

# Training book for specialist service in anaesthesia and intensive care

## Foreword

This booklet, published in 2008, was published to specify the Swedish requirements for specialist competence in Anaesthesia and Intensive Care. It is the result of collaboration between the Swedish Ministry of Health (Socialstyrelsen) and the Swedish Society for Anaesthesia and Intensive Care (SFAI). It is based partly on the former's general advice concerning specialist service for physicians; the requirements for 'communication skills, medical science and quality control' are the same for all specialities. SFAI's contribution was to specify, interpret and explain the specialist training goals, to specify the methods of learning, teaching and assessment, and give advice on the planning and execution of training programs.

## Chapter 1: Definitions of competence

### Area of competence

The speciality of anaesthesia and intensive care embraces pre-, per- and postoperative care, anaesthesia and pain relief during diagnostic and therapeutic procedures, intensive care, the acute treatment of the patient with severe illness or injury, prehospital and transport care, pain relief for severe pain, including oncological pain, and relief of pain in labour. The speciality demands a professional cross-disciplinary attitude.

## **Requirements for specialist competence**

The specialist in anaesthesia and intensive care has the knowledge and attitude required to work independently round the clock with a broad range of acute specialities, including obstetrics. This requires skills in the monitoring, support and resuscitation of vital functions in surgery, severe injury and major illness, in patients of all ages.

The anaesthesiologist must be familiar with anaesthetic and medical technology, general medicine, diagnostic and therapeutic methods. He/she must be able to lead the team working with the critically ill patient in hospital and outside. This includes stabilisation and treatment during transport, and the triage of patients with different degrees of injury. The ability to handle complex acute conditions and to make ethical decisions in life-threatening situations is also important.

## **Communication, leadership, quality control and scientific approach**

### *Communication skills*

The specialist maintains an empathic and open dialogue with the patient and family, and respects the patient's right to receive information and to partake in and influence decision-making. Co-operation and sensitivity to the patient's needs, wishes and opinions, is important. The patient must be stimulated to engage in the decision-making process and to understand his/her own responsibilities for care.

### *Cultural and gender aspects*

Communication with the patient and family requires knowledge of, and respect for, cross-cultural aspects such as language, ethnicity, sexuality, religion and gender.

### *Professional relationships*

The specialist must be able to communicate verbally and in writing with other doctors, and in doing so respect their professional knowledge and abilities. This applies also to other members of staff, the public and their representatives.

### *Teaching and giving information*

The specialist must be able to not only inform patients and their relatives but also teach other physicians, students and staff members.

### *The professional attitude*

The specialist must always maintain a professionally and medically ethical attitude, and make ethically sound decisions.

### *Continuing education*

The specialist must continually identify new skills and areas of knowledge needed to keep in touch with developments in medicine.

### *Leadership*

The specialist anaesthetist

- must understand the importance of co-operation, and recognise his/her own abilities and role in the organisation.
- must be able to supervise other doctors, students and staff.
- must lead by co-operation, openness and communication with colleagues, and by setting a good example, such as by a willingness to participate in the development of improved treatments and routines.
- must possess a thorough understanding of organisation, administration, economics and law as applied to the hospital system, and have a commitment to the efficient use of resources.

### *Medical science and quality control*

The anaesthetist must embrace, via a scientific attitude, the concept of evidence-based medicine, and understand research methodology, including basic epidemiology, and the methods for evidence-based medicine and the critical study of scientific papers

## **Training**

It is most important that trainee placements allow the goals of the program to be achieved, which may require working in several different hospitals. The base unit should offer an introductory period in both anaesthetic and intensive care with in-house on-call. The goal is an ability to independently manage routine anaesthesia and peri-operative care, through full participation in the on-call rota.

Thereafter the trainee's placement should include abdominal, vascular, orthopaedic, trauma, ENT and obstetrical/gynaecological surgery. The final part of the program should contain significant continuous periods in intensive care, particularly multidisciplinary care, together with thoracic, neuro-, and paediatric surgery.

Swedish specialists must also undergo a six month period of training in another, complementary, speciality, in order to obtain a fuller picture of hospital activities and in particular a non-specialist's view of the speciality, which should lead to greater co-operation and understanding of operative and intensive care work. Thus the trainee anaesthetist must serve six months, for example, in a surgical speciality.

During training, practice and theory should be intertwined. Theory should be obtained from the trainee's own reading, from departmental teaching sessions, and through attending courses and scientific meetings.

Documentation: Attendance at courses should be documented by signed certificate from the course administrators. Satisfactory practical performance and service times to be signed off by the supervisor.

## Chapter 2: Part-goals

### Terminology

**Mastery** – to be able to independently assess, investigate, diagnose and follow up patients, and be fully capable of using the relevant techniques and equipment

**Manage** – actively perform the investigations, diagnosis, and follow up, and carry ultimate responsibility for the completion of these measures

**Initial management** - first investigations, diagnosis, and follow up measure, with ultimate responsibility for the completion of these measures

**Have knowledge of** - become familiar with an area through theoretical studies and/or practice

**Be aware of** – become aware of an area through theoretical studies and/or practice

### ***Goal 1: Basic medical and scientific knowledge***

***The specialist should thoroughly understand***

***The anatomy, physiology and pathophysiology of*** the respiratory and vascular systems, the central and peripheral nervous system, the autonomic nerve system, the kidney, liver, gastrointestinal canal, the endocrine system, inflammation, coagulation and metabolism.

***Pharmacology***, i.e. pharmacokinetics, pharmacodynamics, side-effects, interactions and the toxicology of drugs commonly used in anaesthesia and intensive care.

***Physics***: Basic knowledge of the laws of physics relevant to anaesthesia, such as the gas laws, and concepts such as pressure and flow.

***The physiological background*** to different types of pain

***Basic pharmacogenetics.***

***Chemistry***: basic knowledge of chemistry and biochemistry relevant for physiology, pathophysiology and pharmacology.

### ***Goal 2: Mastery of technical equipment used in the speciality***

The specialist must be able to:

- use the equipment safely. For equipment for which a malfunction would compromise patient safety, the ability to protect the patient and/or reinstate function where possible is essential

- set up and calibrate equipment to obtain correct measurement and outcomes
- interpret such results, with knowledge of possible sources of error

### ***Examples of equipment***

- Anaesthetic machines and ventilators, and equipment for NIV/CPAP
- Pulse oximeter
- Capnograph
- Defibrillator
- Vascular pressure measurement
- Cardiac output measurement
- Nerve stimulators and equipment for the assessment of neuromuscular transmission

***Knowledge of medical technical equipment used in specialities with whom the anaesthetist often needs to co-operate. It is important to have sufficient knowledge of such equipment to avoid harm to the patient.***

- Continuous Renal Replacement Therapy
- Ultrasound equipment
- Expiratory gas analyzers
- Blood salvaging equipment
- Pacemakers and internal defibrillators
- Paediatric resuscitation equipment

### ***Goal 3: Assessment of the patient***

Including:

- preoperative assessment of the patient and his/her anaesthetic requirements
- the ability to recognise when a patient needs referral to a more specialised unit.
- airway assessment and identification of the difficult airway
- identification of preoperative investigations relevant to the disease state and ability to interpret the results
- preoperative optimisation, anaesthesia and postoperative care.

- assessment of psychological, physiological, and pharmacological factors which affect the choice and dose of preoperative drugs.
- prevention and treatment of the common side-effects and complications of anaesthesia

***Goal 4: Knowledge of diagnostic and therapeutic procedures commonly used in anaesthesia and intensive care, plus less common procedures needed in emergencies, their uses and associated problems, e.g.***

- fluid and blood component treatment
- insertion of peripheral and central intravascular catheters including the intraosseous route
- measurement and monitoring of intravascular pressure, flow and saturation
- management of the difficult airway, including emergency coniotomy
- DC Cardioversion
- pleural drainage

***The anaesthesiologist should be reasonably familiar with:***

- Percutaneous tracheostomy
- Jet-ventilation
- Echocardiography
- CRRT and haemodialysis
- One-lung-ventilation
- pericardiocentesis

**Goal 5: Mastery of anaesthetic techniques for surgical, diagnostic and therapeutic interventions**

**Thorough knowledge of anaesthetic techniques; the ability to anaesthetise appropriately with regard to the patient's age, general condition, acute and intercurrent disease, the planned surgery and surgical requirements, the expected postoperative course, and possible complications. A thorough awareness of the anaesthetist's own ability is essential.**

***Techniques the specialist should master:***

- intravenous anaesthesia
- inhalational anaesthesia
- epidural anaesthesia (lumbar and thoracic)
- spinal anaesthesia
- peripheral nerve block
- intravenous regional anaesthesia of the extremities, infiltration- and surface anaesthesia
- sedation
- anaesthesia and sedation for healthy children above one year of age (>10 kg)

*Techniques the specialist should have some knowledge of:*

- Anaesthesia for children below one year of age (>10 kg)
- Sacral block
- Controlled hypotension

## **Goal 6: To be able to manage the intensive care of medical and surgical conditions**

**The specialist must be capable of the initial management of the patient with severe organ failure, be familiar with multidisciplinary intensive care, and be able to lead the intensive care team. The specialist must be able to examine and assess the severity of the disease or trauma process in order to direct the immediate care. The following are examples of conditions for which the specialist anaesthetist should be able to initiate management.**

- Acute cardio-pulmonary resuscitation, with complete familiarity with the current algorithm for cardiopulmonary resuscitation in patients of all ages and the ability to apply this both in the hospital setting and before admission.
- Diabetic ketoacidosis and the hyperosmolarity syndrome
- Addison's disease
- Total cerebral infarction, confusion and coma
- Initial management of spinal injury and spinal shock

- Initial management of neurotrauma and other conditions with raised intracranial pressure
- Initial management of stroke and subarachnoid bleeding
- Initial management of status epilepticus

### *Respiratory care*

- Establish and maintain a clear airway
- Oxygen treatment
- Invasive and non-invasive ventilation
- Acute respiratory failure and acute failure of the chronic respiratory invalid
- Tracheostomy management
- Diagnosis and treatment of pneumo- and haemothorax
- Pulmonary embolism

### ***Management of the circulation***

- Assessment and optimisation in chock and pre-shock
- Initial management of myocardial infarction, cardiac arrhythmia, cardiac failure and tamponade
- Initial management of ischaemic heart disease

### ***Infection/inflammation***

Management of acute severe infection

Nosocomial infection and its prevention

Initial management of the patient with multiresistant infection

Initial management of the infection patient with immunosuppression

### ***Renal failure***

- Acute renal failure and preventive strategies

### ***Nutrition and fluid balance***

- Nutrition and fluid therapy

### ***Other***

#### **Initial management of:**

- Acute allergic conditions
- Acid-base imbalance derangements
- Electrolyte imbalance
- Poisoning, pancreatitis and burns
- Drowning
- Pre-eclampsia/eclampsia
- Multitrauma in adults and children
- Hypo- and hyperthermia, induced and accidental
- Liver failure, acute and chronic
- Multi-organ failure
- Identification and care of possible organ donors

*Some knowledge is required of:*

- Estimation and prescription of intravenous nutrition and fluids in children
- The diagnosis and therapy of auto-immune conditions

**Goal 7: The acquisition of a professional attitude towards patients and relatives, particularly at times of ethical decision-making, such as the withholding or withdrawing treatment in the severely ill patient**

**The trainee should:**

- develop a professional, ethical and empathic attitude, with the goal of being able to independently make decisions of a medical ethical nature.
- develop the ability to form a holistic view of the patient from the point of view of human rights and ethical principles such as 'do no harm'.
- use evidence-based medicine and established experience
- treat colleagues with consideration and awareness of resources
- be able to recognise and establish the possible limits of treatment.
- to respect and apply ethical principals
- be able to speak to relatives following the death of a patient

**The trainee should be aware of:**

- the relevant laws of secrecy and confidentiality, e.g. as regards relatives and the media, and of data protection
- basic medical-ethical concepts such as fairness, and their application within anaesthesia and intensive care
- the management and communications problems of potential organ- and tissue donation
- guidelines and laws concerning the withdrawal of treatment
- dealing with information
- The ethical and legal problems of the mentally incompetent patient
- different cultural and religious views of decision making in ethical questions, and the existence of sources of such information regarding severe illness and death

## **Goal 8: Assessment and treatment of acute pain, labour pain, and the initial management of cancer pain**

- Regional anaesthesia for labour pain
- Analysis of pain to provide appropriate treatment

### *Initial management of*

- Acute pain including cancer pain
- Patients with chronic pain whose pain becomes acute
- Regional block for acute pain

### *Awareness of*

- Other treatments for cancer pain
- Other methods for pain relief for labour pain

## **Goal 9: The ability to manage the severely ill and injured patient, plus the ability to deal with complex acute incidents**

**The anaesthetist must be able to quickly assess any new situation and make decisions, even where little information is available. There is a risk of accidents and misjudgement – sometimes the patient is encountered for the first time in tragic circumstances. During training, the anaesthetist will need to deal with such events and later should reflect on them in a positive way, so that future occurrences can be dealt with confidently.**

### **The specialist should:**

- Co-operate with, and lead, a team of staff members of different categories and specialities, in the acute situation
- Prioritise investigations and treatment in the acute situation
- Manage his/her own and others' stress
- Take the initiative, prioritise, decide, delegate and perform medical and administrative measures when required

**The specialist should have awareness and understanding of:**

- different sorts of follow-up conversations, e.g. "debriefing", after a difficult and complicated task has been finished
- his/her own reactions in stressful situations
- strategies to deal with one's own and other's stress in acute situations
- principles of crisis management and conflict resolution in acute situations
- the 'difficult conversation'

**Goal 10: Management of the injured patient at the site, transport of the severely ill patient between hospitals and between units in the same hospital, and to have a working knowledge of catastrophe medicine**

*The specialist should master:*

- examination and assessment of vital signs in the absence of diagnostic equipment
- the support of failing functions without advanced medico-technical equipment
- the planning and management of surface transport within and between hospitals for the severely ill patient
- safety and protective measures in the radiological or magnetic field environment, or at the accident site

*The specialist should know:*

- how different environmental factors, such as heat, cold, air pressure, radiation, or acceleration affect the patient and may affect the use of monitoring
- local and regional catastrophe planning and readiness, its organisation and purpose.
- how to work both practically and in the control room
- the principles of catastrophe medicine for assessment and management.

*The specialist should be aware of:*

- planning and arrangement of air transport of the patient with organ failure
- international catastrophe organisations

**Goal 11: Familiarity with at least one specialised area of anaesthesia/intensive care e.g. neurosurgery, cardiac or paediatric surgery, and some knowledge of other specialised areas**

Where it has not been possible to work in such specialities, attendance at a course is essential.

**Goal 12: To gain insights into the work of other specialities necessary for multidisciplinary work by spending time in other specialities which complement the main anaesthetic training program and previous employment**

The trainee should gain knowledge of conditions which carry increased perioperative risk and those which are relevant for intensive care.

### **Strategy**

Clear goals should be set by the trainee, tutor, head of department and supervisor; the latter should monitor the quality of the complementary training through regular contact with the trainee. This period of training should conclude with an evaluation and certification of the level achieved.

### **Communication Skills**

**Good communication depends on the ability to create sympathetic relationships and to effectively exchange information with patients, relatives and colleagues. Good communication is a prerequisite for good care: safe, timely, goal-orientated, knowledge-based and equality- and patient-focused.**

**Good communication is necessary not only to obtain and disseminate information to patients and their families regarding the illness and expectations of its progress its care; it is also critical for assessing that such information has been correctly understood.**

## **Goal 13: Maintenance of open dialogue with the patient and relatives**

### **The specialist should be able to**

- create an constructive and empathic relationship with patients and the family
- be aware of one's own and others' reactions and emotional needs
- give time for reflection and the clarification of doubts
- listen to the patient and family, and share information with them, regardless of language, ethnicity, sexuality, religion, gender, age, social support and the emotional effects of illness
- sensitively maintain an appropriate flow of information to patients and relatives, in order to gain the patient's active participation in, and responsibility for, the care process
- treat each patient or relative as a unique individual by respecting their wishes, integrity and worth
- explain physiological and pathophysiological conditions and their courses to the patient and family
- give a prognosis, and describe the available treatments, the intention with them, and their consequences
- make a point of including the patient's and family's comprehension in the treatment plan
- communicate fully where there are e.g. cultural and ethnic differences, or when the patient is in an acute crisis or psychologically disturbed
- give and receive constructive feedback

### ***The specialist understands that***

- all communication is a two way, two-sided process
- the patient has the right to information, influence and participation in decisions
- successful communication promotes patient satisfaction and safety, and can improve the outcome of the care process
- co-operation and communication between care personnel is necessary for information to the patient and family to be consistent

## **Goal 14: To be able to communicate verbally and in writing with colleagues and other co-workers**

### *The specialist must*

- contribute to arriving at a common understanding of a situation
- use information technology in a goal-orientated way for optimal patient care
- be open and accessible for colleagues
- continually receive and give one's colleagues the right information at the right time
- identify what is important in a given situation, and inform others in a clear, concise, relevant and appropriate way
- listen to, and converse with colleagues, and explain your planning
- during surgery, stimulate the personnel's understanding of the clinical situation by commenting on events
- give a verbal handover of a patient to a colleague
- receive and give clear orders
- answer and pose constructive questions
- consult colleagues
- be able to admit that one does not understand a given situation
- professionally and constructively question intended measures which one does not understand or with which one does not agree.
- clearly and professionally express one's disquiet in a critical situation
- make clear, reliable and goal-orientated notes on paper and in the data system
- write prescriptions
- be able to inform others about one's audit or research project

## **Goal 15: The ability to inform and teach patients, relatives, colleagues and students**

### *The specialist should be able to*

- teach and give a lecture or presentation unassisted
- evaluate, and reflect on, training activities

- support the learning of patients, their families, students and other members of the care team
- identify the learning needs of others, and choose teaching methods and content to support them
- to run goal-orientated teaching sessions for diverse classes of students
- choose teaching methods and content to support the learning of others

*.....and have some knowledge and understanding of*

- ethical principles in teaching
- pedagogical principles relevant to medical training

## **Goal 16: The ability to supervise colleagues and students**

*The specialist should*

- set a good example to others
- develop increased self-knowledge, and the self-confidence to rely on one's judgement and ability
- know his/her own limits
- complete tasks within an agreed time, in a positive and acceptable fashion
- engage and take responsibility for one's work and for patient safety
- apply clear boundaries for one's engagement regarding the demands of work, patients and relatives and colleagues
- be able to organise and prioritise the workload and to work to a plan, as regards both duties and personal development
- continually identify areas of one's own competence which can be developed to answer patient's needs
- utilise the opportunities presented by everyday's work activities to learn without interrupting the routine
- learn from one's own and others' mistakes
- lead others

- plan the working day in order to leave room for teaching and supervision
- agree, with those under supervision, a common understanding of the supervisor role
- give constructive feedback to improve teaching and learning
- identify and take measures against unprofessional behaviour by others
- set constructive boundaries for the supervisory role

*The specialist should be aware of, and understand,*

- the implications of accepting the supervisory role
- principles of giving appraisal and constructive feedback

### **Goal 17: The ability to take the lead in communicating with colleagues and the care team**

**The specialist in anaesthetic and intensive care co-operates with other staff engaged in the delivery of care to patients. This cooperation is important for creating a patient-centred environment. The specialist works in different types of group such as operating room, intensive care unit, E&E or pain clinic; as part of the ward team, or as part of a team tackling specific projects. In the latter, different professions and disciplines are represented depending on how and where the work is to be done. The specialist must therefore be able to co-operate effectively with patients, relatives, and different professions in order to give good quality care training and research.**

**The specialist must**

- take a clear roll in any working group
- contribute actively to interdisciplinary and interprofessional co-operation
- show respect for other professions and underline the value of their roles, responsibilities and competence
- define, for other professions, the anaesthetist's role and area of responsibility
- respect the differences between professions and work to solve and prevent misunderstandings between professional groups
- create a useful and personal relationship to other care workers and support them

- demonstrate continually the ethics of working as a team; respect, reliance, loyalty, rational use of resources, and professionalism
- prevent and solve conflicts
- respect the opinions of colleagues and their significance for cooperation and problem solving
- take over the role of leader in the team when the situation demands it
- demonstrate authoritative leadership and give clear orders in critical situations
- utilise the resources to hand in order to balance against each other the demands for good patient care, training, research and other activities
- systematically weigh in aspects of patient safety when assessing and prioritising
- assess the need for resources and clearly inform one's superiors when help is required
- delegate work according to the ability to carry it out
- prioritise the most important tasks
- take the initiative and demonstrate a pro-active, problem solving attitude
- constructively question one's own and the group's abilities and be prepared to ask for reinforcements

***Work in co-operation with others***

- in order to assess, plan and carry out the care of individual patients or groups of patients to a common goal
- co-operate with others in order to assess, plan, carry out and follow up other work, research, teaching, audit, organisation and administration
- give and receive feedback during performance of a task in a respectful way, to avoid acting behind the backs of others

***The specialist should understand and be aware of***

- the dynamics of the group
- one's own role in the organisation
- the specialist's role in the organisation, and its limits
- the limits of one's speciality and the possibility of creating interprofessional tension
- the work of an interdisciplinary and interprofessional group

## **Goal 18: Understanding of the hospital organisation, its leadership and relevant laws**

*The specialist anaesthetist/intensivist works as an individual, as a member of a team, and as part of the local, region or national health care system. He/she functions as team leader and administrator, when making everyday decisions which affect themselves, colleagues, resources, and the nature of the work. This applies not only to work with patients but also in the work environment as a whole. The specialist must be able to prioritise and effectively co-operate with colleagues, and be consistent in decision making when resources are limited, thereby taking a leadership role in the healthcare and hospital system.*

*The specialist should understand*

- the main elements of the administration of an anaesthetic/intensive care department, and the function of the specialist in this setting
- the importance of fair distribution of resources to achieve acceptable availability and quality of health care
- the significance of good relations with representatives of the public

*....and be aware of*

- health and employment laws
- ‘leadership for quality and patient safety’ publications
- the financing and budgeting of health care
- strategies for informing the public about problems within the speciality and their significance

## **Goal 19: The possession of a scientific view and attitude**

*The specialist should be able to seek and critically evaluate information, collate and present it in a professional forum. This requires some knowledge of research methodology and statistics.*

A reasonable task would be to, under supervision, do literature search, or collect one’s own data, and to present this to colleagues.

Examples: An article from an anaesthetic journal recommending a particular line of treatment; an abstract or poster for a scientific congress

## **Goal 20: To understand the importance and uses of evidence-based medicine**

*During training, under supervision, the trainee should actively participate in audit projects, not necessarily from start to finish, but to enjoy the experience of such work. The goal is to be able to initiate, participate and be responsible for continual systematic audit. The eventual goal is to see audit from a holistic, safety-orientated and utilitarian point of view. Outcomes must be measurable and have a pedagogic aspect, leading to the ability to critically evaluate one's own work.*

Audit and quality control should include systems, variation, the psychology of change, and methods and techniques which lead to improvements in processes and systems

*The specialist should be aware of*

- processes such as evidence-based medicine, "best practice guidelines", "benchmarking" and "the management of change"

Methods include the PDSA-cycle (Plan-Do-Study-Act), brainstorming, flowcharts, cause and effect (fishbone) diagrams, pareto diagrams, line diagrams, multi-voting, team and meeting techniques, rules and roles

## Chapter 3: Methods for learning

A minimum of five years training is required to acquire the knowledge, skill, and attitude for specialist competence, via supervised training posts and with rotation to sub specialities. Leave and time off in lieu are to be counted as service. If training is performed part-time, the five year period must be prolonged proportionately.

Minimum months	Type	Goal
36	General Anaesthesia	2,3,4,5,6,8,9,10 13,14,15,16,17,18
9	Intensive Care	2,3,4,6,7,9,10, 13,14,15,16,17,18
3	Complementary Training	12
6	Special anaesthesia and intensive care	11
1	Individual study	19,20

If *all* on-call service is compensated as 'time off in lieu', it may be necessary to prolong the period of training.

### Courses: Quality aspects of specialised duty

Courses during specialised training should be quality approved, e.g. by the Swedish Institute for the Professional Development of Physicians

*A course is a teaching-led training with a defined plan, given for a limited time.*

*Participation in several such courses, which may cover several goals, is required. The courses may be regional or national*

### Basic requirements

#### *Year 1 Introduction*

Basic anaesthesia

Basic intensive care

ATLS or equivalent

Adult and child resuscitation

***Year 2- 5: Further studies***

Applied basic science

Medical technical/Physics

Cardiopulmonary Physiology

Anaesthetic Pharmacology

Perioperative medicine

Regional anaesthesia

Intensive care

Pain

The difficult airway

Obstetrical anaesthesia

Neonatal resuscitation

Catastrophe medicine

Pedagogy, Supervision, Leadership, Organisation

***Years 4- 5 Intensive care and special anaesthesia***

Thoracic anaesthesia and intensive care

Paediatric anaesthesia and intensive care

Neuro-anaesthesia and intensive care

## **Simulated training**

Such training is performed in an environment created to resemble reality, e.g. simulator training with manikins, catastrophe exercises, and trauma exercises with actors

## **Directly Observed Clinical Assessment (DOCA)**

‘Directly Observed Clinical Assessment’:

The trainee is observed by a consultant or other professional in carrying out the task

In practical pedagogic terms this means both

- 1) a description of the required task with the patient, and
- 2) an instrument for evaluation of the trainee's performance.

### ***Using the 'direct observation' protocol***

- 1) At the start of clinical duties, the intended supervisor and the trainee discuss the content of the protocol. The goals are demonstrated by the supervisor performing the task described in the protocol with the trainee as observer.
- 2) At a follow-up meeting the trainee performs the task to the best of his/her ability with the supervisor as instructor. Aspects which require more attention are identified.
- 3) At the end of training, the trainee performs all the aspects of the task with the supervisor as observer.

### ***Feedback***

During the performance of the task, the observer comments on the trainee's knowledge, skill, behaviour and attitude; personality and quality are not included in this feedback. The trainee makes his own judgement, which is recorded, and the two assessments are compared and discussed.

### **Allowance for research training and service in other countries**

Time spent in research may be counted towards the five year specialist training. Provided that the requirements of the specialist training have been met, specialist competence can be granted after at least four and a half years of training if the trainee also possesses:

1. A Swedish MD, or
2. A foreign MD judged to be equivalent

Time spent in a foreign hospital or equivalent may be counted towards specialist service if;

- it was included in an individual training program
- it was performed under supervision
- it can be supported by a document from the head of the department in question

Documentary support must include not only the statement that the training program was completed in its entirety, but also a description of the range of work performed.

For doctors licensed in non-EU countries, service may be counted from the time of such documentation

## **Chapter 4: The Portfolio**

*The trainee's portfolio is used to collect documentation of planned and completed service, teaching and assessments. It is a necessary instrument for the assessment of the competence level and for the arrangement of possible revision of the training plan. It is proof of the extent to which goals for specialist competence have been achieved.*

It includes:

- The individual training program
- Service book
- Notes and certificates
- Log book
- Protocols from DOCA sessions
- Certificates from courses
- Documentation concerning research work and quality and development work
- Results from the ESA examination or equivalent
- Documentation of supervision sessions and their contents
- Certificate from tutor with feedback from specialist college

## **Individual training program**

### **Quality Aspects**

The departmental head must provide documentation for established routines so that training can be delivered and can be regularly evaluated to guarantee training to a high and even quality.

### **Training and learning**

The departmental head must provide a consultant 'tutor' who has undergone supervisor training. A supervisor must be provided for each trainee, and an individual training program devised. This should include theoretical studies and courses. The program is revised regularly as needed.

## **Service book**

A service book with detailed documentation of all rotations and placements should be updated regularly, in order to identify and rectify any shortcomings or deviations from the training plan.

## **Certificates of service and notes**

### **Logbook**

The log book is used for the continual registration of training activities. Procedures for which few local opportunities exist must be identified. The log book and DOCA protocols complement each other.

### **'Directly Observed Clinical Assessment' protocols**

At the end of a placement, the supervisor assesses the trainee by interview and by observing performance of a task

### **Recommended 'Directly Observed Clinical Assessment' protocols**

*The specialist in anaesthesia and intensive care must be able to perform the following:*

1. General anaesthesia for minor abdominal or limb surgery
2. Spinal and epidural anaesthesia
3. Anaesthesia for major abdominal surgery
4. Anaesthesia for the patient with severe traumatic injuries or other acute condition
5. Anaesthesia for Caesarian section
6. Anaesthesia for the patient with a difficult airway
7. Anaesthesia for the high risk orthopaedic patient
8. Initial management of the patient with cancer pain
9. Initial management of the intensive care patient with a main diagnosis
10. Management of the patient with multi-organ failure
11. Intensive care management conference.
12. Anaesthesia for thoracic, paediatric- and neurosurgery

*N.B. The term 'anaesthesia' includes pre- and post-operative assessment, optimisation, and management*

## **Results from the ESA training examination (ITA) or equivalent**

The European Society of Anaesthetists provides an annual In-Training Assessment (ITA). Participation gives feedback as to the trainee's development. At the end of training, the trainee is expected to have acquired theoretical knowledge at the level of European Diploma in Anaesthesia (EDA) part I.

## **Chapter 5: Specialist training – departmental requirements**

The compass of the department should be such that it is possible to achieve comprehensive skills and knowledge while working there. Premises and equipment should be suitable for these goals. All trainees should be given access to regular planned internal and external

educational sessions and the opportunity for reading during working hours and for participation in audit and research.

## **Assessment of competence: Documentation, assessment and evaluation**

The head of department is responsible for providing continuous assessment of the trainee's development towards the goals of the training plan for the entire duration of training. The trainee, with the supervisor's help, should continually document the acquisition of new skills and attainment of knowledge.

The supervisor should continuously support, lead and assess the trainee's development. This should

- embrace all aspects of training and its goals,
- be done in an previously agreed way,
- normally be in the department within the working day

Any noted deficiencies in the training should be tackled by making changes to the program, the departmental teaching program or, where appropriate, through the exertion of more precise demands on the trainee.

The head of department or equivalent should frequently meet the trainee and document the assessment of progress in skills and knowledge. Both trainee and supervisor should document these meetings.

## **Quality control in training**

It is the duty of the head of department to provide documented routines for the external inspection of specialist trainees and their training programs. The inspecting organisation and the inspected training unit must be completely free of any economic, administrative or organisational connections to each other.

## **Chapter 6: Supervision, instruction and quality control**

The tutor or equivalent should support departmental heads, supervisors and trainees, participate in the drawing up of training and introductory programs, and should guarantee the competence of supervisors. Units should have enough consultants to be able to support the number of trainees present.

### **Supervision and instruction**

All training programs must be performed under supervision. The agreed training program should be individualised, and regularly supervised. Continuity is important, as is continuous feedback from colleagues.

### **Supervisors**

The supervisor must be a specialist who has undergone supervision training. This should include pedagogy, communication skills and ethics.

## ***Division of Responsibility***

### **Head of department:**

The head must participate in the creation of an individual training plan, together with trainee, tutor and supervisor. He/she must arrange frequent development meetings with the trainee, and ensure that the 'tutor' has sufficient time for these duties. (Ideally the tutor should be included in the leadership group of the department.) Together with the supervisor, the head signs off trainees at the end of a successfully completed training program.

### **The Tutor**

- is responsible for overall planning and quality assurance of the department's training and introductory program.
- devises individual training and introductory programs with the head of department
- delegates supervisors
- organises theoretical training, and regular follow up and quality control of departmental training programs.

- organises, together with the departmental head, meetings of supervisors and other specialists
- supports the organisation of supervisor in the department
- assures that supervisors have the appropriate competence
- is responsible for his/her own development

### **Consultant's meetings**

The department's specialists should meet annually in order to discuss trainee development; decisions and comments are relayed to the trainee by the supervisor.

### **The supervisor**

- provides supervision, guidance and support for the trainee's development in the professional role, identity, pedagogy and communication, integration of practice with theory, reflection, ethics etc.
- ensures that monthly meetings with the trainee are held, and recorded, within working hours
- is responsible for the structure of the training program, its documentation and (nationally agreed) practical content as applied to the individual trainee, and in agreement with the head of department or tutor
- assesses the trainee's development and progress
- feeds back opinions and comments from the consultants as required. This may occasionally lead to the training plan being revised
- countersigns the trainee's application for specialist recognition
- is responsible for giving information to trainees
- acts as a contact with other departments in which parts of the training is given
- is responsible for his/her own development

## **Section Heads**

The head of each section of the department is responsible for the smooth delivery of in-service training. On introduction to each section, the trainee should be informed of the routines and methods. The section head helps the trainee to achieve the sectional goals, and frequently checks that these goals are being met, with the support of the training log book and 'direct observation'. The section head should assist the supervisor in the assessment.

## **Consultants**

Teaching and DOCA should be a normal part of the daily work routine. Practical teaching can be delivered not only by specialist colleagues, but also other personnel categories, such as other trainees, nurses, physiotherapists etc. The trainee must have the opportunity to explain for example how physiology is interpreted, how pathophysiology develops, and how and why treatment plans are chosen. It is important that there should be a free exchange of views between the trainee and his mentors, in which it is accepted that the limits of one's knowledge can be openly admitted.

## **The trainee**

The trainee also bears responsibility for the quality of the training received; all progress should be documented in the portfolio and log book. It is important to prepare adequately for every new rotation by meeting the head of department and understanding the goals. It is the trainee's responsibility to arrange regular direct observation sessions.

## **The personal supervisor**

### **Competence**

The supervisor, who should be a professional role model, is chosen from interested consultants in the department at the start of training. It is important that the supervisor has the opportunity to develop this important and responsible role, which is important for both the CV and negotiation of salary.

### **The supervisor should:**

- support the trainee in integrating theory, practice and experience in the role
- be available to the trainee for the entire program

- support and advise in questions of the role itself and personal development, such as reflection on different situations, medical management, professional relationships or conflict resolution
- initially help the trainee to plan duties via basic training plan. description, and recommend suitable literature. Supervisor and trainee agree the form for their meetings, which the supervisor documents
- follow up and document the training, and monitor training received in other departments, if necessary by contacting the relevant heads of department. The supervisor gives feedback to the trainee and instructors, and countersigns the trainee's application for specialist competence

### **Meetings between trainee and supervisor**

The role of supervisor changes with time; initially a formal teacher-pupil relationship, it should later become a more even, collegial relationship as the trainee progresses and develops. The supervisor may be supported by frequent meetings with supervisors and others responsible for the delivery of training.

#### ***Examples of discussion points:***

- On-going planning of future training, and reflection on what has been achieved
- Review of situations which the trainee has experiences as positive, unsatisfactory or traumatic
- Contact with the family of severely ill or deceased intensive care patients
- Ethical questions e.g. organ donation, advanced care or the severely ill patient with a poor prognosis
- Discussion of risk, techniques, incidents and accidents, mistakes and reports
- Discussion of economics, prioritising, decision-making, and responsibility
- Relations with other colleagues and personnel; the value of a positive attitude; causes of satisfaction, dissatisfaction and conflicts.

### ***The ability to co-operate and work independently***

The anaesthetist/intensivist comes into contact with many other specialists. The operating room and intensive care unit require team work, co-operation, good working relationships,

communication skills and flexibility. The throughput of patients is usually high, demanding effective and safe decision-making and comprehensive medical technological knowledge.

Acute admissions and acute incidents can lead to rapid changes in circumstances, demanding a flexible organisation, multitasking and the ability to tolerate stress. Sometimes decisions must be made on incomplete information, which leads to a risk of accidents and misjudgement, sometimes with tragic consequences. The trainee must reflect on such happenings in the aftermath in order to learn from them. Feelings of being at a loss, discomfort, sorrow, inadequacy, guilt and self accusation must be worked through. The supervisor may assist the trainee to do this by offering calm and understanding support, so that such situations, and their effects, may eventually be managed independently.

Occasionally, it falls also to the supervisor to advise that the trainee should not proceed further within the speciality. Such decisions are made with the head of department and tutor, so that help can be given to find a more suitable speciality. Such decisions should of course be made earlier rather than later.

Although it is the departmental head who countersigns the trainee's application for specialist competence, the assessments by the supervisor and other consultants of the trainee's judgement, integrity, attitude and general ability are of the greatest importance.

## **Application for, and approval of, specialist competence**

The Ministry of Health approves the application. The head of the trainee's department or equivalent and the supervisor are responsible for certifying that the trainee has achieved the knowledge, skills and attitudes described in the goals of training. In particular:

- The trainee must have been in supervised training for at least five years
- The trainee must have followed the teaching/learning methods described in the goals
- Any service abroad must be shown to be relevant to Swedish training programs
- Where the supervisor has also been head of department, one other specialist must support the application.

- If the trainee has worked in several different units, the head or equivalent where the trainee worked most recently must support the application, after discussion with heads of the other departments where the trainee has previously worked.

**Documentary evidence required for the application:**

- Clinical service
- Other teaching/learning methods stated in the goals of training as an alternative to clinical service
- Courses
- Scientific papers
- Quality assurance and development work

**Complementary information to be supplied:**

- teaching under supervision
- supervise under supervision
- ward teamwork under supervision
- formal teaching/college
- conferences etc
- diagnostic and treatment meetings
- simulator training
- direct observation
- professional reflection in group discussions
- theoretical studies

**Approval**

The Ministry of Health grants specialist competence through the advice of two **external assessors**. These are experienced consultant anaesthetists, suggested by the Swedish Association for Anaesthesia and Intensive care, and are appointed for a three year period. They determine whether the trainee's service and certified teaching/learning methods fulfil the goals of training. This includes an assessment as to whether those certifying/supporting the application (including duties in other countries) have the relevant competence.