MODULE TITLE:	**ABDOMINAL WALL, RETROPERITONEUM, UROGENITAL**	**7-Nov-2016**
DEVELOPED BY:	**Richard Turner**	
REVIEWED BY:	**Richard Turner (2010). Ian Campbell, Patrick Cregan, Li Hsee, Michael Rodgers, David Townend, Emma Secomb, Graham Stewart (2013). David Fletcher (2016).**	

Module Rationale and Objectives

A general surgeon is required to have a thorough understanding of normal anatomy and physiology, as well as pathophysiology, investigations, differential diagnosis and surgical and non-surgical management of abdominal wall and retroperitoneal disorders. It is important that general surgeons maintain a current understanding of the most appropriate time and manner of intervention.

The graduating trainee will be able to:

- describe common surgical pathologies of the abdominal wall and retroperitoneum
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that pertain to the abdominal wall, retroperitoneum and urogenital tract, including referral to other specialists where indicated
- select appropriate investigative tools
- adapt their skill in the context of each patient and each procedure
- identify and manage risk
- recognise the need to refer patients to other professionals
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have basic knowledge of the normal embryology, anatomy, and pathology, of:

- abdominal cavity and its walls
- inguinoscrotal region
- external genitalia
- urogenital tract

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, there are no prescribed texts.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

(1) Atlas of Abdominal Wall Reconstruction, by Michael J Rosen. Elsevier

(2) The SAGES Manuel of Hernia Repair, By Brian Jacobs. Springer

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Adult groin hernias ▪ inguinal ▪ femoral						
Early SET	▪ Describe the anatomy of inguinal region, spermatic cord and testis ▪ Describe the embryology of testicular descent and processus vaginalis ▪ Provide an anatomical and pathological classification of groin hernias	▪ Identify signs and symptoms of reducible, irreducible and strangulated hernias ▪ Distinguish inguinal from femoral hernias	▪ Select and interpret appropriate medical imaging modalities where indicated	▪ List management options (non-surgical and surgical): - indications - contraindications - basic procedural details ▪ Indications/contraindications for laparoscopic repair ▪ Describe details of common management options, as well as possible risks/ complications and how to deal with them, postoperative care ▪ Management of recurrent hernias ▪ Post hernia repair pain		▪ Open (mesh) repair of inguinal hernia ▪ Open repair of femoral hernias ▪ Open repair of strangulated and non-strangulated femoral and inguinal hernias ▪ Laparoscopic inguinal hernia repair
Paediatric inguinal hernia / congenital hydrocele						
Early SET	▪ Explain the anatomy of the inguinoscrotal region and spermatic cord in a child ▪ Describe/ differentiate between normal and abnormal embryology of testicular descent and processus vaginalis			▪ Outline surgical management: - indications - basic procedural details ▪ Timing of surgery in children vs. adults		
Mid SET	▪ Understand acute hernia management in children	▪ Discuss signs and symptoms (history) of inguinal hernias in children ▪ Discuss signs and symptoms of hydroceles and hydroceles of the cord in children		▪ Describe details of surgical management, including possible risks and complications ▪ Plan management of acutely irreducible inguinal hernia	▪ Inguinal herniotomy	
Umbilical / para-umbilical / epigastric hernia						
Early SET	▪ Explain the embryology and anatomy of umbilicus/ abdominal wall	▪ Interpret examination findings of umbilical hernia		▪ Summarise surgical management: - indications - basic procedural details ▪ Describe operative management options (including indications for mesh repair), possible complications and how to deal with them, postoperative care		▪ Repair of umbilical/ paraumbilical hernia (with or without mesh)

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Exomphalos/Gastroschisis						
Early SET				▪ Recognise that there are congenital abdominal wall defects requiring emergency management and transfer		
Late SET				▪ Describe principles of surgical management and indications for referral		
Incisional/ventral hernias						
Early SET	▪ Describe normal and abnormal abdominal wall anatomy ▪ Identify/explain etiological factors	▪ Recognise typical signs and symptoms, in particular with regard to irreducibility and strangulation	▪ Select and interpret appropriate medical imaging modalities where indicated	▪ Outline management options (non-surgical and surgical): - indications - basic procedural details ▪ Provide details of operative management options, possible complications and how to deal with them, postoperative care		
Mid SET		▪ Recognise the importance of defect size and its implications on choice of repair ▪ Recognises risk factors influencing outcomes of successful repair		▪ Pre-operative planning ▪ Types of mesh and physiological properties		▪ Open repair of abdominal incisional hernia, with and without mesh/ bowel resection ▪ A retro-rectus mesh repair
Late SET	▪ Identify pathophysiology of massive incisional hernias and repair			▪ Mesh locations and types of repairs and its associated risks and benefits ▪ Provide details of management options associated with massive abdominal wall defects and the possible complications ▪ Assessment of abdominal domain and its physiological implications after repair	▪ Laparoscopic incisional hernia repair (indications and contraindications) ▪ Incisional hernia repair using separation of components ▪ Techniques to restore abdominal domain	▪ Open repair of irreducible incisional hernia
Abdominal wound dehiscence/burst abdomen						
Early SET	▪ Identify etiological factors	▪ Recognise symptoms and signs - superficial - fascial		▪ Plan and carry out pre-operative management		
Mid SET				▪ Describe definitive surgical management ▪ Role of VAC dressing/delayed closure		▪ Definitive closure of abdominal wound dehiscence ▪ Management of the open abdomen

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Open abdomen / laparostomy *See also Trauma Module*						
Early SET	▪ Describe the anatomy of the peritoneal cavity, including peritoneal reflections ▪ Define the normal range of intra-abdominal pressure ▪ Explain the pathophysiological consequences of raised intra-abdominal pressure	▪ Recognise the clinical signs of raised intra-abdominal pressure	▪ Describe the technique for measuring intra-abdominal pressure including significant measure ▪ Measures to reduce intra-abdominal pressure	▪ Describe the indications for laparostomy		
Mid SET				▪ Describe details of managing a laparostomy wound ▪ Define indications / suitability for wound closure		▪ Laparostomy ▪ Application of vacuum dressing ▪ Definitive wound closure
Late SET						▪ Graduated Fascial closure techniques
Other abdominal wall hernias ▪ Spigelian ▪ Lumbar ▪ Obturator						
Early SET	▪ Describe the relevant abdominal wall anatomy	▪ Recognise symptoms and examination findings	▪ Select and interpret appropriate medical imaging modalities where indicated	▪ Explain management options: - indications - basic procedural details ▪ Provide details of operative management, possible complications and how to deal with them, postoperative care		
Mid SET						▪ Open hernia repair (with or without mesh)
Late SET					▪ Laparoscopic repair of other hernias	
Stomal hernia *See Colorectal Module*						
Epididymo-orchitis *See Emergency Module*						
Testicular torsion *See Emergency Module*						

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Haematocele / Scrotal haematoma						
Early SET	▪ Describe normal and abnormal anatomy of testis, spermatic cord ▪ Identify etiological/ predisposing factors	▪ Recognise symptoms and signs testicular viability ▪ Implications of anti-coagulation	▪ Describe role of ultrasound in assessment	▪ Identify indication for urgent conservative surgical management, including basic procedural details		
Mid SET						▪ Scrotal exploration and drainage
Epididymal cyst						
Early SET	▪ Describe normal and abnormal anatomy of testis, epididymis and spermatic cord ▪ Explain the embryology of testis and epididymis	▪ Discuss examination findings	▪ Select and interpret appropriate medical imaging modalities where indicated	▪ Explain principles of surgical management: - indications - basic procedural details		
Mid SET				▪ Describe details of surgical management, including possible complications and how to deal with them		▪ Excision of epididymal cyst scrotal exploration and drainage
Adult hydrocele (acquired)						
Early SET	▪ Describe normal and abnormal anatomy of testis and tunica vaginalis	▪ Identify characteristic examination findings ▪ Exclusion of malignancy/ infective causes	▪ Select and interpret appropriate investigation modalities where indicated	▪ Identify indications for and management options (non-surgical and surgical) ▪ Identify basic procedural details		
Mid SET				▪ Describe details of surgical management, including possible complications and how to deal with them		▪ Operative cure of hydrocele
Mal-descent of the testis – paediatric and adult						
Early SET	▪ Describe normal and abnormal embryology of testis ▪ Review the anatomy of testis, spermatic cord and inguinoscrotal region	▪ Interpret examination findings				
Mid SET	▪ Describe the pathology and pathological consequences of undescended testis		▪ Select and interpret appropriate medical imaging modalities where indicated	▪ Explain the principles of surgical management: - indications - basic procedural - details - possible complications including malignancy		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Mal-descent of the testis – paediatric and adult (continued)						
Late SET					▪ Orchidopexy ▪ Laparoscopic exploration for absent testis	
Varicocele						
Early SET	▪ Describe the anatomy of testis, spermatic cord and inguinoscrotal region ▪ Explain the etiology, pathology and possible consequences	▪ Interpret examination findings	▪ Select and interpret appropriate medical imaging modalities where indicated	▪ Summarise principles of surgical management: - indications - basic procedural details ▪ Describe details of surgical management, including possible complications and how to deal with them, postoperative care		
Mid SET						▪ Surgical treatment of varicocele (inguinal approach)
Late SET					▪ Laparoscopic treatment of varicocele	
Testicular tumours - benign / malignant						
Early SET	▪ Describe the embryology of the testis ▪ Differentiate between normal and abnormal anatomy of testis, spermatic cord, inguinoscrotal region and retroperitoneum ▪ Describe lymphatic drainage of the testis ▪ Review classification and staging of testicular neoplasms	▪ Interpret history and examination findings			▪ Orchidectomy via inguinal approach	
Mid SET			▪ Select and interpret appropriate medical imaging modalities where indicated ▪ Identify serum tumour markers	▪ Summarise principles of multi-disciplinary management ▪ Implement staging procedures ▪ Plan multi-disciplinary management ▪ Describe details of surgical management ▪ Plan follow-up	▪ Testicular exploration and/or radical orchidectomy (inguinal approach)	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Vasectomy						
Early SET	▪ Describe the anatomy of scrotum and spermatic cord		▪ Interpret pathology tests used in determination of efficacy: - histology - semen analysis	▪ Explain details of procedure and complications including consent ▪ Perform pre- and post-operative counselling		
Mid SET						▪ Vasectomy
Nephro-/uretero-/vesico-lithiasis *See Emergency Module*						
Phimosis/ paraphimosis *See Emergency Module*						
Other peripheral nerve entrapments *See Skin & Soft Tissue Module*						

MODULE TITLE:	**BREAST**	**7-Nov-2016**
DEVELOPED BY:	**Bruce Mann, Meron Pitcher, Chris Pyke**	
REVIEWED BY:	**BreastSurgANZ (2010) Michael Donovan, Senarath Edirimanne, Brian Kirkby, Burton King, Chris Pyke, Owen Ung, David Walsh (2013). Robert Tasevski, Robert Whitfield (2016).**	

Module Rationale and Objectives

The clinical features of breast disease require early detection, careful investigation and appropriate operative management. This module addresses issues that need to be considered in diagnosing and making decisions about the immediate as well as long-term needs of the patient. The graduating trainee will be able to:

- describe common surgical pathologies of Breast Diseases
- identify and recognise the symptoms and signs of these conditions
- assess and treat any common breast conditions likely to be encountered in consultative general surgical practice
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- recognise which conditions to refer on to a specialised multidisciplinary oncology service
- employ a consultative approach with colleagues and other professionals
- critically appraise new trends in the surgical management of the breast
- select appropriate investigative tools and monitoring techniques in a cost effective manner
- convey bad news to patients in a way that conveys sensitivity to the patient's social, cultural and psychological needs
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- breast
- axilla
- lymphatic systems
- pituitary gonadal axis
- steroid hormone biochemistry and molecular biology

Suggested Reading

Cancer Australia Guidelines for the Management of Early Breast Cancer

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, the following texts are recommended:

(1) The Breast: Comprehensive Management of Benign and Malignant Diseases (ISBN 9781416052210), 4th edition, by K.I. Bland & E.M. Copeland

(2) Breast Surgery: A Companion to Specialist Surgical Practice (ISBN 9780702049590), 5th edition by J.M. Dixon

(3) Treatment of Breast Infection. BMJ, ISSN 0959-8138, 02/2011, Volume 342, Issue Feb11 1, p. d396. Dixon, J. M and Khan, L.

(4) Diseases of the Breast (ISBN 9781451186277), 5th edition by J.R. Harris, M.E. Lippman, M. Morrow, C.K. Osborne.

(5) ABC of Breast Diseases (ISBN 9781444337969), 4th edition by J.M. Dixon

Trainees are expected to keep abreast of the current literature, including textbooks, key journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

Communications Workshops (delivering bad news), Ultrasound + biopsy workshops – often held in conjunction with the RACS Annual Scientific Congress and Breast Society Meetings (BreastSurgANZ / Australasian Society of Breast Disease). Trainees should attend hospital Breast MDT meetings where available.

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Benign breast disease						
Early SET	▪ Describe anatomy and embryology of the breast including normal histology ▪ Review causes of benign breast disease and developmental abnormalities	▪ Review the clinical features in the history and the examination findings			▪ Image-guided fine needle aspiration and/or core biopsy	▪ Clinical fine needle aspiration ▪ Skin punch biopsy ▪ Core biopsy ▪ Excisional biopsy
Mid SET			▪ Review the appropriate use of medical imaging and the strengths and weaknesses of fine needle aspiration versus core biopsy and triple assessment ▪ Understand the concept of correlation of clinical and imaging findings with cytopathology or histopathology findings	▪ Discuss the management options: - conservative management versus aesthetic excision ▪ Describe management of recurrent cysts, intraduct papilloma, papillary lesions		▪ Wire / carbon localised excision biopsy ▪ Microdochectomy
Late SET	▪ Describe molecular mechanisms, stem cells and endocrinology affecting breast development				▪ Office ultrasound	
Indeterminate proliferative lesions						
Mid SET	▪ Review pathology	▪ Review the clinical features in the history and the examination findings	▪ Review the appropriate use of medical imaging and the strengths and weaknesses of fine needle aspiration versus core biopsy and triple assessment	▪ Explain the significance and implications for future follow-up		▪ Localised excision biopsy
Nipple discharge						
Early SET	▪ Differentiate between physiological and pathological discharge ▪ List causes of each	▪ Recognise clinical presentation of each possible cause	▪ Review appropriate use of imaging			
Mid SET			▪ Explain the use and limitations of discharge cytology and galactography	▪ Identify those who require further investigation		▪ Microdochectomy ▪ Central duct excision
Breast pain						
Mid SET	▪ Differentiate between causes ▪ Describe mechanisms of breast pain	▪ Review the clinical features in the history and the examination findings, including “cyclical” v “non-cyclical” pain	▪ Review the appropriate use of medical imaging	▪ Exclusion of serious pathology and reassurance ▪ Describe management options ▪ Describe a management plan for refractory breast pain		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Breast pain (continued)						
Late SET				▪ Describe the principles of chronic pain management		
Inflammatory conditions, breast abscess						
Early SET	▪ Review the pathophysiological causes and causative mechanisms ▪ Understand the difference between lactational and non lactational infections ▪ Describe the relevant microbiology	▪ Review the clinical features in the history and the examination findings	▪ Review the appropriate use of medical imaging ▪ Review the appropriate use of 'triple assessment' ▪ Understand the role of MRI in assessment of mammary fistula	▪ Carry out/compare the management of mastitis and breast abscesses ▪ Appropriate application of: - antibiotics - recurrent aspiration - incision and drainage	▪ Ultrasound-guided aspiration of deep/recurrent collections	▪ Clinical aspiration of palpable breast abscess
Mid SET				▪ Appraise Granulomatous mastitis ▪ Describe appropriate follow up in patients with a residual mass following initial therapy		▪ Excision of central ducts in chronic inflammation
Late SET					▪ Lay open/excise mammary fistula ▪ Management of complex mammary fistula ▪ Operative management of mammary fistula ▪ Office ultrasound	
Ductal Carcinoma in Situ						
Mid SET	▪ Review/summarise/discuss the contribution of: - epidemiology, genetics, risk factors, UICC pathologic staging, histological types, molecular biology, genetic testing, oestrogen receptors	▪ Review the clinical features in the history and the examination findings	▪ Review the appropriate use of medical imaging including MRI ▪ Describe the strengths and weaknesses of fine needle aspiration versus core biopsy and triple assessment	▪ Review/summarise: - indications and contraindications for breast conservation therapy and radiotherapy - indications and contraindications for immediate breast reconstruction		▪ Wire/ carbon/seed localised biopsy ▪ Wide local excision (complete local excision) ▪ Mastectomy ▪ Sentinel node biopsy (probe and blue dye)
Late SET	▪ Name: Pathological Scoring system for DCIS			▪ Review/summarise: - indications for prophylactic mastectomy - indications for SNB in DCIS		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Breast screening *See also Surgical Oncology Module*						
Early SET	▪ Outline principles of population screening specifically related to breast cancer ▪ Identification and Screening of high risk families		▪ Summarise the principles of breast screening ▪ Principles of screening vs. diagnostic imaging ▪ In screening context understand findings of: - normal - benign - probably benign - suspicious - malignant - in situ - invasive disease ▪ Breast Imaging Reporting and Data System (BI-RADS) classification for breast density.			
Mid SET			▪ Further assessment of radiological abnormalities	▪ Specificity/ sensitivity/ screening intervals ▪ Importance of quality assurance of the program		▪ Surgical management of positive screening findings
Late SET	▪ Outline of BRCA gene mutations and testing		▪ Screening in the high risk patient (BRCA1 and 2, Li Fraumeni)			
Early breast cancer						
Early SET	▪ Review/summarise/discuss the contribution of: - epidemiology, genetics, risk factors, UICC pathologic staging, histological types - HER2 status - principles of wide excision vs mastectomy, sentinel node mapping and assessment ▪ Basic knowledge of: - molecular sub typing, molecular biology, genetic testing, oestrogen receptors					▪ Wire / carbon localised biopsy

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Early breast cancer (continued)						
Mid SET	▪ Basic knowledge of: - principles of metastasis, patterns of metastasis - principles of prognosis and prediction of response to treatment	▪ Review the clinical features in the history and the examination findings	▪ Review the appropriate use of medical imaging including MRI ▪ BI-RADS classification for breast abnormalities ▪ Mammogram classification (M1 – M5) ▪ Ultrasound classification (U1 – U5) ▪ Describe the strengths and weaknesses of fine needle aspiration versus core biopsy and triple assessment ▪ Cytology classification (C1 – C5) ▪ Understand the role of plain x-ray, CT, Nuclear medicine, MRI and PET for early breast cancer	▪ Review/summarise: - sentinel node mapping with isotope and blue dye - principles and indications of Radiotherapy and its delivery systems - principles of systemic adjuvant therapy (cytotoxic, hormonal, biological) and their side effects - indications for neoadjuvant therapy - options for axillary staging in setting of neoadjuvant therapy - prognostic estimation - indications and contraindications to breast conservation therapy - indications and contraindications to immediate breast reconstruction - indications for prophylactic mastectomy - principles of staging ▪ The role of gene expression profiling ▪ Molecular markers of prognosis ▪ Genetic testing and familial syndromes ▪ Principles of management of local recurrence ▪ Principles and protocols for follow-up after breast cancer surgery and treatment ▪ Understand principles of management and variances for: - pregnancy associated breast cancer - axillary lymphadenopathy with occult breast primary - familial breast cancer		▪ Wide local excision (complete local excision) of breast cancer ▪ Mastectomy ▪ Sentinel node biopsy

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Early breast cancer (continued)						
Late SET					▪ Principles of oncoplastic surgery ▪ Breast reconstruction ▪ Skin sparing mastectomy ▪ Nipple sparing mastectomy	▪ Axillary dissection
Locally advanced breast cancer						
Early SET	▪ Review/classify/ differentiate between/discuss the contribution of: - all listed above for early breast cancer - principles of metastasis, patterns of metastasis					▪ Punch biopsy
Mid SET		▪ Review the clinical features in the history and the examination findings	▪ Review: - means of tissue diagnosis - imaging of the breasts - role of CT, Nuclear medicine and PET in staging - use of serum markers	▪ Implement/ compare the management through: - principles of neoadjuvant therapies - axillary staging options in the setting of neoadjuvant therapies - Radiotherapy and its delivery systems - principles of systemic adjuvant therapy and their side effects ▪ Indications and contraindications of breast conservation therapy	▪ Reconstructive techniques post radical excision	▪ Wide local excision (complete local excision) of breast cancer ▪ Mastectomy
Late SET					▪ Breast conservation post primary/neoadjuvant chemotherapy	▪ Axillary dissection
Advanced breast cancer						
Early SET	▪ Review/classify/ differentiate between/discuss the contribution of: - principles of metastasis, patterns of metastasis					
Mid SET		▪ Review the clinical features in the history and the examination findings	▪ Review: - means of tissue diagnosis - imaging of the breasts - staging investigations - use of serum markers	▪ Implement/ compare the management: - all features applicable to early breast cancer - principles of palliative care	▪ Complex salvage surgery: - breast and chest wall - axilla	▪ Post neoadjuvant Mastectomy and axillary surgery ▪ Skin grafting ▪ Insertion permanent central venous catheter (portacath): **See also Vascular Module**

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Advanced breast cancer (continued)						
Late SET	▪ Molecular biological factors in initiation, promotion and metastasis of breast cancer				▪ Pleurodesis – chemical or talc	
Male breast disease						
Mid SET	▪ Male breast cancer ▪ Gynaecomastia	▪ History, including alcohol, steroids and other drugs, Family History ▪ Clinical examination ▪ Testicular and liver examination for gynaecomastia	▪ Triple assessment ▪ Investigations for gynaecomastia: LFTs, endocrine hormones, testicular markers, genetic syndromes	▪ Consider cancer ▪ Recognise physiological changes ▪ Differentiate primary and secondary gynaecomastia ▪ Surgical and non-surgical management strategies		▪ Subcutaneous mastectomy for gynaecomastia, recognition of cosmesis ▪ Mastectomy and axillary surgery for cancer; **See also Early Breast Cancer**
Multidisciplinary care *See also Surgical Oncology Module*						
Early SET	▪ Review/summarise: - principles of post-traumatic stress and grieving – individual and family - pathophysiology of chemotherapy, hormonal intervention and radiotherapy	▪ Review the clinical features in the history and the examination findings				

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Multidisciplinary care (continued)						
Mid SET				▪ Review/compare the management of: - delivering bad news - principles of management complications and principles of timing of courses: chemotherapy, hormonal intervention and radiotherapy - principles of follow-up - assessing risk of developing breast cancer - family counselling/risk analysis - treating menopausal symptoms - fertility issues (especially in younger patients) ▪ Sequencing of treatment: - Surgery - Radiotherapy - Chemotherapy - Biological therapy ▪ Hormonal therapy ▪ Consensus and conflict resolution ▪ Communication in a team and sequential follow-up		
Late SET				▪ Medico-legal aspects associated with multi-disciplinary meetings and genetic counselling		
Axillary nodes unknown primary *See also Surgical Oncology Module*						
Early SET	▪ Review Lymphatic anatomy, pathology of primary lymphadenopathy and secondary lymphadenopathy	▪ Review the clinical features in the history and the examination findings of the lymphatic system	▪ Review: - means of tissue diagnosis - imaging of the breasts - staging tests - use of serum markers			
Mid SET				▪ Implement/ compare the management: - affected axilla - affected breast cancer - systemic		▪ Axillary node biopsy ▪ Mastectomy

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Axillary nodes unknown primary (continued)						
Late SET					▪ Office ultrasound and guided needle biopsy of axillary node	▪ Axillary dissection
Lymphoedema *See also Vascular Module*						
Early SET	▪ Outline pathological classifications, definitions, predisposing factors, incidence	▪ Methods of examination	▪ Selective Ultrasound to exclude venous occlusion/local recurrence	▪ Education, avoidance of exacerbating factors		
Mid SET		▪ Describe the strengths and weaknesses of tape measurement, volume displacement, bioimpedence		▪ Lymphatic massage, compression garments, multidisciplinary care		

MODULE TITLE:	**COLORECTAL**	**7-Nov-2016**
DEVELOPED BY:	**K. Chip Farmer, John Hansen, Christopher Young**	
REVIEWED BY:	**Joanne Dale, Damien Petersen, John Hansen (2010). Nigel Barwood, Matthew Croxford, Elizabeth Dennett, Paul Hollington, Greg Makin, Stewart Skinner, Patrick Tan, Michael Warner, Bruce Waxman, Christopher Young (2013). Elizabeth Dennett, Paul Hollington (2016).**	

Module Rationale and Objectives

Colorectal problems are a common condition in General Surgery. The individual presenting with colorectal disease is frequently experiencing significant symptoms which impacts on preoperative decision making and timing of any surgical intervention. This module covers issues relevant to clinical decision making and surgical management, including evidence based interventions in the perioperative period.

The graduating trainee will be able to:

- describe common surgical pathologies including colorectal cancer, diverticular disease, Crohn's disease, ulcerative colitis, haemorrhoids, perianal sepsis (abscess, fistula), and fissure in ano.
- describe and assess the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- take a thorough history from the patient and perform a competent examination
- clearly elicit features in the history and examination that predict perioperative and postoperative outcomes
- order and interpret appropriate investigations
- recognise the most common disorders and differentiate those amenable to operative and non-operative treatment
- plan and manage appropriate surgical or non-surgical treatment, including principles of enhanced recovery after abdominal surgery
- demonstrates procedural knowledge and technical skill, including the use and workings of rigid sigmoidoscopy, banding devices, stapling devices, energy sources, laparoscopic and endoscopic equipment and devices
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- small bowel, colon, and rectum
- anus and anal sphincter
- pelvis

Suggested Reading

CSSANZ: http://www.cssanz.org.

Available from the College library as electronic books are:

(1) Principles and Practice of Surgery for the Colon, Rectum, and Anus (ISBN 9780824729615), by Gordon, P.H and Nivatvongs, S.

(2) Surgery of the Anus, Rectum & Colon, 3rd edition (ISBN 9780702027239) by M Keighley

These are all excellent, comprehensive books that cover basic pathophysiology, clinical features and therapeutic options for common colorectal conditions.

For the Fellowship examination, the following texts are recommended:

(1) Colorectal Surgery: A Companion to Specialist Surgical Practice (ISBN-13: 9780702049651), 5th edition by R.K.S. Phillips & S Clark.

(2) Current therapy in colon and rectal surgery (ISBN 9781556644801), 2nd edition by V.W. Fazio, J.M. Church & C.P. Delaney.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources. Also essential here are the NH&MRC guidelines and the New Zealand guidelines for the management of colorectal cancer.

Recommended journals- BJS and ANZJS. Suggested journals Diseases of the Colon and Rectum / Colorectal Disease.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM.

Assumed Knowledge

- GI anatomy and embryology
- Functional physiology of the GI tract

Definitions

Operative Management - Knows: Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.

Operative Management - Does: In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Haemorrhoids including external anal skin tags						
Early SET	▪ Describe the anatomy, aetiology and pathophysiology of haemorrhoids ▪ Understand the anatomy of the anal cushions, their role in formation of haemorrhoids and the pathogenesis of complications of haemorrhoids	▪ Perform/discuss the clinical assessment including grading of haemorrhoids	▪ Appropriateness of further investigations	▪ Outline: - principles of conservative management of haemorrhoids - local non-excisional techniques		
Mid SET				▪ Indications for surgery and management of complications following haemorrhoidectomy		▪ Banding of haemorrhoids ▪ Sclerotherapy ▪ Haemorrhoidectomy ▪ Management of post haemorrhoidectomy bleeding
Late SET					▪ Stapled haemorrhoidectomy ▪ Procedures for anal stenosis ▪ DH-HAL: Doppler guided haemorrhoid artery ligation	
Fissure in Ano						
Early SET	▪ Describe the anatomy, aetiology and pathophysiology of anal fissures, with emphasis on the role of the internal anal sphincter and the anal mucosal blood supply in the pathogenesis of anal fissure	▪ Perform/discuss the clinical assessment and differential diagnosis		▪ Outline conservative management of anal fissures, including the use of pharmacological agents and contraindications		
Mid SET				▪ Describe surgical management of anal fissures including fissurectomy, Botox injection, and anal sphincterotomy	▪ Fissurectomy ▪ Botox injection	▪ Internal sphincterotomy
Late SET					▪ Advancement flap repair	
Perianal and Ischiorectal abscess						
Early SET	▪ Describe the anatomy and pathogenesis of perianal abscess including the role of the anal glands and the relevant microbiology	▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Microbiological cultures ▪ Select and interpret appropriate imaging modalities where appropriate	▪ Outline principles of surgical management ▪ Describe details of surgical management including use of drains	▪ Fournier's gangrene / necrotising fasciitis: **See Skin & Soft Tissue Module**	▪ Surgical drainage of perianal and ischiorectal abscess ▪ Appropriate use of drains

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Anal fistula						
Early SET	▪ Describe relevant anatomy, aetiology and pathophysiology including anal fistula classification	▪ Perform/discuss the clinical assessment and differential diagnosis		▪ Outline: - surgical principles of management of high and low fistula - use of seton drains		
Mid SET			▪ Use of endoanal ultrasound and MRI	▪ Describe details of surgical management including for high, low and complex anal fistula		▪ Anal fistulotomy ▪ Use of seton drains
Late SET				▪ Need to exclude Crohn's disease in complex fistula ▪ Medical management of Crohn's fistula	▪ Surgery for complex or high fistula ▪ Advancement flap repair ▪ LIFT procedure ▪ Fibrin glue ▪ Fistula plugs	
Ano-rectal incontinence						
Early SET	▪ Describe relevant anatomy and the functions of each component of the rectum, anal canal and anal sphincters in maintaining continence ▪ Describe common aetiologies, their pathophysiology and associated symptoms	▪ Perform/discuss the clinical assessment and differential diagnosis				
Mid SET			▪ Use of anorectal physiology studies (endoanal ultrasound, manometry, pudendal nerve latency)	▪ Outline principles of conservative management including biofeedback ▪ Identify indications for surgery and manage complications	▪ Surgical techniques for anal incontinence: anterior anal sphincter repair ▪ Sacral nerve stimulation	▪ Stoma formation (open and laparoscopic)
Rectal prolapse						
Early SET	▪ Describe relevant anatomy including the normal supporting structures of the rectum in the pelvis, and pathophysiology	▪ Perform/discuss the clinical assessment ▪ Differentiate rectal mucosal prolapse from full thickness prolapse				

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Rectal prolapse (continued)						
Mid SET			▪ Select and interpret appropriate imaging modalities: defecating proctography ▪ Colonoscopy	▪ Outline principles of surgical management options and patient selection including abdominal and perineal approaches ▪ Outline principles of management of complications/ change in bowel function post operatively		
Late SET					▪ Laparoscopic resection/rectopexy ▪ Abdominal resection/rectopexy ▪ Perineal approaches	
Pruritus ani						
Early SET	▪ Describe the underlying causes	▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Use of skin biopsies ▪ Proctoscopy	▪ Manage the underlying causes using appropriate investigations ▪ Indicate/implement principles of conservative management		
Colorectal polyps						
Early SET	▪ Describe: - aetiology, pathophysiology and genetics of colonic neoplasia - genetic syndromes - epidemiology ▪ Outline molecular sequences resulting in colorectal neoplasia	▪ Perform/discuss assessment and differential diagnosis of various polyps and significance of family history	▪ Select and interpret: - colonoscopy - imaging modalities - histology - faecal occult blood tests	▪ Outline: - management of colonic polyps, including surveillance and follow-up - Identify indications for surgery and manage complications		
Mid SET			▪ Select and interpret: - genetic testing	▪ Outline management of familial cancer syndromes	▪ Endoscopic tattoo ▪ Transanal local excision ▪ Total proctocolectomy and ileal pouch anal anastomosis ▪ Laparoscopic bowel resection ▪ Minimally invasive transanal	▪ Colonoscopy and polypectomy ▪ Open colectomy, anterior resection
Late SET					▪ Transanal endoscopic microsurgery ▪ Advanced colonoscopic polypectomy	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Colorectal cancer						
Early SET	▪ Describe: - anatomy of the colon and rectum including its blood supply and lymphatic drainage and autonomic nerve supply - aetiology, risk factors and pathogenesis - epidemiology - genetic syndromes including FAP and Lynch syndrome - TNM and Dukes classification systems	▪ Perform/discuss the clinical assessment ▪ DRE of rectal lesions	▪ Select and interpret: - tumour markers - colonoscopy - imaging modalities - staging tests including CT, ultrasound, MRI and PET scan - genetic tests - faecal occult blood tests	▪ Outline screening programs for bowel cancer ▪ Outline principles of multidisciplinary management of colorectal cancer including: - multidisciplinary care - genetic counselling, prevention and surveillance - the role of adjuvant, neoadjuvant therapies - principles of curative and palliative surgery - role of stomal therapy ▪ Outline principles of follow-up ▪ Principles of TME dissection		
Mid SET				▪ Management of postoperative complications ▪ Selection of patients for restorative resections	▪ Colonic stenting ▪ Laparoscopic colectomy	▪ Colonoscopy ▪ Colectomy ▪ Right hemicolectomy ▪ High anterior resection ▪ Ileostomy and colostomy (end and loop) and reversal ▪ Hartmann's procedure
Late SET				▪ Management of recurrent cancer, including surgical management, endoscopic, irradiation and chemotherapy	▪ Ultralow anterior resection +/- colonic pouch ▪ Abdominoperineal resection ▪ Coloanal anastomosis	
Diverticula						
Early SET	▪ Describe relevant anatomy and pathophysiology ▪ Describe Hinchey Classification system.	▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Select and interpret: - imaging modalities - colonoscopy	▪ Outline principles of conservative management		
Mid SET				▪ Role of colonoscopy ▪ Identify indications for surgery ▪ Explain/implement management of complications of diverticular disease; **See also Emergency Conditions**	▪ Laparoscopic bowel resection	▪ Colonoscopy ▪ Anterior resection ▪ Hartmann's procedure
Late SET					▪ Restoration of continuity after Hartmann's procedure	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Ulcerative colitis						
Early SET	▪ Describe relevant anatomy, histological features, aetiology and pathophysiology					
Mid SET		▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Select and interpret: - colonoscopy - imaging modalities - relevant haematological and biochemical tests	▪ Outline: - principles of medical management including appropriate pharmacological therapy - management of associated conditions and complications, including toxic mega colon ▪ Identify indications and appropriate surgical therapy		▪ Colonoscopy, including surveillance biopsies
Late SET					▪ Total proctocolectomy and ileal pouch anal anastomosis ▪ Recognition and management of ileo-anal pouch complications	▪ Emergency subtotal colectomy and ileostomy
Crohn’s disease						
Early SET	▪ Describe relevant anatomy, histological features, aetiology and pathophysiology					
Mid SET		▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Select and interpret: - colonoscopy - imaging modalities - relevant haematological and biochemical tests	▪ Outline: - principles of medical management including appropriate pharmacological therapy and immuno-therapy - management of associated conditions and complications ▪ Identify indications and appropriate surgical therapy	▪ Laparoscopic bowel resection	▪ Loop ileostomy ▪ Small and large bowel resection ▪ Surgical drainage of perianal and ischiorectal abscess ▪ Use of setons ▪ Use of drains
Late SET					▪ Surgery for complex fistula in Crohn's ▪ Strictureoplasty ▪ Panproctocolectomy and ileostomy	▪ Emergency subtotal colectomy and ileostomy

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Colitis/ Proctocolitis / Proctitis ▪ **radiation** ▪ **ischaemic** ▪ **bacterial, including pseudomembranous colitis** ▪ **parasitic** ▪ **other, e.g. microscopic colitis**						
Early SET	▪ Describe relevant anatomy, aetiology and pathophysiology ▪ Describe relevant anatomy and risk factors for ischaemic colitis	▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Select and interpret: - stool cultures - colonoscopy - imaging modalities - relevant haematological and biochemical tests			
Mid SET				▪ Outline non-operative management of conditions ▪ Identify indications for surgery and manage complications		
Late SET					▪ Topical formalin application ▪ Argon beam coagulation therapy	▪ Resection (Hartmann's procedure; total colectomy and end ileostomy)
Carcinoma anus/ anal warts/ perianal malignancies, including Paget's disease						
Early SET	▪ Describe relevant anatomy, aetiology and pathology including HPV, anal warts, and AIN	▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Use of: - biopsy - imaging modalities	▪ Outline: - multidisciplinary management of anal carcinoma - non operative treatment, chemo-radiotherapy - indication for surgical excision and complications and follow-up - topical management of warts		
Mid SET				▪ Principles of follow-up after chemo-radiotherapy including role and timing of biopsy ▪ Screening of high risk populations	▪ Inguinal node dissection ▪ Pap smear ▪ High resolution anoscopy	▪ Biopsy ▪ Local excision
Late SET					▪ Abdomino-perineal resection	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Emergency conditions ▪ **haemorrhage** ▪ **perforation** ▪ **fistula both internal and external** ▪ **ischaemia** ▪ **trauma and foreign bodies** ▪ **complications of surgery** ▪ **complications of colonoscopy** ▪ **anastomotic dehiscence**						
Early SET	▪ Describe risk factors for anastomotic dehiscence ▪ Describe the pathophysiology and microbiology of septic shock/peritonitis ▪ Describe the pathophysiology of hypovolaemic shock, physiological responses and associated clinical features	▪ Assessment of acute post-surgical complications	▪ Describe, select and interpret: - radiological tests - nuclear medicine imaging - endoscopic investigations	▪ Review/implement: - management protocols - principles of peritoneal sepsis - removal of foreign bodies - massive transfusion and reversal of anticoagulation ▪ Assess perineal/rectal trauma		▪ Diagnostic laparoscopy / laparotomy
Mid SET				▪ Use of interventional radiology	▪ On table lavage	▪ On table gastroscopy and colonoscopy ▪ Colonic resection ▪ Colostomy and ileostomy ▪ Repair of perforation ▪ Foreign body removal
Large bowel obstruction / volvulus / pseudo-obstruction						
Early SET	▪ Describe relevant anatomy, aetiology and pathophysiology ▪ Embryology of large bowel	▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Select and interpret/discuss: - imaging - colonoscopy	▪ Outline: - principles of operative and non-operative management - identify indications for surgery		▪ Placement of rectal tube
Mid SET				▪ Outline role of colonic stents	▪ On table lavage	▪ Resection ▪ Anastomosis ▪ Colostomy formation ▪ Colonoscopic decompression of pseudo obstruction / volvulus

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Constipation / obstructed defecation / megacolon						
Mid SET	▪ Describe relevant anatomy, aetiology and pathophysiology	▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Use of: - contrast studies - colonic motility studies - colonoscopy - imaging for obstructed defecation	▪ Outline principles of non-operative management ▪ Describe use of various aperients and other motility agents ▪ Identify indications for surgery and management of complications	▪ Appendicostomy	▪ Colonoscopy ▪ Colectomy and ileo-rectal anastomosis
Stoma (ileostomy / colostomy)						
Early SET	▪ Describe relevant anatomy,	▪ Assess stomal complications		▪ Correct stomal sighting ▪ Management of complications		
Mid SET						▪ Formation and closure (open and laparoscopic)
Late SET					▪ Parastomal hernia repair ▪ Stoma revision	
Irritable bowel syndrome **Non-surgical / non-specific abdominal pain**						
Early SET	▪ Describe relevant anatomy, aetiology and pathophysiology	▪ Perform/discuss the clinical assessment and differential diagnosis	▪ Select and interpret: - appropriate imaging modalities - colonoscopy	▪ Outline principles of management of irritable bowel syndrome		
Mid SET						▪ Colonoscopy

MODULE TITLE:	**EMERGENCY (excluding Trauma and Emergencies defined by other subspecialties)**	**7-Nov-2016**
DEVELOPED BY:	**Graeme Campbell, Peter Danne, Philip Truskett**	
REVIEWED BY:	**Alan Saunder (2010) Ian Campbell, Michael Cox, Li Hsee, Michael Rodgers, Emma Secomb, Graham Stewart (2013). Priscilla Martin, Richard Turner (2016).**	

Module Rationale and Objectives

By its very nature, an emergency situation requires decisive decision-making and effective timing of any surgical intervention. This module addresses issues that need to be considered in both decision-making and surgical management. The trainee should have expertise in all aspects of the management of General Surgery emergency conditions.

The graduating trainee will be able to:

- describe common acute surgical pathologies of the abdomen, head and neck, chest, and limbs
- identify and recognise the symptoms and signs of these conditions
- efficiently and effectively examine the patient
- describe and select appropriate diagnostic testing
- order and interpret appropriate imaging investigations
- formulate a differential diagnosis based on investigative findings
- identify appropriate treatment options, and their indications and contraindications
- safely and effectively perform appropriate surgical procedures
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)
- appreciate the role of other disciplines in emergency care and team-based management

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- the abdominal cavity and its contents
- head and neck
- the thorax and its contents
- the upper and lower limbs

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, recommended text books:

(1) Current Surgical Diagnosis and Treatment (ISBN 9780071590877), 13th edition by L.W. Way and G.M. Doherty.

(2) CCrISP Manual

(3) War Surgery in Afghanistan and Iraq: A Series of Cases of 2003-2007 (ISBN 9780981822808), edited by S.C. Nessen, D.E. Lounsbury, and S.P. Hetz.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
ABDOMINAL **Acute Appendicitis**						
Early SET	▪ Describe anatomy and embryology including variations ▪ Describe pathophysiology	▪ Describe the clinical symptoms and signs	▪ Outline the appropriate use of and interpret laboratory and imaging	▪ Outline the principles of pre-operative, post-operative and non-operative management ▪ Recognise and manage post-operative complications		▪ Open appendicectomy ▪ Laparoscopic appendectomy
Mid SET				▪ Synthesise strategy for unexpected pathology ▪ Management of appendiceal tumours ▪ Laparoscopic versus open		▪ Drainage of appendiceal abscess ▪ Conversion to hemicolectomy
Peritonitis of various aetiologies, pancreatitis, cholangitis and gastro intestinal bleeding *See also Upper GI/HPB, Colorectal, Small Bowel, and Transplantation Modules*						
Abdominal haemorrhage **▪ abdominal wall** **▪ intra-peritoneal** **▪ retroperitoneal**						
Early SET	▪ Describe anatomy ▪ Describe pathophysiology	▪ Describe the clinical symptoms and signs ▪ Understand coagulation disorders	▪ Outline the appropriate use of and interpret laboratory and imaging	▪ Describe the management of each condition		
Mid SET				▪ Appreciate role of interventional radiology in management	▪ Drainage and control of retroperitoneal haemorrhage	▪ Extra-peritoneal drainage of collection
Late SET				▪ Intra-abdominal haemorrhage control		
Spontaneous bacterial peritonitis						
Early SET	▪ Describe pathophysiology including microbiology	▪ Describe the clinical symptoms and signs ▪ Differential diagnosis	▪ Outline the appropriate use of and interpret laboratory and imaging			
Mid SET				▪ Describe the management of peritonitis in the presence of liver disease ▪ Basic understanding of antibiotics - clearance - resistance	▪ Removal and insertion of peritoneal dialysis catheter	▪ Laparotomy

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
UROLOGICAL **Urinary retention and urinary tract infection**						
Early SET	▪ Describe appropriate anatomy, aetiology and, patho-physiology of urinary retention	▪ Assess and diagnose urinary retention	▪ Arrange and interpret ultrasound if required	▪ Manage the condition of urinary retention ▪ Appropriate antibiotics for UTI ▪ Role of suprapubic catheters and know how to insert one in detail		▪ Catheterisation ▪ Suprapubic catheterisation
Phimosis and paraphimosis						
Early SET	▪ Differentiate between normal and abnormal anatomy of penis and foreskin ▪ Explain the pathology of balanitis (acute and chronic) and foreskin adhesions (in children)	▪ Identify symptoms and examination findings		▪ Identify the medical indications for circumcision ▪ Contraindications		▪ Perform non-operative reduction of paraphimosis
Mid SET				▪ Describe details of surgical management, including possible complications and postoperative care		▪ Circumcision - elective - acute
Epididymo-orchitis						
Early SET	▪ Explain the etiology/ pathogenesis ▪ Discuss the microbiology	▪ Recognise symptoms and examination findings	▪ Interpret microbiological investigations ▪ Select and interpret appropriate medical imaging modalities where indicated	▪ Plan medical management ▪ Provide details of medical management		
Mid SET				▪ Identify indications for surgical management ▪ Role of exploration of scrotum ▪ Describe details of drainage of scrotal abscess, including postoperative care		▪ Incision and drainage of scrotal abscess
Testicular torsion						
Early SET	▪ Describe the variations in testicular/epididymal anatomy that may predispose to torsion ▪ Describe the pathology of testicular infarction	▪ Recognise symptoms and signs	▪ Discuss the appropriate use of ultrasound in diagnosis	▪ Identify indication for urgent surgical management, including basic procedural details ▪ Describe details of acute surgical management, including possible complications (of surgery and of delay to surgery) and how to deal with them		▪ Scrotal exploration of testes and orchidopexy ▪ Trans-scrotal orchidectomy (where indicated)

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Ureteric obstruction, including calculi and pyonephrosis						
Early SET	▪ Describe the aetiology and pathophysiology of ureteric obstruction and sepsis	▪ Assess and diagnose ureteric obstruction and its causes	▪ Analyse: - ultrasound - CT scan - urinary cultures - biochemical tests of renal function	▪ Describe and demonstrate principles of management of: - ureteric obstruction		
Mid SET					▪ Emergency ureteric stenting for infected obstructed kidney	
GYNAECOLOGY **Ectopic pregnancy**						
Early SET	▪ Describe the underlying anatomy and pathophysiology of ectopic pregnancy	▪ Diagnose and inform patient of differential diagnosis of ectopic pregnancy	▪ Arrange and interpret: - pelvic ultrasound - pregnancy tests	▪ Discuss the principles of management of ectopic pregnancy and haemorrhage		
Mid SET					▪ Operations for ectopic pregnancy, repair of Fallopian tube	▪ Salpingectomy
Ovarian cysts						
Early SET	▪ Indicate causes of ovarian cysts	▪ Differential diagnosis	▪ Pelvic ultrasound			
Mid SET			▪ Management of adnexal masses	▪ Discuss the principles of management of cystic lesions of the ovary ▪ Management of rhesus isoimmunisation	▪ Oophorectomy	▪ Ovarian cystectomy
ENT **Epistaxis**						
Early SET	▪ Anatomy of nasal cavity	▪ Determine significance and when to refer	▪ Appropriate haematology investigations	▪ Control of haemorrhage (including interventions) ▪ Control medical factors	▪ Nasal packing	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
SEPSIS **Focal Sepsis**						
Early SET	▪ Describe the anatomy and pathophysiology of focal sepsis as it relates to skin, the limbs, solid organs, and body cavities ▪ Fournier's gangrene: **See Skin & Soft Tissue Module**	▪ Assess and diagnose focal sepsis	▪ Arrange and interpret: - CT Scans - Ultrasound - Plain X Rays	▪ Demonstrate an ability to assess the level of severity of sepsis ▪ Demonstrate an ability to provide appropriate resuscitation ▪ Demonstrate an understanding of the appropriate choice of antibiotics and their side effects ▪ Demonstrate an ability to choose appropriate methods of drainage, either open or image guided percutaneous drainage ▪ Demonstrate an understanding of the managements of drainage tubes ▪ Understanding necrotising conditions ▪ Use of appropriate antibiotics		▪ Drainage of an abscess
Mid SET						▪ Debride necrotising fasciitis: **See Skin & Soft Tissue Module** ▪ Open drainage of abscesses of the abdominal cavity and abdominal solid organs ▪ Fournier's gangrene: **See Skin & Soft Tissue Module**
Sepsis Syndrome *See also Sepsis Module and CCriSP Manual*						
Early SET	▪ Describe the pathophysiology of the Sepsis Syndrome	▪ Assess and diagnose the Sepsis Syndrome		▪ Demonstrate an understanding and indication in the use of antibiotics, resuscitative fluids, and vasoactive agents ▪ Understanding organ dysfunction		▪ Gain access for central line placement

MODULE TITLE:	**ENDOCRINE**	**7-Nov-2016**
DEVELOPED BY:	**Jonathan Serpell**	
REVIEWED BY:	**Jonathan Serpell (2010) Michael Donovan, Senarath Edirimanne, Richard Harman, Brian Kirkby, Chris Pyke, Neil Wetzig (2013). Michael Donovan, Julie Howle (2016).**	

Module Rationale and Objectives

The general surgeon is expected to be able to investigate, assess and manage commonly occurring diseases of the endocrine glands and to be competent in accurately identifying conditions that require surgery, and those which are best treated by other means. They also expected to be able to recognise the need and appropriate time to refer such patients to other professionals.

The graduating trainee will be able to:

- describe common surgical pathologies of thyroid, parathyroid, adrenal, pancreas, and gut endocrine organs
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- recognise, assess and treat any common thyroid, parathyroid, adrenal, pancreatic endocrine and neuro-endocrine tumour conditions likely to be encountered in consultative general surgical practice
- recognise which conditions to refer on to a specialised multidisciplinary service
- critically evaluate the advantages and disadvantages of different investigative modalities
- select appropriate investigative tools and monitoring techniques in a cost effective manner
- appropriately adjust the way they communicate with patients to accommodate cultural and linguistic differences
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- branchial arch development
- regional anatomy of neck
- surgical anatomy of the neck
- thyroid
- parathyroid
- adrenal
- pancreas/neuroendocrine system

Suggested Reading

Society of Australian & New Zealand Endocrine Surgeons http://www.endocrinesurgeons.org.au/

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, the following text is recommended:

(1) Textbook of Endocrine Surgery (ISBN 9789351528067), 3rd edition by O. Clark, Q-Y Duh et al.

This is an excellent reference textbook on Endocrine Surgery.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Multinodular goitre, thyroiditis, thyrotoxicosis, thyroglossal cyst *See Head & Neck Module*						
Early SET	▪ Normal and abnormal anatomy, embryology histology of the thyroid gland, including thyroglossal duct cyst ▪ Natural history and causes of multinodular goitre, including retrosternal and recurrent goitres and thyroiditis, including Hashimoto's and subacute thyroiditis ▪ Thyrotoxicosis - Graves, toxic adenoma, toxic MNG ▪ Physiology of thyroid hormone and iodine metabolism including pathophysiology of hyper and hypothyroidism	▪ Take a history of thyroid disorders including the assessment by history of thyroid function ▪ Conduct a thorough thyroid gland examination and other features of neck examination ▪ Describe clinical features of thyroglossal cyst	▪ Review the relevance of: - thyroid function (TSH, T4, T3) - thyroid antibody tests, ESR, CRP - thyroglobulin - imaging (U/S, Nuclear medicine scans, CT) - fine needle aspiration cytology +/- repeat FNAC - understand the place of laryngoscopy - indirect laryngoscopy			
Mid SET	▪ Understand principles of nerve monitoring	▪ Perform indirect laryngoscopy	▪ FNA thyroid ▪ Laryngoscopy - indirect - flexible	▪ Summarise indications for surgery versus medical therapy versus radioiodine treatment for hyperthyroidism ▪ Describe indications for surgery and preoperative assessment multinodular goitre ▪ Manage postoperative complications including hypocalcaemia, thyroid storm, airway compromise, post-operative bleeding and infection, recurrent laryngeal nerve palsy, external branch of superior laryngeal nerve palsy ▪ Outline preoperative management hyperthyroid patient	▪ Total Thyroidectomy ▪ Autotransplant parathyroid	▪ Hemithyroidectomy ▪ Tracheostomy
Late SET				▪ Understand role of office ultrasound	▪ Sternal split ▪ Re-operative thyroid surgery ▪ Sistrunk operation: **See Head & Neck Module** ▪ Principles of intraoperative neuromonitoring	▪ Hemithyroidectomy ▪ Total Thyroidectomy ▪ Autotransplant parathyroid

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Thyroid tumours ▪ **benign** ▪ **malignant**						
Early SET	- Discuss the: - natural history and causes benign and malignant thyroid tumours - histopathological types of thyroid cancer - inheritance patterns, genetic and molecular implications of various malignancies - spectrum of sporadic versus MEN I & II syndromes - presentation and natural history ▪ Detailed knowledge (levels I to VII lymph nodes of neck)	▪ Review the clinical features in the history and the examination findings	▪ Review the relevance of: - medical imaging (U/S, Nuclear Medicine scans, CT, PET scanning) - fine needle aspiration cytology (Bethseda classification)	▪ Understand the differences between Total and Hemithyroidectomy and a basic understanding of the risks of thyroid surgery and the place of radioactive iodine therapy		
Mid SET		▪ *See also multinodular goitre*	▪ *See also multinodular goitre*	▪ Summarise: - indications for surgery for benign tumours - role of hemi-thyroidectomy for microcarcinoma - role of total thyroidectomy for malignancy - role of post-operative radioiodine ablation for thyroid cancer - principles of neck dissection for thyroid cancer - manage postoperatively thyroid hormone replacement - manage post-operative complications, including bleeding hypocalcaemia, thyroid storm, respiratory and tracheal problems, post-operative, and infection, recurrent laryngeal nerve palsy, external branch of superior laryngeal nerve palsy	▪ *See also multinodular goitre*	▪ *See also multinodular goitre*

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Thyroid tumours (continued) ▪ **benign** ▪ **malignant**						
Late SET					▪ Selective lateral lymph node dissection (levels II to V) ▪ Central compartment node dissection (level VI and VII) ▪ Principles of intraoperative neuromonitoring ▪ Principles of surgical management of locally advanced thyroid cancer ▪ *See also multinodular goitre*	▪ *See also multinodular goitre*
Parathyroid tumours and hyperplasia						
Early SET	▪ Understand: - normal and abnormal anatomy, embryology histology and physiology of the parathyroids, including calcium homeostasis, parathormone assays, vitamin D homeostasis and familial hypocalciuric hypercalcaemia - pathological spectrum and natural history of primary, secondary and tertiary hyperparathyroidism – including adenoma and hyperplasia and carcinoma - spectrum of sporadic versus MEN I and II syndromes - presentation and natural history	▪ Review the clinical features in the history: - hyperparathyroidism	▪ Importance of biochemical diagnosis ▪ Carry out serum and urine biochemical diagnosis and exclude other causes of hypercalcemia ▪ Review the relevance of medical imaging (U/S, Nuclear medicine scans, CT ▪ Understand the role and interpretation of Ultrasound and sestamibi scans, MRI, CT; selective venous sampling, preoperative localisation ▪ Understand the associated general medical conditions including complications of hyperparathyroidism and chronic renal failure	▪ Indications for surgery ▪ Understand the differences associated with parathyroid exploration in the different situations of primary, secondary, tertiary, and reoperative hyperparathyroidism		
Mid SET	▪ Knowledge of anatomical sites of ectopic parathyroid glands	▪ Understand the role of indirect laryngoscopy		▪ Summarise: - non-surgical management of hypercalcemia - management of post-operative hypocalcemia and hungry bone syndrome - complications of surgery - implications of failed parathyroid exploration	▪ Parathyroidectomy – open and minimally invasive (MIP) ▪ Neck exploration + frozen section including excision adenoma, 31/2 gland excision, total parathyroidectomy +/- autotransplantation	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Parathyroid tumours and hyperplasia (continued)						
Late SET	▪ Discuss the likely sites of finding parathyroid glands at neck exploration				▪ Re operative parathyroid surgery ▪ Cervical thymectomy	
Pancreatic endocrine tumours and hyperplasia, neuro-endocrine tumours						
Early SET	▪ Discuss the: - spectrum of sporadic versus MEN I and II syndromes -presentation and natural history - pathophysiological effects of neuroendocrine hormone excess - pharmacology of somatostatin analogues ▪ Outline general pathology of neuroendocrine tumours ▪ Detailed understanding of normal, abnormal anatomy, histology and pathology of the endocrine pancreas ▪ Syndromes due to neuroendocrine metastasis ▪ Paraneoplastic syndromes	▪ Review the clinical features in the history and the examination findings	▪ Appropriate serum and urine biochemical diagnosis ▪ Review the relevance of: - medical imaging - Preoperative endoscopy +/-endoscopic ultrasound ▪ Review general medical associated conditions			
Mid SET			▪ Assessment of a pancreatic mass	▪ Summarise: - principles of preoperative optimisation medical conditions - principles of pancreatic surgery - intraoperative ultrasound - principles of palliation neuroendocrine syndromes (operative, medical, radiological)	▪ Pancreatic tumour enucleation, distal pancreatectomy, pancreatoduodenectomy	▪ Bowel resection for small bowel tumours (carcinoid) ▪ Liver biopsy
Late SET					▪ Non-anatomical and anatomical liver resection	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Adrenal gland functional abnormalities and tumours, and retro peritoneal tumours						
Early SET	▪ Normal and abnormal anatomy, embryology, histology and physiology the adrenal gland ▪ Discuss the: - spectrum of sporadic versus MEN I and II syndromes - presentation and natural history - pathophysiological effects of adrenal cortical or medullary hormone excess	▪ Review the clinical features in the history and the examination findings including those for: - Cushings syndrome - Conn's Syndrome - Sex Hormone excess - Catecholamine excess	▪ Review: - screening tests - definitive tests - localising tests ▪ Discuss the principles of stimulation and suppression tests ▪ Carry out serum and urine biochemical diagnosis ▪ Review general medical associated conditions			
Mid SET			▪ Review the relevance of medical imaging for localising	▪ Summarise/ implement: - preoperative optimisation/ blockade of medical condition - assessment for suitability for laparoscopic approach versus open approach - postoperative hormone deficiency syndromes and their management	▪ Adrenalectomy, including open and laparoscopic anterior, posterior, lateral and abdominal	
Late SET					▪ Retroperitoneal lymph node dissection and resection of adrenal tumours	

MODULE TITLE:	**GASTROINTESTINAL ENDOSCOPY**	**7-Nov-2016**
DEVELOPED BY:	**Elizabeth Dennett, Rowan French, Brian Kirkby.**	
Module Rationale and Objectives	Gastrointestinal endoscopy, and the knowledge and skills that this entails, is an integral part of General Surgery. The skilled endoscopist, far from acting as a technician, employs endoscopy in the appropriate situation to guide clinical decisions or improve patient outcomes. The skilled and safe practice of Gastrointestinal Endoscopy, in both diagnostic and therapeutic domains, requires knowledge across a wide range of areas considered elsewhere in the General Surgery Curriculum. Such knowledge is important for safe conduct of procedures, accurate diagnosis, and correct management. Important areas of knowledge and skill relevant to Gastrointestinal Endoscopy include, but are not limited to gastrointestinal anatomy/physiology, pharmacology of sedative medication, gut embryology, gastrointestinal disease including malignant, inflammatory and functional disorders, emergency gastrointestinal presentations, nutrition, audit and quality assurance, and public health issues. By graduation, it is expected that the trainee will be able to ▪ Describe the structure and function of the endoscope and ancillary equipment ▪ Safely administer conscious sedation ▪ Understand and apply principles of electrophysiology as they apply to therapeutic endoscopy ▪ Understand the principles of anti-sepsis as they apply to GI endoscopy ▪ Describe the indications and contra-indications for Gastrointestinal Endoscopy ▪ Perform safe insertion for upper and lower GI endoscopy, including knowledge of troubleshooting problems with insertion ▪ Make accurate diagnosis and demonstrate good lesion recognition ▪ Understand correct therapeutic techniques and begin to employ these safely and accurately ▪ Understand and participate in quality improvement/assurance processes as they apply to GI endoscopy ▪ Demonstrate positive traits in professionalism and communication in the endoscopy suite	
Suggested Reading	Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources. (1) “Gastrointestinal Endoscopy in Practice” Canard, Jean Marc. 2011 Elsiever inc. Available in RACS online library.	
Learning Opportunities and Methods	Basic and advanced practical courses in GI endoscopy where available.	
How this module will be assessed	Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable); PBAs in colonoscopy.	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING		TECHNICAL EXPERTISE
	ANATOMY PHYSIOLOGY PATHOLOGY	BEHAVIOUR	KNOWLEDGE	SKILL
PERI-PROCEDURAL **Structure and Function of the Endoscope and Ancillary Equipment**				
Early - Mid SET		▪ Demonstrates respect for the endoscopes and ancillary equipment ▪ Display awareness of the effect colonoscope movement and manipulation has	▪ Develops a core understanding of the basic structure of the endoscope which should include knowledge of: - Relationship of the lens, washer, lights ounce and channels at the tip - Mechanism by which tip is manipulated - Control of insufflation, washer and irrigation pump - Image controls - Mechanism of action of ancillary equipment such as biopsy forceps, injection needles etc.	▪ Prepare an endoscopy video processor and endoscope for use without assistance ▪ Develop an effective stance and hand grip to optimise use of controls with the left hand ▪ Identify the site of a blocked channel and correct the blockage ▪ Troubleshoot basic equipment problems during procedure
Sedation				
Early - Mid SET		▪ Work within team environment to deliver safe and effective sedation ▪ Monitors patient comfort and sedation levels, recognise and manage any change in sedation and comfort levels	▪ Describe risk factors for poor outcome in conscious sedation ▪ Understand the pharmacology, risks and complications of commonly used sedative medication ▪ Understands the role of monitoring and supplemental oxygen in conscious sedation ▪ Describe requirements for safe recovery and discharge	▪ Undertake a pre-procedural assessment with regards to risks associated with conscious sedation ▪ Delivers skilled titration of sedative medication and reversal agents when sedation is deeper than expected
Principles of Electrosurgery				
Early - Mid SET		▪ Displays awareness of the important of diathermy current and power settings in the context of interventional endoscopy	▪ Explain: - the difference between Monopolar and Bipolar diathermy - the role of a dispersing return electrode and incorporated safety features - capacitive coupling - current leaks - shorting ▪ Describe power settings for cutting and coagulation ▪ Recognise electrical hazards and how to avoid them	▪ Deploy a diathermy unit checking for safety and electrical integrity ▪ Select appropriate settings on an electrosurgical unit ▪ Deploy and use a snare in a manner that minimises risk to normal surrounding tissues
Infection Control and Safety				
Early - Mid SET		▪ Demonstrates knowledge and application of Standard Precautions ▪ Participates as required in decontamination processes as the apply to endoscopic equipment	▪ Explain principles and practice of standard precautions, sterilisation, disinfection, and storage ▪ Describe measures to limit transmission of infection relevant to endoscopy	▪ Appropriate handling of the scope

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING		TECHNICAL EXPERTISE
	ANATOMY PHYSIOLOGY PATHOLOGY	BEHAVIOUR	KNOWLEDGE	SKILL
GASTROSCOPY **Preparation for Gastroscopy**				
Early - Mid SET		▪ Ensures appropriate fasting status ▪ Chooses appropriate location to perform acute endoscopy to maximise patient safety	▪ Understand department protocols relating to fasting before upper gastrointestinal endoscopy ▪ Explain how the sedation plan and patient factors determine the risk of pulmonary aspiration	▪ Assess risk of intra- and post- procedure pulmonary aspiration in an individual patient ▪ Gains consent for the procedure in an appropriate process
Gastroscopy Insertion				
Early - Mid SET		▪ Utilises good endoscopic insertion technique ▪ Appraise patient status throughout and choose appropriate steps resolve patient anxiety or discomfort	▪ Describe an approach to difficult oesophageal intubation ▪ Demonstrates knowledge of other areas of potential difficulty	▪ Successful oesophageal intubation - Key performance indicator > 95%, done under constant direct vision ▪ Correctly identify anatomic landmarks, and steer tip accurately towards direction of lumen ▪ Complete insertion to second part of duodenum is achieved in majority of cases
Gastroscopy Withdrawal				
Early - Mid SET		▪ Uses adequate time and various manoeuvres on withdrawal, to maximise views of all mucosal surfaces	▪ Explain why some areas of the upper digestive tract are challenging to image adequately, and describe how choice of instrument, endoscopic technique or additional measures such as chromoendoscopy or image enhancement can increase sensitivity ▪ Demonstrates knowledge of various gastrointestinal pathologies as they relate to endoscopy	▪ Uses tip control to optimise mucosal view in duodenum, minimise blind areas and visualise ampulla ▪ Uses distension and retroflexion in stomach to assess areas of mucosa poorly seen in forward viewing position - Key performance indicator > 95% ▪ Inspect the oesophagus on withdrawal in a manner suitable to identify mucosal pathology ▪ Makes an assessment of the likely cause of pathology based on close examination of a mucosal surface
Therapeutic Gastroscopy				
Late SET		▪ Appropriately assess and counsel a patient on the appropriateness, risks and alternatives of therapeutic interventions including mucosal resection, polypectomy and dilatation ▪ Demonstrates good in-procedure decision making with regards to potential therapeutic interventions	▪ Demonstrates knowledge on indications and contraindications for intervention ▪ Demonstrates working knowledge of various required tools	▪ Use tip control and positioning of shaft to optimise access to an area of interest ▪ Assess the risk of re-bleeding of a patient with peptic ulcer using endoscopic examination and implement an appropriate management plan ▪ Demonstrate use of available endoscopic haemostatic techniques to treat or prevent bleeding from submucosal vessels

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING		TECHNICAL EXPERTISE
	ANATOMY PHYSIOLOGY PATHOLOGY	BEHAVIOUR	KNOWLEDGE	SKILL
COLONOSCOPY **Preparation for Colonoscopy**				
Early - Mid SET		▪ Fosters a working team environment ▪ Participates in surgical checklist procedures ▪ Involved in activities to maximise the effectiveness of bowel prep, gain informed consent and reduce procedural risk of the patient	▪ Describe various schedules of bowel preparation and factors that influence their effectiveness ▪ Understand advantages and disadvantages of different bowel preparations ▪ Describe peri-procedural management of anticoagulant and anti-platelet agents	▪ Describe preparation for colonoscopy to a patient and prescribe appropriately ▪ Arranges additional preparation when required
Colonoscopy Insertion				
Late SET		▪ Perform digital rectal examination prior to introduction of colonoscope ▪ Demonstrate willingness and ability to insert instrument so as to minimise risk and discomfort to patient, and obtain help when needed ▪ Appraise patient status throughout and choose appropriate steps resolve patient anxiety or discomfort ▪ Select manoeuvres appropriate to anatomic landmarks. Use abdominal pressure and patient position change appropriately to facilitate insertion	▪ Describe how the anatomy of the colon influences the introduction and manipulation of the colonoscope ▪ Explain the principles, advantages and limitations of torque steering: inserting the scope using up down and rotation movements alone ▪ Demonstrates knowledge of how loops form and techniques to prevent and resolve looping	▪ Maintains a luminal view sufficient to allow safe insertion ▪ Correctly identifies the direction of lumen and anatomic landmarks ▪ Demonstrate a strategy for passing an acute angle by angulation, withdrawal and timed deflection of the tip, including judicious use of “slide by” manoeuvres ▪ Demonstrates use of water injection, minimal insufflation and adequate shaft lubrication ▪ Aspirates distended loops and straighten scope shaft, while steering into the lumen to facilitate scope advancement ▪ Employs a technique to achieve successful ileal intubation
Colonoscopy Withdrawal				
Late SET		▪ Recognises the importance of the withdrawal phase of colonoscopy and obtain help when needed ▪ Withdraw instrument, optimising probability of visualising the entire mucosal surface	▪ Understands the features and locations that are associated with greater likelihood of missed lesions ▪ Describe measures that may increase polyp detection rate	▪ Use tip control to optimise mucosal view ▪ Use washing, position change and aspiration appropriately ▪ Utilises double flexure pass when appropriate
Colonoscopy Polypectomy				
Late SET		▪ Work in a team using clear instructions ▪ Develop a polypectomy technique that minimises risks of complications or recurrence ▪ Demonstrates good in-procedure decision making around appropriateness and technique of polypectomy	▪ Understands the nature of polyp histopathology ▪ Describe how the histological subtypes, polyps numbers and patient factors influence decisions around polypectomy and surveillance intervals ▪ Knows the nature and incidence of complications with polypectomy ▪ Discuss the choice of fluid for flat polyp elevation prior to snare polypectomy	▪ Uses tip control and positioning of shaft to optimise working area and view of polyp ▪ Inject fluid accurately to the submucosal space in a manner that increases the ease and safety of polypectomy ▪ Examines polypectomy defect closely for completeness and risk of perforation ▪ Uses adjunctive equipment if necessary to achieve haemostasis and retrieve tissue ▪ Deploys endoscopic clips if required to control bleeding or close mucosal defects ▪ Performs physical examination if appropriate to detect signs of perforation ▪ Retrieve a resected specimen for pathology processing - Key performance Indicator: 90% of resected polyps retrieved

MODULE TITLE:	**HEAD & NECK**	**7-Nov-2016**
DEVELOPED BY:	**Kerwin Shannon, Richard Turner**	
REVIEWED BY:	**Alan Saunder (2010) Michael Donovan, Senarath Edirimanne, Brian Kirkby, Chris Pyke (2013). Michael Donovan, Julie Howle (2016).**	

Module Rationale and Objectives

General surgeons need to have a thorough knowledge of infections, tumours and lesions of the head and neck and be able to recognise and treat compromise of the upper airway. Trainees are also required to have a high level of knowledge of investigations, differential diagnosis, potential risks and/or complications and appropriate management strategies.

The graduating trainee will be able to:

- describe common surgical pathologies of deep neck space infections, congenital cysts and sinuses of the head and neck, metabolic and neoplastic conditions of salivary glands, and primary and secondary malignancies presenting in the head and neck
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- recognise the symptoms of, accurately diagnose, and manage common problems in the head and neck
- select appropriate investigative tools
- adapt their skill in the context of each patient and each procedure
- identify and manage risk
- recognise the need to refer patients to other professionals, including multidisciplinary teams
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- the head (extracranial)
- the neck (upper aero-digestive tract and soft tissues)

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, there are no prescribed texts.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Upper aero-digestive tract neoplasia						
Early SET	▪ Describe anatomy of the upper aerodigestive tract ▪ Classify neoplasms of the upper aerodigestive tract ▪ Describe biological behaviour including patterns of lymphatic spread ▪ Discuss epidemiology and risk factors	▪ Recognise symptoms and signs ▪ Perform a basic oral, oropharyngeal and cervical node examination	▪ Describe and interpret staging investigations ▪ Understand the role of FNAB	▪ Define the role of laryngopharyngoscopy ▪ Assess indications/ contraindications of open cervical node biopsy (and complications) ▪ Discuss the role of multidisciplinary approach to management		▪ Cervical lymph node biopsy
Mid SET				▪ Review principles of curative/palliative treatment (surgical and non-surgical): ▪ Plan and manage maintenance of airways and nutrition		▪ Open feeding gastrostomy or PEG ▪ Tracheostomy
Salivary gland pathology **▪ tumour**						
Early SET	▪ Classify salivary neoplasms and biological behaviour	▪ Perform focused examination of parotid and submandibular glands	▪ Understand the role of FNAB ▪ Discuss the role of imaging			
Mid SET				▪ Describe indications for surgical treatment and possible complications ▪ Describe indications for radiotherapy	▪ Excision of submandibular gland ▪ Parotidectomy	
Salivary gland pathology **▪ infections** **▪ inflammatory disease** **▪ calculi**						
Early SET	▪ Describe pathogenesis and pathological complications	▪ Perform focused examination of parotid and submandibular glands	▪ Discuss the role of medical imaging			
Mid SET		▪ Palpate stone in submandibular duct		▪ Describe indications for surgical treatment and possible complications ▪ Discuss non-operative therapies ▪ Manage the condition	▪ Excision of submandibular gland ▪ Submandibular dochotomy and stone extraction	▪ Drainage of acute suppuration
Upper airway foreign body/occlusion/ trauma						
Early SET	▪ Describe upper airway anatomy including vocal cords and upper trachea	▪ Diagnose upper airway compromise	▪ Interpret plain X-rays of cervical soft tissues	▪ Identify principles of surgical and non-surgical treatment ▪ Describe the role of direct/indirect laryngoscopy		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Upper airway foreign body / occlusion / trauma (continued)						
Mid SET				▪ Manage the condition	▪ Extracting foreign body	▪ Emergency tracheotomy ▪ Cricothyroidotomy
Cervical infections lymphadenitis / abscess						
Early SET	▪ Describe pathogenesis ▪ Describe fascial compartments of the neck	▪ Diagnose abscess formation on examination	▪ Describe and interpret appropriate imaging ▪ Describe and interpret appropriate microbiology	▪ Describe indications for surgical treatment and possible complications ▪ Prescribe medical treatment where indicated		
Mid SET						▪ Incision and drainage of cervical abscess ▪ Emergency tracheotomy
Lumps in the neck ▪ **carotid body tumour** *(See also Vascular Module)* ▪ **branchial cyst / sinus** ▪ **thyroglossal cyst** *(See also Endocrine Module)* ▪ **pharyngeal pouch**						
Early SET	▪ Understand the anatomy of the neck ▪ Explain embryological origin of thyroglossal cyst and branchial cyst/sinus ▪ Outline the pathology of carotid body tumours ▪ Outline the aetiology of pharyngeal pouch	▪ Describe clinical features of thyroglossal cyst, carotid body tumour, branchial cyst/sinus and pharyngeal pouch ▪ Perform a thorough neck examination				
Mid SET		▪ Formulate differential diagnosis ▪ Diagnose on examination	▪ Describe and interpret appropriate imaging	▪ Describe indications and complications of surgical management ▪ Manage the condition	▪ Excision of branchial cyst ▪ Excision of thyroglossal cyst/ fistula / Sistrunk procedure	
Parathyroid *See Endocrine Module*						
Head and neck trauma *See Trauma Module*						
See also Skin and Soft Tissue Module						

MODULE TITLE:	**SEPSIS & THE CRITICALLY ILL OR COMPROMISED PATIENT**	**7-Nov-2016**
DEVELOPED BY:	**Adrian Anthony, Michael Cox, Richard Turner**	
REVIEWED BY:	**Alan Saunder (2010) Adrian Anthony, Wendy Brown, Sayed Hassen, Michael Cox, Tom Elliott, Greg Keogh, Noel Tait (2013). Richard Bryant, Satish Warrier (2016).**	

Module Rationale and Objectives

Sepsis and other critical conditions require informed and decisive action on the part of the surgeon. This module identifies the key areas in which trainees are expected to have expertise in order to be able to minimise infection risks and consequences in critically ill or compromised patients and to respond promptly and appropriately as the need for assessment and management of sepsis in such patients arises. The graduating trainee will be able to:

Pathology of sepsis:

- describe common surgical pathologies of sepsis in specific organs or regions
- describe infectious pathologies likely to be associated with surgically treated diseases
- describe infectious pathologies associated with medically complex, malnourished and immune suppressed patients

Prophylaxis of sepsis:

- display well informed, evidence based team leadership in prophylaxis and management of sepsis in critically ill or compromised patients
- anticipate and aim to prevent the onset of sepsis and sepsis related complications in surgical patients
- describe mechanisms for limiting the development and spread of infectious diseases, especially multi-resistant organisms, among critically ill and compromised surgical patients
- describe evidence-based prophylaxis against development of peri-surgical sepsis

Recognition and diagnosis of sepsis and sepsis syndromes:

- apply the CCrISP principles to identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- select appropriate investigative tools and monitoring techniques

Management planning and treatment:

- identify appropriate treatment options, and their indications and contraindications
- determine the appropriate priorities of care and level of care for patients affected by sepsis
- demonstrate awareness of the basic pharmacology and principles of antibiotic based therapeutics
- effectively manage septic complications of operative procedures and the underlying disease process
- identify the likely causative factor(s) of a patient's critical illness and implement management accordingly
- prioritise, initiate and coordinate the timely management of critically ill patients
- accurately identify the risks, benefits and mechanisms of action of various treatment modalities and interventions

Ethics and Professional Communications:

- understand the importance of a multidisciplinary approach to the management of critically ill patients
- recognise the importance of effective communication with other professionals and recognise the need for timely referral and for timely response to requests for surgical review and surgical treatment
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the, anatomy, microbiology, physiology, and pathology, of:

- organ-specific sepsis
- Systemic Inflammatory Response Syndrome (SIRS)/Multiple Organ Dysfunction Syndrome (MODS)
- system specific dysfunction (e.g. renal impairment)
- co-morbidities that may alter management and/or adversely affect outcome

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

Suggested reading:

(1) Care of the Critically Ill Surgical Patient (ISBN 9780340810484), 2nd edition, edited by I.D. Anderson.

(2) Core Topics in General & Emergency Surgery: A Companion to Specialist Surgical Practice (ISBN 9780702049644), 4th edition, by S. Paterson-Brown.

For the Fellowship examination, there are no prescribed texts.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

Therapeutic Guidelines for surgical sepsis prophylaxis and for antibiotic therapy of surgical sepsis (available on internet or on most hospital intranets).

Skills courses including RACS CCrISP, EMST courses.

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Assumed Knowledge

- Normal organ physiology
- Classification and characteristics of micro-organisms
- Local and systemic immune responses
- Physiological responses to pathogens
- Microbiology of organisms associated with major surgical sepsis including especially surgically relevant cocci, bacilli, clostridia, yeasts and fungi

MODULE TITLE:	**SEPSIS & THE CRITICALLY ILL OR COMPROMISED PATIENT**	**7-Nov-2016**
DEVELOPED BY:	**Adrian Anthony, Michael Cox, Richard Turner**	
REVIEWED BY:	**Alan Saunder (2010) Adrian Anthony, Wendy Brown, Sayed Hassen, Michael Cox, Tom Elliott, Greg Keogh, Noel Tait (2013). Richard Bryant, Satish Warrier (2016).**	
Assumed Knowledge (continued)	▪ Laboratory investigation methods and indications for same ▪ Pharmacology, prescribing and indications for appropriate prophylactic and therapeutic use of for use of antibiotics in the prophylaxis and therapy of surgical sepsis ▪ Principles and practice of routines mitigating against spread of colonisation and invasive sepsis among surgical patients (e.g. 5 moments of hand hygiene) ▪ Principles and practice of antibiotic stewardship in surgical practice	
Definitions	*Operative Management - Knows:* Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures. *Operative Management - Does:* In addition to the above, trainees must be competent at performing the procedure.	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Critically ill surgical patient e.g.: ▪ **severe pancreatitis, anastomotic leak** ▪ **strangulated small bowel / ischaemic colon / perforated small bowel / colon (see also Emergency Surgery Module)** ▪ **massive haemorrhage (see also Emergency Surgery Module)** ▪ **Severe cholangitis** *(See also Upper GI & HPB - Hepatic, Pancreatic & Biliary Module)*						
Early SET	▪ Recognise the spectrum of pathologies responsible for critical illness ▪ Explain the pathophysiolo-genesis and consequences of: - SIRS - MODS - Adult Respiratory Distress Syndrome - shock	▪ Identify the patient at risk of becoming critically ill ▪ Recognise the clinical features of a critically ill patient and life threatening conditions ▪ Identify and describe the clinical features of the different causes of shock	▪ Appropriately select and coordinate multimodal assessment as required ▪ Review and interpret available data ▪ Identify and describe scoring systems in relation to critically ill patients	▪ Organise multidisciplinary management ▪ Identify the appropriate level of care for the patient ▪ Organise resuscitation ▪ Coordinate safe transfer of patient ▪ Employ appropriate monitoring to assess response to resuscitation ▪ Outline the role of pharmacological agents and their complications	▪ Cricothyroidotomy/ tracheostomy	▪ Establish and maintain emergency airway ▪ Needle thoracostomy / intercostal chest drain ▪ Establish definitive emergency vascular access - central and peripheral
Mid SET				▪ Discuss the procedural details of definitive surgical management where indicated ▪ Explain the role and indications for advanced organ and system support: - cardiovascular - respiratory - renal		
Late SET					▪ Understand surgical strategies in the critically ill patient	
Gangrene / necrotising fasciitis *See Skin & Soft Tissue Module*						
Tetanus						
Early SET	▪ Discuss the incidence and describe pathogenesis including microbiology	▪ Identify the clinical manifestations ▪ Classify the spectrum of presentation	▪ Select and interpret blood tests, microbiology and imaging investigations	▪ Establish the principles of immunisation ▪ Recognise early signs and describe the management	▪ Wound debridement	
Mid SET				▪ Coordinate multidisciplinary care		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Subphrenic/pelvic/ intra-abdominal abscess						
Early SET	▪ Describe the anatomy of abdominal and pelvic cavity ▪ Describe the various forms of abscess	▪ Classify the spectrum of presentation, including the clinical signs of sepsis and clinical presentations pertaining to abscesses in various sites in the abdomen	▪ Select and interpret blood tests, microbiology and imaging investigations	▪ Review open/ percutaneous drainage procedures ▪ Discuss therapeutic and prophylactic role of antibiotics, including dosage of common antibiotics		
Mid SET				▪ Identify and describe the role for laparotomy/laparostomy, minimally invasive techniques ▪ Discuss the procedural details of treatment, including possible complications and how to deal with them		▪ Transrectal drainage ▪ Laparotomy/ laparostomy/minimally invasive techniques for drainage of complex abscesses
Psoas abscess						
Early SET	▪ Describe pathogenesis, causative organisms, and related disease	▪ Take an appropriate history and perform a focused examination	▪ Select and/or interpret diagnostic/ interventional imaging ▪ Interpret results of microbiological specimens	▪ Review open/ percutaneous drainage procedures ▪ Discuss the role of antibiotic therapy		
Mid SET				▪ Discuss the procedural details of open drainage	▪ Trans/ Retroperitoneal drainage	
Intra-abdominal sepsis/peritonitis *See also Abdominal Wall Module* *See also above: Subphrenic/pelvic/ intra-abdominal abscess*						
Early SET	▪ Discuss pathogenesis, causative organisms, and related disease	▪ Perform a focused clinical examination ▪ Recognise the clinical signs of peritonitis ▪ Understand the clinical scenarios that may mask the signs or peritonitis	▪ Select and/or interpret diagnostic/ interventional imaging ▪ Interpret microbiological results	▪ Discuss the indications for non-surgical and surgical management ▪ Discuss indications for laparostomy and delayed closure ▪ Describe the principles of open/ percutaneous and minimally invasive drainage procedures where appropriate		
Mid SET					▪ Laparostomy	▪ Laparotomy for sepsis control

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
The immuno- suppressed patient *See Transplantation Module*						
Early SET	▪ Discuss the basis of humoral and cellular immunity and the factors that modify immunity	▪ Identify the symptoms and signs suggesting sepsis and/or impending decompensation in an immuno-suppressed patient	▪ Select appropriate pathology and imaging investigations to identify sepsis in an immuno-suppressed surgical patient	▪ Enlist appropriate multi-disciplinary input to assist with management		
Mid SET				▪ Discuss the nature and role of operative or non-operative management, where indicated		
Late SET					▪ Understand surgical strategies in the critically ill patient	
HIV/AIDS and other atypical infections including TB *See also above: The immuno-suppressed patient*						
Early SET	▪ Describe the pathophysiology of immune suppression as it relates to HIV/AIDS ▪ Explain the progression of disease	▪ Recognise the spectrum of clinical presentation	▪ Interpret relevant haematological and microbiological tests, such as helper/suppressor cell ratios and viral load ▪ Indicate the role for medical imaging where indicated	▪ Describe and explain the role of universal precautions ▪ Seek multi-disciplinary input from Microbiology and Infectious Disease specialists regarding operative vs. non-operative management		
Mid SET						▪ Insertion of central venous access with management
The splenectomised patient *See also above: The immuno-suppressed patient*						
Early SET	▪ Discuss the anatomy and physiological role of the spleen ▪ Outline the role of the spleen in certain haematological disorders such as hereditary spherocytosis and idiopathic thrombocytopenic purpura ▪ Outline the role of the spleen in certain infectious conditions such as infectious mononucleosis and malaria	▪ Perform an abdominal examination to identify splenomegaly		▪ Prescribe appropriate preventive management for overwhelming post-splenectomy infection (OPSI) following splenectomy including antibiotics and immunisation		
Mid SET	▪ Discuss the pathophysiological and clinical consequences of splenectomy		▪ Select appropriate pathology and imaging investigations prior to elective splenectomy	▪ Discuss the indications for elective splenectomy	▪ Laparoscopic elective splenectomy	▪ Open elective splenectomy **See also Upper GI / HPB Module**

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Post transplantation patients *See Transplantation Module*						
Nutritional support						
Early SET	▪ Describe: - components of nutrition and their functions - normal fluid, electrolytic and other nutritional requirements - specific nutritional demands associated with different pathologies - complications associated with nutritional replacement - how nutrition influences outcome	▪ Identify the patient at risk of nutritional deficiencies ▪ Recognise the symptoms and signs related to nutritional deficiencies ▪ Identify patients who have specific nutritional requirements	▪ Select and interpret appropriate laboratory tests to assess nutrition	▪ Appraise the role of nutritional support in the management of surgical pathologies ▪ Coordinate multidisciplinary approach to management ▪ Differentiate the various routes for nutritional support		
Mid SET			▪ Select and interpret appropriate laboratory tests to formulate nutritional support	▪ Explain the indications for enteral and parenteral nutritional routes and the associated complications ▪ Monitor response to nutritional support and adjust accordingly ▪ Describe techniques to establish routes for administering nutrition ▪ Understand pathophysiology of re-feeding syndrome		▪ Feeding gastrostomy/ jejunostomy (open, endoscopic, and laparoscopic) ▪ Vascular access for nutrition (including surgical and radiological implantable and tunnelled devices)
Other medical system disease						
Early SET	▪ Recognise the impact on effective management of surgical patients of comorbidities	▪ Quantify and classify the risk factors of comorbidities		▪ Classify the patient according to ASA grading system and be able to accurately determine patient status ▪ Coordinate (and lead) multidisciplinary teams		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Acute pain control						
Early SET	▪ Describe: - pathophysiology of acute pain - the causes of pain in the surgical patient - the effect of pain on various physiological functions	▪ Identify the patient likely to have pain ▪ Recognise and assess pain using a scoring system ▪ Recognise abnormal behaviour in response to pain	▪ Select and interpret investigations to determine the cause of pain	▪ Implement preventive measures ▪ Discuss the role of pain control in patient outcome ▪ Liaise with an acute pain service to assist management ▪ Prescribe and monitor response to pharmacological agents and adjust accordingly ▪ Implement multimodal therapy for pain control ▪ Describe complications associated with analgesic therapy ▪ Differentiate the preferred route(s) for administering analgesia		
Patients on specific medications: Anticoagulant, Immunomodulators, Oncological agents						
Early SET	▪ Recognise the impact of various pharmacological agents on different patients ▪ Understand the management of anticoagulants		▪ Order and interpret appropriate investigations as required	▪ Select and adjust surgical practice according to risk ▪ Coordinate multidisciplinary teams ▪ Understand which patients on anticoagulation / antiplatelets require interim cover ▪ Establish a perioperative plan to manage patients on anticoagulants		

MODULE TITLE:	**SKIN & SOFT TISSUE**	**7-Nov-2016**
DEVELOPED BY:	**Adrian Anthony, Michael Cox, Richard Turner**	
REVIEWED BY:	**Alan Saunder (2010) Adrian Anthony, Wendy Brown, Sayed Hassen, Michael Cox, Noel Tait (2013). Andrew Thompson (2016).**	
Module Rationale and Objectives	Skin cancer is increasing in prevalence, and if undiagnosed or untreated can be lethal. Infections of the skin and soft tissue require early identification and prompt management. General surgery trainees are required to become competent in accurately identifying conditions that require surgery, and those which are best treated by other means. The graduating trainee will be able to: ▪ describe common surgical pathologies of benign and malignant skin lesions, and the various types of skin and soft tissue infections. ▪ identify and recognise the symptoms and signs of these conditions ▪ describe and select appropriate diagnostic testing ▪ identify appropriate treatment options, and their indications and contraindications ▪ diagnoses and treat commonly encountered conditions of the skin and soft tissues ▪ select appropriate investigative tools ▪ adapt their skill in the context of each patient and each procedure ▪ identify and manage risk ▪ recognise the need to refer patients to other professionals ▪ communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)	
Anatomy, Physiology, Pathology	Trainees should have thorough knowledge of the normal embryology, anatomy, physiology and pathology of the skin and subcutaneous tissues. In addition, the trainee should know: ▪ regional surgical anatomy of body surfaces ▪ histology of the skin and appendages ▪ principles of wound healing and cosmesis	
Suggested Reading	Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org For the Fellowship examination, there are no prescribed texts. Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.	
Learning Opportunities and Methods	If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.	
How this module will be assessed	The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).	
Assumed Knowledge	▪ Anatomy, histology and physiology of the integument ▪ Anatomy of subcutaneous spaces and structures ▪ Anatomy and physiology of skeletal muscle and associated neuro-lympho-vascular structures ▪ The wound healing process	
Definitions	*Operative Management - Knows:* Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures. *Operative Management - Does:* In addition to the above, trainees must be competent at performing the procedure.	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Skin cancer ▪ **basal cell carcinoma** ▪ **squamous cell carcinoma** ▪ **intra-epithelial carcinoma** ▪ **Merkel cell tumour** ▪ **Melanoma** *(See also Surgical Oncology Module)*						
Early SET	▪ Types of skin cancer and their biological behaviour ▪ Epidemiology/risk factors ▪ Principles of wound healing ▪ Principles of cosmesis: Langer's lines ▪ Anatomy of cervical, axillary and inguinal lymph node basins	▪ Perform appropriate physical examination ▪ Identify typical appearances of specific lesions	▪ Perform and interpret results of: - punch biopsy - excision biopsy ▪ Discuss indications/ contraindications of these biopsy methods ▪ Interpret skin surface microscopy	▪ Indications for operative treatment, procedural details, and potential complications ▪ Non-operative primary treatments		▪ Excision of skin cancer and wound closure using direct suturing
Mid SET			▪ Select and describe relevant staging investigations	▪ Principles of advanced reconstructive techniques ▪ Discuss the indications and principles of managing regional lymph nodes ▪ Discuss possible complications of surgical treatments and how to manage them	▪ Block dissection of regional lymph nodes	▪ Excision of skin cancer and wound closure using: - cutaneous flaps - full-thickness/split skin grafts ▪ Sentinel lymph node biopsy
Benign skin and subcutaneous lesions ▪ **Nevus** ▪ **Solar keratosis** ▪ **Papilloma / wart** ▪ **Seborrheic keratosis** ▪ **Lipoma** ▪ **Sebaceous cyst** ▪ **Ganglion** ▪ **Keloid and hypertrophic scar**						
Early SET	▪ Histological features and biological behaviour of specific lesions ▪ Principles of wound healing ▪ Principles of cosmesis: Langer's lines	▪ Identify the typical appearance and examination findings of specific lesions	▪ Employ and interpret appropriate ancillary investigations as indicated: - skin surface microscopy - punch biopsy - incision biopsy - excision	▪ Indications for and complications of biopsy or excision ▪ Indications for non-surgical treatments ▪ Principles of excision and closure, including possible complications		▪ Simple excision of lesion ▪ Diathermy ablation/curettage (warts)

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Ingrown toenail						
Early SET	▪ Describe the anatomy of a finger or toe: - digital artery and nerves - nail matrix ▪ Describe the pathogenesis	▪ Identify typical appearance and examination findings ▪ Identify risk factors for complications		▪ Describe preventative measures ▪ Discuss principles and indications of non-surgical and surgical management ▪ Discuss details of surgical management		▪ Nail avulsion ▪ Wedge resection of nail
Mid SET						▪ Zadek's operation
Cellulitis **Soft tissue abscess** **Wound infection**						
Early SET	▪ List likely pathogens ▪ Summarise pathogenesis of cellulitis and abscess formation ▪ Define risk factors for wound infection	▪ Take a history and accurately interpret examination findings ▪ Clinical features and risk factors for necrotising infections	▪ Employ and interpret microbiological investigations as appropriate ▪ Medical imaging modalities where indicated	▪ Discuss principles and indications of non-surgical and surgical management ▪ Discuss details of surgical management		▪ Incision and drainage of abscess ▪ Wound debridement
Synergistic soft tissue infections e.g.: **▪ Fournier's gangrene** **▪ gas gangrene** **▪ necrotising fasciitis, etc.**						
Early SET	▪ Define and describe pathogenic mechanisms ▪ List likely pathogens ▪ Define risk factors ▪ Explain the role in systemic inflammatory response syndrome	▪ Take a history and accurately interpret examination findings ▪ Recognise and identify the critically ill patient	▪ Interpret microbiological investigations as appropriate ▪ Employ and interpret imaging modalities as appropriate	▪ Implement and evaluate response to resuscitation ▪ Discuss principles and indications of non-surgical and surgical management ▪ Organise multidisciplinary approach to management		
Mid SET				▪ Discuss principles of surgical management	▪ Reconstructive techniques	▪ Extensive wound debridement/ amputation ▪ Defunctioning colostomy (as indicated)
Late SET					▪ Advanced reconstructive techniques	
Hidradenitis suppurativa						
Early SET	▪ Discuss pathogenesis and natural history of the condition	▪ Interpret history and examination findings		▪ Discuss principles and indications of non-surgical and surgical management		▪ Incision and drainage
Mid SET				▪ Discuss procedural details of surgical management	▪ Reconstructive techniques where indicated	▪ Excision

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Hand Infections						
Early SET	▪ Anatomy of hand spaces	▪ Interpret history and examination findings ▪ Recognise implications of deep space infections	▪ Employ use of microbiology, imaging and blood tests	▪ Discuss principles and indications of non-operative and operative management, including antibiotic rationale ▪ Plan aftercare including rehabilitation		
Mid SET				▪ Discuss procedural details of surgical management	▪ Incision and drainage of hand and finger spaces	
Chronic leg ulcer / pressure ulcers *See also Vascular Module*						
Early SET	▪ Discuss pathogenesis and aetiological factors ▪ Describe arterial and venous anatomy of the leg	▪ Take a history and accurately interpret examination findings ▪ Perform, calculate and interpret Doppler assessment of ankle-brachial index	▪ Use and interpret investigations as indicated	▪ Discuss principles and indications of non-surgical and surgical management, including preventive measures ▪ Discuss procedural details of surgical management		▪ Wound debridement ▪ Split skin grafting
Late SET					▪ Flap repair (as indicated)	
High risk foot (diabetic / neuropathic) *See also Vascular Module*						
Early SET	▪ Anatomy of the foot ▪ Aetiological factors ▪ Microbiology: likely pathogens (where relevant)	▪ Take a history and accurately interpret examination findings	▪ Use and interpret investigations as indicated	▪ Discuss principles and indications of non-surgical and surgical management, including preventive measures		▪ Incision and drainage of suppuration
Mid SET				▪ Discuss procedural details of surgical management ▪ Coordinate multi-disciplinary care	▪ Major limb amputations	▪ Wound debridement ▪ Local amputations
Pilonidal sinus / abscess						
Early SET	▪ Describe pathogenesis and aetiology	▪ Take a history and accurately interpret examination findings	▪ Employ medical imaging where appropriate	▪ Discuss principles and indications of non-surgical and surgical management, including preventive measures ▪ Discuss procedural details of surgical management ▪ Appraise the use of various wound care techniques including vacuum dressings		▪ Incision and drainage of abscess ▪ Excision and marsupialisation

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Pilonidal sinus/ abscess (continued)						
Mid SET					▪ Surgical management of Pilonidal sinus	▪ Excision and primary closure with or without a flap
Hyperhidrosis						
Early SET	▪ Describe the normal physiology and histology of sweat glands ▪ Discuss the anatomy of the sympathetic nervous system ▪ Explain the pathophysiology of focal/generalised primary/secondary hyperhidrosis	▪ Obtain a focused history including with respect to location of sweating and possible causes of secondary hyperhidrosis		▪ Discuss the principles and indications of non-surgical and surgical management		
Mid SET				▪ Discuss the procedural details of surgical management including possible complications	▪ Endoscopic thoracic sympathectomy ▪ Lumbar sympathectomy	
Carpal tunnel syndrome						
Early SET	▪ Describe anatomy of hand and wrist, with particular reference to median nerve ▪ Define pathogenesis and contributing conditions	▪ Take a history and accurately interpret examination findings ▪ Differentiate between other diagnoses	▪ Order and interpret nerve conduction studies	▪ Discuss principles and indications of non-surgical and surgical management		
Mid SET				▪ Discuss procedural details of surgical management		▪ Carpal tunnel release
Other peripheral nerve entrapments						
Early SET	▪ Discuss the regional anatomy of the ulnar nerve and lateral cutaneous nerve of the thigh, as well as their sensory and/or motor functions and points at which they may become entrapped	▪ Obtain a focused history of the condition ▪ Perform an examination of the sensory and motor functions of the relevant nerve	▪ Request nerve conduction or electromyographic studies where appropriate	▪ Discuss the options and indications for non-surgical and surgical management		
Mid SET	▪ Discuss the neuralgia post inguinal hernia repair	▪ Ilioinguinal nerve damage ▪ Genitofemoral nerve damage		▪ Outline the procedural details of surgical management, including possible complications	▪ Ulnar neurolysis ▪ Other neurolysis	
Late SET					▪ Exploration of Guyon's canal ▪ Decompressive surgery for pronator syndrome	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Peripheral nerve injuries						
Early SET	▪ Discuss the regional anatomy, sensory and motor functions of peripheral nerves that are commonly injured ▪ Demonstrate understanding of the pathogenetic mechanisms and natural history of nerve injury	▪ Obtain a focused history, including the mechanism and circumstances of the injury ▪ Perform an examination of the sensory and motor functions of the relevant nerve		▪ Outline preventive measures for peripheral nerve injuries on the operating table ▪ Discuss the principles of primary nerve repair for acute injuries		
Mid SET	▪ Appreciate sites of potential iatrogenic nerve injury				▪ Acute primary nerve repair	

MODULE TITLE:	**SMALL BOWEL**	**7-Nov-2016**
DEVELOPED BY:	**Graham Cullingford, Alf Deacon, Sayed Hassen**	
REVIEWED BY:	**Arend Merrie, Elizabeth Dennett (2010). Nigel Barwood, Matthew Croxford, Elizabeth Dennett, John Hansen, Paul Hollington, Michael Warner, Christopher Young (2013). Andrew Moot, Michael Warner (2016).**	

Module Rationale and Objectives

A general surgeon is required to have a thorough understanding of normal anatomy and physiology, as well as pathophysiology, investigations, differential diagnosis and surgical and non-surgical management of small intestinal disorders. It is important that general surgeons maintain a current understanding of the most appropriate time and manner of intervention.

The graduating trainee will be able to:

- Describe normal & abnormal anatomy of duodenum, jejunum, and ileum and their blood supply and lymphatic drainage
- describe common surgical pathologies of duodenum, jejunum, and ileum
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that pertain to the duodenum, jejunum, and ileum including referral to other specialists where indicated
- select appropriate investigative tools
- adapt their skill in the context of each patient and each procedure
- identify and manage risk
- recognise the need to refer patients to other professionals
- convey bad news to patients in a way that conveys sensitivity to the patient's social, cultural and psychological needs
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology of:

- peritoneal cavity
- small bowel – digestion and absorption; immune and endocrine functions; motility

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, there are no prescribed texts.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Recommended reading:

(1) Core Topics in General & Emergency Surgery: A Companion to Specialist Surgical Practice (ISBN 9780702049644), 5th edition, by S. Paterson-Brown.

(2) Colorectal Surgery: A Companion to Specialist Surgical Practice (ISBN-13: 9780702049651), 5th edition by R.K.S. Phillips & S Clark.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Assumed Knowledge

- Anatomy and embryology of the small intestine
- Functional physiology of the small intestine

Definitions

Operative Management - Knows: Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.

Operative Management - Does: In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Small bowel obstruction (SBO)						
Early SET	▪ Describe the embryology and anatomy of the small bowel ▪ Discuss the aetiologies ▪ Describe the pathophysiological changes associated with SBO ▪ Recognise and describe complications	▪ Assess and differentiate the clinical symptoms and signs ▪ Differentiate the signs of strangulation	▪ Define the role of laboratory investigations and medical imaging of SBO	▪ Review the indications and principles of non-operative management ▪ Define the indications for operative management ▪ Management of acute postoperative obstruction		
Mid SET	▪ Explain the anatomy of internal herniation	▪ Diagnose acute postoperative obstruction vs. ileus	▪ Discuss the role of investigations to distinguish post-operative ileus from obstruction	▪ Define the indications for resection ▪ Role of second look laparotomy ▪ When to defunction ▪ Management of recurrent SBO ▪ Management of SBO in the patient with advanced malignancy	▪ Laparoscopy for SBO	▪ Laparotomy ▪ Division of adhesions ▪ Bowel resection/ bypass
Intussusception						
Early SET	▪ Discuss the aetiologies ▪ Describe the pathophysiology			▪ Management of Intussusception		
Mid SET						▪ Small bowel resection
“Foreign bodies” in the GI tract						
Early SET	▪ Describe classification	▪ Define symptoms and signs and potential complications	▪ Radiology ▪ Endoscopy			
Mid SET				▪ Define indications for surgical intervention ▪ Management of foreign bodies ▪ Gallstone ileus		▪ Enterotomy and closure
Duodenal adenoma and carcinoma						
Early SET	▪ Discuss the anatomy of the duodenum	▪ Discuss presentation				
Mid SET	▪ Discuss the natural history of duodenal carcinoma		▪ Discuss and interpret modalities for diagnosis and staging	▪ Discuss the surgical options for treatment		
Late SET					▪ Endoscopic duodenal stenting ▪ Surgical resection	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Duodenal diverticula						
Mid SET	▪ Discuss the anatomy and complications			▪ Discuss the potential complications	▪ Duodenal diverticulectomy	
Duodenal obstruction						
Early SET	▪ Discuss the anatomy and embryology of the duodenum ▪ Discuss the aetiologies ▪ Discuss the pathophysiology			▪ Discuss the aetiology and management of electrolytic imbalance		
Mid SET						▪ Open gastrojejunostomy ▪ Duodeno-jejunostomy
Late SET					▪ Laparoscopic gastrojejunostomy	
Small bowel ischaemia ▪ **acute** ▪ **chronic** *See also Vascular Module*						
Early SET	▪ Discuss the aetiologies ▪ Discuss the pathophysiology	▪ Assess clinical symptoms and signs	▪ Discuss and define role of medical imaging, lab investigations, enteroscopy / capsule endoscopy			
Mid SET				▪ Discuss management of both acute and chronic ▪ Multidisciplinary management of autoimmune SB arteritis ▪ Describe specific therapies	▪ Revascularisation ▪ Embolectomy	▪ Resection
Small bowel neoplasia / tumours						
Early SET	▪ List the types and describe presentation	▪ Assess the clinical symptoms and signs				
Mid SET			▪ Define the role and interpretation of endoscopy and imaging	▪ Describe the principles of tumour assessment and treatment ▪ Role of diagnostic/ therapeutic laparoscopy ▪ Multidisciplinary management ▪ Describe specific therapies		▪ Diagnostic laparoscopy ▪ Bowel resection/ bypass ▪ Mesenteric nodal resection
Late SET					▪ Laparoscopic therapy	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Small bowel bleeding						
Early SET	▪ Describe the aetiology and pathology	▪ Recognise the clinical presentations ▪ Demonstrate the ability to assess the patient with a massive bleed		▪ Design a plan of investigation and subsequent treatment for occult bleeding ▪ Discuss treatment for massive GI bleed, including a thorough knowledge of transfusion requirements and assessment of haemodynamic stability		
Mid SET			▪ Define the role and interpretation of endoscopy and imaging	▪ Understand the role of endovascular management		▪ Bowel resection
Late SET					▪ On table enteroscopy	
Meckel's diverticulum						
Early SET	▪ Describe abnormality including the embryology and anatomy	▪ Recognise the different clinical presentations	▪ Define the role of medical imaging	▪ Discuss the role and techniques of resection ▪ Discuss the assessment and management of the incidental finding of a Meckel's diverticulum		
Mid SET						▪ Meckel's diverticulectomy ▪ Small bowel resection
Late SET					▪ Laparoscopic Meckel's diverticulectomy	
Small bowel fistula						
Early SET	▪ Define the pathological abnormalities ▪ Describe the physiological effects of an enteric fistula at different levels	▪ Assess the clinical presentation	▪ Establish the role of medical imaging and laboratory investigations	▪ Describe the principles of management including: - resuscitation - fluid and electrolyte management - nutrition - sepsis control - skin control		
Mid SET				▪ Timing of surgery ▪ Surgical options	▪ Management of open abdomen	▪ Small bowel resection ▪ Defunctioning Jenunostomy/ Ileostomy

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Inflammatory conditions of the small bowel *See also Colorectal Module*						
Early SET	▪ Describe the pathology of inflammatory conditions of the small bowel	▪ Recognise and differentiate inflammatory bowel disease affecting the small intestine ▪ Be aware of possible differential diagnosis for small bowel Crohn's disease ▪ Recognise complications of IBD	▪ Define the role and interpretation of endoscopy and imaging	▪ Principles of medical management ▪ Discuss nutritional support ▪ Indications for surgical intervention		
Mid SET				▪ When to defunction	▪ Laparoscopic ileocolic resection	▪ Small bowel resection ▪ Ileocolic resection
Late SET					▪ Laparoscopic assisted small bowel resection ▪ Strictureoplasty	
Infectious disorders of the small bowel						
Early SET	▪ Describe the microbiology, pathophysiology and pathology	▪ Differentiate infectious disorders from inflammatory conditions	▪ Role of laboratory investigations	▪ Principles of multidisciplinary management		
Mid SET		▪ Recognise complications requiring surgical intervention				▪ Small bowel resection
Diverticulosis of the small intestine						
Early SET	▪ Describe the aetiology ▪ Describe complications	▪ Recognise significance of diverticulosis in clinical presentation ▪ Recognise the clinical features of malabsorption syndromes	▪ Define the role and interpretation of endoscopy and imaging	▪ Indications for surgical intervention		
Mid SET						▪ Small bowel resection ▪ Diverticulectomy
Intestinal failure (including post Bariatric bypass) *See also Sepsis Module (Nutrition)*						
Early SET	▪ Describe the anatomy of the gastrointestinal tract ▪ Describe the functions of the small intestine ▪ Understand the causes and classification of intestinal failure ▪ Complications of long-term TPN	▪ Identify the symptoms and signs	▪ Outline the basic routine and the essential tests to establish a diagnosis ▪ Interpret the investigations	▪ Outline the methods of management ▪ Understand the principles of nutritional support - enteral & parenteral		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Intestinal failure (including post Bariatric bypass) (continued)						
Mid SET				▪ Discuss the role of enzymatic replacement therapy ▪ Indications and contraindications for small bowel transplantation		▪ Insertion of a tunnelled central venous line for long-term TPN
Malabsorption syndromes						
Early SET	▪ Describe pathologies causing malabsorption	▪ Nutritional assessment and clinical syndromes	▪ Laboratory ▪ Radiological ▪ Gastroenterological investigations	▪ Nutritional and metabolic support ▪ Pharmacological management ▪ Antibiotic management		
Radiation enteritis						
Early SET	▪ Define the range of acute and chronic pathologies that follow radiation therapy	▪ Discuss clinical presentation and complications	▪ Outline the basic routine and the essential tests to establish a diagnosis	▪ Discuss nutritional support		
Mid SET				▪ Discuss indications for surgical intervention		
Small bowel trauma						
See Trauma Module						
Other small bowel problems including functional bowel disease and slow transit						
Early SET	▪ Describe slow transit		▪ Transit studies	▪ Outline the pharmacological, dietary and psychological options in management		

MODULE TITLE:	**SURGICAL ONCOLOGY**	**7-Nov-2016**
DEVELOPED BY:	**Bruce Mann, Meron Pitcher, Chris Pyke**	
REVIEWED BY:	**Jeremy Tan, Alan Saunder (2010) Michael Donovan, Senarath Edirimanne, Brian Kirkby, Chris Pyke (2013). Richard Bryant, Satish Warrier (2016).**	

Module Rationale and Objectives

A general surgeon is required to have a thorough understanding of surgical oncology. It is important that general surgeons maintain a current understanding of the most appropriate timing and manner of intervention.

The graduating trainee will be able to:

- describe common surgical pathologies of melanoma and soft tissue sarcoma
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that pertain to surgical oncology including referral to other specialists where indicated
- select appropriate investigative tools
- adapt their skill in the context of each patient and each procedure
- identify and manage risk
- recognise the need to refer patients to other professionals
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the general principles of various aspects of cancer management, including:

- cancer screening
- cancer diagnosis
- cancer staging
- multidisciplinary care
- adjuvant therapies
- cancer follow-up
- palliative care

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, there are no prescribed texts.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable. Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Fundamentals of cancer biology						
Early SET	▪ Describe aetiology and epidemiology ▪ Describe mechanisms of metastasis	▪ Understand local versus systemic manifestations of malignant disease	▪ Appreciate order of investigations to diagnose malignant disease	▪ Appreciate principles of treatment modalities for cancer		
Principles of screening for malignancy						
Early SET	▪ Issues in population screening, including bias ▪ Principles of ethical screening	▪ Discuss screening results with patients/families	▪ Describe subsequent pathology of investigation following screening	▪ Interpretation of results: - false positives - false negatives		
Mid SET	▪ Know current screening programs and data supporting their use					
Familial cancer syndromes including: ▪ **FAP** ▪ **HNPCC** ▪ **BRCA1,2** ▪ **Li Fraumeni** ▪ **Neurofibromatosis** ▪ **MEN syndrome**						
Mid SET	▪ Understand molecular basis	▪ Ability to take a family history ▪ Recognise possible familial cancer syndromes		▪ Principles of genetic counselling and testing ▪ Principles of risk management		
Late SET				▪ Indications for preventive surgery		
Carcinoma including breast, colon, oesophageal, gastric, pancreatic, skin, thyroid *See also individual Modules - tumours*						
Early SET	▪ Understanding the molecular biology of the tumour		▪ Understand requirements of standardised histology reporting	▪ Understanding intent of treatment and terminology		
Mid SET		▪ Discuss clinical staging	▪ Discuss appropriate imaging investigations to enhance staging	▪ Immunotherapy ▪ Systemic chemotherapy ▪ Regional chemotherapy ▪ Radiotherapy ▪ Vaccine options and delivery thereof ▪ Biological therapy ▪ Intent of therapy – downstaging vs neoadjuvant vs adjuvant vs definitive vs palliative	▪ Regional lymphadenectomy	▪ Regional nodes

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Carcinoma including breast, colon, oesophageal, gastric, pancreatic, skin, thyroid (continued) *See also individual Modules - tumours*						
Mid SET (continued)				▪ Understand options for curative intent treatment for metastatic disease		
Late SET					▪ Define adequate oncologic resection	
Melanoma						
Early SET	▪ Describe pathology of premalignant lesions ▪ Understand and describe Clarke's levels and Breslow's thickness	▪ Describe clinical features of premalignant lesions ▪ Describe clinical features of malignant melanoma				
Mid SET			▪ Role of imaging and biopsy options	▪ Principles of multidisciplinary management ▪ Follow-up of melanoma patients ▪ Understand the rationales for systemic therapy ▪ Principles of management of local, regional and distant recurrence	▪ Regional node dissection	▪ Appropriate resection +/- skin grafting ▪ Sentinel node biopsy
Late SET					▪ Isolated limb infusion/perfusion	
Sarcoma						
Early SET	▪ Describe aetiology	▪ Appropriate history and examination ▪ Differential diagnosis of soft tissue tumours				
Mid SET			▪ Imaging ▪ Staging ▪ Principles of biopsy	▪ Multidisciplinary management ▪ Recognise possibility of Soft Tissue Sarcoma (STS) ▪ Formulating a plan for diagnosis and treatment ▪ Principles of limb preservation		
Late SET					▪ Limb sacrifice and reconstruction	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Sarcoma – Retroperitoneal *See also Endocrine Module - Adrenal*						
Early SET	▪ Understand the regional anatomy of the retroperitoneum ▪ Understand the pathology and natural of history of benign, borderline and malignant primary tumours of the retroperitoneum ▪ Understand the pathology of tumours which metastasise to the retroperitoneum ▪ Molecular biology of tumours including the role of molecular targeted therapy	▪ Appropriate history and examination	▪ Role of imaging and biopsy options and tests to exclude non-sarcoma ▪ Role of imaging	▪ Multidisciplinary management ▪ Understand the role of radiotherapy	▪ Radical resection of retroperitoneum ▪ Reconstruction	
Metastatic disease of unknown primary						
Early SET	▪ Knowledge of mode of spread and likely anatomical distribution of metastases of various primary tumours ▪ Immunohistochemistry differentiation	▪ Understanding of probability of potential primary sites based on location of metastases and patient symptomatology	▪ Understanding of order of investigations and diagnostic yield of investigations to elucidate primary site	▪ Principles of active treatment versus palliative intent ▪ Role of palliative resection/surgery		
Mid SET				▪ Role of systemic therapy ▪ Principles of disease monitoring		▪ Open biopsy
Lymphatic malignancies						
Early SET	▪ Describe anatomy of lymphatic basins and related structures ▪ Understanding of the broad categorisation of lymphoma	▪ Differential diagnosis of lymphadenopathy	▪ Role of FNA/ core/ excisional biopsy	▪ Multidisciplinary care		▪ Lymph node excision and specimen handling
Mid SET					▪ Laparoscopic biopsy	
Vascular access *See also Vascular Module*						
Early SET	▪ Describe anatomy of subclavian and jugular veins			▪ Recognise choice of most appropriate site ▪ Recognise risks and complications ▪ Describe options for long-term vascular access		▪ Removal of above devices

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Vascular access (continued) *See also Vascular Module*						
Mid SET						▪ Insertion of subcutaneous venous access port/ Hickman catheter (open and percutaneous) ▪ Management of complications
Malignant ascites/ pleural effusions ▪ **Peritoneal malignancy** ▪ **Pseudomyxoma** ▪ **Mesothelioma**						
Early SET	▪ Describe pathophysiology of ascites and effusions	▪ Appropriate history and the examination	▪ Review the clinical tests, laboratory tests, and medical imaging techniques	▪ Management of unexpected operative finds ▪ Indications for surgery ▪ Palliation for malignant ascites/pleural effusion		
Mid SET				▪ Role of hyperthermic intraperitoneal chemotherapy	▪ Denver shunt	
Late SET				▪ Multidisciplinary care adhering to current guidelines		
Principles of adjuvant therapy for malignant disease *See also individual Modules*						
Principles of follow-up for malignant disease *See also individual Modules*						
Early SET	▪ Describe general principles that are common to the management of various solid tumours ▪ Describe specific issues with common cancers					
Multidisciplinary care *See also individual Modules*						
Early SET		▪ Appropriate history and the examination ▪ Recognise the psychosocial impact		▪ Understand how to break bad news		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Multidisciplinary care (continued)						
Mid SET				▪ Timing and sequence of treatment ▪ Coordination of treatment and follow-up ▪ Consensus and conflict resolution ▪ Communication in a team and sequential follow-up		
Palliative care and pain management						
Early SET	▪ Describe pathophysiology of pain ▪ Illustrate pain pathways	▪ Appropriate history and the examination		▪ Formulate a step-wise progression of techniques for pain management and nausea management ▪ Pressure care ▪ Nutrition ▪ Psychological/pastoral ▪ End-of-life decision making/advanced health directives		

MODULE TITLE:	**TRANSPLANTATION**	**7-Nov-2016**
DEVELOPED BY:	**Daryl Wall, Tom Wilson**	
REVIEWED BY:	**Alan Saunder (2010) Michael Fink, Alan Saunder, Kellee Slater, Tom Wilson (2013). Kellee Slater (2016).**	

Module Rationale and Objectives

A general surgeon is expected to have an understanding of the anatomy, physiology, pathophysiology, investigations and differential diagnosis of organ failure. The surgeon should maintain a current understanding of indications for the provision of and the procedures of organ transplantation to overcome organ failure (in particular, liver, kidney, pancreas and small bowel). The general surgeon should be aware of the implications for management of patients with organ failure presenting with general surgical conditions. The general surgeon should be capable of participating in multi-organ donation. The general surgeon should also be prepared for and capable of caring for the characteristic complications of organ transplantation that includes serious sepsis and malignancy.

The graduating trainee will be able to:

- describe the causes, risk factors for, and effects of organ failure
- identify and recognise the symptoms and signs of the diseases that lead to organ failure and of the development of organ failure
- describe and select appropriate investigations, diagnostic strategies and describe the diagnostic tests that may be required
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that lead to liver failure, renal failure, diabetes and intestinal failure and be able to provide management, advice and referral for transplantation where indicated
- advise on the appropriate investigative procedures
- remain current with respect to the care of the patient with incipient or established organ failure
- refer patient for consultation with appropriate other professions

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology of the kidney liver, small bowel and pancreas.

Trainees should know the pathological processes that lead to:

- liver failure
- renal failure
- intestinal failure
- diabetes mellitus

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, the following text is recommended:

(1) Transplantation Surgery: Companion to Specialist Surgical Practice (ISBN 9780702021466), 7th edition, by J.L. Forsythe.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

SET trainees should seek all opportunities open to them, to attend multi-organ procurements. The anatomical exposure is a valuable experience.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Renal failure ▪ **acute** ▪ **chronic**						
Early SET	▪ Describe the anatomy of the kidney and urinary tract ▪ Describe the function of the kidney ▪ Describe the causes and prevention of renal failure	▪ Identify the symptoms and signs: - acute - chronic	▪ Outline the basic routine and the essential tests to identify: - cause - effects - associated diseases ▪ Interpret the investigations	▪ Outline the methods of management: - acute - chronic ▪ Outline the requirements for consent for both donor and recipient procedures	▪ Placement of venous dialysis catheter	
Mid SET	▪ Review the implications of operating on patients with renal failure			▪ Vascular access and peritoneal dialysis: - indications - contraindications - procedural requirements - complications ▪ Outline the contraindications to renal transplantation ▪ Evaluate the options for kidney donation ▪ Outline the management of general surgical problems presenting in patients with renal failure (including referral to appropriate specialists)	▪ Placement of peritoneal dialysis catheter	
Late SET					▪ Multi-organ donation ▪ Living donor ▪ Kidney donation: - laparoscopic - open ▪ Renal transplantation ▪ AV fistula and management of complications; **See also Vascular Module**	
Acute rejection following renal transplantation						
Early SET	▪ Describe: - immunology of HLA matching - cytotoxic cross match - immunosuppression - process of rejection	▪ Identify the symptoms and signs	▪ Identify the essential tests to identify the rejection episode			
Mid SET					▪ Renal biopsy and complications ▪ Transplant nephrectomy	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Tertiary hyperpara-thyroidism *See also Endocrine Module*						
Early SET	▪ Describe: - onset of hyperpara-thyroidism in renal failure - consequences	▪ Identify the symptoms and signs	▪ Outline the essential tests to prove the nature of the hyperpara-thyroidism	▪ Identify: - indications - contraindications - complications of parathyroidectomy		
Mid SET		▪ Describe the prevention of hyperpara-thyroidism		▪ Describe the influence of renal transplantation on the presence of hyperpara-thyroidism	▪ Parathyroidectomy associated with renal failure	
Late SET					▪ Outline: - success rate - follow-up of parathyroidectomy in renal failure - procedure of parathyroid transplantation	
Brain death/ Donation after cardiac death (DCD)						
Early SET	▪ Describe the likely sequences that lead to the development of brain death	▪ Identify the criteria for brain death and how these criteria are completed	▪ Identify the essential tests to evaluate relevant organ function ▪ Identify tests that are required to ensure that transplanting of the organ will not place the recipient at risk			
Late SET					▪ Operation of multi-organ donation	
Malignancy in transplantation						
Early SET	▪ Describe the underlying disorders that predispose transplant recipients to multiple malignancies	▪ Identify the symptoms and signs ▪ Recommend appropriate screening	▪ Outline the appropriate screening tests to identify likely malignancies in transplant recipients			
Mid SET				▪ Outline the appropriate management of the common malignancies associated with transplantation ▪ Describe procedures that may be carried out by general surgeons caring for transplant recipients		
Late SET					▪ Identify procedures that could require a referral for specialist support	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Liver failure ▪ **acute** ▪ **chronic**						
Early SET	▪ Describe the anatomy of the liver and biliary tract ▪ Describe the functions of the liver ▪ Describe the causes and prevention of liver failure ▪ Describe the pathophysiology of ascites and portal hypertension	▪ Identify the symptoms and signs - acute - chronic	▪ Outline the routine investigations of causes and status of liver failure	▪ Outline the management of: - chronic liver failure - ascites - portal hypertension		▪ Abdominal paracentesis
Mid SET				▪ Outline the indications for liver transplantation ▪ Outline the management of general surgical problems presenting in patients with liver failure (including referral to appropriate specialists)	▪ Upper GI endoscopy and interventions for bleeding	▪ Laparoscopic assessment of the liver, including ultrasound
Late SET					▪ Interventions for portal hypertension ▪ Surgical procedure of liver transplantation	
Pancreatic endocrine failure						
Early SET	▪ Describe: - anatomy - functions of islets of Langerhans - causes and prevention of diabetes mellitus	▪ Identify the symptoms and signs of diabetes mellitus and its end organ complications	▪ Outline: - basic routine and essential tests to identify the cause of diabetes mellitus - long-term effects of insulin dependent diabetes mellitus ▪ Interpret the investigations			
Mid SET				▪ Outline the methods of management: - advanced complications - renal failure ▪ Indications and contraindications for pancreas transplantation		
Late SET					▪ Multi-organ donation	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Short bowel syndrome *See also Small Bowel Module*						
Early SET	▪ Describe the anatomy of the gastrointestinal tract ▪ Describe the functions of the small intestine ▪ List the causes of short bowel syndrome	▪ Identify the symptoms and signs	▪ Outline the basic routine and the essential tests to establish a diagnosis ▪ Interpret the investigations			
Mid SET				▪ Outline the methods of management ▪ Discuss nutritional support ▪ Discuss the role of enzymatic replacement therapy ▪ Indications and contraindications for small bowel transplantation	▪ Insertion of a Hickman line for long-term TPN	
Late SET					▪ Multi-organ donation	
Operating on the immunosuppressed/ post transplantation patient						
Early SET	▪ Describe processes of immuno-compromise in transplant recipients					
Mid SET			▪ Outline pre-operative preparation for operations on transplants recipients	▪ Outline principles of management in operations on immuno-compromised patients		

MODULE TITLE:	**TRAUMA**	**7-Nov-2016**
DEVELOPED BY:	**Zsolt Balogh, Peter Danne, Daryl Wall, Graeme Campbell, Philip Truskett (reviewed and commented by Frank Plani)**	
REVIEWED BY:	**Alan Saunder (2010) Ian Campbell, Li Hsee, Michael Rodgers, Emma Secomb, Graham Stewart (2013). Priscilla Martin, Richard Turner (2016).**	

Module Rationale and Objectives

The general surgeon is an integral part of the Trauma Team. By their very nature, these patients require attention from a competent and confident practitioner. It is therefore imperative that during training all trainees have sufficient knowledge and experience to be able to fulfil this role.

The graduating trainee will be able to:

- understand the mechanisms of injury and the patterns of injury that may result from both blunt and penetrating trauma,
- describe common surgical pathologies that will result from trauma
- describe the pathophysiology of shock, acute brain injury, respiratory failure, sepsis, renal failure, multi organ failure, and burns
- identify appropriate treatment options, and their indications and contraindications
- participate in a trauma team including team leader role
- safely and effectively assess and resuscitate the injured patient
- implement the principles of EMST/ATLS, CCrISP, and DSTC
- effectively manage the care of patients with trauma, including multiple system trauma
- identify and manage risk in an environment of complexity and uncertainty
- appropriately adjust the way they communicate with patients to accommodate cultural and linguistic differences
- work in collaboration with members of an interdisciplinary team where appropriate
- recognise the need to refer patients to other professionals
- understand the need for early initiation of rehabilitation
- effectively use resources to balance patient care and systemic demands
- in acute circumstances, the consenting process may require conforming to state legislation
- communication and collaboration with other surgical specialties
- clear understanding of the potential disaster, humanitarian and military responsibilities of general surgeons
- disaster planning
- epidemiology and prevention
- trauma quality improvement, benchmarking and audit
- trauma systems and resources allocation

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- head and neck
- spine
- limbs
- thorax
- abdomen
- pelvis

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, the following texts are recommended:

(1) Trauma (ISBN 9780071717847), 7th edition, by D. Feliciano, K. Mattox, and E. Moore.

(2) Anatomic Exposures in Vascular Surgery (ISBN 9780781741019), 2nd edition, by R.J. Valentine and G.G. Wind.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles including the Journal of Trauma and Injury, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

Trainees will have completed the requirements of the EMST program. Participation in the EMST Refresher course will be encouraged.

It is recommended that trainees participate in the Definitive Surgical Trauma Care (DSTC) Course, which is available in most regions and New Zealand. The course is available for Trainees in the last two (2) years of training.

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Assumed Knowledge

- Trainees should have a good understanding of relevant regional surgical anatomy
- Understand the basic patterns of various type of trauma
- Resource availability in multi-system injured patients

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Initial trauma management: Resuscitative phase - ED						
Early SET	▪ Recognition/ anticipation of immediately and potentially life threatening situations based on injury mechanism, anatomical location and patient physiology	▪ Primary and Secondary survey according to EMST	▪ Define the role of imaging and laboratory investigations	▪ Implementation of EMST principles of initial management and stabilisation of major trauma patients ▪ Coordination of care with other specialties and disciplines ▪ Interaction with patients and family members: Communication/ Counselling	▪ Basic airway management techniques ▪ DPL principles ▪ FAST ▪ Principles of damage control laparotomy ▪ Laparostomy	▪ Vascular access ▪ Central venous access ▪ Intra osseous puncture and access ▪ Intercostal catheter ▪ Splinting of extremities ▪ Control of external haemorrhage ▪ Pelvic binding (stabilisation) ▪ Cricothyroidotomy ▪ Nasopharyngeal packing ▪ Clear cervical spine appropriately
Mid SET		▪ Triage in multiple casualties		▪ Leadership of trauma team ▪ Ability to triage trauma patients presenting simultaneously ▪ Decision on transport and definitive treatment priorities ▪ Indications and initiation of massive transfusion protocol ▪ Indications of angioembolisation ▪ Principle of damage control resuscitation and surgery	▪ Emergency thoracotomy	▪ FAST ▪ Damage control laparotomy ▪ Laparostomy
Late SET				▪ Triage training ▪ Disaster management ▪ Overwhelming injury policies	▪ Retroperitoneal exposure (great vessels)	▪ Emergency thoracotomy
Ongoing ICU management: Definitive care phase						
Early SET	▪ Definition and pathophysiology of traumatic shock, ischaemia reperfusion injury, post injury SIRS, sepsis and MOF, nutrition, compartment syndromes, burn care	▪ Perform Tertiary survey ▪ Ability to perform focused assessment of the organ systems based on clinical examination, vital parameters, laboratory data and the required level of organ support	▪ Interpretation of daily routine chest x-ray ▪ Ability to indicate and interpret focused imaging required based on clinical assessment ▪ Interpret compartment pressure measurements and know the indications for treatment	▪ Formulate a coordinated management plan based on clinical assessment ▪ Attention to prevention of common post injury complications		▪ Compartment pressure measurement

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Ongoing ICU management: Definitive care phase (continued)						
Mid SET				▪ Leadership role in multidisciplinary team of specialists and prioritise management based on the need of the trauma patient ▪ Understand management of SIRS and MOF ▪ Understanding the ICU principles of second day resuscitation – optimisation of haemodynamics, core rewarming, correction of coagulopathy	▪ Enteral feeding access	▪ Laparostomy (open abdomen) and its management ▪ Tracheo(s)tomy ▪ Limb fasciotomy
Late SET						▪ Staged abdominal closure
Daily ward management: Definitive care phase ward and rehabilitation						
Early SET		▪ Ability to perform daily focused assessment for the management of post injury/ postoperative patients ▪ Recognise the need for other specialty involvement ▪ Ability to perform comprehensive tertiary survey	▪ Daily examinations based on the patient condition	▪ Comprehensive discharge planning including rehabilitation and follow up ▪ Attention to prevention of common post-injury complications ▪ Recognition of minor injuries resulting in significant impairment if left untreated		▪ Principles of wound/drain care
Mid SET				▪ Coordinate multi-disciplinary treating team ▪ Nutritional management post-injury		▪ Tracheo(s)tomy care
Skin / Soft Tissues						
Early SET	▪ Wound healing ▪ Pathophysiology of necrosis/ischaemia ▪ Pathophysiology of burns	▪ Assessment and description of wounds ▪ Body cavity penetration ▪ Distal neuro-vascular assessment ▪ Viability assessment of soft tissues ▪ Burn assessment ▪ Fluid resuscitation in severe burn patients ▪ Inhalation injuries	▪ Relevant investigations for foreign bodies and body cavity penetration; **See also abdomen, chest** ▪ Investigation for injury to deeper neurovascular, aerodigestive, bone and joint structures	▪ Management priorities of acute traumatic wounds depending on mechanism, location and contamination ▪ Initial management principles of severe burns ▪ Anticipation and recognition of wound complications	▪ Surgical airway	▪ Wound exploration ▪ Wound debridement ▪ Foreign body removal (use of image intensifier) ▪ Wound closure or open management based on the nature of the soft tissue injury ▪ Split skin grafting ▪ VACC therapy applications and limitations

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Skin / Soft Tissues (continued)						
Mid SET				▪ Advanced soft tissue management decisions: identifying the need for specialist involvement ▪ Wound management in specific areas	▪ Wound management in specific areas	▪ Escharotomy ▪ Local flap coverage
Blast injuries						
Early SET	▪ Understanding the unique patterns of blast trauma ▪ Pathophysiology of blast injury	▪ Assessment and description of wounds ▪ Identify life threatening injuries ▪ Initiate initial resuscitation ▪ Assess tetanus immunization status ▪ Identify possible exposures to toxins, chemicals or radiological	▪ Relevant investigations for barotrauma, penetrating, blunt and burn injuries			▪ Lavage and debride contaminated wounds ▪ Intercostal catheters
Mid SET		▪ Mass casualty triaging ▪ Resource allocations ▪ Co-ordinate multidisciplinary team efforts		▪ As per initial resuscitation phase and identify life threatening injuries ▪ Management of contaminated wounds ▪ Management of severe burns ▪ Air embolism	▪ Attend to life threatening injuries	▪ Surgical airway ▪ Thoracotomy ▪ Emergency laparotomy ▪ Haemorrhage control ▪ Escharotomy in burns
Head / Brain						
Early SET	▪ The relevant anatomy and physiology of the CNS ▪ The pathophysiology of increased intracranial pressure	▪ Detailed neurological assessment and documentation of trauma patients ▪ The recognition of typical presentations ▪ Recognition of concussion syndrome	▪ Basic Indications and interpretation of neurotrauma imaging ▪ Cognitive function assessment for management of head injury	▪ The initial management of potential head injured patient ▪ The recognition of raised ICP and monitoring of this ▪ Priorities and timeframes of intervention ▪ Recognition the need of specialist involvement	▪ Extra dural drainage	▪ Control of severe bleeding from scalp lacerations ▪ Nasal packing
Mid SET				▪ Decision making about priorities of head injury in polytrauma scenario ▪ Ongoing management principles of brain injury	▪ Control of severe maxilla-facial bleeding	▪ Definitive wound management of head/face/orbit wounds
Late SET					▪ For rural practice: craniotomy and craniectomy	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Face / Neck						
Early SET	▪ Anatomy regions of the neck ▪ Describe Zones I, II and III of the neck	▪ Clinical assessment of the face ▪ Recognition of signs of vascular, airway, nerve, pharyngeal/ oesophageal injury	▪ Indication and interpretation of x-ray, CT, angiography, endoscopy, contrast studies depending the zone of injury and patient condition	▪ The indications for surgical exploration ▪ Involvement of other subspecialty surgeons ▪ Blunt cerebrovascular injury	▪ Surgical airway	
Mid SET				▪ Selective management strategy based on the zone of injury ▪ Principles of angioembolisation - Level I - Level II ▪ Principles of: - tracheoscopy - pharyngoscopy - oesophagoscopy - bronchoscopy	▪ Access and vascular control in Zone I and III ▪ Repair of carotid injury ▪ Repair of oesophageal injury ▪ Surgical exploration of Zone II	▪ Surgical airway
Spine						
Early SET	▪ Anatomy and physiology of spine and spinal cord ▪ Pathophysiology of primary and secondary cord injury ▪ Common spine injury patterns	▪ Ability to perform safe log-roll and immobilization ▪ Maintenance of spinal precautions ▪ Detailed peripheral neurological exam, level determination and documentation	▪ The need and priorities for imaging depending on the patient condition ▪ The advantages and limitations of imaging tests ▪ Recognition of “unstable” spinal fracture	▪ The ability to ‘clear the spine’ safely in straightforward scenarios		▪ Application of spine immobilisation devices
Mid SET				▪ Decision on transfer and the management priorities of spine injuries in polytrauma scenario	▪ Application of tongs	
Chest						
Early SET	▪ Anatomy and Physiology of thoracic wall and thoracic organs ▪ The pathophysiology of immediately and potentially life threatening conditions in the chest	▪ Focused clinical examination of the chest/torso for a blunt and penetrating trauma patient	▪ Interpretation of chest x-ray (recognition of life threatening conditions) ▪ Indication for further imaging ▪ Clear understanding of penetrating chest trauma workup	▪ Recognising the need for urgent lifesaving interventions (decompression, chest tube insertion), indicating the need for thoracotomy ▪ Involving cardiothoracic surgery as required	▪ ED resuscitative thoracotomy	▪ Chest tube insertion

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Chest (continued)						
Mid SET				▪ Prioritisation of chest injuries in polytrauma scenario ▪ Decision on advanced imaging, timing of aortic tear management ▪ Selective management of penetrating chest trauma ▪ Management of blunt thoracic aortic rupture ▪ Tracheobronchial injury ▪ Pulmonary contusion ▪ Management of retained haemothorax	▪ Diaphragmatic repair from the abdomen ▪ Pericardial window (extra-peritoneal vs. intra-peritoneal) ▪ Diaphragmatic repair from chest	
Late SET					▪ Vascular control in the chest ▪ Periclavicular approaches for the thoracic outlet ▪ Repair simple cardiac wounds ▪ Thoracoscopy, thoracotomy ▪ VATS	▪ Diaphragmatic repair from the abdomen
Abdomen						
Early SET	▪ Up to date knowledge of penetrating and blunt abdominal trauma mechanism, injury probabilities ▪ Relevant trauma surgical anatomy of abdominal organs ▪ Physiology and pathophysiology of abdominal organs ▪ Abdominal organ injury scaling (AAST)	▪ Abdominal/torso assessment in blunt and penetrating trauma ▪ Interpretation of clinical signs in the context of abdominal trauma and other injuries (urgency, importance)	▪ Indication and interpretation of FAST, plain abdominal x-ray and CT scan ▪ Contrast and endoscopic studies ▪ Up to date knowledge of each tests sensitivity specificity and operator dependency	▪ Indications and timing of trauma laparotomy ▪ Decision making in isolated blunt and penetrating abdominal trauma ▪ Indications and limitations of local wound exploration and laparoscopy in penetrating trauma		▪ Local wound exploration

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Abdomen (continued)						
Mid SET				▪ Indications for selective and non-operative management ▪ Priorities of abdominal injuries in polytrauma patients “Damage control” principles ▪ Sound knowledge of which organs can be resected and in what extent, which arteries and veins can be ligated at what level without and with (specifically what) consequences ▪ Role of embolisation	▪ Exploration of the retroperitoneum – left and right medial visceral rotation manoeuvers ▪ Control of major vessels	▪ Damage control laparotomy ▪ Temporary abdominal closure ▪ Trauma laparoscopy ▪ Control of the environment, preparation and execution ▪ Systematic approach ▪ Haemorrhage and contamination control ▪ Anatomical liver packing ▪ Pringle manoeuvre ▪ Splenectomy ▪ Repair resection hollow viscus injury
Late SET					▪ Major abdominal vascular repair ▪ Vascular isolation of the liver ▪ Splenic and kidney salvage techniques ▪ Exploration of the retroperitoneum – left and right medial visceral rotation manoeuvers	
Pelvis						
Early SET	▪ Knowledge of relevant pelvic musculo-skeletal and visceral anatomy and physiology ▪ Basic classification of pelvic fractures	▪ Pelvic examination, leg length, springing, deformity, perineal examination, rectal examination ▪ Neuro-vascular assessment	▪ Pelvic x-ray interpretation ▪ Pelvic CT interpretation (injury to the posterior and anterior ring, contrast blush, pelvic organ injuries) ▪ Indications and interpretation of urethrogram, cystogram and pelvic angiography	▪ Recognition and initiation of the management of haemodynamically unstable pelvic fracture patients ▪ The role of abdominal clearance, pelvic binding, packing, external and internal fixation and angiography		▪ Application of pelvic binder
Mid SET				▪ Decision making on the need and priorities of techniques at the basic column (left) ▪ Priorities in associated abdominal injuries and polytrauma ▪ Open pelvic fracture management ▪ Role of temporary pelvic fixation		▪ Trauma laparotomy
Late SET				▪ Urethrogram	▪ Pre-peritoneal packing for pelvic traumas	▪ Pelvic packing

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Extremities						
Early SET	▪ Relevant anatomy of extremities ▪ The pathophysiology of limb threatening injuries ▪ Grading of open fractures	▪ Basic trauma focused musculo-skeletal assessment including the neurovascular status ▪ Recognition of hard and soft signs of vascular injuries ▪ Ankle-brachial Index	▪ The indication, timing and interpretation of skeletal radiology	▪ Initiation of the management of limb threatening injuries ▪ Tetanus and antibiotic prophylaxis ▪ Early involvement other specialties		▪ Realignment ▪ Splinting ▪ Washout and debridement of open wounds ▪ Compartment pressure measurement
Mid SET				▪ Decision making of viability of limbs in conjunction with other relevant specialties ▪ The priorities of damage control or definitive management of extremity injuries in polytrauma scenarios ▪ Tourniquet	▪ Vascular exploration and control on extremities	▪ Amputations ▪ Fasciotomy

MODULE TITLE:	**UPPER GI & HPB - BARIATRIC/OBESE PATIENTS**	**7-Nov-2016**
DEVELOPED BY:	**Chris Christophi, Mark Smithers**	
REVIEWED BY:	**Tom Wilson, Michael Donovan (2010) Adrian Anthony, Simon Bann, Wendy Brown, Sayed Hassen, Michael Cox, Noel Tait (2013). Wendy Brown (2016).**	

Module Rationale and Objectives

A general surgeon is required to have a thorough understanding of normal anatomy and physiology, as well as pathophysiology, investigations, differential diagnosis and surgical and non-surgical management of abdominal disorders. It is important that general surgeons maintain a current understanding of the most appropriate time and manner of intervention. It is also important that they keep abreast of the most current developments in investigative and surgical procedures.

The graduating trainee will be able to:

- describe common surgical pathologies of the foregut and associated structures
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that pertain to the foregut
- effectively manages patients
- maintains skills and learns new skills
- analyses their own clinical performance for consistent improvement
- recognise the need to refer patients to other professionals
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery for the morbidly obese patient in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology and pathology, of:

- foregut

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, there are no prescribed texts.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Assumed Knowledge

- Nutrition
- Endocrinology of obesity/metabolic syndrome
- Psychological aspects of obese patients

Definitions

Operative Management - Knows: Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.

Operative Management - Does: In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
MORBID OBESITY						
Early SET	▪ Describe the pathophysiology of obesity and understand concept of the weight homeostat ▪ Describe the long term natural history of obesity and associated co-morbidities, and the effects of weight loss on these co-morbidities	▪ Describe the classification of obesity	▪ Define the role of laboratory investigations and imaging specific to the morbidly obese patient undergoing any surgical procedure ▪ Define the laboratory investigations that assist in the diagnosis of the causes and complications of obesity			▪ Gastric band deflation
Mid SET				▪ Describe the specific management of a morbidly obese patient undergoing a surgical procedure ▪ Describe the management of a patient who is to have an anti-obesity operation ▪ Describe the principles for selection of a patient for obesity surgery ▪ Recognise the life threatening early and late complications of bariatric surgery and their management ▪ Recognise short and long term complications and sequelae of anti-obesity surgery		▪ Removal of Gastric Band (open or laparoscopic) in emergency situations ▪ Management of internal hernia after gastric bypass in emergency situations
Late SET					▪ Options for managing complications	

MODULE TITLE:	**UPPER GI & HPB - HEPATIC, PANCREATIC & BILIARY**	**7-Nov-2016**
DEVELOPED BY:	**Chris Christophi, Mark Smithers**	
REVIEWED BY:	**Tom Wilson, Michael Donovan (2010) Adrian Anthony, Simon Bann, Adam Bartlett, Wendy Brown, Tom Elliott, Sayed Hassen, Michael Cox, Noel Tait (2013). Vijayaragavan Muralidharan (2016).**	

Module Rationale and Objectives

A general surgeon is required to have a thorough understanding of normal anatomy and physiology, as well as pathophysiology, investigations, differential diagnosis and surgical and non-surgical management of abdominal disorders. It is important that general surgeons maintain a current understanding of the most appropriate time and manner of intervention. It is also important that they keep abreast of the most current developments in investigative and surgical procedures.

The graduating trainee will be able to:

- describe common surgical pathologies of the foregut and associated structures
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that pertain to the foregut
- effectively manages patients
- maintains skills and learns new skills
- analyses their own clinical performance for consistent improvement
- recognise the need to refer patients to other professionals
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology and pathology, of:

- foregut

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

Suggested readings:

(1) Hepatobiliary and Pancreatic Surgery: A Companion to Specialist Surgical Practice (ISBN 9780702030147), 4th edition (or later), edited by O.J. Garden.

(2) Blumgart's Surgery of the Liver, Biliary Tract and Pancreas (ISBN 9781437714548), 5th edition (or later), by W.R. Jarnagin and L.H. Blumgart.

For the Fellowship examination, there are no prescribed texts.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Assumed Knowledge

- Embryology of the liver, pancreas and bilio-pancreatic tract
- Anatomy and physiology of the liver, biliary tract, pancreas

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
HEPATIC **Primary liver malignancy** ▪ **HCC** ▪ **cholangioca** ▪ **others**						
Early SET	▪ Describe the embryology, anatomy, and physiology of the liver ▪ Describe the aetiology, pathology, and staging	▪ Describe the clinical presentation	▪ Define the role of medical imaging and laboratory investigations			
Mid SET	▪ Describe the common anatomical variations of the liver		▪ Determine the degree of hepatic dysfunction	▪ Patient and family counselling ▪ Understand the aims of treatment ▪ Staging ▪ Describe and evaluate the various methods of treatment		▪ Staging Laparoscopy
Late SET			▪ Establish the operability of the lesion ▪ Assessment of portal hypertension ▪ Assessment of future liver remnant (FLR)	▪ Improving future liver remnant (FLR) ▪ Prevention of post-operative liver failure ▪ Post treatment surveillance	▪ Liver resection in patient with cirrhosis ▪ Intra Operative US ▪ Laparoscopic Liver Biopsy in Cirrhosis	
Liver metastases						
Early SET	▪ Describe the pathology and staging	▪ Demonstrate the clinical assessment of the patient with suspected liver metastasis				
Mid SET			▪ Outline the role of staging techniques including: - Cross sectional imaging - Functional imaging - Laparoscopy - Laparoscopic IOUS ▪ Determine factors for operability	▪ Patient and family counselling ▪ Understand the principles of treating metastatic disease ▪ Selection and pre-operative preparation of patient ▪ Outline the multi-disciplinary approach to treatment		▪ Staging laparoscopy ▪ Staging at laparotomy
Late SET			▪ Assessment of future liver remnant (FLR)	▪ Improving future liver remnant (FLR) ▪ Prevention of post-operative liver failure ▪ Post treatment surveillance	▪ Principles of hepatic mobilisation, localisation of the tumour and dissection of the liver ▪ Intra Operative US	▪ Laparoscopic Liver Biopsy

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Incidental liver lesions ▪ **adenoma** ▪ **FNH** ▪ **haemangioma** ▪ **non-parasitic cysts**						
Early SET	▪ Differentiate between the various pathologies ▪ Describe the natural history of each entity	▪ Describe the clinical presentation and assessment				
Mid SET			▪ Define the role of medical imaging and laboratory investigations ▪ Understand the strengths and weakness of investigations	▪ Establish which lesions need further management and/or referral for further investigations or treatment ▪ Role of long term surveillance ▪ Risk stratification of tumours ▪ Role of immune-histochemical and genetic profiling of biopsies		▪ Evaluation at open operation ▪ Laparoscopic liver biopsy
Late SET					▪ Principles of hepatic mobilisation, localisation of the tumour and dissection of the liver ▪ Intra Operative US	
Liver infections ▪ **abscess pyogenic** ▪ **parasitic** ▪ **others**						
Early SET	▪ Describe the aetiology and pathological features including microbiology	▪ Describe the clinical symptoms and signs	▪ Define the role of medical imaging and laboratory investigations	▪ Describe the medical and surgical management of each condition		
Mid SET				▪ Role of percutaneous drainage ▪ Role for surgical drainage		
Portal hypertension						
Early SET	▪ Classification of portal hypertension ▪ Describe the aetiology and pathophysiology ▪ Classification of severity of liver disease (Childs-Pugh)	▪ Demonstrate the clinical assessment of a patient with acute or chronic liver disease and portal hypertension	▪ Define the endoscopic, laboratory and radiological assessments	▪ Describe the management of a patient with acute or chronic liver disease in relation to peri-operative care and portal hypertension ▪ Describe the principles of management: - medical - radiological - surgical management - endoscopic	▪ Operative strategies for patient with portal hypertension	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Portal hypertension (continued)						
Late SET					▪ Management of variceal bleeding	
Ascites						
Early SET	▪ Describe the aetiology and associated pathologies causing ascites	▪ Describe the clinical symptoms and signs	▪ Define the role of medical imaging and laboratory investigations ▪ Interpretation of ascitic tap	▪ Describe the principles of radiological, medical and surgical management ▪ Medical and paracentesis for symptom management	▪ Impact of ascites on abdominal surgery	
Mid SET					▪ Operative management of patient with ascites	
Hepatic trauma *See also Trauma Module*						
Early SET	▪ Describe aetiology and the patterns of injury ▪ Define the subsequent complications of blunt and penetrating trauma ▪ Define the natural history of each type of injury	▪ Demonstrate the clinical assessment of the trauma patient with liver injury	▪ Define the role of medical imaging and laboratory investigations	▪ Describe the principles of management: - radiological - operative		
Mid SET			▪ Describe the CT grading of liver injuries	▪ Describe the principles of management of liver injury ▪ Describe the principles of management: - non-operative - operative	▪ Understand the principles of use of various haemastatic agents ▪ Understand the role of low CVP anaesthesia in liver injuries	▪ Laparotomy ▪ Assessment of severity of injury ▪ Methods to obtain haemostasis including packing a liver injury for referral/transfer
Hepatic Failure (Acute & Chronic)						
Early SET	▪ Describe the definitions of acute and chronic liver failure ▪ Understand the aetiology of acute and chronic liver failure	▪ Demonstrate the clinical assessment of patients with liver failure	▪ Define the investigations to determine the aetiology ▪ Determine assessment of liver failure			
Mid SET				▪ Describe the principles of management of acute and chronic liver failure	▪ Methods to achieve haemostasis	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
BILIARY **Gallstone disease**						
Early SET	▪ Describe the aetiology of biliary stone disease and the complications	▪ Describe and differentiate the clinical features and signs	▪ Understand the role, limitations and complications of investigations and treatment options			
Mid SET	▪ Describe the common anatomical variations of the biliary tree ▪ Describe the common anatomical variations of the hepatic vasculature		▪ Understanding of the role, limitations and complications of endoscopic retrograde cholangiopancreatography ▪ Understanding of the role, limitations and complications of transcystic bile duct exploration	▪ Describe and evaluate the management, including all complications		▪ Cholecystectomy for uncomplicated and complicated disease, including performance of operative cholangiography ▪ Open exploration of the common bile duct ▪ Laparoscopic transcystic exploration of the common bile duct
Late SET					▪ Laparoscopic exploration of the common bile duct	▪ Open cholecystectomy including techniques for the “difficult” gall bladder
Gall bladder polyp						
Early SET	▪ Describe the aetiology and the pathology ▪ Describe the natural history of the causes	▪ Describe the symptoms and signs	▪ Define the role of medical imaging and laboratory investigations			
Mid SET			▪ Risk stratification	▪ Describe the principles of management: - non-operative - operative		▪ Laparoscopic cholecystectomy
Late SET					▪ Role of laparoscopic IOUS	
Gallbladder carcinoma / cholangiocarcinoma						
Early SET	▪ Describe the pathology and staging	▪ Describe and differentiate the clinical features and signs	▪ Define the role of medical imaging and laboratory investigations			
Mid SET				▪ Patient and family counselling ▪ Describe the assessment, staging and management ▪ Define the role of resection ▪ Outline the mechanism of palliation of jaundice when present	▪ Laparoscopic assessment ▪ Laparoscopic IOUS	▪ Staging laparoscopy ▪ Laparoscopic liver biopsy

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Benign biliary bile duct /strictures injuries						
Early SET	▪ Describe the aetiology of benign biliary strictures ▪ Describe the mechanism for bile duct injuries ▪ Describe the classification of bile duct injuries	▪ Describe and differentiate the clinical symptoms and signs				
Mid SET	▪ Define the risk factors for injury ▪ Describe the common anatomical variations of the biliary tree ▪ Describe the common anatomical variations of the hepatic vasculature	▪ Describe the clinical features of an injury in the post-operative period	▪ Define the role of medical imaging and laboratory investigations ▪ Define the role of medical imaging, endoscopic and laboratory investigations peri-operatively	▪ Describe the assessment and management of injuries and stricture ▪ Describe the outcomes ▪ Outline the role of follow-up ▪ Describe the assessment and management of a bile duct injury recognised	▪ Roux-en-Y hepatico-jejunostomy	▪ Intra-operative - recognition - call for help or - drain and refer ▪ Postoperative - recognition - laparoscopic or open drainage and refer
Late SET				▪ Describe associated vascular injuries and consequences		
Choledochal anomalies						
Mid SET	▪ Describe the pathology and the classification	▪ Describe and differentiate the clinical symptoms and signs	▪ Define the role of medical imaging and laboratory investigations	▪ Describe the principles of management		
Late SET					▪ Biliary resection ▪ Roux-en-Y hepatico-jejunostomy	
PANCREATIC **Acute pancreatitis**						
Early SET	▪ Describe the embryology, anatomy, and physiology of the exocrine pancreas ▪ Define the aetiology ▪ Describe the pathophysiology of the changes associated with acute pancreatitis ▪ Describe and explain the pathology of the complications	▪ Define the clinical symptoms and signs ▪ Define the risk stratification	▪ Describe and evaluate the indicators of severity	▪ Describe the principles of management of the acute episode		
Mid SET		▪ Describe the presentation of the complications	▪ Define the role of imaging in diagnosis, staging, severity, and assessment of complications	▪ Role of ERCP ▪ Define the assessment and treatment of the complications: - general - pancreas specific	▪ Percutaneous necrosectomy	▪ Operative recognition of acute pancreatitis ▪ Percutaneous abscess drainage

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Acute pancreatitis (continued)						
Late SET				▪ Role of EUS for diagnosis and therapeutic roles	▪ Open, laparoscopic and endoscopic cysto-gastrostomy ▪ Open necrosectomy ▪ Laparoscopic necrosectomy	
Chronic pancreatitis						
Early SET	▪ Define the aetiology					
Mid SET	▪ Describe the pathophysiology of the changes associated with chronic pancreatitis ▪ Describe and explain the complications	▪ Define the clinical symptoms and signs	▪ Define the role of medical imaging and laboratory investigations ▪ Assessment of exocrine and endocrine deficiencies	▪ Describe the role of medical radiological, endoscopic and surgical treatment options for general constitutional and pancreas specific problems		
Late SET			▪ Differentiate pancreatic mass in chronic pancreatitis	▪ Chronic pain management ▪ Nutritional management	▪ Pancreatico-jejunostomy ▪ Distal pancreatectomy ▪ Role for splenic preservation	
Periampullary and ductal pancreatic carcinoma						
Early SET	▪ Describe the pathology and staging ▪ Describe and evaluate the pathophysiological changes associated with obstructive jaundice	▪ Define the clinical symptoms and signs	▪ Define the role of medical imaging and laboratory investigations	▪ Outline the multidisciplinary approaches to management		
Mid SET			▪ Outline the role of endoscopic ultrasound	▪ Patient and family counselling ▪ Define assessment for resectability pre-operatively and intra-operatively ▪ Describe the principles of pancreatic resection	▪ Biliary-enteric anastomosis and gastro-enterostomy	▪ Laparoscopic staging
Late SET					▪ Pancreatic-duodenectomy ▪ Distal pancreatectomy	▪ Gastro-enterostomy
Pancreatic cysts & Cystic tumours trauma						
Early SET	▪ Describe the pathology and staging	▪ Define the clinical symptoms and signs	▪ Define the role of medical imaging and laboratory investigations			

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Pancreatic cysts & Cystic tumours trauma (continued)						
Mid SET		▪ Define the natural history ▪ Risk stratification	▪ Outline the role of endoscopic ultrasound ▪ Understand interpretation of FNA and cyst fluid biochemistry	▪ Define the principles of: - Risk stratification and conservative management - Role of surgical intervention - Role of endoscopic intervention	▪ Pancreatic duodenectomy ▪ Distal pancreatectomy	▪ Laparoscopic staging
Late SET						▪ Gastro-enterostomy
Other pancreatic tumours including: *See also Endocrine Module* ▪ **endocrine tumours** ▪ **incidental tumours**						
Early SET	▪ Describe the pathology and staging	▪ Define the clinical symptoms and signs	▪ Define the role of medical imaging and laboratory investigations			
Mid SET			▪ Outline the role of endoscopic ultrasound	▪ Define the principles of: - resectability - medical management - control of systemic symptoms ▪ Risk stratification and conservative management	▪ Pancreatic duodenectomy ▪ Distal pancreatectomy	
Pancreatic-duodenal trauma *See also Trauma Module*						
Early SET	▪ Describe the patterns of injury		▪ Define the role of medical imaging and laboratory investigations			
Mid SET	▪ Define the classification for duodenal and pancreatic trauma	▪ Define the clinical findings and assessment in suspected pancreatico-duodenal trauma		▪ Define the principles of: - assessment - non-operative management - operative assessment and management	▪ Techniques for repair of a duodenal injury/± pancreatic injury ▪ Assess the extent of injury at laparotomy	▪ Damage control ▪ Laparotomy
Late SET					▪ Distal pancreatectomy	
ERCP complications						
Mid SET	▪ Define the types of complications - haemorrhage - perforation - cholangitis - pancreatitis	▪ Define the clinical findings and assessment of post ERCP complications	▪ Define the role of medical imaging and laboratory investigations	▪ Describe the principles of management		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
SPLEEN AND HAEMOPOIETIC SYSTEM **Splenic trauma**						
Early SET	▪ Describe the embryology, anatomy, and physiology of the spleen ▪ Describe the patterns and classification of injury	▪ Describe the clinical assessment of splenic trauma	▪ Define the role of medical imaging and laboratory investigations	▪ Describe the principles of management including: - resuscitation - non-operative - operative (conservative and resection)		
Mid SET	▪ Describe the complications of splenectomy					▪ Trauma splenectomy
Late SET					▪ Understand the principles of use of various haemostatic agents ▪ Splenorrhaphy	
ITP/other indications for splenectomy						
Early SET	▪ Describe the pathophysiology of ITP		▪ Define the role of medical imaging and laboratory investigations			
Mid SET	▪ Describe the indications for elective splenectomy			▪ Describe the principle of pre-operative management ▪ Describe the principles of the follow-up care	▪ Laparoscopic splenectomy	▪ Elective splenectomy for a normal sized spleen
Massive spleen						
Early SET	▪ Describe the causes (infective vs. non-infective)	▪ Describe the clinical features	▪ Define the role of medical imaging and laboratory investigations	▪ Describe the principle of pre-operative management		
Mid SET				▪ Describe the indications for splenectomy		
Late SET					▪ Splenectomy for massive spleen	
Lymph nodes including lymphoma						
Early SET	▪ Describe the aetiology and associated pathologies causing lymphadenopathy	▪ Describe the clinical symptoms and signs	▪ Define the role of medical imaging and laboratory investigations ▪ Define the role of cytology	▪ Describe the principle of pre-operative assessment ▪ Define the role of lymph node biopsy		▪ Open node biopsy; - cervical - axillary - femoral
Mid SET					▪ Laparoscopic abdominal nodal biopsy **See also Surgical Oncology Module**	▪ Open abdominal nodal biopsy

MODULE TITLE:	**UPPER GI & HPB - OESOPHAGO-GASTRIC**	**7-Nov-2016**
DEVELOPED BY:	**Chris Christophi, Mark Smithers**	
REVIEWED BY:	**Tom Wilson, Michael Donovan (2010) Adrian Anthony, Simon Bann, Wendy Brown, Jon Gani, Sayed Hassen, Michael Cox, Noel Tait (2013). Simon Bann, Sayed Hassen (2016).**	

Module Rationale and Objectives

A general surgeon is required to have a thorough understanding of normal anatomy and physiology, as well as pathophysiology, investigations, differential diagnosis and surgical and non-surgical management of abdominal disorders. It is important that general surgeons maintain a current understanding of the most appropriate time and manner of intervention. It is also important that they keep abreast of the most current developments in investigative and surgical procedures.

The graduating trainee will be able to:

- describe common surgical pathologies of the foregut and associated structures
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- diagnose and manage pathological conditions that pertain to the foregut
- effectively manages patients
- maintains skills and learns new skills
- analyses their own clinical performance for consistent improvement
- recognise the need to refer patients to other professionals
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology and pathology, of:

- foregut

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, there are no prescribed texts.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Assumed Knowledge

- Embryology, anatomy and physiology of the foregut

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
OESOPHAGUS **Gastro-oesophageal reflux (GOR) disease and Hiatus hernia / paraoesophageal hernia**						
Early SET	▪ Describe embryology, anatomy, and physiology of the oesophagus ▪ Describe manometric associations	▪ Assess and differentiate the clinical symptoms				
Mid SET	▪ Describe complications including stricture, respiratory symptoms and Barrett's ▪ Describe acute of presentation of strangulated Hiatus hernia		▪ Outline the role of: - gastroscopy - manometry - 24 Hr pH studies - barium swallow	▪ Review the principles of non-operative/medical management ▪ Establish: - indications - options - complications of operative management		▪ Endoscopic assessment of GOR
Late SET				▪ Management of incarcerated Hiatus hernia	▪ Laparoscopic/ open fundoplication	
Oesophageal strictures: **▪ peptic and corrosive strictures** **▪ Schatzki ring and webs**						
Early SET	▪ Describe the lesion and aetiology when known	▪ Assess the clinical symptoms				
Mid SET			▪ Analyse the role of gastroscopy and barium swallow	▪ Implement the principles of non-operative, endoscopic and operative management		▪ Endoscopic assessment of the stricture ▪ Endoscopic dilatation
Oesophageal malignancies						
Early SET	▪ Describe the aetiology and pathology ▪ Identify prognostic factors	▪ Recognise the clinical presentations ▪ Examine and assess the clinical staging ▪ Medical assessment	▪ Define the role of gastroscopy ▪ Define the role of radiological investigations	▪ Outline the multi-disciplinary approach to management		
Mid SET				▪ Define the methods of palliation ▪ Patient and family counselling ▪ Outline management of the post-resection functional problems ▪ Outline management of high grade dysplasia	▪ Resection/reconstruction options ▪ Palliative stenting	▪ Endoscopic diagnosis and assessment ▪ Feeding jejunostomy ▪ Laparoscopic staging
Other tumours						
Early SET	▪ Describe other benign tumours of the oesophagus	▪ Recognise the clinical presentations	▪ Define the role of gastroscopy, EUS, medical imaging	▪ Define the management of these tumours		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Other tumours (continued)						
Mid SET					▪ Endoscopic diagnosis and assessment	
Motility disorders						
Early SET	▪ Define the pathological abnormalities	▪ Describe the clinical presentation	▪ Describe the role of gastroscopy, barium swallow, and manometry			
Mid SET				▪ Describe the principles of management of the relevant conditions	▪ Endoscopic assessment and management options	
Late SET					▪ Laparoscopic Heller's myotomy	
Oesophageal varices						
Early SET	▪ Knowledge of the aetiology and associated pathology					
Mid SET		▪ Differentiate the clinical features of a variceal bleeding from other causes of upper GI bleeding ▪ Define the extent of underlying liver disease	▪ Describe the role of gastroscopy ▪ Describe the laboratory assessment of the severity of the associated liver disease	▪ Outline the various forms of treatment: - endoscopic assessment and therapies - radiological stenting (TIPPS) - operative shunts ▪ Management of the underlying liver disease		▪ Endoscopic assessment
Oesophageal foreign bodies						
Early SET	▪ Define the pathological abnormalities	▪ Assess the clinical presentation	▪ Differentiate the role of gastroscopy and medical imaging	▪ Describe the endoscopic therapies and the management of complications (perforation) ▪ Define the follow-up management		
Mid SET						▪ Endoscopic assessment and removal
Oesophageal perforation						
Early SET	▪ Describe the aetiology and associated pathology	▪ Describe the clinical presentation	▪ Define the role of medical imaging and laboratory investigations	▪ Define the diagnosis and describe the principles of therapy: - options to treat the injury - management of the associated sepsis		

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Oesophageal perforation (continued)						
Mid SET				▪ Outline assessment of appropriate transfer to specialist centre		
Late SET					▪ Operative repair, endoscopic stenting	
STOMACH **Peptic ulcers (gastric and duodenal)**						
Early SET	▪ Describe embryology, anatomy, and physiology of the stomach and duodenum (foregut component) ▪ Describe the pathophysiology of benign peptic ulcer disease ▪ Recognise and review the complications: - bleeding - perforation - stricture	▪ Describe and differentiate the clinical symptoms and signs ▪ Outline assessment of patients with complications	▪ Define the role of gastroscopy: - elective - emergency ▪ Investigations relevant to Helicobacter Pylori	▪ Define the medical management of uncomplicated peptic ulcers, including Helicobacter eradication ▪ Define the techniques used to treat bleeding peptic ulcers		
Mid SET				▪ Summarise the principles of management of complications: - bleeding - perforation - stricture		▪ Endoscopic assessment: - elective - emergency ▪ Management of complications (open/lap/endo) operations): - bleeding - perforation - stricture - difficult duodenum
Late SET						▪ Techniques of endoscopic haemostasis
Gastric carcinoma						
Early SET	▪ Describe pathophysiology and the pathological staging	▪ Describe and differentiate the clinical symptoms and signs of gastric carcinoma and other upper GI conditions	▪ Define the role of gastroscopy, imaging, and staging laparoscopy in the assessment	▪ Outline the multi-disciplinary management ▪ Selection and pre-operative patient preparation	▪ Total or subtotal gastrectomy and oesopha-gastrectomy ▪ Radical distal gastrectomy	
Mid SET				▪ Describe the role of palliative surgical procedures ▪ Patient and family counselling		▪ Endoscopic and laparoscopic staging ▪ Gastro-enterostomy ▪ Feeding jejunostomy

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Other gastric tumours e.g. GIST *See also Surgical Oncology Module*						
Early SET	▪ Describe the pathology	▪ Define the clinical symptoms and signs				
Mid SET			▪ Outline the role of gastroscopy and medical imaging	▪ Describe the principles of management		▪ Endoscopic assessment ▪ Local gastric resection or distal gastrectomy (lap/open)
Late SET				▪ Aware of role of adjuvant, neoadjuvant and palliative therapies		▪ Laparoscopic and open wedge gastrectomy

MODULE TITLE:	**ARTERIAL, VENOUS & LYMPHATIC SYSTEMS**	**7-Nov-2016**
DEVELOPED BY:	**David Adams, Alan Saunder, Ivan Thompson**	
REVIEWED BY:	**Alan Saunder (2010) Michael Fink, Damien Mosquera, Alan Saunder, Kellee Slater, Tom Wilson (2013). Gabriella Vasica (2016).**	

Module Rationale and Objectives

The general surgeon is expected to be able to assess and manage commonly occurring vascular diseases that can occur as a single entity, or as a co-morbidity or complication associated with other diseases. They also expected to be able to recognise the need and appropriate time to refer such patients to other professionals.

The graduating trainee will be able to:

- describe common surgical pathologies of atherosclerosis, acute ischaemia and reperfusion injury, aneurysmal disease, systemic complications of diabetic disease, venous insufficiency, and thrombosis
- identify and recognise the symptoms and signs of these conditions
- describe and select appropriate diagnostic testing
- identify appropriate treatment options, and their indications and contraindications
- recognise, assess and treat any common vascular conditions likely to be encountered in consultative general surgical practice
- dissect and expose the abdominal aorta and all major peripheral blood vessels
- select appropriate investigative tools and monitoring techniques in a cost-effective and useful manner recognising risks and complications of their use
- appraise and interpret investigative imaging against patient's needs
- understand risks and benefits of common vascular medications
- recognise which conditions to refer on to a specialised vascular service
- acknowledge their own limitations
- communicate information to patients (and their family) about procedures, outcomes, and risks associated with surgery in ways that encourage their participation in informed decision making (consent)

Anatomy, Physiology, Pathology

Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:

- arterial
- venous
- lymphatic systems

Suggested Reading

Trainees who are preparing to sit the Generic and Clinical Examinations need to refer to the recommended reading list on the RACS website at www.surgeons.org

For the Fellowship examination, there are no prescribed texts.

Trainees are expected to keep abreast of the current literature, including textbooks, journal articles, consensus guidelines and other on-line resources.

Learning Opportunities and Methods

If state-based and/or local hospital courses/meetings are available, trainees are strongly advised to avail themselves of these opportunities. This also includes practising procedures on simulation equipment where applicable.

Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.

Trainees are encouraged to gain exposure to vascular surgery when available.

How this module will be assessed

The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).

Definitions

Operative Management - Knows:	Trainees are required to be familiar with the indications, benefits and limitations of the procedure; trainees should be able to describe the relevant operative techniques involved in performing the procedure; trainees are encouraged to at least observe and preferably assist in these procedures.
Operative Management - Does:	In addition to the above, trainees must be competent at performing the procedure.

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Acute ischaemia						
Early SET	▪ Outline pathological causes of acute ischemia ▪ Describe the local and systemic effects of acute ischemia ▪ Outline mechanisms of trauma that lead to vascular injury and/or haemorrhage	▪ Identify the medical conditions that contribute to or arise from vascular disease ▪ Recognising when it is safe to manage conservatively, at least initially ▪ Appreciate clinical assessments of limb viability and the features of compartment syndrome requiring urgent intervention	▪ Review the relevance of non-invasive and invasive imaging ▪ Recognise which limbs require prompt treatment and no investigation	▪ Implement emergency treatment		▪ Fasciotomy - leg
Mid SET	▪ Outline the anatomical points of access for treatment of acute ischemia ▪ Understand the mechanisms of reperfusion phenomena			▪ Formulate multimodality therapy including: - medical - radiological - surgical treatment ▪ Recognise indications and complications of thrombolysis	▪ Appreciate the role of endovascular treatment including thrombolysis ▪ Embolectomy: - brachial - femoral	
Peripheral vascular disease (chronic)						
Early SET	▪ Outline causes and anatomical distribution of arterial lesions causing chronic ischaemia	▪ Identify vascular risk factors, differential diagnoses, and conditions arising from vascular disease ▪ Review the clinical features in the history and the examination findings including ABPI	▪ Appreciate relative roles of non-invasive versus invasive imaging ▪ Review appropriate investigations to plan risk factor management	▪ Advocate correction of personal risk factors of lifestyle change to improve results of all treatment		
Mid SET	▪ Outline the local pathological sequelae of chronic ischaemia and appreciate the systemic conditions that contribute to the chronic limb ischemia	▪ Be able to take a comprehensive history and examination of all arterial risk factors		▪ Formulate multimodality therapy including: - medical - radiological - surgical treatment ▪ Recognise indications for conservative versus interventional treatment ▪ Differentiate between radiological and surgical options and discuss their limitations	▪ Peripheral vascular reconstruction/ bypass procedures ▪ Dissection and isolation of vessels in the groin ▪ Arterial anastomosis ▪ Arteriotomy closure	▪ Below knee amputation ▪ Above knee amputation

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Aneurysmal disease						
Early SET	▪ Recognise the common sites of aneurysmal disease ▪ Outline pathological basis of abdominal aortic aneurysmal disease ▪ Review pathophysiological sequelae of aneurysmal disease ▪ Differentiate between true and false aneurysm	▪ Identify and recognise the symptoms, signs, and differential diagnoses of ruptured intra abdominal aneurysm ▪ Assess for presence of peripheral aneurysm	▪ Review the relevance of non-invasive and invasive imaging	▪ Justify screening for aortic aneurysm		
Mid SET	▪ Outline anatomical and pathophysiological features that may exclude aneurysmal repair	▪ Identify the clinical characteristics and complications of aneurysms that require treatment		▪ Discuss/describe: - indications for treatment of AAA - management of incidentally identified aneurysm - impact of concomitant medical conditions on management in elective and emergent situations - endoluminal and open techniques for AAA repair ▪ Define role of conservative management of AAA ▪ Formulate the management AAA in the presence of other intra-abdominal pathologies ▪ Complications of AAA repair: - colonic ischaemia	▪ Exposure of aorta and Common iliac arteries	
Late SET					▪ Repair of AAA ▪ Clamp neck of AAA	
Diabetic vascular disease						
Early SET	▪ Outline the pathophysiological effects of diabetes on the vascular system and the foot	▪ Review the clinical presentation of diabetic foot disease including: - ulceration - digital gangrene - sepsis ▪ Discuss the application and limitation of ABPI in diabetic disease ▪ Aggressive approach to diabetic foot care, importance of early recognition of at risk and prevention	▪ Review the relevance of non-invasive and invasive imaging	▪ Describe: - general medical management of diabetes - care of diabetic foot/limb - indications for and level of amputation - multidisciplinary approach to diabetic foot disease	▪ Role of primary closure versus secondary healing	▪ Digital amputations

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Diabetic vascular disease (continued)						
Mid SET	▪ Describe the relative effect of neuropathy versus vasculopathy	▪ Recognise clinical features of diabetic neuropathy		▪ Revascularisation procedures ▪ Role of “off-loading “strategies	▪ Appreciate appropriate application of Negative Pressure Wound Therapy (NPWT) ▪ Transmetatarsal amputations	
Vascular access						
Early SET	▪ Outline the anatomy of vessels used for central vascular access (venous only)	▪ Evaluate access site suitability	▪ Assess clinical tests for adequacy of blood supply and describe the place of imaging	▪ Protection of future vascular access sites		▪ Central line insertion
Mid SET	▪ Outline the anatomy of arteries and veins used for haemodialysis access	▪ Clinical testing of access sites		▪ Review indications for establishing vascular access ▪ Discuss the relative merits of vascular versus peritoneal dialysis techniques; **See also Transplant Module** ▪ Discuss the complications of access procedures and their management	▪ Arterio-venous anastomosis ▪ Portacath and/or Hickman's insertion (including complications of CVL insertion)	
Late SET					▪ Arterio venous graft access techniques	
Venous disease (including varicose veins)						
Early SET	▪ Outline the underlying causes ▪ Describe the anatomy of the deep, superficial and perforating venous systems ▪ Define the pathophysiology of venous ulceration	▪ Review the clinical features in the history and the examination findings ▪ Appreciate the limitations of clinical assessment ▪ Exclude concomitant arterial disease	▪ Discuss the role of duplex in assessing venous disease ▪ ABIs in venous ulcer assessment	▪ List and evaluate the modalities available for treatment of varicose veins ▪ Discuss the role of compression therapy in venous disease ▪ Review various operative techniques ▪ Consider non vascular aetiologies of ulceration; **See also Skin & Soft Tissue Module**	▪ Varicose vein surgery	
Mid SET				▪ Explain/perform the treatment of complications of chronic venous stasis		
Late SET					▪ Operations for recurrent varicose veins	

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Thrombo-embolic disease (DVT and PE)						
Early SET	▪ Outline pathophysiology of VTE ▪ Summarise the causes of hypercoagulable states	▪ Review the clinical features of lower limb DVT ▪ Describe presentation of axillary vein thrombosis ▪ Australasian guidelines on prevention and treatment of DVT/PE ▪ Contraindications to anticoagulation and how this is managed	▪ Review the place of medical imaging and relevant laboratory investigations	▪ Evaluate methods of thromboprophylaxis and risk assessment/stratification of DVT formation ▪ Describe: - emergency treatment - indications for anticoagulation and thrombolysis ▪ Evaluate the role of radiological intervention and surgery for DVT		
Superficial thrombophlebitis						
Early SET	▪ Outline pathophysiology ▪ Summarise the cause of hypercoagulable states	▪ Review the clinical features of lower limb SVT	▪ Review the place of medical imaging and relevant laboratory investigations	▪ Discuss management options	▪ High saphenous ligations	
Mesenteric ischaemia **▪ acute**						
Early SET	▪ Outline relevant anatomy, and pathophysiology	▪ Differentiate the clinical features of acute and chronic mesenteric ischaemia	▪ Review laboratory investigations and place of medical imaging	▪ Review the: - importance of early recognition - recognition of associated medical conditions - medical and surgical therapy options	▪ Laparotomy - resection of nonviable bowel	
Late SET					▪ Mesenteric embolectomy/ revascularisation procedures	▪ Role of secondary laparotomy ▪ Laparotomy ▪ Resection of nonviable bowel
Vascular trauma						
Early SET	▪ Describe the anatomy of vessels most vulnerable to trauma, including iatrogenic	▪ Recognise common patterns of vascular injury ▪ Differentiate hard and soft signs of vascular injury	▪ Indications for investigations, combination injures ▪ Interpret relevant investigations ▪ Recognise relevance or timing of investigations versus immediate surgery			

SET LEVEL	MEDICAL EXPERTISE	JUDGEMENT / CLINICAL DECISION MAKING			TECHNICAL EXPERTISE	
	ANATOMY PHYSIOLOGY PATHOLOGY	CLINICAL ASSESSMENT	INVESTIGATIONS	PRINCIPLES OF MANAGEMENT	OPERATIVE MANAGEMENT - KNOWS -	OPERATIVE MANAGEMENT - DOES -
Vascular trauma (continued)						
Mid SET				▪ Outline methods of vascular repair ▪ Describe an approach to stab injuries to neck, groin and upper limbs ▪ Appraise approaches to and management of thoracic injuries including widened mediastinum	▪ Exposure of major abdominal vessels	
Lymphatic disease						
Early SET	▪ Delineate normal anatomy, embryology and function					
Mid SET	▪ Identify the etiology and pathogenesis of lymphodema and lymphocele ▪ Understand microbiology of cellulitis in lymphedematous limbs	▪ Assessment and differential diagnosis of the swollen limb, especially the unilateral		▪ Describe conservative management options and prevention; **See also Breast Module** ▪ Manage complications of lymphatic disease, especially cellulitis		
Variant anatomy and non-anatomical reconstruction						
Mid SET	▪ Describe common vascular anomalies and their surgical relevance			▪ Explain the surgical implications of non-anatomic reconstruction		