MODULE TITLE:	**COLORECTAL**	**7-Nov-2016**
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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

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	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				

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	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	

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	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	

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	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

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	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	

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	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

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	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