the structure of an agreed CPD programme.
- In addition other responsibilities are an essential part of a senior trainee's role for instance:
 - the training and supervision of more junior trainees;
 - participation in departmental organisation; and
 - the running of and presentation at formal departmental teaching sessions.

4.10: Academic and Research Anaesthesia

Research is regarded by the RCoA as integral to the development of anaesthesia, critical care and pain management. All trainees should be able to evaluate new developments in their specialty, thus preparing themselves for their future careers as consultants. The CCT, however, marks the completion of a *prospectively* planned and approved programme of training. No *retrospective* credit can be given for research undertaken before being appointed to the CCT programme.

All Trainees All trainees should be required to participate in a research project, a full audit cycle or a published systematic review.

Research Fellowships

- Specific academic/research fellowships should be available for terms of up to 12 months for those trainees who wish to undertake additional training that will count towards their CCT. Research is part of the rotation in some Schools or may be taken off rotation, see Section 6. Prospective approval should be sought from the Training Department with full supporting documentation and the approval of the Local Training Committee.⁷ Research time beyond 12 months would have to be taken as Out of Programme Experience, see Section 5. A designated consultant or university staff member will be nominated as a research supervisor and a report will be submitted that evaluates the trainee's performance in the post.
- Where there is a significant clinical component linked to a research post it may be possible for a proportion of this to be taken as training time with the balance counting as research. Within the CCT programme this situation is only likely to arise when a second

⁷ The checklist in Appendix 3 could be modified to form the basis of an application for ORT under the categories of Clinical Experience in the UK or Research.

year of research is undertaken.

Clinical Lecturers

- A certain proportion of training posts at higher and advanced level should be provided as academic lecturer posts which would allow training in both clinical and academic anaesthesia. In most circumstances this would translate to 4 elective sessions together with 2 sessions for involvement in ward work, and on-call emergency work appropriate to others at this stage of training. The clinical programme should allow the lecturer to have a varied and planned exposure to appropriate specialist activities, approximately covering a similar experience to that which the clinical trainee would cover in ST Years 5, 6 and 7.
- *CCT dates* CCT dates for clinical lecturers will be calculated on an individual basis after discussions between the Regional Training Committee and the College's Training Committee.

5: OUT OF PROGRAMME CLINICAL EXPERIENCE (OOPE)

OOPE is defined by PMETB as:

“out of programme clinical experience’ that does not count towards the award of a CCT.”

OOPE may be obtained in clinical or research posts in the United Kingdom or overseas that have not received *prospective* approval from PMETB. For instance, a trainee may request permission from the Postgraduate Dean for up to 3 years Out of Programme time if he/she wishes to undertake research leading to a PhD or MD.

Although College approval is not required for this out of programme experience, it is essential that trainees inform the Training Department of the dates of all OOPE so that prospective completion dates can be revised.

6: OUT OF PROGRAMME EXPERIENCE FOR TRAINING OR RESEARCH

6.1: Out of Programme Experience for Training (OOPT)

- OOPT is clinical training, taken out of programme, that will count towards the CCT provided certain conditions are fulfilled: On commencing OOPT the trainee must be in a PMETB approved training programme having completed the basic and intermediate levels of training *in their entirety*. This does not preclude setting up and planning OOPT during intermediate level training.
- Only one year during the ST years 5, 6 and 7 can be taken as OOPT.
- The OOPT post must have been *prospectively* approved by PMETB with support from the Dean and the College; *several months should be allowed for this*.
- OOPT may be in appropriate higher or advanced level clinical posts in the UK or overseas.
- Trainees should complete the final 6 months of their CCT training in-programme and in the UK. Only in exceptional circumstances will a trainee be allowed to be training out of the UK during the final 6 months of training; in such cases, a minimum of the final 3 months of training must occur in the UK. This is to allow sufficient time to assess satisfactory completion of the CCT programme. This must be taken into account if the trainee wants to be interviewed for a job more than 3 months before completion of their CCT programme (Section 8.6)
- The trainee on his/her return must complete a report on the time spent on OOPT and submit it, together with an assessment report from the local supervisor, to the Deanery and the Medical Secretary of the RCoA Training Committee.

6.2: Out of Programme Experience for Research (OOPR)

- OOPR is research taken out of programme. The same rules apply as for OOPT.
- In-programme research is part of the rotation in some Schools, see Section 4.10, but only one year of full time research can be counted towards the CCT whether it is taken in or out of programme.

6.3: Applying for OOPT and OOPR

It is recommended that Schools of Anaesthesia should have guidelines that inform trainees commencing their *intermediate* level training of: the requirements for, the notice of and the documentation required for the organisation of OOPT and OOPR. It should be made clear to trainees that any proposed period of OOPT or OOPR must be arranged at the earliest opportunity. Gaps created within the rotation will need to be filled and if the OOPT is to be spent overseas, the acquisition of visas and the necessary licensing documentation for clinical work may be lengthy and difficult.

It is the responsibility of the trainee to provide all necessary information in their applications to the Deanery. An application form and checklist can be downloaded from the training pages of the College website.

6.4: Secondment between Schools and Deaneries

Secondment of a trainee to an approved training or research post in another School or Deanery (eg to obtain training not available in the “home” School or Deanery) is not regarded as OOPT; the secondment is an integral part of that individual’s training programme.⁸

⁸ Gold Guide section 6.121

7: DOCUMENTATION OF TRAINING BY THE TRAINEE

To enable external evaluation to take place as part of Deanery and PMETB quality control and quality assurance procedures and to ensure that individual trainees are receiving an appropriately balanced training, it is essential that trainees maintain proper records. The RCoA requires that:

- Details of anaesthetics given by trainees should be recorded by them in a suitable paper or electronic format^{9 10}. This is mandatory. The only exception being that trainees in their final two years of training may keep abbreviated details of short, repetitive cases.
- **ICM** Anaesthetic trainees training in ICM should maintain a diary of sessions spent in the ICU and a record of procedures learnt and performed. Any trainee with a specific interest in this field should adopt the Intercollegiate Board's Educational Training Record at an early stage.
- **Pain** Anaesthetic trainees training in acute or chronic pain should maintain a diary of sessions spent in these activities and a record of procedures learnt and performed. Any trainee with a specific interest in this field should keep more detailed records from an early stage.
- **Obstetrics** A record of obstetric cases and procedures should be kept in a format similar to the Logbook.

Trainees nearing the end of their training should organise the records and information they keep towards that set out in the Portfolio that consultants are required to maintain for their NHS appraisals and General Medical Council revalidation. In many instances these processes when applied to recently appointed consultants will depend on information recorded in the final years of training. The key points of a Training Portfolio are described in *The CCT in Anaesthetics I: General Principles* Appendix P.¹¹

⁹ If a trainee elects to keep an electronic logbook then he/she must observe the requirements of the *Data Protection Register*.

¹⁰ The RCoA's requirements for the maintenance of logbooks and an example of the training summary that should be kept as part of the trainee's portfolio are set out in *The CCT in Anaesthesia I: General Principles* Appendix P.

¹¹ Further advice can be found in The Royal College of Anaesthetists and The Association of Anaesthetists of Great Britain and Ireland: *Good Practice: A Guide for Departments of Anaesthesia: 2nd edition 2002*, *Draft Guidance on Appraisal for Anaesthetists: March 2000* and *Personal Folder: April 2002*.

8: OBTAINING A CCT IN ANAESTHETICS

The Certificate of Completion of Training (CCT) signifies the end of specialist training and allows a UK trainee to be entered onto the GMC's Specialist Register. Doctors who have not followed a complete programme of training prospectively approved by PMETB will have to apply to PMETB for a Certificate of Eligibility for Specialist Registration under PMETB Article 14. Entry on the Specialist Register is a pre-requisite to taking up a consultant post in the UK.

The CCT is awarded by the Postgraduate Medical Education and Training Board (PMETB) on the recommendation of the RCoA. The approved programme of training recognises minimum times of training (no maxima are given) at specific levels of competence and responsibility, each with predetermined training objectives. The minimum duration of training has been recommended by the RCoA and accepted by the PMETB.

Requests for changes to accommodate individual training needs are first considered by the RCoA's Training Committee and if accepted these may be used to create a body of "case law". Additions to "case law" are first published in *Guidance for Trainers* (obtainable from College Tutors and RAs, or from the training section of the College website www.rcoa.ac.uk) and are then included in the next edition of *The CCT in Anaesthetics*.

In summary, for a trainee to obtain a CCT in Anaesthetics from the UK he/she must:

- complete all his/her training in a training programme prospectively approved by PMETB.
- be registered as a trainee with the RCoA.
- complete the minimum training to a satisfactory standard.

8.1: Restrictions on calculating training time

The regulations on calculating training time can be found in *The CCT in Anaesthetics Part I : General Principles* Section 3.6.

8.2: Requests to complete training as a locum consultant

Time spent in a Locum Consultant appointment does not count toward the CCT: only time spent in a PMETB approved training programme counts toward the CCT. It is recognised, however, that some trainees towards the end of their training would benefit from being allowed to 'act up' in a consultant capacity and undertake duties similar to those encountered in consultant practice.

If the period of acting up as a consultant is deemed by the Deanery/College to be a normal part of the anaesthetic CCT training programme and is intended to count towards the trainee's CCT then PMETB approval will not be needed because in effect this is an already approved element of the training programme. Acting up should be allowed only within the trainee's own programme with the agreement of the local Training Committee, the Programme Director and the Clinical Director of the hospital concerned. The trainee will retain their NTN and continue to be supervised by and be responsible to the local Training Committee. It is essential that at all times the trainee has immediate access to consultant advice and understands that he or she is still in training until completion of the CCT.

Such a post can only occur within the last 3 months of training with the proviso that the trainee must have satisfactorily completed all other aspects of the training programme.

Trainees wishing to take up this option should apply directly to the College with the support of their Programme Director.

If, however, the period of acting up as a consultant is not deemed to be a normal part of the anaesthetic CCT training programme and the trainee still wishes this to count towards their CCT, then prospective approval must be sought from PMETB in the same way as other out of programme training, or it must be taken as Out of Programme Clinical Experience (see Section 5). PMETB approval must be consistent with all other PMETB approval mechanisms. That is, applications should come via Deaneries using a Form B (specifying that it is an Acting Up Consultant or AUC post), including a covering letter confirming Deanery support for the post. Form B requires the signature of the Regional Adviser.

8.3: Calculating the CCT date

The provisional date of completing training is assessed by the Training Department of the RCoA with supporting evidence from the local Specialty Training Committee. In particular the following are considered:

- completion of basic, intermediate, higher and/or advanced training programmes, including passing assessments of knowledge i.e. the FRCA Primary and Final Examinations or prospectively approved equivalent qualifications;
- satisfactory assessments from trainers and final ARCP outcome¹²;
- the date of entry to higher and advanced training; and
- reports from the trainee and the assessment of the supervisor of any OOPT or OOPR.

The RCoA Training Department wishes trainees to be aware of their expected CCT date ahead of time. This can only be accurate if the Department is kept informed of factors that might affect the actual date. The following are relevant:

- training time for flexible trainees is calculated pro rata.;
- any sick leave or maternity leave: (for further details see *The CCT in Anaesthetics Part 1: General Principles* Appendix C);
- any time in locum or fixed-term training posts (for further details see *The CCT in Anaesthetics I* Section 3.6); and
- failure to pass the Primary and/or Final FRCA Examinations or prospectively approved equivalent qualifications before completing the appropriate level of training.¹³

As described above, once training is completed the recommendation is sent from the RCoA to the PMETB. The PMETB audit a random selection of the recommendations by asking for a review of the trainee's file, in particular the information that the College has relied on in making its decision to recommend a trainee for the award of a CCT. This will include as appropriate to the individual:

- the registration form;
- the assessment sheet detailing hospital placements;
- correspondence indicating the expected CCT date;
- any correspondence that may alter the expected CCT date;
- information about OOPT or OOPR together with the trainee's report and supervisor's assessments of these posts;
- An ARCP *Recommendation for completion of training* (Outcome 6)¹⁴; and
- information related to maternity or sick leave.

Any omissions or inconsistencies in the documentation will slow down the audit and hence possibly delay entry onto the Specialist Register and the ability to take up a consultant post.

¹² RITA assessment for SpRs on the pre- 2007 programme.

¹³ see Section 2.2.

¹⁴ RITA G for SpRs on the pre- 2007 programme.

8.4: Leaving the training grade

Employment in the training grade will not end for “a period of six months after the date of completion of training, or six months after the date on which the trainee is notified formally by the Postgraduate Dean, taking advice from the Royal College of Anaesthetists, that his/her training is complete and that he/she is eligible for the award of a CCT, whichever date is the later.” Trainees who still have difficulty in obtaining a consultant post after six months should seek advice from the Postgraduate Dean.

8.5: Applying for a Consultant Post

Interviews for consultant posts can take place up to 6 months before a trainee’s expected CCT date. Trainees should take this into account when planning off-rotation training overseas (Section 6). The “expected CCT date” is interpreted by the DH to mean the date calculated by the College’s Training Department for the completion of training.

8.6: Responsibilities for processing a CCT application

The RCoA Training Department When a trainee enters ST year 5 the College’s Training Department will give them a provisional date for the award of a CCT.

The Deanery

- Towards the end of the CCT training programme trainees will undergo a final summative assessment and, if successful, will be issued with an ARCP Recommendation for completion of training (Outcome 6)¹⁵ by their Postgraduate Dean. Although there may be slight variations between Deaneries, this assessment panel should be convened about three months before a trainee's provisional date for completion of training.
- A *Notification of Completion of Training* form will then be provided to the trainee via their Programme Director.

The trainee

- Completes the *Notification of Completion of Training* form and gets it signed by the Programme Director or Regional Adviser.
- Returns the *Notification of Completion of Training* form to the RCoA Training Department.

The RCoA Training Department

- Receives the ARCP *Recommendation for completion of training (Outcome 6)*¹⁶ and checks the *Notification of Completion of Training* form against the training programme.
- Recommends the trainee to the PMETB for the award of a CCT; batches of names are sent on an approximately fortnightly basis.
- The same day as the recommendation is sent to PMETB, sends the *trainee* a PMETB application form for the award of a CCT.
- Formally advises confirmation to the Training Committee and informs Council of the RCoA of the recommendation.

The trainee Completes the PMETB application form and sends it, with the appropriate fee to the PMETB. Any delay by the trainee will halt the process.

PMETB

- Awards the CCT on receipt of the College's recommendation, the trainee's application and the fee.

¹⁵ RITA G for SpRs on the pre- 2007 programme.

¹⁶ RITA G for SpRs on the pre- 2007 programme.

- Advises the GMC that the anaesthetist has completed specialist training and is therefore eligible for inclusion in the GMC's Specialist Register.
- Will request that the GMC add the trainee's name on to the Specialist Register; the trainee must have ticked the relevant box on the application form.

The trainee The trainee must then apply directly to the GMC for inclusion in the Specialist Register using an application form that will be sent to the trainee by the PMETB. Failure to do this by the trainee will delay specialist registration and being able to take up a consultant post.

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APPENDIX A:

HIGHER TRAINING IN CLINICAL ANAESTHESIA

This section sets out some indicative programmes for trainees to become skilled at a higher level in particular aspects of anaesthetic practice. These should not be seen as a syllabus. The availability of clinical material will very often determine what can be achieved. The selection is therefore related to clinical practice and, for instance, regional anaesthesia is not separately identified. This does not mean that it is not an essential part of the training, but rather that it will naturally be covered as the trainee progresses. It is suggested that trainees should start to move through these training blocks based on periods of 3 months. For some this may be shortened, other trainees may wish to extend the period of their training.

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1: Cardiac/Thoracic

Higher training in anaesthesia for cardiac and thoracic surgery will be undertaken in specialist units. The skills gained here are transferable to many other special interest areas and are important to underpin generalist practice.

1.1: Objective

H:1.1.1	To equip the trainee with above skills to be used in general anaesthetic practice or to form the basis of further sub-specialist training. Higher training should enable the trainee to undertake anaesthesia for such surgery with local supervision.
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1.2: Cardiac Anaesthesia skills

<i>To become skilled in:</i>	
H:1.2.1	preoperative assessment of patients with cardiac disease, including an understanding of cardiac catheterisation, echocardiography, stress testing and radionuclide imaging
H:1.2.2	induction and maintenance of anaesthesia for high-risk cardiac procedures, including valve surgery.
H:1.2.3	the management of cardiopulmonary bypass and its complications, myocardial protection and the weaning of patients from cardiopulmonary bypass.
H:1.2.4	to develop an understanding of the principles of oesophageal Doppler and transoesophageal echo monitoring and their place in the management of patients.
H:1.2.5	understanding of the adult patient with congenital heart disease and their management during anaesthesia.
H:1.2.6	postoperative cardiac critical care, including cardiovascular problems, analgesia, sedation and ventilatory management; and
H:1.2.7	the significance of and management of cardiac tamponade.
<i>To enhance the following practical skills:</i>	
H:1.2.8	insertion of invasive monitoring for arterial monitoring, central venous pressure monitoring, pulmonary artery catheter insertion and interpretation.

1.3 Thoracic Anaesthesia skills

<i>To become skilled in:</i>	
H:1.3.1	preoperative assessment and preparation of patients for thoracic surgery and their suitability for that surgery and anaesthesia;
H:1.3.2	principles of one lung anaesthesia and ventilatory management;
H:1.3.3	induction and maintenance of anaesthesia for thoracic procedures including bronchoscopy, Video Assisted Thoracoscopic Surgery (VATS) and thoracotomy for lung resection;
H:1.3.4	principles and management of chest drains;
H:1.3.5	postoperative management following thoracic procedures including analgesia management; and
H:1.3.6	the management of chest trauma including pneumothorax and haemothorax
<i>To enhance the following practical skills:</i>	
H:1.3.7	insertion and accurate placement of single- and double –lumen endobronchial tubes and the use of a fiberoptic bronchoscope to check their placement;
H:1.3.8	insertion and management of thoracic epidurals; and
H:1.3.9	insertion of chest drains.

2: Conscious sedation for dentistry

2.1: Training objectives

H:2.1.1	To gain an in-depth understanding of the reasoning behind the definition of conscious sedation for dentistry defined in the DH 2003 document 'Conscious Sedation in the Provision of Dental Care' i.e.: 'a technique in which the use of a drug or drugs produces a state of depression of the central nervous system enabling treatment to be carried out, but during which verbal contact with the patient is maintained throughout the period of sedation. The drugs and techniques used to provide conscious sedation for dental treatment should carry a margin of safety wide enough to render loss of consciousness unlikely'.
H:2.1.2	To develop the necessary skills and knowledge to use conscious sedation techniques for dentistry appropriately in the hospital and non-hospital setting
H:2.1.3	To understand the spectrum of behavioural and pharmacological techniques of pain and anxiety control for dentistry as an adjunct to local anaesthesia
H:2.1.4	To understand the potential side effects and complications associated with the use of such techniques
H:2.1.5	To understand the limitations of working in the isolation of the non-hospital environment
H:2.1.6	To recognise the important principle of minimum intervention, where the simplest and safest technique which is likely to be effective is used to achieve the clinical goal

2.2: Knowledge

Competence	Description	GMP
H:2.2.1	To understand the definition of conscious sedation and the importance of published guidance for its use in dentistry.	1,2
H:2.2.2	To understand the causes of dental pain and mechanisms of pain transmission in the orofacial region	1,2
H:2.2.3	To understand the principles of local anaesthesia for dentistry, techniques and complications	1,2
H:2.2.4	To understand the complexity of treatment need and how this may influence clinical management	1,2,4,5
H:2.2.5	To understand the definition and development of dental anxiety and phobia	1,2
H:2.2.6	To understand the importance of being able to recognise the signs and symptoms of dental anxiety and be familiar with assessment of its severity (eg Modified Dental Anxiety Score (MDAS))	1,2,4,5
H:2.2.7	To understand the role of behavioural strategies for management of dental anxiety: <ul style="list-style-type: none"> • Communication includes appropriate use of language • Positive reinforcement • Distraction and the environment • Desensitisation and tell/show/do • Modelling techniques • Cognitive behavioural therapy (CBT) 	1,2,5
H:2.2.8	To understand the role of pharmacological techniques in the spectrum of pain and anxiety control for dentistry as an adjunct to and not a substitute for effective local anaesthesia and good behavioural management	1,2,4,5
H:2.2.9	To be aware of the different routes of administration for sedative drugs and their role in the management of the anxious patient including: <ul style="list-style-type: none"> • Oral • Transmucosal (eg intranasal) 	1,2

	<ul style="list-style-type: none"> • Inhalation • Intravenous 	
H:2.2.10	To understand the pharmacodynamics and pharmacokinetics of the commonly used sedative drugs, antagonists and drug interactions	1,2
H:2.2.11	To understand the importance of thorough preoperative preparation of patients, the consent process and aftercare, focussing on medical, social and psychological assessment and evaluation of risk	1,2,4,5
H:2.2.12	To understand the range of standard and alternative sedation techniques as defined in published guidance	1,2
H:2.2.13	To understand the concept of titrating drugs to recognised end-point for conscious sedation, and the implications of the use of multiple drug techniques and anaesthetic drugs with regard to margin of safety	1,2
H:2.2.14	To understand the pharmacokinetic models and pump technology relevant to the use of infusion and target controlled infusions (TCI)	1,2
H:2.2.15	<p>To understand the limitations of working in the isolation of the non-hospital environment including:</p> <ul style="list-style-type: none"> • The need to ensure that each component of the premises (e.g. waiting room, surgery, recovery area) is appropriate to the sedation technique(s) used • The importance of robust patient selection (which should include dental, psychological, medical and social assessment, be undertaken in advance of actual treatment and include a valid consent process) • Awareness that staff and equipment available must meet the needs of both the technique (including monitoring) and its possible complications. Awareness of need to ensure that resuscitation equipment is regularly checked, maintained and includes all the drugs and equipment necessary for life support. 	1,2,4,5
H:2.2.16	Understand that anaesthetic drugs titrated to effect or used as infusions and/or the use of multiple drugs with synergistic actions have a narrow therapeutic index and hence reduced margin of safety making such techniques suitable only for use in a setting equipped to a level found in NHS hospitals i.e. one providing full resuscitation and general anaesthetic facilities	1,2
H:2.2.17	<p>To understand the importance of the following points:</p> <ul style="list-style-type: none"> • Increased potential for adverse outcomes when two or more sedating/analgesic drugs are administered • The importance of titrating multiple drugs to effect whilst recognising that the possibility of differing times of onset, peak effect and duration, can result in an unpredictable response • Knowledge of each drugs time of onset, peak effect, duration of action and potential synergism • Importance of the order of administration of sedative and analgesic agents when multiple drugs are used <p>Understand why multiple drug techniques should only be administered in an environment providing facilities equivalent to those found in NHS hospitals.</p>	1,2,5
H:2.2.18	<p>To understand the following points when conscious sedation is used for children under 16 years of age:</p> <ul style="list-style-type: none"> • Nitrous oxide/oxygen sedation (inhalation sedation), titrated to the individual's need is recommended for use in all dental settings • Intravenous sedation for patients under the age of 16 years should only be provided in an environment providing facilities 	1,2,5

	<p>equivalent to those found in NHS hospitals</p> <ul style="list-style-type: none"> Children under 16 years of age undergoing intravenous sedation must be managed by staff who have received appropriate training. Anaesthetic staff administering sedation to children should have demonstrable competency in paediatric anaesthesia and resuscitation that is adequate for the management of the children they serve 	
H:2.2.19	To understand the need for and means of monitoring the sedated patient including the use of commonly used sedation scoring systems	1,2,5
H:2.2.20	To understand the need for robust recovery and discharge criteria and the importance of escort arrangements	1,2,5
H:2.2.21	To understand the implications of sedation for medically compromised patients, with particular regard to limitations imposed by the non-hospital environment	1,2,4
H:2.2.22	To understand the principles of the Mental Capacity Act 2005 in relation to special care dentistry	1,2,4
H:2.2.23	To understand the complications of conscious sedation techniques for dentistry and their management	1,2
H:2.2.24	To understand the role of general anaesthesia in the management of the anxious or phobic dental patient	1,2,4,5
H:2.2.25	To understand the uses of systemic analgesia for dentistry	1,2

2.3: Attitudes and behaviour

Competence	Description	Assessment Method	GMP
H:2.3.1	Appreciates the need for specific postgraduate training in the use of conscious sedation techniques for dentistry before practising without supervision in the non-hospital setting	A,C,M	1,2
H:2.3.2	Appreciates the importance of maintaining experience and competence, and undertaking CPD relevant to the use of conscious sedation techniques	C	1,2
H:2.3.3	Appreciates the need for constant vigilance and appropriate leadership skills to direct the team when necessary	A,M	1,2,5
H:2.3.4	Shows ability to assess the performance of the team, identify learning points and system weaknesses and promotes improvement	A,M	1,2,5
H:2.3.5	Appreciates the need for all members of the team providing treatment under conscious sedation to receive appropriate supervised theoretical, practical and clinical training and assessment before commencing practice	A,M	1,2,5
H:2.3.6	Appreciates the need to regularly update and rehearse, as a team, the management of sedation related complications and medical emergencies. ALS training (including paediatrics) is mandatory	A,M	1,2,5
H:2.3.7	Appreciates the importance of maintaining accurate clinical records	A,C,M	1,2

2.4: Skills

Competence	Description	Assessment Method	GMP
H:2.4.1	Demonstrates an understanding that conscious sedation for dentistry in the dental practice setting is	A,M	1,2

	very different from the sedation delivered by anaesthetists in a hospital setting		
H:2.4.2	Demonstrates ability to communicate effectively with patients, being sympathetic to their anxieties or phobia, and explaining the technique proposed	A	1,2,4
H:2.4.3	Demonstrates ability to communicate with the dental team	A,M	1,2,5
H:2.4.4	Demonstrates competence with regard to patient selection, assessment and determination of suitability for treatment under conscious sedation, including the ability to decide which patients may be treated in the non-hospital setting and those whose interests would be best served by referral to a hospital facility	A,C	1,2
H:2.4.5	Demonstrates ability to give clear pre- and postoperative instructions and guidance for both patients and their chaperones	A,M	1,2,4
H:2.4.6	Demonstrates skill in titrating drug(s) to a recognised end point, avoiding the risks implicit in over-sedation	A,C	1,2
H:2.4.7	Demonstrates a clear understanding that establishing a level of sedation deeper than that defined as conscious sedation requires the same level of care and monitoring as general anaesthesia and is unacceptable outside of the hospital setting	A,C	1,2
H:2.4.8	Demonstrates the ability to consider the following points in choice of technique: <ul style="list-style-type: none"> • The implications and potential complications of the use of the chosen technique • Recognise that no one technique is suitable for all patients and chooses an appropriate conscious sedation technique on the basis of minimum intervention, using the simplest and safest effective technique based on patient assessment and clinical need • Awareness that techniques using multiple drugs/anaesthetic drugs should only be considered where there is a clear clinical justification, having excluded simpler techniques, and this requires an environment providing facilities equivalent to those provided within an NHS hospital 	A,C	1,2
H:2.4.9	Demonstrates competence in the use of the following standard conscious sedation techniques: <ul style="list-style-type: none"> • Inhalation sedation using nitrous oxide/oxygen • Intravenous sedation using midazolam alone • Oral/transmucosal benzodiazepine 	A	1,2
H:2.4.10	Demonstrates competence in the use of the following alternative conscious sedation techniques: <ul style="list-style-type: none"> • Any form of conscious sedation for patients under the age of 12 years other than nitrous oxide/oxygen inhalation • Benzodiazepine plus any other agent with sedative effects (e.g. opioid, propofol, ketamine) • Propofol either alone or with any other agent (e.g. benzodiazepine, opioid, ketamine) • Inhalation sedation using any other agent other than nitrous oxide/oxygen • Techniques which simultaneously combine two or 	A,C	1,2

	more routes of administration		
H:2.4.11	Demonstrates competence in the use of infusion or target-controlled infusion pumps	A	1,2
H:2.4.12	Demonstrates competence with regard to monitoring and management of the sedated patient	A	1,2
H:2.4.13	Demonstrates competence in the management of medical emergencies and complications of the techniques used, including management of the airway in the unconscious patient	A,C	1,2,5
H:2.4.14	Demonstrates ability to avoid unnecessary complications and use timely intervention or abandonment of a technique when it has proved problematic or unsuccessful, and being prepared to defer treatment so that alternative management may be considered	A,C	1,2,5

Notes:

Assessment for independent practice

Training in the administration of conscious sedation techniques should use a stepwise approach starting with standard techniques, which possess wider margins of safety, progressing to alternative techniques, where appropriate, using multiple drugs, infusions and TCI techniques. Progression should be based on demonstration of competence and not on a minimum number of cases.

Adequate assessment after a defined period of supervised training forms an important part of this curriculum. A minimum of two anaesthesia clinical exercises and two case based discussions are recommended. DOPS are not considered an appropriate form of assessment at this higher level of practice, as all the practical procedures required are those that are common to general anaesthetic practice and will have been tested during the intermediate stages of training. Trainers must ensure that a broad selection of the curriculum is sampled and examples are provided below.

Anaesthesia Clinical Exercises

- Pre-assessment of a patient requiring conscious sedation for dentistry, working with the dental team. Demonstrating the ability to choose a suitable technique on the basis of clinical need, minimum intervention, and giving due consideration to any limitations imposed by the clinical environment (hospital/non-hospital setting)
- Conscious sedation using a single drug technique, using midazolam alone
- Conscious sedation using a multiple drug technique, for example a benzodiazepine plus any other agent with sedative effects e.g. opioid, propofol, ketamine
- The use of target-controlled infusions of anaesthetic drug/s to achieve conscious sedation, for example propofol (if training opportunities present)

Case Based Discussion

Examine the case notes. Ask the trainee to explain their approach to preoperative preparation, choice of sedation technique and postoperative care. Select a relevant topic and discuss the trainee's understanding of the issues in context.

Suggested topics for discussion include:

- The role of pharmacological techniques within the wider spectrum of pain and anxiety management for dentistry.

- Principal considerations involved in the assessment, consent and aftercare of the anxious patient requiring dental treatment under conscious sedation.
- Management of the needle phobic patient
- The rationale behind the definition of conscious sedation and the titration of drugs to effect
- The principle of minimum intervention
- Management of the medically compromised patient (e.g. chronic obstructive pulmonary disease, ischaemic heart disease and morbid obesity)
- Potential complications associated with the use of conscious sedation techniques, and their management
- Limitations imposed by working in the isolation of the non-hospital environment and the factors that may influence the choice of clinical setting
- Monitoring of the sedated patient
- Recognition and management of a failed conscious sedation technique
- Roles and responsibilities of the team in the management of medical emergencies in the non-hospital environment

3: Day surgery

Higher training in anaesthesia for Day Surgery should allow a trainee to consolidate the intermediate level training objectives laid out in *The CCST in Anaesthetics III* as well as gaining experience in new aspects of the special interest. At the end of such a block a trainee should be capable of providing anaesthesia for all areas of Day Surgical practice, with the exception of children under the age of two. In particular, an advanced trainee would be expected to gain experience in the organisational aspects of running a Day Surgery Unit by attending management meetings, pre-assessment clinics and through involvement in staff training. Such training may be undertaken at a central or district general hospital.

Such training, supplemented by generalist and specialist training, should see the trainee fully prepared to take up a consultant post with an interest in anaesthesia for Day Surgery with the necessary clinical skills supported by an understanding of how a Day Surgery Unit is run and developed.

3.1: Skills

<i>To become skilled in:</i>	
H:3.1.1	training of staff e.g. in resuscitation or preoperative assessment;
H:3.1.2	development of protocols or guidelines and their implementation;
H:3.1.3	anaesthetic and analgesic techniques not covered during a 'general unit of training';
H:3.1.4	audit and other quality assurance activities relevant to day case anaesthesia;
H:3.1.5	management of a day surgery unit;
H:3.1.6	understanding the place of day surgery within the aims of the NHS as laid out in various Department of Health documents such as <i>The NHS Plan</i> ;
H:3.1.7	understanding the advances and controversies in anaesthesia for day surgery; and
H:3.1.8	managing complications of day surgery, including criteria for inpatient admission.
<i>To enhance the following practical skills:</i>	
H:3.1.9	regional techniques for day surgery;
H:3.1.10	the use of TIVA and sedation; and
H:3.1.11	the use of postoperative local anaesthetic infusion devices and techniques.

4: Ear, Nose and Throat (Otorhinolaryngology)

Higher training for anaesthesia in this specialty may be undertaken in a district general hospital or a tertiary referral centre. However it is recognised that training in major head and neck surgery will normally only be available in specialist centres. Training will build on the intermediate level module in Ear, Nose and Throat (Otorhinolaryngology) anaesthesia. It is recognised that the opportunity to see and manage some of the emergencies in ENT anaesthesia may occur during general on-call duties.

4.1: Objective

H:4.1.1	There should be greater emphasis on the trainee undertaking more complex cases and particularly those where airway management is less straightforward.
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4.2: Skills

<i>To become skilled in:</i>	
H:4.2.1	preoperative assessment of concomitant disease;
H:4.2.2	managing children for tonsillectomy;
H:4.2.3	assessing the airway and managing difficult airways;
H:4.2.4	team working in airway management;
H:4.2.5	perfecting day-case techniques for nasal surgery;
H:4.2.6	techniques of controlled hypotension for ear surgery;
H:4.2.7	nausea and vomiting control especially after ear surgery;
H:4.2.8	anaesthesia for oesophagoscopy and laryngoscopy;
H:4.2.9	preservation of nerve function for parotid and base of skull surgery;
H:4.2.10	anaesthesia for major head and neck surgery in a specialist unit;
H:4.2.11	management of permanent tracheostomies; and
H:4.2.12	management of emergencies including bleeding tonsil bed, airway obstruction.
<i>To enhance the following practical skills:</i>	
H:4.2.13	a variety of airway management techniques; and
H:4.2.14	gaseous induction of anaesthesia.

5: General surgery / Gynaecology / Urology (+/- Transplantation)

Training in anaesthesia general surgery, gynaecology and urology procedures may be undertaken in either a tertiary referral centre or district general hospital. However, it is recognised that training in anaesthesia for transplant surgery will be limited to specialist centres.

5.1: Objective

H:5.1.1	During this advanced training module, there should be a greater emphasis on the trainee undertaking anaesthesia for increasingly complex surgery and at the same time, taking responsibility for patients with co-existing disease.
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5.2: Skills

<i>To become skilled in:</i>	
H:5.2.1	preoperative assessment of patients with multiple co-existing diseases;
H:5.2.2	preoperative optimisation of high-risk patients;
H:5.2.3	risk stratification scoring of patients undergoing major surgery e.g.POSSUM scoring;
H:5.2.4	the presentation of a balanced judgement to the patient and their relatives of the perceived risks and complications+ of anaesthesia and surgery;
H:5.2.5	the recognition of problems posed by malignant disease and recent chemotherapy/ radiotherapy treatment;
H:5.2.6	the intra-operative critical care management/resuscitation of patients of all ASA grades for elective and emergency surgery;
H:5.2.7	leading the anaesthetic theatre team;
H:5.2.8	appropriate planning for postoperative care in a critical care facility if required;
H:5.2.9	developing and implementing appropriate postoperative feeding regimens;
H:5.2.10	being part of the multi-disciplinary team for postoperative care;
H:5.2.11	participation in multi-disciplinary clinical audit of outcomes;
H:5.2.12	implementing local guidelines or protocols where indicated e.g. management of anaesthesia for renal transplant surgery, management of the diabetic patient;
H:5.2.13	understanding the ethics of transplantation surgery; and
H:5.2.14	understanding and applying the need for, and effects of, immunosuppression in patients with transplanted organs.
<i>To enhance the following practical skills:</i>	
H:5.2.15	insertion of arterial and central venous lines;
H:5.2.16	use of cardiac output monitoring and vasoactive agents, when indicated;
H:5.2.17	insertion of double-lumen endobronchial tubes and the management of one-lung anaesthesia;
H:5.2.18	regional anaesthesia; thoracic and lumbar epidural placement, spinal and combined spinal-epidural techniques;
H:5.2.19	peripheral nerve blockade for renal access procedures; and
H:5.2.20	use of TIVA and sedation techniques.

6: Intensive Care Medicine

The syllabus for training in ICM within the programme for a CCT in Anaesthetics is contained in *The CCT in Anaesthetics II: Intermediate Level* Appendix 1 Section 4. The syllabus also applies to all higher training in ICM taken within the programme for a CCT in Anaesthetics and so is not repeated here.

In most respects the RCoA's standards for training in ICM are identical to those of the Intercollegiate Board for Training in ICM (IBTICM). During the final 5 years of anaesthetic training in anaesthesia trainees should normally receive 6 months of ICM training to the level equivalent to the Board's Step 1 training standard. If less than 6 months ICM training has been taken in ST years and 4 of anaesthetic training, the balance of 6 months should be undertaken in ST year 5, so as to complete the recommended 6 months before the end of that year (or exceptionally in ST years 6/7).

Trainees planning on taking the lead role as paediatric anaesthetist in a non-tertiary hospital are required to complete a 3 month module in paediatric intensive care at the higher level attaining the additional competences listed in this section. (See section 4.8 for additional information)

Paediatric Intensive Care

6.1: Knowledge

H:6.1.1	Principal anatomical and physiological differences in neonates and infants
H:6.1.2	Principal pharmacological differences in neonates and infants
H:6.1.3	Sedation and analgesia in children
H:6.1.4	Fluid management of medical and surgical emergencies
H:6.1.5	Respiratory management: nasal CPAP, pressure controlled ventilation, High Frequency Oscillatory Ventilation
H:6.1.6	Differential diagnosis of the collapsed neonate (cardiac, sepsis, metabolic, non-accidental injury)
H:6.1.7	Common presentations of paediatric cardiac anomalies
H:6.1.8	Management of paediatric medical conditions requiring critical care: septicaemia, bronchiolitis, epilepsy, diabetic ketoacidosis and basic working knowledge of other metabolic emergencies
H:6.1.9	Principal psychological aspects of critically ill children

6.2: Skills

H:6.2.1	Transferring critically ill children and working knowledge of specifically relevant equipment
H:6.2.2	Resuscitation of infants and children, including intubation and insertion of arterial and central venous catheters, and intra-osseous needles
H:6.2.3	Selection of age and size appropriate materials for procedures in H:5.2.2

6.3: Attitude and Behaviour

H:6.3.1	Importance of parental roles and family dynamics in paediatric intensive care
H:6.3.2	Early initiation of child protection measures
H:6.3.3	'Listen to the child' and 'Fraser competence'

7: Maxillo-facial / Dental

Higher training in maxillo-facial and dental anaesthesia is intended to build on the competences outlined in the intermediate level additional unit of training and may take place in a central or district general hospital. Trainees should be familiar with all forms of anaesthesia for dental and oral surgical treatment. They should be able to set standards for pre and postoperative care, recovery, staffing levels and teaching and training of all staff.

7.1: Objectives

H:7.1.1	During this higher training module, there should be a greater emphasis on the trainee undertaking anaesthesia for increasingly complex surgery.
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7.2: Skills

<i>To become skilled in</i>	
H:7.2.1	all aspects of anaesthesia for elective major oral and maxillo-facial surgery including paediatric patients;
H:7.2.2	assessment and management of patients with maxillo-facial injuries;
H:7.2.3	postoperative management of patients including HDU / critical care;
H:7.2.4	working in an isolated environment; and
H:7.2.5	advising dental and oral surgical colleagues on matters relating to anaesthesia and resuscitation.
<i>To enhance the following practical skills:</i>	
H:7.2.6	airway management in such patients including fiberoptic intubation; and
H:7.2.7	administration of all forms of conscious sedation for both adults and children.

8: Military anaesthesia

8.1: Training objectives

A:8.1.1	To equip the trainee with the additional knowledge and skills required to perform appropriate pre-hospital care, resuscitation, field anaesthetics and critical care within military environments
A:8.1.2	To gain an understanding of the management of medical support to military operations

8.2: Knowledge and understanding

<i>Competence</i>	<i>Description</i>	<i>Delivery</i>	<i>GMP</i>
Pre-hospital care			
A:8.2.1	Military triage assessment and categories	SD, B,	1
A:8.2.2	Military major incident management	SD, Dep	1, 5
A:8.2.3	Physiological hazards of transporting patients by air	SD,B, Dep	1
A:8.2.4	Aircraft features and aircrew procedures likely to impact on patient safety	SD,B, Dep	2, 5
A:8.2.5	Medical Emergency Response Team equipment	SD,B, Dep	2
A:8.2.6	Casualty reporting systems	SD, Dep	1, 5
In-hospital resuscitation and field anaesthetics			
A:8.2.7	Relevant trauma scoring systems and military audit projects	SD,B, Dep	2, 3
A:8.2.8	In-depth knowledge of Surgeon General's current transfusion policy, including recombinant Factor VIIa policy	SD	1, 2
A:8.2.9	The logistics of medical resupply and the maintenance of appropriate storage conditions	SD, Dep	2
A:8.2.10	Indications for, and the safe use of emergency blood donor panels	SD	1, 2
A:8.2.11	Field surgical team equipment, including tri-service anaesthetic apparatus and operating tables	Sim, Dep	1, 2
A:8.2.12	A broad understanding of field sterilisation and clinical waste disposal methods	SD, Dep	1, 2
A:8.2.13	In-depth knowledge of ketamine	SD, Sim, Dep	1
A:8.2.14	Principles of anaesthetics for damage control surgery	SD, Dep	1, 2
A:8.2.15	Current methods for management of acute pain in the field	SD, Dep	1
Critical Care			
A:8.2.16	Capabilities and limitations of field critical care	SD, Dep	1, 2
A:8.2.17	Preparation of patients for handover to an aeromedical transfer team	SD, Sim, Dep	1
A:8.2.18	The role of the AELO in the evacuation process	SD, Dep	5
A:8.2.19	A basic knowledge of CCAST equipment	SD, Dep	1, 2
A:8.2.20	Specific deployable medical assets such as field haemofiltration teams	SD	2
A:8.2.21	Repatriation process for KIA including appropriate liaison with SIB and UK coroners	SD, Dep	5
Battle Casualty Rehabilitation			
A:8.2.22	Casualty reception process in the UK	SD	4, 5
A:8.2.23	The rehabilitation process	SD	4, 5
A:8.2.24	Chronic pain management options for battle casualties	SD	1, 4
Deployed Military Hospital Management			
A:8.2.25	A working knowledge of Joint Warfare Publication 4-03 – Medical Support to Operations	SD	2
A:8.2.26	Familiarity with Clinical Guidelines for Operations (CGOs)	SD, B, Sim, Dep	2
A:8.2.27	The structure and responsibilities of the Defence Medical Services, Joint Medical Command, Surgeon General's	SD	2, 5

<i>Competence</i>	<i>Description</i>	<i>Delivery</i>	<i>GMP</i>
	Department, Land, Fleet and Air Commands.		
A:8.2.28	Procurement process for new medical equipment	SD	2, 5
A:8.2.29	Role and responsibilities of a Field Hospital Clinical Director and the Commander Medical	SD, Dep	2, 5
A:8.2.30	Role of host nation, friendly-force medical facilities and non-government organisations	SD, Dep	5
A:8.2.31	Role of UK Role 2 (light manoeuvre) and sea-based medical facilities	SD	2
A:8.2.32	The operational medical entitlement matrix	SD, Dep	1, 4, 5, 6
A:8.2.33	Medical communication systems	SD, Dep	2, 5
A:8.2.34	Field hospital major incident plan	SD, Dep	1, 2, 5

8.3: Personal Qualities

<i>Competence</i>	<i>Description</i>	<i>Delivery</i>	<i>GMP</i>
A:8.3.1	Applying the principles of Good Medical Practice in the field including the conduct of Healthcare Governance on operations	SD, Dep	1 – 7
A:8.3.2	A broad understanding of the unusual ethical challenges and non-medical influences on hospital activity	SD, Dep	4, 5, 6
A:8.3.3	Appropriate risk assessment and management	SD, B, Dep	2, 5, 6, 7
A:8.3.4	Ability to work within a military command structure*	Dep	4, 5
A:8.3.5	Strong communication skills	Sim, B, Dep	5
A:8.3.6	Strong leadership and team working skills	Sim, B, Dep	3, 4, 5, 6

8.4: Skills¹⁷

<i>Competence</i>	<i>Description</i>	<i>Assessment method</i>	<i>Delivery</i>	<i>GMP</i>
Pre-hospital Care				
A:8.4.1	Emergency skills in trauma with particular reference to emergency airway management including use of field cricothyroidotomy kit, insertion of chest drains and gaining central venous access	A, D, C	SD, B, Sim	1, 2
A:8.4.2	Application of the combat application tourniquet (CAT) and haemorrhage control compression dressing bandage	D	SD, B, Sim	1, 2
A:8.4.3	Intra osseous rapid access devices	D	SD, B, Sim	1, 2
A:8.4.4	Novel haemostatic techniques such as Hemcon and QuikClot dressings	A, D	SD, B, Sim	1, 2
In-hospital Resuscitation and Field Anaesthetics				
A:8.4.5	Provision of anaesthetics for elective, emergency and damage control surgery using current UK Military field anaesthetic equipment modules	A, C, D	SD, Sim, Dep	1, 2
A:8.4.6	Use of field and regional anaesthetics as an adjunct to acute pain management in the field	D, C	SD, Dep	1, 2
A:8.4.7	Use of field PCA equipment	D	SD, Dep	1, 2
Critical Care				
A:8.4.8	Packaging of casualties for safe aeromedical evacuation	C	SD, Sim, Dep	1, 2, 5
A:8.4.9	Management of massive blood transfusion in a field hospital	C	SD, Sim	1, 2, 5

¹⁷ Competences in marked * may only be achievable on or after active service and are to be regarded as desirable rather than essential for the completion of the Unit

<i>Competence</i>	<i>Description</i>	<i>Assessment method</i>	<i>Delivery</i>	<i>GMP</i>
A:8.4.10	Assist the AELO with completion of evacuation signals and documentation*	M	SD, Dep	5
Battle Casualty Rehabilitation				
A:8.4.11	Visit the Defence Medical Rehabilitation Centre and present a case report on an inpatient to your military Educational Supervisor	M, C	SD	4
A:8.4.12	Follow-up own patients' progress after 6 months*	M, C	SD, Dep	3, 4
Deployed Military Hospital Management				
A:8.4.13	Draft a Statement of Requirement for a piece of new medical equipment	A	SD	2
A:8.4.14	Present a case at the weekly RCDM/Field Hospital Video Teleconference*	C, M	Dep	3, 5
A:8.4.15	Present on a military medical topic at a CME meeting	M	SD, Dep	3
A:8.4.16	Shadow the Field Hospital Clinical Director for a day, present on his behalf at a Command Brief and deliver a backbrief to clinical staff*	M	Dep	2, 5

Summary of Achievement:

To ensure military anaesthetists are familiar with the additional equipment, environmental, management and logistic challenges they will encounter on deployment. By proposing strategies and preparing trainees for independent practice in the military environment, it will achieve the aims of a higher training unit.

The unit is designed to be flexible enough to incorporate new developments, to provide a framework for maintaining knowledge and skills at all levels of seniority and to be deliverable in more peaceful times.

Glossary of Terms:

Delivery mode:

SD	Study day, tutorial or pre-deployment training course		Sim	Simulator session
B	Battlefield Advanced Trauma Life Support Course		Dep	Instruction and supervision on deployment

Work-based Assessment Tools

D	Directly observed procedural skill		C	Case based discussion
M	Multi-source feedback		A	Anaesthetic clinical exercise

Military Abbreviations

AELO	Aeromedical Evacuation Liaison Officer		RCDM	Royal Centre for Defence Medicine
CCAST	Critical Care Air Support Team		SIB	Special Investigation Branch (Royal Military Police)
KIA	Killed In Action			

9: Neuroanaesthesia

Higher training in neuroanaesthesia can only be undertaken in a specialist unit although the training is applicable to head-injured patients wherever they occur. The skills gained here are transferable to many other special interests.

9.1: Objectives

H:9.1.1	To be able to resuscitate, stabilise, prepare for transfer and transfer patients with impaired conscious levels resulting from intracranial pathology.
H:9.1.2	To recognise the potential risks to the spinal cord during spinal surgery and other operations where there may be compromise to its blood supply, and to be able to undertake appropriate interventions to safeguard the cord in such circumstances.

9.2: Skills

<i>To become skilled in:</i>	
H:9.2.1	anaesthesia for planned intracranial and spinal surgery;
H:9.2.2	emergency neurosurgery for head trauma, in patients with higher ASA grades; and
H:9.2.3	the non-surgical management of the head trauma patient, the resuscitation and transfer of patients with decreased conscious levels resulting from intracranial pathology.
<i>To enhance practical skills in the following aspects of monitoring:</i>	
H:9.2.4	insertion of arterial lines;
H:9.2.5	insertion of CVP lines;
H:9.2.6	techniques for detection and management of air embolism;
H:9.2.7	EEG and evoked potentials;
H:9.2.8	intracranial pressure measurement; and
H:9.2.9	spinal drainage.
<i>In neuro-critical care to develop skill in:</i>	
H:9.2.10	the ventilation of patients with intracranial pathology including understanding the appropriate use of drugs, the management of raised intracranial pressure and manipulation of cerebral perfusion pressure, appropriate fluid and electrolyte balance and the treatment of raised intracranial pressure;
H:9.2.11	methods of cerebral protection and prevention of cerebral ischaemia; and
H:9.2.12	management of patients for organ donation.
<i>In neuroradiology to obtain skill in:</i>	
H:9.2.13	practical aspects of patient management for CT and MRI.

10: Obstetrics

Training will build on the intermediate level module in obstetric anaesthesia. It is recognised that the ability to see and manage some of the important major obstetric emergencies is to some extent dependent on chance, but increased time in the specialty increases the likelihood of active involvement.

10.1: Objective

H:10.1.1	To achieve a greater emphasis on the trainee undertaking more complex obstetric cases and becoming more involved in team working.
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10.2: Skills

<i>To become skilled in:</i>	
H:10.2.1	assessing women with factors complicating pregnancy;
H:10.2.2	providing information about analgesia and anaesthesia to pregnant women, with or without complicating factors, to midwives and other professional groups;
H:10.2.3	advising on alternative methods to regional block for analgesia ;
H:10.2.4	allaying anxiety and dealing with disappointment;
H:10.2.5	managing complications of regional block;
H:10.2.6	managing emergencies including as pre-eclampsia, eclampsia, major haemorrhage;
H:10.2.7	being part of a multidisciplinary team;
H:10.2.8	recognising and treating the sick mother;
H:10.2.9	recognising when further advice or skills are needed; and
H:10.2.10	neonatal resuscitation ¹⁸ .
<i>To enhance skills in:</i>	
H:10.2.11	epidural and CSE insertion and management for labour;
H:10.2.12	epidural and subarachnoid anaesthesia for Caesarean Section, and other operative deliveries;
H:10.2.13	conversion of analgesia for labour to that for operative delivery; and
H:10.2.14	general anaesthesia for Caesarean Section.

¹⁸ The competence is also listed in Section 11 but will mostly be gained in Section 8

11: Orthopaedics

Higher training in anaesthesia for orthopaedics may be undertaken in either a central or district general hospital. Some of the more complex operations such as major spinal surgery may only be performed in larger centres or the trainee may encounter these cases during training in anaesthesia for neurosurgery. Aspects of anaesthesia for orthopaedics will be encountered in other sections for example in the Trauma and Accidents section and Paediatric section.

11.1: Objectives

H:11.1.1	During this period of higher training there should be a greater emphasis on the trainee undertaking anaesthesia for increasingly complex orthopaedic surgery and for patients with co-existing disease. The trainee should be able to provide appropriate anaesthesia for all types of elective and emergency orthopaedic surgery.
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11.2: Skills

<i>To become skilled in:</i>	
H:11.2.1	preoperative assessment and anaesthesia for patients with multiple co-existing diseases or congenital syndromes;
H:11.2.2	preoperative optimisation of high-risk patients.;
H:11.2.3	management of the difficult airway in orthopaedic patients such as those suffering from rheumatoid arthritis, ankylosing spondylitis and those with cervical spine injury or pathology;
H:11.2.4	anaesthesia for major corrective spinal surgery; and
H:11.2.5	anaesthesia for paediatric patients having major orthopaedic surgery.
<i>To enhance the following practical skills:</i>	
H:11.2.6	anaesthesia for orthopaedic operations in the prone position;
H:11.2.7	anaesthesia for orthopaedic operations with major blood loss;
H:11.2.8	anaesthesia for emergency orthopaedic surgery including multiple trauma;
H:11.2.9	peripheral nerve blockade for orthopaedic procedures; and
H:11.2.10	thoracic and lumbar epidural blocks, spinal and combined spinal-epidural (CSE) techniques for orthopaedic procedures.

12: Ophthalmic anaesthesia

Trainees should be conversant with the advantages and indications for local anaesthetic blocks as well as those for general anaesthesia in ophthalmology.

12.1: Objective

H:12.1.1	To develop flexibility in providing the best possible conditions for ophthalmic surgery to the benefit of the patient.
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12.2: Skills

<i>To become skilled in</i>	
H:12.2.1	the assessment and management of patients with significant co-morbidity scheduled to undergo ophthalmic procedures;
H:12.2.2	to understand fully the needs of the surgeon in relation to particular procedures so as to be able to create the best operating conditions; and
H:12.2.3	techniques of sedation.
<i>To enhance the following practical skills:</i>	
H:12.2.4	local and general anaesthesia in adults and children for ophthalmic surgery.

13: Paediatric anaesthesia

Higher training in paediatric anaesthesia may be undertaken in specialist paediatric hospitals or *hospitals* with separate paediatric services and a substantial paediatric caseload. It is expected that the majority of trainees would complete higher training in paediatric anaesthesia during ST Years 5, 6 or 7, as part of their balanced programme of higher specialist training (see *The CCT in Anaesthetics IV* Section 3). Large numbers of children undergo routine surgery outside specialist centres. The ability to manage paediatric emergencies and to stabilise paediatric patients for transfer are important skills for anaesthetists irrespective of where they work.

Trainees aspiring to be generalists should first read the advice contained in Sections 3.3 and 4.7 of *The CCT in Anaesthetics IV*.

13.1: Objectives

H:13.1.1	To develop competence in meeting the anaesthetic needs of infants and children for common surgical conditions;
H:13.1.2	To be able to organise and manage safely a list of paediatric cases, with consultant supervision for neonates and infants under 1 year;
H:13.1.3	To be able to manage hazards and complications of paediatric anaesthesia; and
H:13.1.4	To be able to resuscitate and stabilise a sick child for transfer.

13.2: Skills

<i>To become skilled in:</i>	
H:13.2.1	preoperative assessment and optimisation of infants and children requiring elective and emergency surgery including understanding the significance of;
H:13.2.2	former premature and very premature babies;
H:13.2.3	children with significant co-morbidity;
H:13.2.4	congenital abnormalities, including congenital heart disease and common syndromes;
H:13.2.5	induction (inhalational and intravenous techniques) and maintenance of anaesthesia independently for children over the age of 1 year, and with consultant supervision, induction and maintenance of anaesthesia for neonates and infants;
H:13.2.6	peri-operative management of fluids, electrolytes, glucose and temperature;
H:13.2.7	management of recovery from anaesthesia;
H:13.2.8	pain management in children, including the use of local and regional anaesthetic techniques, the use of opioids (including infusions and PCA/NCA), adjuvant NSAIDs and simple analgesics;
H:13.2.9	selection, management and monitoring of children for diagnostic and therapeutic procedures carried out under sedation/GA;
H:13.2.10	understanding the commoner problems of paediatric intensive care, including ventilatory and circulatory support, upper airway problems and trauma;;
H:13.2.11	safe transport of critically ill children and babies;
H:13.2.12	communicating with children, parents or carers;
H:13.2.13	presenting to the patient and parents or carers a balanced judgement of the estimated risks and likely complications of anaesthesia;
H:13.2.14	working as a member of the multi-disciplinary paediatric team; and
H:13.2.15	understanding issues relevant to consent in children; the law and research.
<i>To enhance skills in:</i>	
H:13.2.16	resuscitation - basic life support (BLS) and advanced life support (ALS);
H:13.2.17	resuscitation of the newborn ¹⁹ ;
H:13.2.18	vascular access;
H:13.2.19	regional analgesia techniques and peripheral nerve blockade;

¹⁹ The competence is listed here but will mostly be gained in Section 8.

H:13.2.20	anaesthetic management of the child with a full stomach; and
H:13.2.21	management of anaesthetic emergencies in children: acute airway obstruction, including croup and acute epiglottitis, loss of airway, laryngospasm, failed venous access.

Training in Child Protection

Anaesthetists of all grades may encounter children who have suffered physical and/or sexual abuse in various situations:

1. Resuscitation of a critically ill child who has sustained an injury under circumstances that cannot wholly be explained by natural circumstances or is consistent with intentional trauma or abuse
2. In the paediatric intensive care unit e.g. following severe head injury, where the above needs to be considered
3. When called upon to anaesthetise a child for a formal forensic examination, possibly involving colposcopy, sigmoidoscopy and the collection of specimens. This may also include medical photography/video records.
4. Rarely a child may tell the anaesthetist about abuse (“disclosure”)
5. During the course of a routine pre-op examination or surgical procedure, the anaesthetist or surgeon notes unusual or unexplained signs which may be indicative of physical or sexual abuse

In all these situations, it is essential that health care professionals, including the anaesthetist, act in the best interests of the child.

Knowledge

Situations in which abuse of children may present
 Signs indicative of a possible need to safeguard the infant or child
 Awareness of local CP procedures

Skills

Clearly communicates concerns (includes documentation)
 Ability to manage the child and their parents in a sensitive, appropriate manner

Attitudes and behaviour

Understands need to communicate concerns within team
 Asks for senior and/or paediatrician support when appropriate

Workplace and training objectives

Demonstrates knowledge of local safeguarding children procedures

Additional Notes

It is suggested that this training can be achieved in a 1 hour scenario based discussion or PBL format. In addition all trainees should be familiar with the RCoA/APA/RCPCH Guideline *Child Protection and the Anaesthetist: Safeguarding Children in the Operating Theatre*.

General principles-What to do if child abuse or neglect is suspected

- *Good communication is essential.* Anaesthetists are advised not to intervene alone, and suspicions should be discussed with the individual identified in the local guideline. In particular it would *not* be appropriate to institute or initiate formal *examination* whilst the child is anaesthetised, as separate consent is required.

- Further management needs to be agreed in conjunction with the paediatrician, surgeon and anaesthetist. Consideration needs to be given to:
 - Informing the parents (except in the case of fabricated or fictitious illness and child sexual abuse)
 - Further assessment
 - Informing social services and/or the police
- Full documentation is essential.
- The paediatrician should lead this process, and may seek advice from the Named or Designated Doctor for child protection.

Duties of the Anaesthetist

- To act in the best interests of the child
 - To be aware of the child's rights to be protected
 - To respect the rights of the child to confidentiality
 - To contact a paediatrician with experience of child protection for advice (On call paediatrician for Named or Designated Doctor/Nurse)
 - To be aware of the local child protection mechanisms
- To be aware of the rights of those with parental responsibility

14: Pain management

Higher training in acute and chronic pain management may be undertaken in teaching hospital, district general hospital or a combination of the two. The training will build upon that obtained during intermediate level training.

14.1: Objectives

H:14.1.1	To assess patients with pain including: history taking, physical examination, and interpretation of investigations;
H:14.1.2	To institute effective pain relief for patients with acute pain;
H:14.1.3	To explain the therapeutic options that are available for acute pain and discuss the advantages and disadvantages of each particular therapy;
H:14.1.4	To understand the basic principles of management of patients with chronic pain and cancer pain;
H:14.1.5	To be aware of when and where to refer patients for appropriate help;
H:14.1.6	To demonstrate technical proficiency with a range of procedures for pain relief;
H:14.1.7	To work effectively as part of a multidisciplinary pain team; and
H:14.1.8	To communicate satisfactorily with patients and their relatives, plus colleagues, referring doctors and other staff.

14.2: Skills

<i>To become skilled in:</i>	
H:14.2.1	management of acute pain including pain after surgery and non-surgical acute pain;
H:14.2.2	the basic practice of assessment of patients with chronic pain including: history taking, physical examination, and interpretation of investigations;
H:14.2.3	understanding the management options for treating patients with chronic pain, including cancer pain;
H:14.2.4	understanding the role of a multidisciplinary approach for the management of chronic pain and recognising the role of other medical specialties and healthcare professionals in pain management;
H:14.2.5	recognising when help from other specialists is required for any patient including identifying patients with pain who require psychological evaluation;
H:14.2.6	effective communication with patients; and
H:14.2.7	effective communication with referring doctors and other healthcare professionals.
<i>To enhance skills in:</i>	
H:14.2.8	management of acute pain;
H:14.2.9	the diagnosis and management of pain syndromes after surgery eg neuropathic pain;
H:14.2.10	principles and practice of neural blockade for pain management including peripheral catheter techniques; and
H:14.2.11	working as a part of a multidisciplinary team.

15: Plastics/Burns

Many trainees will not have had training in anaesthesia for plastics and burns during their intermediate level training where it is an optional module. Major burn anaesthesia should only take place in specialist centres where the critical care of burned patients is an integral part of the process. Training opportunities are limited but burned patients may present at any A&E department and thus many anaesthetists may be involved in the initial treatment and resuscitation. It is recognised that training may need to be supplemented by other teaching and instructional methods such as CD-ROM presentations.

Much plastic surgery takes place in specialist centres, some is related to further treatment of burned patients, some to head and neck cancers whilst some is more routine cosmetic surgery in non-specialist centres. Some specifically relates to children and will only be available in specialist hospitals.

15.1: Burns

<i>To become skilled in:</i>	
H:15.1.1	resuscitation and early management of burns;
H:15.1.2	recognition of risk of upper airway damage of burns;
H:15.1.3	management in the intensive care unit:
H:15.1.4	management of the respiratory burn;
H:15.1.5	invasive monitoring;
H:15.1.6	inotropic support;
H:15.1.7	multi-organ failure;
H:15.1.8	IPPV; and
H:15.1.9	effect on patient and relatives;
H:15.1.10	Anaesthesia for grafting and related procedures:
H:15.1.11	airway management;
H:15.1.12	difficult venous access;
H:15.1.13	monitoring;
H:15.1.14	surgical procedures in the major burn;
H:15.1.15	blood loss and its prevention;
H:15.1.16	antibiotic therapy; and
H:15.1.17	effect on patients and relatives;
H:15.1.18	anaesthesia/sedation for dressing changes;
H:15.1.19	analgesia in the burned patient; and
H:15.1.20	organisational problems associated with burns:
H:15.1.21	reception of patients from other hospitals;
H:15.1.22	MRSA;
H:15.1.23	unscheduled lists.
<i>To enhance the following practical skills:</i>	
H:15.1.24	airway management; and
H:15.1.25	resuscitative techniques.

15.2: Plastic and Maxillofacial surgery

<i>To become skilled in:</i>	
H:15.2.1	management of the acutely compromised airway;
H:15.2.2	identification of potentially difficult airway;
H:15.2.3	management including LMA, fiberoptic intubation and transtracheal ventilation;
H:15.2.4	anaesthesia for all aspects e.g. general plastic and maxillofacial surgery:
H:15.2.5	acute and elective surgery;
H:15.2.6	general and regional anaesthesia;
H:15.2.7	methods of reducing blood loss including the use of vasoactive agents;
H:15.2.8	hypotensive anaesthesia; and

H:15.2.9	specialised areas e.g. face;
H:15.2.10	anaesthesia for head and neck surgery:
H:15.2.11	ensuring a good airway against competition;
H:15.2.12	prevention of blood loss; and
H:15.2.13	reconstructive techniques;
H:15.2.14	anaesthesia for free flap surgery;
H:15.2.15	cleft lip and palate surgery:
H:15.2.16	primary (infant) repair; and
H:15.2.17	secondary repair;
H:15.2.18	other major paediatric surgery e.g. craniofacial - Specialised Units.
<i>To enhance the following practical skills:</i>	
H:15.2.19	airway management; and
H:15.2.20	resuscitative techniques.

16: Trauma and accidents

Higher training in anaesthesia for trauma and accidents may be undertaken in any hospital designated to receive major trauma patients. Many trainees will have completed an Advanced Trauma Life Support (ATLS), or equivalent, course. It should be the intended aim of anaesthetic trainees wishing to complete advanced training in trauma and accidents to achieve 'instructor' status on such courses.

16.1: Skills

<i>To become skilled in</i>	
H:16.1.1	immediate assessment of major trauma patients and institution of appropriate airway and resuscitation management in the Emergency Unit;
H:16.1.2	major incident management, triage and anaesthesia in the pre-hospital setting;
H:16.1.3	leading and being an effective member of the trauma team;
H:16.1.4	communicating with other members of the team e.g. paramedics, relevant surgical specialists, radiologists;
H:16.1.5	non-surgical management of head trauma patient, the resuscitation and transfer of patients with decreased conscious levels secondary to injury;
H:16.1.6	management of massive blood loss and associated coagulopathy;
H:16.1.7	management of the burned patient;
H:16.1.8	management of a child following trauma;
H:16.1.9	transfer of the traumatised patient to an appropriate specialist centre, with appropriate airway and pain management;
H:16.1.10	trauma scoring systems;
H:16.1.11	preoperative assessment and optimisation of high-risk patients for trauma surgery;
H:16.1.12	intra-operative care of patients of all ages and ASA grade requiring trauma surgery Implementing appropriate postoperative pain management and postoperative care in a critical care facility, if required;
H:16.1.13	participating in clinical audit of outcome;
H:16.1.14	instituting local guidelines or protocols for trauma patient management; and
H:16.1.15	teaching other members of the trauma team and more junior anaesthetists the necessary knowledge and skills required
<i>To enhance the following practical skills:</i>	
H:16.1.16	securing the airway in a trauma patient;
H:16.1.17	insertion of arterial and central venous lines;
H:16.1.18	insertion of double-lumen endobronchial tubes;
H:16.1.19	insertion of intercostal chest drains;
H:16.1.20	use of cardiac output monitoring, inotropes and vasoactive agents, when indicated;
H:16.1.21	regional anaesthesia; thoracic and lumbar epidural placement, spinal and combined spinal-epidural techniques;
H:16.1.22	peripheral nerve blocks for emergency, intra-operative and postoperative pain management; and
H:16.1.23	use of TIVA and sedation techniques

17: Vascular

Higher training in vascular anaesthesia is intended to build on the intermediate level module and may take place in a central or District General Hospital. Higher training during ST years 5, 6 and 7 should be undertaken with gradually increasing responsibility to enable the trainee to undertake major vascular lists with distant supervision.

17.1: Objectives

H:17.1.1	During this advanced training module, there should be a greater emphasis on the trainee undertaking anaesthesia for increasingly complex vascular surgery and at the same time, taking responsibility for patients with co-existing disease.
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17.2: Skills

<i>To become skilled in</i>	
H:17.2.1	preoperative assessment of vascular patients with multiple co-existing diseases;
H:17.2.2	preoperative optimisation of high-risk vascular patients;
H:17.2.3	risk stratification scoring of patients undergoing major surgery e.g.POSSUM scoring;
H:17.2.4	understanding the risks and complications of surgery;
H:17.2.5	the intraoperative critical care management/resuscitation of patients of all ASA grades for elective and emergency vascular surgery;
H:17.2.6	managing the effects of aortic clamping;
H:17.2.7	managing anaesthesia for carotid artery surgery;
H:17.2.8	appropriate planning for postoperative care in a critical care facility if required; and
H:17.2.9	management of massive blood loss and its associated coagulopathy.
<i>To enhance the following practical skills:</i>	
H:17.2.10	insertion of arterial and central venous lines;
H:17.2.11	use of cardiac output monitoring, inotropes and vasoactive agents, when indicated; and
H:17.2.12	regional anaesthesia; thoracic and lumbar epidural placement, spinal and combined spinal-epidural techniques.

APPENDIX B:

ADVANCED TRAINING IN ANAESTHESIA

By training at the advanced level in the following special interests the trainee will be seeking to become expert in the field and thereby capable of undertaking a consultant post with a significant sessional commitment to the special interest. By devoting a period of at least 6 months (and in some cases up to 12 months) to a single special interest, it is inevitable that if the totality of training is to be appropriately balanced (as is required by the RCoA) then only one, or exceptionally two, special interests can be covered.

The RCA recognises that 'signing off' training in these special interests can only be carried out by consultants experienced in the field. Equally in setting the training requirement the RCA would wish to work closely with the relevant anaesthetic Specialist Society. A model is therefore proposed such that within each School of Anaesthesia there should be one or more designated special interest educational supervisors for each of the special interests. These consultants would be responsible for signing off the trainees. It is to be hoped that through close co-operation between the School's Educational Supervisors, their respective Specialist Society and under the formal direction of the RCoA a mechanism can be found to develop special interest training.

A minimum case load is included for most special interests. It is recognised that the programme is competency based but also that a certain minimum case load is required to assess competence. It is quite possible that the numbers quoted may have to be revised in the light of experience.

Clearly different trainees will become competent with varying numbers of cases, however a guideline has been widely requested for the purpose of special interest training.

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1: Cardiac/thoracic anaesthesia

1.1: Training objectives

A:1.1.1	Anaesthetists intending to undertake anaesthesia for cardiac or thoracic surgery should have received background training to higher level in adult intensive care, adult cardiac and / or thoracic anaesthesia in recognised training centres as part of general training.
A:1.1.2	<i>Paediatric cardiothoracic anaesthesia</i> Those wishing to pursue a career involving paediatric cardiothoracic anaesthesia are likely to gain a grounding during their CCST programme and will need to develop their skills further after their CCST in a specific post or during their consultant practice, with guidance from their colleagues.

1.2: Indicative clinical experience

A:1.2.1	Adult cardiac anaesthesia: 6-12 months
A:1.2.2	Thoracic anaesthesia: 6 months

1.3: Professional qualities

A:1.3.1	Ability to communicate sensitively and effectively with the patients and their families
A:1.3.2	Ability to communicate effectively with surgical colleagues and other members of the operating theatre team.
A:1.3.3	Full participation in multi-disciplinary clinical audit.
A:1.3.4	Commitment to continued professional development.

1.4: Knowledge and understanding

<i>Cardiac anaesthesia</i>	
A:1.4.1	Cardiac physiology, including cardiac electrophysiology.
A:1.4.2	Preoperative cardiac investigation including the interpretation of cardiac catheterisation data and transthoracic and transoesophageal echocardiography.
A:1.4.3	The main techniques and aims of cardiac and thoracic aortic surgery, interventional cardiology and cardiac electrophysiology.
A:1.4.4	The variation in basic techniques of anaesthesia necessary for different types of congenital cardiac physiology in adults.
A:1.4.5	The techniques of anaesthesia for open and closed cardiac surgery including the safe use of invasive monitoring.
A:1.4.6	Mechanical and pharmacological methods for blood conservation.
A:1.4.7	The techniques of cardiopulmonary bypass and use of ECMO and Ventricular Assist Devices.
A:1.4.8	The principles and practice of intensive care following cardiac surgery including intra-aortic balloon counterpulsation.
<i>Thoracic anaesthesia</i>	
A:1.4.9	Pulmonary anatomy, physiology and chest wall mechanics.
A:1.4.10	Preoperative pulmonary investigation including the interpretation of lung function data and spirometry.
A:1.4.11	Principles of single lung ventilation.
A:1.4.12	The main techniques and aims of thoracic surgery.

1.5: Skills

<i>Cardiac anaesthesia</i>	
A:1.5.1	Preoperative assessment in patients with cardiac disease.
A:1.5.2	Induction and maintenance of anaesthesia in patients with ischaemic and valvular cardiac disease, myocardial dysfunction and thoracic aortic disease; also aspects of congenital cardiac disease, balanced shunts and outflow tract obstruction.
A:1.5.3	Appropriate use of invasive monitoring and intra-operative echocardiography and

	interpretation of data obtained.
A:1.5.4	Use of cardio-active drugs in cardiac disease.
A:1.5.5	Safe and effective use of postoperative analgesia drugs and techniques.
<i>Thoracic anaesthesia</i>	
A:1.5.6	Preoperative assessment in patients with diseases of the lungs, mediastinum and chest wall.
A:1.5.7	Induction and maintenance of anaesthesia in patients with lung disease, including bronchoscopic placement of double lumen tubes and management of single lung ventilation.
A:1.5.8	Appropriate use of invasive monitoring and interpretation of data obtained.
A:1.5.9	Safe and effective use of postoperative analgesia drugs and techniques, including thoracic epidural analgesia.

1.6: Minimum case load

The recommended training caseload is

	Minimum	Desirable
Cardiac	100	200
Thoracic	50	75

1.7: Teaching and supervision An anaesthetist training in cardiothoracic anaesthesia should be supervised at all times by an appropriately trained consultant, and should not normally be expected to supervise other trainees in theatre.

1.8: Research and Academic requirements Involvement with on-going audit and research in the training centre is expected, with the aim of presenting a poster or paper at a national or international meeting. Trainees should continue to develop critical evaluation skills to enable them to assess published research in the field.

1.9 Training environment To achieve and maintain expertise in this area the quality of time spent in training is as least as important as the quantity. Training should therefore be undertaken in large units which have an integrated, team approach to perioperative care of patients with heart disease.

1.10 Other requirements There is little evidence to support a minimum level of experience necessary to maintain expertise in the above competences. However, it is unlikely that competence could be maintained with less than an average of one theatre session a week in cardiac or thoracic anaesthesia.

1.11: Specialist Societies Anaesthetists specialising in cardiothoracic anaesthesia would benefit from the CPD opportunities offered by membership and regular attendance at the scientific meetings at one or more of the following:

- Association of Cardiothoracic Anaesthetists
- European Association of Cardiothoracic Anaesthesiologists
- Society of Cardiovascular Anesthesiologists

2: Intensive Care Medicine

Refer to Section 4.6 of *The CCT in Anaesthetics IV*.

3: Neuroanaesthesia

3.1: Training objectives

A:3.1.1	To provide all the skills, knowledge and professional judgement required, to practice anaesthesia with a special interest in neuroanaesthesia and neuro-critical care.
A:3.1.2	To ensure that following their training in neuroanaesthesia and neuro-intensive care, doctors have had sufficient experience to perform routine and emergency work with confidence.
A:3.1.3	To be aware of the extended role of a specialist, and be confident in supervising and teaching junior colleagues.

3.2: Indicative clinical experience

A:3.2.1	Advanced sub-speciality training in anaesthesia will be for a period of at least 6 months and will be expected to produce a trainee who is 'expert' in that field and thereby capable of taking up a consultant post in the special interest. Provisions set out should take account of those gaining their experience abroad.
A:3.2.2	<i>Neuroanaesthesia</i> There should be experience of anaesthesia for a wide range of the usual neurosurgical case-mix and the different positions used during neurosurgical procedures. At the end of training the advanced trainee should be able to demonstrate an ability to anaesthetise a range of neurosurgical cases with distant supervision and to have a fundamental understanding of the problems that can be encountered. Differences in neurosurgical and neuroanaesthetic practice make experience in another centre desirable, either as a formal exchange or study leave.
A:3.2.3	<i>Critical Care</i> The trainee should be sufficiently experienced and have an understanding of issues in neurocritical care to ensure that neurocritical care facilities are used intelligently and to have the foundation for further training as a specialist neurointensivist if required. Experience should complement and complete the clinical experience recommended in ST Years 3 and 4.

3.3: Professional Qualities

A:3.3.1	Respect for and understanding the needs and roles of the many different disciplines involved in the care of the neurological and neurosurgical patients.
A:3.3.2	To establish a rapport with the surgeon to exchange information both in the planning and peri-operative periods.
A:3.3.3	Develop the necessary interpersonal skills to work effectively in a team, leading and communicating with nursing and ICU staff.
A:3.3.4	To be able to apply principles and knowledge to new procedures, to recognise the limits of personal knowledge, but be able to consult colleagues.
A:3.3.5	To be able to continue learning new skills, knowledge and techniques.
A:3.3.6	To be able to organise and lead teams in the rapid preparation of severely compromised patients for urgent surgery .
A:3.3.7	To be able to discuss procedures, risks and alternatives in simple and complex terms with patients and be able to comfort patients distressed by their condition and the prospect of surgery.
A:3.3.8	To understand the requirements for organ donation.

Critical Care In addition, all neuroanaesthetists should have experience of at least 1 month in neuro-critical care. It is essential that this training is undertaken in units that have an appropriate case-mix and caseload, thus ensuring that trainees have a reasonable prospect of acquiring the skills and knowledge they need within a realistic time frame. Training schemes must also have an appropriate number of trainers to ensure that training is not overwhelmed by service needs. However, it is essential that trainees must fully participate in the on call commitment of the unit, so as to expose them to the full range of clinical and organisational practice involved in intensive care. The implementation of training in practical

skills will vary but all trainees should learn how to interpret all monitoring modalities. Those wishing to have sessions in neuro-critical care should have an attachment of at least 3-6 months to neuro-critical care as part of their general ICM training. Trainees who wish to make neurocritical care a substantial part of their clinical practice as consultants, or wish to direct such units, should conform broadly to the requirements laid down by the Intercollegiate Board for Training in Intensive Care Medicine.

Specific Skills required including associated Critical Care The trainee should be fully trained in and able to provide and supervise other junior doctors for:

- **Neuroanaesthesia**
 - Planned intracranial surgery and spinal surgery.
 - Emergency neurosurgery for head trauma alone and as part of multi-trauma care.
 - Safe patient positioning – prone , park-bench (lateral).
 - Resuscitation and patient transfer.
 - Monitoring:
 - insertion of arterial lines;
 - insertion of CVP lines;
 - techniques for detection and management of air embolism;
 - EEG and evoked potentials;
 - intracranial pressure measurement; and
 - spinal drainage.
- **Critical Care** Those skills already outlined for SpR 1/2 training:
 - the non-surgical management of the head trauma patient;
 - systemic complications of severe brain injury;
 - management of subarachnoid haemorrhage and vasospasm;
 - diagnosis and management of patients with brainstem death; and
 - dealing with patient's relatives.
- **Neuroradiology**
 - Practical aspects of patient management for CT and MRI.
 - Anaesthetic considerations in interventional radiology.

Minimum case load

- 20 patients for immediate management of head injury or intracranial haematoma in the neurosurgical unit which includes receiving or resuscitation of patients, imaging, operating theatre and intensive care management.
- 10 patients for shunt procedures (experience can be gained during a paediatric attachment).
- 20 patients for major spinal surgery including unstable cervical spine, thoracic spinal surgery, spinal instrumentation and spinal tumour (some experience in anaesthesia for spinal surgery can be obtained during an orthopaedic surgery attachment).
- 5 patients for carotid endarterectomy (experience in this area can be obtained during vascular attachment).
- 25 patients for intracranial surgery other than evacuation of intracranial haematoma which should include intracranial vascular surgery and anaesthesia for transphenoidal hypophysectomy.
- 5 patients for posterior fossa surgery.
- 5 patients for stereotactic surgery/image guidance.
- 15 patients for neuroradiological imaging including experience in anaesthesia and sedation for interventional neuroradiology and MRI.

Teaching / Supervision

- Obtain experience in teaching, training and supervising more junior trainees.
- Understanding and accepting limitations and experience of more junior doctors.

Research / Academic requirements

- Encourage close involvement in research projects at home or overseas.
- Opportunities should be available to spend time out of programme doing research.
- Critical appraisal – presentation /participation in journal club.
- Participation in ongoing audit.
- To have experience in Critical Incident reporting.

Training environment Recognised neurosurgical centre with neuroradiological and neurocritical care facilities.

Other requirements Membership of the Neuroanaesthetists Society of Great Britain and Ireland is strongly recommended. Membership of non-specialist societies is encouraged to ensure that skills and knowledge remain as wide-based as possible.

4: Obstetric anaesthesia

4.1: Training objectives

A:4.1.1	The overall objective is to achieve competence in the provision of analgesia and anaesthesia to the variety of obstetric patients normally encountered so that the trainee can take up a post with a special interest. This may be in a major centre or to be equipped to assume the role of lead clinician in obstetric anaesthesia in a smaller unit.
A:4.1.2	To be competent for independent consultant practice in a post with obstetric anaesthesia as a special interest.
A:4.1.3	To be able to assess pregnant patients for anaesthesia for elective and emergency procedures.
A:4.1.4	To be able to assess the need for, and advise on, analgesia during labour in a range of situations.
A:4.1.5	To be technically proficient in a range of regional anaesthetic techniques for analgesia and anaesthesia.
A:4.1.6	To perform general anaesthesia safely and appropriately for obstetric patients.
A:4.1.7	To recognise and treat complications of regional and general anaesthesia in obstetrics.
A:4.1.8	To recognise and treat obstetric complications and emergencies.
A:4.1.9	To recognise and treat the sick obstetric patient.
A:4.1.10	To be able to communicate effectively with pregnant women, their relatives, midwives, obstetricians and other staff.
A:4.1.11	To act as an effective member of a multidisciplinary team.
A:4.1.12	To act as an effective teacher of obstetric analgesia and anaesthesia.
A:4.1.13	To be able to critically assess evidence from research related to obstetric analgesia and anaesthesia.

4.2: Indicative clinical experience

A:4.2.1	Experience should be gained in the assessment, investigation and anaesthetic/analgesic management of a wide variety of obstetric cases. This includes:
A:4.2.2	healthy women for elective and emergency Caesarean Section;
A:4.2.3	women with non-obstetric systemic disease (e.g. cardiac, respiratory, obesity);
A:4.2.4	women with complications of pregnancy;
A:4.2.5	other procedures required in obstetric practice;
A:4.2.6	women in normal labour;
A:4.2.7	special patient groups such as the intellectually impaired and non-English speakers;
A:4.2.8	complications of obstetric anaesthesia and analgesia;
A:4.2.9	multidisciplinary team management of the sick parturient antenatally, during and after labour, and in the critical care unit; and
A:4.2.10	obstetric emergencies and complications (e.g. haemorrhage, pre-eclampsia).
A:4.2.11	It is recognised that some of the rarer obstetric emergencies (e.g. eclampsia, amniotic fluid embolus, inverted uterus) will not necessarily have been encountered but it is expected that the trainee will be able to recognise and treat them when they occur.

4.3: Professional Qualities

A:4.3.1	Enthusiasm and aptitude for emergency work.
A:4.3.2	Sympathetic but professional approach to difficulties and disappointment.
A:4.3.3	Ability to communicate effectively to patients and relatives/partners.
A:4.3.4	Ability to respond appropriately to requests and demands of patients.
A:4.3.5	Ability to communicate effectively and confidently in a multiprofessional

	environment.
A:4.3.6	Awareness of the uniquely high-risk management issues and medicolegal consequences in obstetrics.
A:4.3.7	Awareness of when it is appropriate to enlist the help of other specialists.
A:4.3.8	Awareness of safety issues.
A:4.3.9	Awareness of the importance of sterile techniques.
A:4.3.10	Possession of a high level of personal organisation (including record keeping) and efficient time management.
A:4.3.11	Ability to set priorities, organise others effectively and to delegate appropriately.
A:4.3.12	Commitment to follow labour ward protocols.
A:4.3.13	Commitment to continuing education and professional development in obstetric anaesthesia.
A:4.3.14	Commitment to audit own practice and that of labour ward, and to making changes as a result.

4.4: Knowledge and understanding

A:4.4.1	In-depth understanding of the 'core knowledge' required for basic training and a detailed appreciation of current controversies.
A:4.4.2	In-depth understanding of the effect of the pregnant state on normal physiology and on pathological conditions.
A:4.4.3	Understanding of the principles of local infiltration for Caesarean section and the use of caudal anaesthesia in obstetrics.
A:4.4.4	A thorough knowledge of national audits both past and present e.g. CEMD, CESDI, the National Sentinel Caesarean Section Audit.
A:4.4.5	Current innovations/initiatives relevant to obstetric anaesthesia eg NICE guidelines, Audit Commission recommendations etc..
A:4.4.6	Current literature related to obstetric anaesthetic and obstetric issues.
A:4.4.7	An understanding of the risk management process.
A:4.4.8	A working knowledge of obstetrics, particularly intra-partum management. Some sessions during the advanced training period should be spent gaining more in-depth knowledge of obstetric, midwifery and paediatric issues, and to develop further interdisciplinary communication skills. This aspect of training/experience could be achieved by spending these sessions:
A:4.4.9	shadowing the labour ward obstetric consultant;
A:4.4.10	shadowing the senior labour ward midwife (labour ward co-ordinator);
A:4.4.11	shadowing the consultant neonatal paediatrician;
A:4.4.12	in the fetal assessment unit specifically to gain greater understanding of general ultrasound and Doppler study estimation of fetal well-being;
A:4.4.13	undertaking training in CTG interpretation; and
A:4.4.14	discussing risk management issues in obstetrics.

4.5: Specific Skills

A:4.5.1	Competence in a wide range of obstetric regional anaesthetic techniques. Familiarity with a variety of approaches (sitting, lateral, midline, paramedian). Regional anaesthetic techniques should include spinal, epidural, combined spinal-epidural and rectus sheath blocks in normal and 'difficult' backs.
A:4.5.2	Competence in delivery of general anaesthesia to the obstetric patient, both in elective and emergency settings. A very high standard of airway management is expected. The ability to anticipate, recognise and manage the difficult airway.
A:4.5.3	Recognition and treatment of complications of obstetric anaesthesia and analgesia such as obstetric and traumatic neuropathies, post dural puncture headache.
A:4.5.4	Epidural blood patch for post dural puncture headache.
A:4.5.5	Management of obstetric emergencies such as haemorrhage and severe fetal distress
A:4.5.6	Management of the sick obstetric patient.

4.6: Minimum case load

A:4.6.1	During the specialist training period the trainee should have performed or personally supervised at least:
A:4.6.2	150 regional procedures for labour analgesia; and
A:4.6.3	100 regional anaesthetics for Caesarean section. Of these 100 at least 50 should have involved <i>de novo</i> regional anaesthesia.
A:4.6.4	By the end of their training in ST Years 3 to 5 the trainee will be expected to have performed at least 10 general anaesthetics in obstetric patients. Because of the decline in use of general anaesthesia the trainee should avail himself or herself of any opportunity.

4.7: Teaching and supervision The trainee undergoing advanced training in obstetric anaesthesia will be expected to take part in teaching relevant aspects of obstetric anaesthesia to the public, all groups of health care workers and more junior trainees. The trainee should be able to supervise other trainees in practical aspects of obstetric anaesthetic management.

4.8: Research/Audit

- Maintain a personal logbook of obstetric anaesthesia procedures.
- Personal involvement in research and audit relevant to obstetric anaesthesia is essential.
- A complete audit cycle or completion of a research project may not be possible but at the very least the trainee should have helped to gather data for ongoing audits/research.
- Write up and present 4 case histories illustrating complex or unusual points.

4.9: Training environment

- The level of consultant staffing should be at least that recommended by the current OAA/AAGBI guidelines.
- Consultants must be committed to training. At least a proportion of advanced training should be spent in a tertiary referral centre that manages an HDU, and has an anaesthetic referral system. There should be ongoing audit in the department and the environment should encourage clinical research and publications.
- In order to gain a wider perspective of current practice, attachments to different units, including midwifery-led units, should be arranged.

4.10: Other requirements

- Attendance at a number of regional, national and if possible, international meetings relevant to obstetric anaesthesia. The presentation of a study/audit at one of these meetings is desirable. In addition to specialty based courses (such as those organised by the OAA and SOAP) there are skill-based multidisciplinary courses such as MOE&T and MOSES.
- Experience in obstetric anaesthesia simulator training is desirable, especially in view of the decreased airway management opportunities in obstetrics.
- Membership of the OAA (www.oaa-anaes.ac.uk) is strongly recommended for trainees contemplating a career in obstetric anaesthesia.

5: Paediatric anaesthesia

5.1: Training Objectives

A:5.1.1	To prepare a trainee who aspires to a career in full-time paediatric anaesthesia, either in a specialist paediatric hospital or a tertiary referral centre, or a trainee wishing to assume the role of lead consultant for paediatric anaesthesia in a district general hospital.
A:5.1.2	To acquire an in-depth knowledge and understanding of the anatomical, physiological, pharmacological and psychological differences between adults and children, and be aware of the changes associated with growth and development, and with co-existing disease.
A:5.1.3	To be competent in relation to every aspect of the peri-operative management of children of all ages, from the very premature neonates to those children with complex coexisting disease.
A:5.1.4	To become skilled in communicating with children, parents and other carers throughout the surgical episode, and also become an effective communicator within the multi-disciplinary paediatric team.
A:5.1.5	To understand the legality of consent in children, in relation to research, restraint and procedures.
A:5.1.6	To acquire leadership skills when managing both elective and emergency paediatric cases and also when supervising more junior trainees.

5.2: Indicative clinical experience

A:5.2.1	Advanced training will enhance that obtained during basic and higher training in paediatric anaesthesia.
A:5.2.2	The advanced training programme should be for a minimum period of six months. However if it is likely that a period of 12 months will be required for trainees intending to pursue a career with a substantial commitment to paediatric anaesthesia.
A:5.2.3	Anaesthesia for a wide range of neonates, infants and children with significant co-morbidity, congenital abnormalities and both premature and very premature babies.
A:5.2.4	All cases involving children under one year, should be carried out under direct supervision in the first three months of the advanced training.
A:5.2.5	The trainee should, with appropriate senior back up, be allowed to assume the role of lead clinician in both elective lists and emergency work.
A:5.2.6	The case mix must be wide and must include emergency cases.
A:5.2.7	Management of patients requiring paediatric intensive care, for example ventilatory management, support of circulation and resuscitation of neonates and children of all ages. A period of one to two months in a PICU is recommended for all trainees undergoing advanced training in paediatric anaesthesia.
A:5.2.8	Paediatric acute pain management.
A:5.2.9	Exposure to and an understanding of the principles in other areas of special interest training such as paediatric cardiac, neuro, plastic and reconstructive surgery.
A:5.2.10	Sessions should be allocated to acquire an appreciation of the wider aspects of paediatric care such as post-anaesthetic recovery and the work of play specialists and paediatric physiotherapists.

5.3: Professional Qualities

A:5.3.1	The ability to communicate clearly with children, parents and carers.
A:5.3.2	To respond appropriately to the requests of children, parents, carers and other medical professionals, nursing and managerial staff.
A:5.3.3	The ability to work and communicate competently and confidently in a multi-professional environment.

A:5.3.4	An understanding of the rights of children and child protection issues surrounding consent, research and restraint in children under the age of sixteen.
A:5.3.5	A high level of personal organisation, including comprehensive record keeping and efficient time management.
A:5.3.6	Priority setting, the ability to organise and lead others effectively and the ability to delegate appropriately.
A:5.3.7	Commitment to continuing education, professional development and audit of their practice in anaesthesia.

5.4: Knowledge and understanding

A:5.4.1	In-depth understanding of the 'core knowledge' required for basic and higher training.
A:5.4.2	In-depth understanding of the anatomical, physiological, pharmacological and psychological differences between adults and children, and the changes that occur with growth and development, and co-existing pathology.
A:5.4.3	A broad understanding of congenital abnormalities and syndromes.
A:5.4.4	A detailed appreciation of current controversies within the sub-speciality.
A:5.4.5	Knowledge of the current guidelines for provision of paediatric services, local pain management guidelines and others e.g. SIGN guidance for sedation.
A:5.4.6	Understanding the development and running of a paediatric pain service.
A:5.4.7	Awareness of chronic pain in childhood. Understanding of risk management and critical incident reporting.
A:5.4.8	Knowledge of current research in paediatric anaesthesia acquired through personal reading, departmental journal clubs and other meetings.
A:5.4.9	In order to demonstrate evidence of increasing understanding of paediatric anaesthesia, the trainee will be expected to compile and present <i>four</i> case histories, which will be assessed by the consultant responsible for advanced training in paediatric anaesthesia. Ideally, the trainee should have been personally involved in the care of the patients whose histories are presented.

5.5: Skills

A:5.5.1	Preoperative assessment and optimisation of term neonates and children with significant co-morbidity, and both premature and very premature babies.
A:5.5.2	General and regional anaesthesia in elective and emergency situations for neonates, infants and children with significant co-morbidity, history of prematurity and congenital abnormalities.
A:5.5.3	Management of the paediatric difficult airway, including the use of fiberoptic techniques.
A:5.5.4	Management of anaesthetic emergencies in children; acute airway obstruction, loss of airway, laryngospasm, failed venous access, suxamethonium apnoea and anaphylaxis, including latex allergy.
A:5.5.5	Advanced intravenous line insertion, including central venous cannulation and the familiarity and use of 2D ultrasound to assist with insertion techniques.
A:5.5.6	Sleep apnoea.
A:5.5.7	Sedation techniques including the selection, management and monitoring of children for diagnostic and therapeutic procedures, with particular attention to working in areas outside the theatre suite.
A:5.5.8	Advanced postoperative pain management, including the use of local and regional techniques (caudal, epidural and spinal anaesthesia) and familiarity of the equipment available to assist with such techniques, the use of opioids (infusions, NCA, PCA), simple analgesics and NSAID's.
A:5.5.9	Advanced resuscitation of children of all ages.
A:5.5.10	Resuscitation and stabilisation of the sick child requiring transfer.
A:5.5.11	Effective communication with the child, parent and carers.
A:5.5.12	Presentation of a balanced explanation of the risks and likely complications of anaesthesia to the child, parents and other carers.

5.6: Minimum case load Maintaining a logbook of paediatric anaesthesia caseload is essential for both the trainee and his/her supervisor to monitor progress accurately. For advanced training the trainee normally should have performed during a six-month period a minimum of 300 elective and emergency cases, including:

- 100 cases aged 1 to 5 years; and
- 50 cases < 1 year old, including neonates.

5.7: Teaching and Supervision Trainees should:

- be able to teach relevant aspects of paediatric anaesthesia to other health care professionals;
- have the ability to teach and supervise more junior trainee anaesthetists, suitably tailored to their individual abilities and requirements; and
- have a clear understanding of the concept and requirements for continuing professional development and the role of appraisal and assessment.

5.8: Research and Audit

- Personal participation in audit and research relevant to paediatric anaesthesia is essential.
- If research activity is an integral part of the training programme, the minimum period of continuous training should be twelve months.
- The trainee will be required to complete an audit project in a topic specific to paediatric anaesthesia and present the findings at a relevant meeting.

5.9: Training environment

- Training should be undertaken in a specialist paediatric hospital or a tertiary referral centre, equipped and staffed to deal with children of all ages and clinical complexity. A tertiary referral centre is defined as one, which provides specialist paediatric surgical services. Both paediatric ICU and HDU facilities should be available. Part of the advanced training programme in paediatric anaesthesia may be completed in a recognised overseas paediatric centre.
- During advanced training the trainees should spend the majority of their time involved solely in paediatric anaesthesia. It is recommended that the trainees' out of hours commitment should be in paediatric anaesthesia/paediatric ICM.
- Trainers should spend the majority of their practice in specialist paediatric anaesthesia and should be committed to training.
- Comprehensive library and inter/intranet facilities must be available for the trainee to access up-to-date books, reports and journals, and electronic educational material.
- There should be ongoing audit and research activity within the department.

Other Requirements Attendance at study days, courses and appropriate regional, national and international meetings related to paediatric anaesthesia (including those of the Association of Paediatric Anaesthetists) is encouraged. It is highly recommended that trainees present appropriate research or audit activity at such a meeting.

Training in Child Protection

Anaesthetists of all grades may encounter children who have suffered physical and/or sexual abuse in various situations.

1. Resuscitation of a critically ill child who has sustained an injury under circumstances that cannot wholly be explained by natural circumstances or is consistent with intentional trauma or abuse
2. In the paediatric intensive care unit e.g. following severe head injury, where the above needs to be considered

3. When called upon to anaesthetise a child for a formal forensic examination, possibly involving colposcopy, sigmoidoscopy and the collection of specimens. This may also include medical photography/video records.
4. Rarely a child may tell the anaesthetist about abuse (“disclosure”)
5. During the course of a routine pre-op examination or surgical procedure, the anaesthetist or surgeon notes unusual or unexplained signs which may be indicative of physical or sexual abuse

In all these situations, it is essential that health care professionals, including the anaesthetist, act in the best interests of the child.

Knowledge

Signs indicative of a possible need to safeguard the infant or child

National Safeguarding Children Guidelines and legislation

Awareness of and contact with local Safeguarding Children procedures/personnel

Skills

Clearly communicates concerns

Ability to manage the child and their parents in a sensitive, appropriate manner

Implements guideline

Attitudes and behaviour

Takes responsibility for implementing guideline

Advises non paediatric anaesthetic colleagues on local implementation

Ability to communicate concerns to parent and child (with paediatrician support)

Workplace and training objectives

Demonstrates knowledge of safeguarding children procedures

Demonstrates ability to support/advise colleagues with concerns about safety of a child

Additional Notes

It is recommended that trainees at this level who aspire to be either Children’s or specialist paediatric anaesthetists should register for a 1day course run by the RCPCH and utilise the “*Child Protection Companion*” (RCPCH, April 2006). In addition all trainees should be familiar with the RCoA/APA/RCPCH Guideline *Child Protection and the Anaesthetist: Safeguarding Children in the Operating Theatre*.

General principles-What to do if child abuse or neglect is suspected

- *Good communication is essential.* Anaesthetists are advised not to intervene alone, and suspicions should be discussed with the individual identified in the local guideline. In particular it would *not* be appropriate to institute or initiate formal *examination* whilst the child is anaesthetised, as separate consent is required.
- Further management needs to be agreed in conjunction with the paediatrician, surgeon and anaesthetist. Consideration needs to be given to:
 - Informing the parents (except in the case of fabricated or fictitious illness and child sexual abuse)
 - Further assessment
 - Informing social services and/or the police
- Full documentation is essential.
- The paediatrician should lead this process, and may seek advice from the Named or Designated Doctor for child protection.

Duties of the Anaesthetist

- To act in the best interests of the child
- To be aware of the child’s rights to be protected
- To respect the rights of the child to confidentiality

- To contact a paediatrician with experience of child protection for advice (On call paediatrician for Named or Designated Doctor/Nurse)
- To be aware of the local child protection mechanisms
- To be aware of the rights of those with parental responsibility

6: Pain management

6.1: Training objectives

A:6.1.1	The overall objective is to achieve competence in the key aspects of pain management so that the trainee can take up a consultant post with a major interest in pain management (or medicine). The trainee is not expected to be an 'expert' in pain management. Greater proficiency and, eventually, expertise will be acquired during subsequent consultant practice and will be underpinned by continuing education and professional development. Additional knowledge and skills about specific conditions or techniques may be acquired after the designated training period and award of the CCT.
A:6.1.2	To be competent for independent consultant practice in a post with a major commitment to pain management / medicine.
A:6.1.3	To be able to assess patients with pain including, history taking, physical examination, and interpretation of investigations.
A:6.1.4	To be aware of the treatment options available to provide effective pain management for patients with acute, chronic and cancer-related pain.
A:6.1.5	To become technically proficient with a range of procedures for pain management.
A:6.1.6	To be able to communicate effectively with patients and their relatives, plus colleagues, referring doctors and other staff.
A:6.1.7	To act as an effective member of a multidisciplinary pain team.
A:6.1.8	To act as an effective teacher of pain management topics.
A:6.1.9	To be able to critically assess evidence from research related to pain management.

6.2: Indicative clinical experience

A:6.2.1	Experience should be gained in the assessment, investigation and management of a wide range of pain problems. This includes:
A:6.2.2	patients with acute pain after surgery and non-surgical acute pain;
A:6.2.3	patients with different types of chronic pain;
A:6.2.4	patients with pain and other symptoms associated with cancer; and
A:6.2.5	pain management in special patient groups including the elderly, children, disabled, those with learning disabilities and those unable to communicate.

6.3: Professional qualities

A:6.3.1	Enthusiasm for caring for patients with pain.
A:6.3.2	Ability to treat pain patients politely and considerately.
A:6.3.3	Ability to communicate effectively with patients and relatives.
A:6.3.4	Ability to communicate effectively with other professionals in primary and secondary health care or in related organisations.
A:6.3.5	Awareness of the clinical boundaries of anaesthetist-led pain services in providing pain management for a wide range of patients in diverse clinical settings.
A:6.3.6	Awareness of when it is appropriate to refer pain patients to another specialist or to enlist help.
A:6.3.7	Ability to apply critical assessment to the evidence concerning pain therapies. The trainee must learn to employ therapies that are appropriate to the patient's condition and for which there exists evidence of effectiveness. Trainees must also understand that, for some pain conditions, there may be little published evidence to guide the choice of therapy.
A:6.3.8	Commitment to continuing education and professional development in pain management.
A:6.3.9	Commitment to auditing their own practice and to making changes to practice as a result of this.

6.4: Knowledge and understanding

A:6.4.1	The causes, nature and clinical features of non-surgical acute pain, chronic pain and cancer-related pain.
A:6.4.2	Pharmacology of medication used for treating pain.
A:6.4.3	Mechanisms and side effects of other therapies used for treating pain.
A:6.4.4	Basic principles of psychological assessment of patients with pain.
A:6.4.5	Basic principles of psychological management techniques including cognitive-behavioural approaches. Awareness of the doctor's contribution to a cognitive behavioural pain management programme.
A:6.4.6	The principles of pain management in special patient groups including the elderly, children, disabled, intellectually handicapped and those unable to communicate.
A:6.4.7	The principles of pain management in patients with problem drug use, drug dependency and addiction.
A:6.4.8	The principles and practice of neural blockade for pain management.
A:6.4.9	Awareness of the principles for insertion and management of implantable drug delivery pumps.
A:6.4.10	Awareness of the principles and indications for spinal cord stimulation.
A:6.4.11	Awareness of the basic principles and indications for neurosurgical techniques for pain management (including percutaneous cordotomy).
A:6.4.12	Awareness of the basic principles of palliative care.
A:6.4.13	Awareness of medico-legal issues in pain management and of writing a medical report.
A:6.4.14	Awareness of social services and other support agencies. Awareness of factors influencing the assessment of incapacity and disability.
A:6.4.15	Awareness of rehabilitation techniques.
A:6.4.16	Awareness of socio-economic and cultural issues in pain.
A:6.4.17	Awareness of ethical issues in pain management.
A:6.4.18	Awareness of research methods for pain management therapies.
A:6.4.19	An appreciation of evidence-based medicine applied to pain management therapies.
A:6.4.20	Awareness of business management principles for pain services.

6.5: Skills

A:6.5.1	Assessment of patients with pain including: history taking, physical examination, and interpretation of investigations.
A:6.5.2	Recognition of patients with pain who have potential psychological problems and who require psychological evaluation.
A:6.5.3	Recognition of patients with pain who require referral to other specialists.
A:6.5.4	The safe and effective use of medication for pain management.
A:6.5.5	The safe and effective use of neural blockade for pain management. Trainees may not have an opportunity to learn every procedure.
A:6.5.6	Techniques for insertion of tunnelled spinal (epidural or intrathecal) drug delivery systems.
A:6.5.7	Basic practice of stimulation induced analgesia including TENS and acupuncture.
A:6.5.8	Application of audit to pain management.
A:6.5.9	Undertaking research in pain management.
A:6.5.10	Understanding of responsibilities when undertaking medico-legal work and preparation of a medical report.
A:6.5.11	In order to become competent, additional training will be required for specialised procedures such as spinal cord stimulation, implanted drug delivery systems and percutaneous cordotomy. Opportunities for this training may occur during ST Years 4 and 5 but it is probable that this training may have to be undertaken post-CCT.

6.6: Minimum case load

A:6.6.1	It is neither possible nor appropriate to stipulate a minimum case load for all the diverse aspects of advanced pain management. It is more important to ensure that the training centre offers a suitable range of experience combined with appropriate educational supervision.
A:6.6.2	The overall caseload of the pain management services should be sufficient to ensure that the trainee encounters new patients at most clinical sessions. In addition there must be an opportunity for the trainee to follow the progress of patients over an extended period.
A:6.6.3	During each week of advanced training in pain management the trainee should be able to:
A:6.6.4	participate in consultant led out-patient consultation sessions for patients with pain;
A:6.6.5	participate in ward rounds for in-patients with acute, chronic and cancer pain (conducted by medical and / or nursing staff);
A:6.6.6	participate in consultant led treatment sessions. Interventions should include a range of procedures performed for acute and chronic pain. (NB Mono-therapies and interventional therapy such as neural blockade must not be the sole treatment modality offered by the institution. All therapies must be used in the context of a multidisciplinary approach to pain management.); and
A:6.6.7	participate in, or observe, assessment or treatment sessions with other healthcare professionals including clinical psychologists and physiotherapists.
A:6.6.8	If specialised services such as cognitive behavioural pain management programmes and techniques such as spinal cord stimulation are not used in the institution then there should be an opportunity for the trainee to observe these in another institution.

6.7: Teaching and supervision The trainee undergoing advanced training in pain management will be expected to take part in the teaching of more junior trainees, medical students and other healthcare professionals. The trainee should be able to supervise more junior trainees in practical aspects of acute pain management.

6.8: Research and academic requirements The trainee undergoing advanced training in pain management will be expected to take part in audit projects during the training period and if possible to contribute to a research project.

6.9: Training environment The majority of advanced training in pain management should be undertaken in units that meet the recommendations published by the Royal College of Anaesthetists. A model curriculum would match that published in the IASP core curriculum.

6.10: Other requirements Membership of the Pain Society (www.painsociety.org) and the International Association for the Study of Pain (www.iasp-pain.org) is strongly recommended for trainees contemplating a career with a significant component devoted to pain management.

Appendix C:

BLUEPRINT OF WORKPLACE BASED ASSESSMENTS MAPPED AGAINST HIGHER LEVEL COMPETENCES

Updated guidance on the practical application of these assessments can be found in the training pages of the RCoA website.

	WORK PLACE BASED ASSESSMENTS			
	DOPS	Anaes-CEX	CBD	MSF
Cardiac/Thoracic	X	X	X	X
Conscious sedation in dentistry		X	X	X
Day surgery	X	X	X	X
Ear, Nose and Throat (Otorhinolaryngology)	X	X	X	X
General surgery / Gynaecology / Urology (± Transplantation)	X	X	X	X
Intensive Care Medicine	X	X	X	X
Maxillo-facial/Dental	X	X	X	X
Military anaesthesia	X	X	X	X
Neuroanaesthesia	X	X	X	X
Obstetrics	X	X	X	X
Orthopaedics	X	X	X	X
Ophthalmic anaesthesia	X	X	X	X
Paediatric anaesthesia	X	X	X	X
Pain Management	X	X	X	X
Plastics/Burns	X	X	X	X
Trauma and accidents	X	X	X	X
Vascular	X	X	X	X
Communication Skills, Attitudes and Behaviour	X	X	X	X
The Responsibilities of Professional Life	X		X	X
Teaching and Medical Education	X			X
Health Care Management			X	
Medical Ethics and Law		X	X	

Appendix D:

BLUEPRINT OF WORKPLACE BASED ASSESSMENTS MAPPED AGAINST ADVANCED LEVEL COMPETENCES

Updated guidance on the practical application of these assessments
can be found in the training pages of the RCoA website.

	WORK PLACE BASED ASSESSMENTS			
	DOPS	Anaes-CEX	CBD	MSF
Cardiac/Thoracic anaesthesia	X	X	X	X
Intensive Care Medicine	X	X	X	X
Neuroanaesthesia	X	X	X	X
Obstetric anaesthesia	X	X	X	X
Paediatric anaesthesia	X	X	X	X
Pain Management	X	X	X	X