Specialist training in anesthesia around the world

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ABSTRACT
Anesthesia history has been marked by periods of nice developments and innovations followed by long periods of idleness. The interest in surgical anesthesia was in fact, a result of the painful surgical procedures being performed by merely restraining the patient by four or more body builder strong men. Perhaps the first anesthesia was a natural one; by severe cold which made surgeries less painful in wounded soldiers. Other developments followed in periodic succession.

But pharmaceutical anesthesia brought with it the side effects too. So a concept of balanced anesthesia was born. The debate about general anesthesia and regional anesthesia is also an old one. The recent four to five decades revolutionized monitoring techniques and thus allowed complex cardiovascular and neuro-surgery possible. USG has been a great milestone.

All this course has always put a burden on the anesthetist to keep himself abridged, if he has to be competent as well as safe healthcare professional. Different countries have different schedules of anesthesia training and this special invited paper by Dr. Romana Durrani offers a bird’s eye view of such training in a few countries. It is published as a guide for our young medical graduated, who might like to pursue their careers in one of these countries.

Key words: Anesthesia; Anesthesia, General; Development; Training, Postgraduate

Citation: Specialist training in anesthesia around the world. Anaesth. pain intensive care 2023;27(5):600-607; DOI: 10.35975/apic.v28i3.2482

Received: 23 October 2023; Revised: October 15, 2023; Accepted: 06 November 2023

Early anesthesia
Early anesthesia can be traced back to ancient times (Babylonians, Greeks, Chinese and Incas), but one of the first European accounts occurred in the 1200s when Theodoric of Lucca, an Italian physician and bishop, "used sponges soaked with opium and mandragora [from the mandrake plant] for surgical pain relief," 1

Shakespeare’s observation (from Cymbeline) explains why attempts to alleviate the pain of disease, injury or simple surgical procedures by producing unconsciousness are almost as old as civilization, although the techniques were crude. Most involved ingestion of ethanol and or herbal mixtures, but ‘knock-out’ blows to the head and bilateral carotid artery compression (carotid derives from the Greek for stupor) are also described.1

The first anesthetics in these islands were given on 19 December 1846, one ‘probable’ in Dumfries (there is no contemporary record) and the other ‘definite’ at 24 Gower Street, London. However, the techniques and methods were crude and could not give a qualitative or quantitative service.

Anesthesia as a specialty
These many developments all improved the standing of the anesthetist to that of independent practitioner, a situation confirmed in 1948 by all specialties being given equal status in the NHS. So, by 1950 all of the elements of modern anesthesia were in place.

Training programs have been devised since then in different parts of the world and continued to develop further with more sophistications and modernisation.

We will be giving an overview of different programs in this article, focusing on United Kingdom, Republic of Ireland, Australia, USA and Pakistan.
United Kingdom

The current program is divided in 2 parts & completion of both parts is mandatory to be certified anesthesiologist CCT holder. CCT holder is eligible to apply for a substantive/ permanent NHS post of work privately as consultant. The other route of becoming consultant is CESR.

CCT (Certificate of Completion of Training). 7 years (non-run though)

A. CT program 3 years (CT1, CT2, CT3)
B. ST program 4 years (ST4, ST5, ST6, ST7)

During the second year of foundation training, the doctors apply for postgraduate training of UK anesthesia training program. The post holder is called CT doctor of ST doctor (CT core trainee, ST: specialist trainee)

Curriculum changed in 2020. There is a central application for CT post and one has to finish primary exam during CT time. Applications are invited for ST selection after CT stage is finished. Final exam must be passed in ST 5 level / or pause training / or leave program

The distribution of modules is not compact in terms of level of training but it’s a mixed exposure on CT level as well as at ST level of the same. Defined number of modules is not available as a document

<table>
<thead>
<tr>
<th>Table 1: Mandatory modules for UK and USA</th>
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<tr>
<td>Obstetric</td>
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<td>Peds</td>
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<td>Pain Medicine</td>
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<td>General surgery</td>
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USA has 2 months block each, but no fixed blocks in UK

Trainees also have the option of completing dual Certificates of Completion of Training (CCT) in anesthesia and intensive care medicine at a later stage.

CESR

CESR (Certificate of Eligibility of Specialist Registration) is an out of national training scheme. That aims at training arrangements by personal efforts and getting it signed off. It includes total of 15 modules, 7 generic modules 7 clinical 1year special interest year.

Seven generic modules are non-clinical. Clinical modules begin with module 8, which is peri-op medicine, 9th is general anesthesia that has further sub modules, case mix of all the main subs (7-8 sub specialties). Evidence of all this training should be with in last 5 years. CUT form “completion unit of trainings. It can be followed by one-year SIA (special interest area).

Exam: Primary exam to be passed before applying for ST. Final FRCA to be passed at ST5 level

Republic of Ireland

Republic of Ireland is an independent country & has its own training program run by College of anesthesiologists of Ireland CAI. The exams & training is equally accepted all over the world like UK training /exam. It is called CSCST or CCST which allows one to work as consultant. The other route to reach the consultant level is called Alternate pathway.

CCST (CSCST: Certificate of Successful Completion of Training). 6-year run through

It is a run through program. Position holder is called SAT doctor (Specialist anesthesia trainee) & the levels are SAT1- SAT6.

Candidates apply through a central application system, following by short listing and interviews. Induction in program is after internship/foundation years. One can also apply few years after internship. However, there is no exemption of training years on basis of previous years, so the training time remains 6 years.

Total 16 modules are to be done with competencies signed off. Online trainee progress report, 2 times in 6 months is mandatory (beginning and end of 6-month session) plus one in middle (to see progress in right direction) is usually optional. Each module minimum 3 months, except pediatrics & ICU (6 month each). Pain module is offered only when one is eligible for final fellowship exams. All modules are repeated as case mix in the last 2 years working as senior registrar who is basically trained at that level to learn work like consultant with a solid academic knowledge.

Exam: MCAI is to be passed by year 2 and FCAI to be passed by Year 4. MCAI was previously known as “primary” but to make it look equal to other colleges its re-named as membership, however, membership alone without fellowship is not a qualification and cannot be registered to work as specialist anywhere in the world

Failing to get through the exam can result in halting the training or ending the training. Exam plus training ends
The table shared is a snapshot of a trainee who has some training done outside program & has achieved the basic training certification. The left side shows alternate route & does not show the registrar level. Right side is national training program modules (SAT). All in green are achieved milestone & pending appearing as red.

Modules aren’t available in one hospital/city, change of hospital/city is mandatory.

**United States of America**

**4 years run through**

This program also starts right after the internship year & run by ABA and at the end of training one gets certified ABA (American Board of Anesthesiology) Position is called CA (Clinical Anesthesia)

The three clinical anesthesia years (CA-1, CA-2, CA3) that include training in basics, subspecialty, and advanced anesthesia, as well as opportunities to participate in scholarly activity. Rotations vary in length from one to three months during 4 years.

The BASIC Exam focuses on the scientific basis of clinical anesthetic practice, including pharmacology, physiology, anatomy, anesthesia equipment and monitoring. Residents are encouraged to take it at the end of their CA-1 year.

The ADVANCED Exam focuses on clinical aspects of anesthetic practice, subspecialty-based practice and advanced clinical issues. Physicians take this exam after completing residency and passing the Basic Exam.

Finals advanced exam 1 written then oral boards with long short case scenarios based. 4
The APPLIED Exam includes the traditional Standardized Oral Examination (SOE) and the Objective Structured Clinical Examination (OSCE) component. Physicians take this exam after passing the advance exam.

AUSTRALIA: Post name: ANZCA trainee

Certificate name: FANZCA

Its 5 years run though program five-years' supervised training:
two years of introductory and basic training;
two years of advanced training; and one year of provisional fellowship training.6,7

This figure gives a complete layout of the training program & makes it easy to understand the flow.
ANAEETHETICS TRAINING PATHWAY

Registering as an ANZCA trainee is a two-step process:

To Apply must:
- Be a registered medical practitioner
- Have completed at least 52 weeks (full-time equivalent) practical medical education and training (PME)

To Register you must:
- Be a current applicant
- Have completed at least 104 weeks PME (with no more than 52 weeks in any combination of anaesthesia, intensive care or pain medicine)
- Provide confirmation of appointment to an ANZCA-accredited training position

Application (after PGY1)
To assess eligibility to register as an ANZCA Trainee

Registration (after PGY2)
Once a training position in an ANZCA-accredited training site has been obtained

Anaesthesics Registrar (ANZCA Trainee)

Curriculum:
Incorporates three elements:
- Training in clinical fundamentals (core units) and roles in practice as well as specialist study units (SSU)
- Volume of practice (VOP) requirements
- Workplace-based assessments (WBA)

Introductory Training min 26 weeks (6 months) max 52 weeks* requires:
- Registration for access to the TPS
- Initial assessment of anaesthetic competence (IAC)
- VOP and WBA requirements
- An advanced life support (ALS) course or equivalent
- A clinical placement review (CPR)
- A core unit review (CUR)

Basic Training min 78 weeks (18 months) max 182 weeks* requires:
- Two of five required scholar role activities
- Successful completion of the Primary Exam

Advanced Training min 104 weeks (24 months) max 260 weeks* requires:
- VOP: WBA, ALS, CPR, CUR
- An Emergency Management of Severe Trauma (EMST) course
- Remaining scholar role activities
- An approved study plan for PFT
- Successful completion of the Final Exam

Provisional Fellowship Training min 52 weeks (12 months) max 104 weeks* requires:
- VOP, WBA, CPR
- Participation in the ANZCA Continuing Professional Development (CPD) program
- Emergency Management of Anaesthesia Crises (EMAC) course
- Scholar role activities
- Successful completion of a Provisional Fellowship Review

Minimum 5 years:
The training program is undertaken over five years (260 weeks) during supervised clinical placements within ANZCA-accredited training sites.

ANZCA uses a secure online Training Portfolio System (TPS) for trainees to record all aspects of their training.
Details of the ANZCA Anaesthesia Training Program Curriculum are available at:

ANZCA runs courses throughout the year designed to assist and prepare trainees for exams.
ANZCA host social and networking events for trainees.
There is a Victorian Trainees Facebook Group to foster interaction between registrars across the date.

Anaesthesics Training in North West Victoria:
Bendigo Health is accredited for anaesthetic trainees with a range of registrar positions available. We host rotations from the Alfred and St Vincent’s Hospital.

Trainees who successfully complete the ANZCA Training Program and are assessed to have met the requirements for admission to fellowship qualify for independent practice as a Specialist Anaesthetist in Australia and New Zealand, and are awarded Fellowship of Australian and New Zealand College of Anaesthetists (FANZCA)

Consultant/ Staff Specialist FANZCA

CPD
Meet ANZCA annual and triennial CPD requirements

Flexible training options are available including:
- Part time training (min 50%)
- Overseas training
- Interrupted training (max 104 weeks)
- Extended training

This information sheet is intended as a summary to assist with career planning. While every effort has been made to ensure accuracy, details should be verified through the relevant Specialist College.
The specialized study units define the further specialized knowledge and skills required for the anesthetic management of patients in specific contexts. They are:

1. Cardiac surgery and interventional cardiology
2. General surgical, urological, gynecological and endoscopic procedures
3. Head and neck, ear nose and throat, dental surgery and electro-convulsive therapy
4. Intensive care
5. Neurosurgery and neuroradiology
6. Obstetric anesthesia and analgesia
7. Ophthalmic procedures
8. Orthopedic surgery
9. Pediatric anesthesia
10. Plastic, reconstructive and burns surgery
11. Thoracic surgery
12. Vascular surgery and interventional radiology

As trainees focus their attention on the completion of specialized study units during basic and advanced training, they will be applying the knowledge and skills attained while working through the clinical fundamentals.

Volume of practice and assessment requirements for each of the specialized study units are detailed at the start of each unit. In addition, trainees are required to select and complete a minimum of six case-based discussions (CbDs) from the specialized study units, two of which must be done in basic training and four in advanced training.
Pakistan (FCPS)

4-years Run through.

It’s a 4-year training program run by CPSP (College of Physician & Surgeons of Pakistan). FCPS part 1, is mandatory for entering the program. After passing exam (MCQs) there are options of public sector and private sector seats, public sector is through central application and private sector is by application to individual institute. Securing a training post can be a few months later of a year or two later FCPS1. Next step in IMM exam midway of training (intermediate module) which is MCQ+SEQs and oral based exam, this is followed by FCPS-2 exam after completing 4 years. One can only appear in exam if one has submitted a dissertation project in hard copy and has been checked and approved by college as genuine. The proposal of the same has to be accepted by College before IMM. FCPS-2 exam is MCQs and oral exam.

There are no defined modules mandatory or non-mandatory and no blocks are assigned for any sub specialty. Totally depends on the institution and supervisors’ personal discretion and skills.

Other existing programs are DA and MCPS, both are two years programs and regulated by local training bodies

One of the man difference is that most of the other training programs continue even after final exams so that trainee can have a broader vision of everything with a solid expert knowledge. Whereas passing FCPS part 2 exam, is the end of training. Many take time off & stay at home to study & improve bookish knowledge to be reproduced in exam. There is an induction interview after passing Part 1, but there is no exit interview to conclude the other learning aspects of becoming a consultant.

Conflict of interest

None declared by the authors.

Author’s contribution

The author does not claim any originality of the information given in this paper.

REFERENCES


