

CURRICULUM, ORGANISATION AND SYLLABUS
FOR HIGHER SURGICAL TRAINING IN GENERAL SURGERY
(December 2001)

The Manual of Higher Surgical Training in the United Kingdom and Ireland published as the seventh report of the Joint Committee for Higher Surgical Training lays out the basic principles for the arrangement and monitoring of higher surgical training for all the surgical specialties, you should refer to the curriculum in conjunction with this document. This document clarifies and amplifies the specific arrangements for General Surgery, and defines the syllabus for the Intercollegiate Examination.

Constitution of the SAC

- Chairman elected by the Committee.
 - Seven representatives appointed jointly by the four Royal Surgical Colleges.
 - Seven representatives appointed by the appropriate specialist association, the Association of Surgeons of Great Britain and Ireland.
 - Four representatives appointed by the Society of Academic and Research Surgery.
 - One representative of the Defence Medical Services.
- In attendance:
- One representative appointed by the Association of Surgeons in Training.
 - The Lead Postgraduate Dean for General Surgery.
 - The Chairman of the Intercollegiate Examination Board in General Surgery.

Representatives should be senior clinicians with a background in education and training, with experience in such positions as regional programme director or college regional adviser. Vacancies will be publicised. Endeavours will be made to have a balance of members from the various areas of sub-specialist practice, but all representatives act for the specialty, namely General Surgery. Members will receive appropriate training as decided by the SAC.

Each Postgraduate Deanery has a nominated SAC Liaison member appointed by the SAC from outside that Region. The Liaison member acts as independent observer and adviser to the regional training scheme and its trainees, attends the RITA Assessments, assesses CCST dates and presents them to the SAC, and co-ordinates the visiting programme for that region. There is a close relationship between Regional Programme Directors and the SAC, with regular joint meetings.

Visits

Every hospital with higher surgical trainees will be visited by the SAC on a five yearly basis with interim visits as necessary. Any significant alteration to a training programme must be reported to and approved by the SAC.

SAC members are grouped into teams of three for the purpose of visits so that each SAC member becomes familiar with three regions. The formal SAC team for quinquennial visits will consist of three members, but for smaller hospitals there may be only two. Liaison members may carry out interim informal visits under the aegis of the Regional Training Committee. The visiting programme makes considerable demands upon SAC members and extra visitors may be sought from former members of the SAC, Regional Programme Directors and other Consultant Surgeons with special expertise.

Trainee/Trainer Ratios

- 1 In no circumstances may the ratio of 1.2 middle grade staff to 1 consultant (full time equivalent) be exceeded.
- 2 It is mandatory that trainees are at all times exposed to the clinical practice of at least two trainers.

Programme Sequence

The minimum period of Higher Specialist Training in General Surgery is six years, five of which must be “in programme”. Any flexible year will normally be clinical in content, spent either abroad, in an SAC approved post in a different region, or in any other training post approved by the SAC. In some circumstances, particularly for trainees intending to enter an academic career, it may be research based.

Placements

These will usually be for one year but may be for six months or any other convenient period particularly in the first three years. Junior trainees will tend to be placed in more general posts with more sub-specialised posts being occupied by senior trainees. Allocations may be to fixed rotations, flexible or a mixture of the two. The annual rotation date will be normally the first Wednesday in October.

Research

- The SAC encourages trainees to undertake research but recommends that full time research be undertaken well into higher surgical training, usually after the first few years and before the more sub-specialist postings. It is appropriate for trainees to choose their research project in the area of their major clinical interest, where they will be more likely to continue an academic approach into their subsequent consultant careers. The timing of research may affect eligibility for the Intercollegiate Examination, and the current regulations should be consulted.
- Retrospective recognition will not normally be granted for any research activity undertaken before entering the Specialist Registrar Grade.

- Out of programme research must be approved prospectively by the SAC and there must be adequate in-training assessment of academic achievement, either by the Regional Training Committee or by independent academic assessment, in effect a “Research RITA”. Evidence of presentations and publications will be required. Research done during clinical posts should also be assessed, during the RITA process.
- Full time research will normally be for one or two years and only exceptionally should a higher surgical trainee be away from clinical duties longer than this.
- Piecemeal clinical work done during a period of out of programme research cannot be counted towards Higher Surgical Training.

Academic Trainees

The SAC wishes to encourage recruitment into academic surgery and is sympathetic to the difficulties experienced in reconciling clinical training with significant involvement in teaching and on-going research. Nevertheless, academic surgeons must receive equivalent training up to award of the CCST.

However, the SAC encourages training committees to apply the rules to bona fide academics with the maximum of flexibility, particularly over research activity in the flexible year and length of time spent out of programme, particularly abroad.

Exceptional rules may apply to surgical trainees showing evidence of pursuit of an academic career, and undertaking prolonged research. They may obtain retrospective recognition of one year’s research done before programme, and clinical work done in the second and third research years may also be eligible for recognition.

Sub-Specialty Training

The aim of higher surgical training is to enable trainees to undertake independent practice in their chosen specialty of general surgery. A subsidiary objective is to provide training to a more advanced level in one or more areas of sub-specialisation and to produce trainees capable enough to move between sub-specialities and to practice new sub-specialties which may arise during their subsequent career.

Educational approval by the SAC can be only in the specialty of general surgery. SAC visit reports may recommend certain posts for sub-specialty training and advise regional training committees accordingly. However, all approved posts must be suitable for higher specialist trainees at any level of experience.

Posts suitable for sub-specialist training will usually be on firms with a minimum of two consultants working in the same area of interest. The facilities and caseload required will be decided by the SAC, taking advice from the appropriate sub-specialty association where necessary. The requirements for a unit to be judged able to provide satisfactory sub-specialist training will be flexible, as at the more complex levels of sub-specialisation no single unit will be able to provide training in every aspect of the subspecialty.

General Surgery Curriculum – Training for Rural Surgery

A very small number of trainees will be aiming to work in rural hospitals. Their CCST will most appropriately be in general surgery. They must therefore spend five years in SAC approved general surgical posts, using their sixth flexible year for training in appropriate surgical specialties prospectively agreed with the SAC – as required for the specific appointment envisaged. Any further experience necessary to undertake the duties of the specific post will need to be obtained (post CCST) usually through FTTA positions.

Training Overseas

A period spent working outside the UK and Ireland in a clinical post requires prior provisional approval by the SAC if it is to count as time towards CCST. A maximum of twelve months may be recognised and the post must be equivalent in standard and supervision to an SAC approved post in the United Kingdom. Final approval can only be given retrospectively following inspection of the log book, trainee's report and trainer's report after the post is completed.

Emergencies

Experience of emergency surgery must be sufficient to attain the confidence and ability to be responsible as a consultant for an unsorted general surgical "Take". This will require involvement in the rota for unselected general surgical emergencies for a minimum four years of HST, with an on call frequency of not less than one in six. In large hospitals it is acceptable to have two HSTs, usually a junior and a senior, on duty together providing the SAC is satisfied that the workload supports this or where a sub-specialist rota exists. All Higher Surgical Trainees in General Surgery must at all times in their clinical years have an emergency commitment, which may be in a subspecialty for the last two years.

Continuity of Care

It is essential that Higher Surgical Trainees have sufficient flexibility in their timetables to allow them to experience continuity of patient care. In particular they must be able to follow the patients that they have managed and operated upon themselves. An important part of training is to learn to hand over clinical problems to the succeeding team at the end of a period of duty.

Operative log books

It is essential that all higher trainees keep an up to date operative log book, clearly divided into experience in the current post and cumulative career experience. This should be continually available to assist the Programme Director and the SAC Liaison Member. It is mandatory that the electronic nation-wide system be employed. In log books the SAC will wish to see an appropriate ratio of assisting, operating with senior help, and operating alone. Complex operations may be split into component parts where appropriate.

Index Procedures

The SAC will select certain index procedures as a method of assessing the adequacy of workload of a unit at a visit.

Ranking of Posts

The SAC may use scoring systems based on operative Log Books and RITA forms as a means of ranking HST posts.

Assessment of Training

The SAC may lay down numerical targets for clinical and operative experience. This will usually be in the form of the number of procedures carried out annually by a training unit. In the case of trainees, the number of procedures will be a career target to be met before obtaining the CCST. In future, it might be possible to assess clinical and technical competence. The SAC encourages research and development along these lines and will be prepared to recognise any such properly validated testing.

Appraisal and assessment of competence in endoscopy will be conducted jointly with the SAC in Medical Gastroenterology, via the Joint Advisory Group.

Flexible Training

Flexible trainees must have a programme properly balanced between elective and emergency care, clinics and operating theatre.

Post CCST Training

The SAC recognises that training is a lifetime process which does not stop with the award of the CCST, which indicates the milestone of competence for independent general surgical practice. It is incumbent on consultants to seek further training, formally or informally, throughout their professional careers.

CURRICULA

Core Curriculum

The Core Curriculum describes the training compulsory for all General Surgeons by the completion of Higher Surgical Training and outlines the syllabus for the general surgery part of the Intercollegiate Examination. These are the areas to which all trainees should be exposed to provide core skills and to assist them in their choice of sub-specialisation.

Sub-Specialist Curricula

This defines training in areas of sub-specialist interest not required for all General Surgeons and which will be examined in the sub-specialist part of the Intercollegiate Examination. The sub-specialist areas, however, should not be seen as reserved only for those with a major interest in them.

Please note that the lists of topics and procedures are for training and reflect current practice.
By the nature of general surgery they will inevitably change from time to time.

CORE CURRICULUM

EMERGENCY SURGERY	
TOPICS	PROCEDURES
<p>Assessment of the acute abdomen Biliary tract emergencies Acute pancreatitis Swallowed foreign bodies Gastrointestinal bleeding Appendicitis and right iliac fossa pain Abdominal pain in children Peritonitis Acute intestinal obstruction Intestinal pseudo-obstruction Strangulated hernia Intestinal ischaemia Toxic megacolon Superficial sepsis and abscesses Acute ano-rectal sepsis Ruptured aortic aneurysm Acutely ischaemic limb Acute presentations of urological disease Acute presentations of gynaecological disease Scrotal emergencies in all age groups</p> <p><u>Trauma</u> Assessment of the multiple injured patient including children Closed abdominal injuries, especially splenic, hepatic and pancreatic injuries Closed chest injuries Stab and gunshot wounds Arterial injuries Injuries of the urinary tract Initial management of head injuries and interpretation of CT scans Initial management of severe burns</p>	<p>Drainage of superficial abscesses Tracheostomy Emergency thoracotomy Diagnostic laparoscopy Closure of perforated peptic ulcer, open and laparoscopic Endoscopy for upper GI bleeding Operations for GI bleeding including partial gastrectomy Emergency cholecystectomy Splenectomy for trauma Emergency hernia repair Laparotomy for small bowel obstruction Small bowel resection Ileostomy Laparotomy for large bowel obstruction Laparotomy for perforated colon Hartmann's operation Colostomy Appendicectomy Drainage of ano-rectal sepsis Laparotomy for abdominal injury Laparotomy for post operative complications Urethral catheterisation Suprapubic cystostomy Exploration of scrotum Reduction of paraphimosis Embolectomy Fasciotomy Organ retrieval for transplantation</p>
CRITICAL CARE	
<p>Hypotension Haemorrhage Haemorrhagic and thrombotic disorders Blood transfusion and blood component therapy Septicaemia and the sepsis syndrome Antibiotic therapy and the management of opportunist infection Gastro-intestinal fluid losses and fluid balance, including in children Nutritional failure and nutritional support Respiratory failure Renal failure and principles of dialysis Fluid overload and cardiac failure Myocardial ischaemia Cardiac arrhythmias Multiple organ failure Pain control Cardiac arrest, respiratory arrest and brain death Organ donation Hypo and hyperthermia Diagnosis of brain death Legal & ethical aspect of transplantation</p>	<p>Cardio-pulmonary resuscitation Chest drain insertion Central venous line insertion Insertion of peritoneal dialysis catheter Primary vascular access for haemodialysis</p> <p>A detailed knowledge of the methods and results of invasive monitoring will <i>not</i> be required</p>

ELECTIVE SURGERY	
<p>Pathology, diagnosis and management of skin lesions, benign and malignant</p> <p>Basal and squamous cell carcinoma</p> <p>Malignant melanoma</p> <p>Other skin cancers</p> <p>Diagnosis & management of neck lumps</p> <p>Physiology & pathology of:-</p> <p>Thyroid</p> <p>Parathyroid</p> <p>Adrenal cortex</p> <p>Adrenal medulla</p> <p>Management of :-</p> <p>Thyrotoxicosis</p> <p>Adrenal insufficiency</p> <p>Hyper and hypo thyroidism</p> <p>Carcinoid syndrome</p> <p>Anaesthetic and pharmacological problems</p> <p>Imaging techniques for endocrine organs</p> <p>Carcinoma of the breast</p> <p>Benign breast disease</p> <p>Hormone therapy for benign and malignant breast disease</p> <p>Histo-/cytopathology</p> <p>Mammography</p> <p>Ultrasound</p> <p>Adjuvant chemotherapy:</p> <p>Chemotherapy for advanced disease</p> <p>Radiotherapy</p> <p>Counselling</p> <p>Hospice care</p> <p>Neoplasms of the upper GI tract</p> <p>Gallstone disease</p> <p>Jaundice</p> <p>Gastro-oesophageal reflux and its complications</p> <p>Hiatus hernia</p> <p>Peptic ulceration and its complications</p> <p>Radiation enteritis</p> <p>Infantile pyloric stenosis</p> <p>Physiology of pneumo-peritoneum</p> <p>Informed consent for laparoscopic procedures</p> <p>Pre and post operative management of laparoscopic cases</p> <p>Port complications</p> <p>Technology of video imaging, cameras, insufflator etc</p> <p>Laparoscopic instruments, clips, staplers and port types</p> <p>Management of equipment failure</p> <p>Recognition and management of laparoscopic complications</p> <p>Use and dangers of diathermy</p> <p>Anaesthetic problems in laparoscopic surgery</p> <p>External and internal abdominal herniae. Anatomy, presentation, complications</p> <p>Hernia in childhood</p> <p>Undescended testicle</p> <p>Development and natural history of the prepuce</p>	<p>Excision of skin lesions</p> <p>Excision of skin tumours</p> <p>Split and full thickness skin grafting</p> <p>Node biopsy</p> <p>Block dissection of axilla and groin</p> <p>Surgery for soft tissue tumours including sarcomas</p> <p>Thyroid lobectomy</p> <p>Retrosternal goitre</p> <p>Thyroglossal cystectomy</p> <p>Submandibular salivary gland excision</p> <p>Parotidectomy</p> <p>Treatment of breast abscess</p> <p>Fine needle aspiration cytology</p> <p>Trucut biopsy</p> <p>Excision of breast lump</p> <p>Mastectomy</p> <p>Wide excision of breast tumours</p> <p>Axillary dissection with other breast operations</p> <p>Diagnostic upper GI endoscopy</p> <p>Laparoscopic cholecystectomy</p> <p>Conversion to open cholecystectomy</p> <p>Exploration of common bile duct</p> <p>Biliary bypass</p> <p>Gastrectomy</p> <p>Splenectomy</p> <p>Ramstedt's procedure</p> <p>Diagnostic laparoscopy</p> <p>Closed and open techniques of port insertion</p> <p>Laparoscopic biopsy</p> <p>Laparoscopic appendectomy</p> <p>Laparoscopic adhesiolysis</p> <p>Thoracoscopy</p> <p>Laparoscopic suturing and knotting</p> <p>Control of laparoscopic bleeding</p> <p>Surgery for all abdominal herniae, using open and laparoscopic techniques</p> <p>Repair of childrens' herniae</p> <p>Orchidopexy</p> <p>Circumcision in children</p>

<p>Neoplasms of large bowel Inflammatory bowel disease (inc medical management) Diverticular disease Irritable bowel syndrome Haemorrhoids Anal fissure Rectal prolapse Fistula in ano Diverticular disease/fistula Colostomy complications Ileostomy complications</p>	<p>Proctoscopy/rigid sigmoidoscopy Flexible sigmoidoscopy & colonoscopy, diagnostic and therapeutic Outpatient haemorrhoid treatment Haemorrhoidectomy Procedures for fistula in ano Right hemicolectomy Left hemicolectomy Sub-total colectomy Resections for rectal cancer, restorative and excisional Ileorectal anastomosis Panproctocolectomy Closure of Hartmann's procedure Rectal injuries</p>
<p>Pathology of the scrotum and its contents Male sterilization, including counselling and informed consent</p>	<p>Operations for hydrocoele, epididymal cyst and varicocele Adult circumcision Vasectomy</p>
<p>Atherosclerosis Ischaemic limb Aneurysmal disease Venous thrombosis & embolism Hyper-hypo coagulable state Chronic venous insufficiency Arteriography Vascular CT scanning Magnetic Resonance Angiography Vascular ultrasound Varicose veins Mesenteric ischaemia</p>	<p>Vascular suture/anastomosis Approach to/control of infra-renal aortic, iliac and femoral arteries Control of venous bleeding Balloon thrombo-embolism Amputations of the lower limb Fasciotomy Primary operation for varicose veins Abdominal aortic aneurysm repair, elective and ruptured Femoro-popliteal bypass Femoro-femoral bypass</p>
<p>Critical appraisal of the surgical literature Scientific method & statistics as applied to surgery Informed consent Ethical aspects of surgical practice Genetic aspects of surgical disease</p>	

SUB-SPECIALIST CURRICULA

ENDOCRINE SURGERY	
TOPICS	PROCEDURES
Pituitary The gut as an endocrine organ Endocrine pancreas Counselling and screening in familial disease Radio-immuno assays	Re-operative thyroid surgery including nodal dissection Parathyroidectomy Re-operative parathyroidectomy Endocrine pancreatic tumours Adrenalectomy (inc. laparoscopic) Total thyroidectomy Prophylactic thyroidectomy Excision of gut endocrine tumours

BREAST SURGERY	
TOPICS	PROCEDURES
Genetics related to surgery Immunocyto-chemistry Clinical trials Neo-adjuvant therapy and related surgery Epidemiology Screening programme Stereotaxis	Needle localisation biopsy Mammary duct fistula Breast duct excision Microdochectomy <u>Reconstruction</u> Myocutaneous flaps Tissue expanders Complications and re-operation Breast reduction

UPPER GI SURGERY	
OESOPHAGO-GASTRIC SURGERY	
TOPICS	PROCEDURES
Epidemiology and aetiology of oesophago-gastric, pancreato-biliary and liver cancer Principles of screening for cancer The use and limitations of multimodality treatment for upper GI cancer Oesophageal motility disorders Imaging and endoluminal ultrasound	Oesophageal dilatation Oesophageal stenting Laser recanalisation Mucosal resection Staging laparoscopy & laparoscopic ultrasound scanning Oesophagectomy Total and subtotal gastrectomy Extended lymphadenectomy for gastric cancer Laparoscopic anti-reflux surgery Open anti-reflux surgery Repair of para-oesophageal hiatus hernia Re-do gastric surgery Re-do anti-reflux surgery Heller's myotomy ,open and laparoscopic Long oesophageal myotomy Pharyngeal pouch Laparoscopic splenectomy Operations for morbid obesity Endoscopic control of of upper GI bleeding Variceal banding/sclerotherapy
HEPATO-PANCREATICO-BILIARY SURGERY	
Chronic pancreatitis Complex liver injuries Hydatid disease Management of primary & secondary hepatic and choledochal neoplasms Other conditions of the liver and biliary tract Pancreatic neoplasms Chronic liver disease Liver failure Pancreatic insufficiency Imaging & endoluminal ultrasound Hepatitis	ERCP and endoscopic sphincterotomy Biliary stenting Pancreatic stenting Biliary reconstruction Pancreatectomy all types Treatment of pancreatic necrosis Drainage of pancreatic pseudo-cyst Porto-systemic shunt Liver resection Laparoscopic exploration of bile duct Staging laparoscopy & laparoscopic ultrasound scanning

COLOPROCTOLOGY	
TOPICS	PROCEDURE
Anal tumours Pelvic autonomic nerves Screening for colorectal cancer Genetics of colorectal cancer Place of radiotherapy and chemotherapy in treatment Anorectal physiology Anorectal ultrasound Faecal incontinence Chronic constipation Complex intestinal fistulae Colonic bleeding Radiation enterocolitis Other small bowel conditions	Anterior resection of rectum AP resection Prolapse surgery Laparoscopic rectopexy Incontinence surgery Recto-vaginal fistula Ileo-anal and colonic pouch Colo-anal anastomosis Laparoscopic large bowel resection Re-operation for pelvic malignancy Re-operation for inflammatory bowel disease Operation for intestinal fistula Complex fistula in ano Posterior approach to rectum Transanal resection Transanal microsurgery Posterior pelvic clearance Laparoscopic colectomy Block dissection of groin

ENDOSCOPIC SURGERY	
TOPICS	PROCEDURES (also appear in appropriate anatomical subspecialty lists)
Theory and practice of choledochoscopy Theory of different forms of diathermy Laparoscopic ultrasound Advanced instrumentation and equipment Endoscopic suturing devices Theory, uses and dangers of lasers and other energy sources e.g. harmonic scalpel Creation and maintenance of new endoscopic spaces Use of assistance robots and robotic instruments Minilaparoscopy Ultrasound interpretation, internal and external techniques	Laparoscopic repair of all types of hernia Laparoscopic anti-reflux procedures Laparoscopic splenectomy Laparoscopic large bowel resection Laparoscopic rectopexy Laparoscopic exploration of CBD Laparoscopic closure of perforated duodenal ulcer Laparoscopic adrenalectomy Laparoscopic operations for morbid obesity Laparoscopic abdominal lymphadenectomy Other major laparoscopic and laparoscopically assisted procedures

VASCULAR SURGERY	
TOPICS	PROCEDURES
Angioplasty/stenting Thrombolysis Reno-vascular disease Raynaud's/vasopastic disorders Lymphoedema Cerebrovascular disease Vasculitis Graft prosthetics Graft surveillance Graft infection Autonomic dysfunction Reperfusion injury Arterial dissection Arterio-venous malformations Thoracic outlet syndrome Diabetic foot Trophic ulceration Intimal hyperplasia Rehabilitation & limb prosthetics Medical management of vascular disease	Abdominal aortic aneurysm repair : elective Abdominal aortic aneurysm repair : emergency Supra renal aortic aneurysm Procedures for peripheral aortic dissection Aorto-bifemoral bypass Ilio-femoral bypass Infra-inguinal bypass (all types) Axillo-femoral bypass Revision surgery Surgery for infected grafts Carotid endarterectomy Carotid body tumour Operations for thoracic outlet syndrome Thoracoscopic sympathectomy Upper limb arterial reconstruction Recurrent and complex varicose veins Venous reconstruction Renal/visceral artery reconstruction Interventions for arterio venous malformations Procedures for arterial injuries Angioplasty,thrombolysis and stenting Per-operative angiography and thrombolysis Endoluminal grafting Reduction surgery for lymphoedema Endoscopic vascular procedures Lumbar sympathectomy Vascular access procedures

TRANSPLANTATION	
TOPICS	PROCEDURES
Pathology of renal and hepatic disease Patho-physiology of renal and hepatic failure Peritoneal and haemo-dialysis Selection of patients for transplantation Post-operative management Immuno-pathology of rejection Management of rejection Immunosuppression Opportunist infections Immunosuppression and cancer Transmission of viral and fungal diseases Tissue typing The HLA system Bladder dysfunction Preservation of organs Legal & ethical aspects of transplantation	Donor nephrectomy Donor hepatectomy Renal transplantation Uretero-neocystostomy Uretero-ureterostomy Renal biopsy Transplant nephrectomy Vascular access Peritoneal access Drainage of intra-and extra-peritoneal collections Live donor transplantation <u>Renal procedures:-</u> Work bench preparation of the kidney Ileal and colonic conduits Uretero-pyelostomy Bladder (psoas) hitch Boari flap Partial nephrectomy Bilateral nephrectomy Secondary vascular access Renal artery reconstruction Renal vein reconstruction Parathyroidectomy <u>Pancreatic procedures:-</u> Donor pancreatectomy Pancreatic transplantation <u>Hepatic procedures:-</u> Liver transplantation