

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	<p>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:</p> <ul style="list-style-type: none"> ▪ 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	<p>Trainees should have thorough knowledge of the normal embryology, anatomy, physiology, and pathology, of:</p> <ul style="list-style-type: none"> ▪ breast ▪ axilla ▪ lymphatic systems ▪ pituitary gonadal axis ▪ steroid hormone biochemistry and molecular biology 	
Suggested Reading	<p>Cancer Australia Guidelines for the Management of Early Breast Cancer</p> <p>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</p> <p>For the Fellowship examination, the following texts are recommended:</p> <ol style="list-style-type: none"> (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 <p>Trainees are expected to keep abreast of the current literature, including textbooks, key journal articles, consensus guidelines and other on-line resources.</p>	
Learning Opportunities and Methods	<p>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.</p> <p>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.</p> <p>Trainees are encouraged to present their research at national and/or accredited regional training days, in order to fulfil the research requirement.</p>	
How this module will be assessed	<p>The Generic and Clinical Examinations; Fellowship examination (written and viva voce sections); Trainee evaluation forms and logbooks; SEAM (where applicable).</p>	
Definitions	<p><i>Operative Management - Knows:</i> 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.</p> <p><i>Operative Management - Does:</i> In addition to the above, trainees must be competent at performing the procedure.</p>	

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	<ul style="list-style-type: none"> Describe anatomy and embryology of the breast including normal histology Review causes of benign breast disease and developmental abnormalities 	<ul style="list-style-type: none"> Review the clinical features in the history and the examination findings 			<ul style="list-style-type: none"> Image-guided fine needle aspiration and/or core biopsy 	<ul style="list-style-type: none"> Clinical fine needle aspiration Skin punch biopsy Core biopsy Excisional biopsy
Mid SET			<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Discuss the management options: <ul style="list-style-type: none"> conservative management versus aesthetic excision Describe management of recurrent cysts, intraduct papilloma, papillary lesions 		<ul style="list-style-type: none"> Wire / carbon localised excision biopsy Microdochectomy
Late SET	<ul style="list-style-type: none"> Describe molecular mechanisms, stem cells and endocrinology affecting breast development 				<ul style="list-style-type: none"> Office ultrasound 	
Indeterminate proliferative lesions						
Mid SET	<ul style="list-style-type: none"> Review pathology 	<ul style="list-style-type: none"> Review the clinical features in the history and the examination findings 	<ul style="list-style-type: none"> Review the appropriate use of medical imaging and the strengths and weaknesses of fine needle aspiration versus core biopsy and triple assessment 	<ul style="list-style-type: none"> Explain the significance and implications for future follow-up 		<ul style="list-style-type: none"> Localised excision biopsy
Nipple discharge						
Early SET	<ul style="list-style-type: none"> Differentiate between physiological and pathological discharge List causes of each 	<ul style="list-style-type: none"> Recognise clinical presentation of each possible cause 	<ul style="list-style-type: none"> Review appropriate use of imaging 			
Mid SET			<ul style="list-style-type: none"> Explain the use and limitations of discharge cytology and galactography 	<ul style="list-style-type: none"> Identify those who require further investigation 		<ul style="list-style-type: none"> Microdochectomy Central duct excision
Breast pain						
Mid SET	<ul style="list-style-type: none"> Differentiate between causes Describe mechanisms of breast pain 	<ul style="list-style-type: none"> Review the clinical features in the history and the examination findings, including "cyclical" v "non-cyclical" pain 	<ul style="list-style-type: none"> Review the appropriate use of medical imaging 	<ul style="list-style-type: none"> Exclusion of serious pathology and reassurance Describe management options Describe a management plan for refractory breast pain 		

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Breast pain (continued)						
Late SET				<ul style="list-style-type: none"> Describe the principles of chronic pain management 		
Inflammatory conditions, breast abscess						
Early SET	<ul style="list-style-type: none"> Review the pathophysiological causes and causative mechanisms Understand the difference between lactational and non lactational infections Describe the relevant microbiology 	<ul style="list-style-type: none"> Review the clinical features in the history and the examination findings 	<ul style="list-style-type: none"> Review the appropriate use of medical imaging Review the appropriate use of 'triple assessment' Understand the role of MRI in assessment of mammary fistula 	<ul style="list-style-type: none"> Carry out/compare the management of mastitis and breast abscesses Appropriate application of: <ul style="list-style-type: none"> antibiotics recurrent aspiration incision and drainage 	<ul style="list-style-type: none"> Ultrasound-guided aspiration of deep/recurrent collections 	<ul style="list-style-type: none"> Clinical aspiration of palpable breast abscess
Mid SET				<ul style="list-style-type: none"> Appraise Granulomatous mastitis Describe appropriate follow up in patients with a residual mass following initial therapy 		<ul style="list-style-type: none"> Excision of central ducts in chronic inflammation
Late SET					<ul style="list-style-type: none"> Lay open/excise mammary fistula Management of complex mammary fistula Operative management of mammary fistula Office ultrasound 	
Ductal Carcinoma in Situ						
Mid SET	<ul style="list-style-type: none"> Review/summarise/discuss the contribution of: <ul style="list-style-type: none"> epidemiology, genetics, risk factors, UICC pathologic staging, histological types, molecular biology, genetic testing, oestrogen receptors 	<ul style="list-style-type: none"> Review the clinical features in the history and the examination findings 	<ul style="list-style-type: none"> Review the appropriate use of medical imaging including MRI Describe the strengths and weaknesses of fine needle aspiration versus core biopsy and triple assessment 	<ul style="list-style-type: none"> Review/summarise: <ul style="list-style-type: none"> indications and contraindications for breast conservation therapy and radiotherapy indications and contraindications for immediate breast reconstruction 		<ul style="list-style-type: none"> Wire/ carbon/seed localised biopsy Wide local excision (complete local excision) Mastectomy Sentinel node biopsy (probe and blue dye)
Late SET	<ul style="list-style-type: none"> Name: Pathological Scoring system for DCIS 			<ul style="list-style-type: none"> Review/summarise: <ul style="list-style-type: none"> indications for prophylactic mastectomy indications for SNB in DCIS 		

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Breast screening						
<i>See also Surgical Oncology Module</i>						
Early SET	<ul style="list-style-type: none"> ▪ Outline principles of population screening specifically related to breast cancer ▪ Identification and Screening of high risk families 		<ul style="list-style-type: none"> ▪ Summarise the principles of breast screening ▪ Principles of screening vs. diagnostic imaging ▪ In screening context understand findings of: <ul style="list-style-type: none"> - normal - benign - probably benign - suspicious - malignant - in situ - invasive disease ▪ Breast Imaging Reporting and Data System (BI-RADS) classification for breast density. 			
Mid SET			<ul style="list-style-type: none"> ▪ Further assessment of radiological abnormalities 	<ul style="list-style-type: none"> ▪ Specificity/ sensitivity/ screening intervals ▪ Importance of quality assurance of the program 		<ul style="list-style-type: none"> ▪ Surgical management of positive screening findings
Late SET	<ul style="list-style-type: none"> ▪ Outline of BRCA gene mutations and testing 		<ul style="list-style-type: none"> ▪ Screening in the high risk patient (BRCA1 and 2, Li Fraumeni) 			
Early breast cancer						
Early SET	<ul style="list-style-type: none"> ▪ Review/summarise/discuss the contribution of: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - molecular sub typing, molecular biology, genetic testing, oestrogen receptors 					<ul style="list-style-type: none"> ▪ Wire / carbon localised biopsy

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Early breast cancer (continued)						
Mid SET	<ul style="list-style-type: none"> ▪ Basic knowledge of: <ul style="list-style-type: none"> - principles of metastasis, patterns of metastasis - principles of prognosis and prediction of response to treatment 	<ul style="list-style-type: none"> ▪ Review the clinical features in the history and the examination findings 	<ul style="list-style-type: none"> ▪ 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 	<ul style="list-style-type: none"> ▪ Review/summarise: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - pregnancy associated breast cancer - axillary lymphadenopathy with occult breast primary - familial breast cancer 		<ul style="list-style-type: none"> ▪ Wide local excision (complete local excision) of breast cancer ▪ Mastectomy ▪ Sentinel node biopsy

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Early breast cancer (continued)						
Late SET					<ul style="list-style-type: none"> ▪ Principles of oncoplastic surgery ▪ Breast reconstruction ▪ Skin sparing mastectomy ▪ Nipple sparing mastectomy 	<ul style="list-style-type: none"> ▪ Axillary dissection
Locally advanced breast cancer						
Early SET	<ul style="list-style-type: none"> ▪ Review/classify/ differentiate between/discuss the contribution of: <ul style="list-style-type: none"> - all listed above for early breast cancer - principles of metastasis, patterns of metastasis 					<ul style="list-style-type: none"> ▪ Punch biopsy
Mid SET		<ul style="list-style-type: none"> ▪ Review the clinical features in the history and the examination findings 	<ul style="list-style-type: none"> ▪ Review: <ul style="list-style-type: none"> - means of tissue diagnosis - imaging of the breasts - role of CT, Nuclear medicine and PET in staging - use of serum markers 	<ul style="list-style-type: none"> ▪ Implement/ compare the management through: <ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> ▪ Reconstructive techniques post radical excision 	<ul style="list-style-type: none"> ▪ Wide local excision (complete local excision) of breast cancer ▪ Mastectomy
Late SET					<ul style="list-style-type: none"> ▪ Breast conservation post primary/neoadjuvant chemotherapy 	<ul style="list-style-type: none"> ▪ Axillary dissection
Advanced breast cancer						
Early SET	<ul style="list-style-type: none"> ▪ Review/classify/ differentiate between/discuss the contribution of: <ul style="list-style-type: none"> - principles of metastasis, patterns of metastasis 					
Mid SET		<ul style="list-style-type: none"> ▪ Review the clinical features in the history and the examination findings 	<ul style="list-style-type: none"> ▪ Review: <ul style="list-style-type: none"> - means of tissue diagnosis - imaging of the breasts - staging investigations - use of serum markers 	<ul style="list-style-type: none"> ▪ Implement/ compare the management: <ul style="list-style-type: none"> - all features applicable to early breast cancer - principles of palliative care 	<ul style="list-style-type: none"> ▪ Complex salvage surgery: <ul style="list-style-type: none"> - breast and chest wall - axilla 	<ul style="list-style-type: none"> ▪ Post neoadjuvant Mastectomy and axillary surgery ▪ Skin grafting ▪ Insertion permanent central venous catheter (portacath): See also Vascular Module

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Advanced breast cancer (continued)						
Late SET	<ul style="list-style-type: none"> Molecular biological factors in initiation, promotion and metastasis of breast cancer 				<ul style="list-style-type: none"> Pleurodesis – chemical or talc 	
Male breast disease						
Mid SET	<ul style="list-style-type: none"> Male breast cancer Gynaecomastia 	<ul style="list-style-type: none"> History, including alcohol, steroids and other drugs, Family History Clinical examination Testicular and liver examination for gynaecomastia 	<ul style="list-style-type: none"> Triple assessment Investigations for gynaecomastia: LFTs, endocrine hormones, testicular markers, genetic syndromes 	<ul style="list-style-type: none"> Consider cancer Recognise physiological changes Differentiate primary and secondary gynaecomastia Surgical and non-surgical management strategies 		<ul style="list-style-type: none"> Subcutaneous mastectomy for gynaecomastia, recognition of cosmesis Mastectomy and axillary surgery for cancer; See also Early Breast Cancer
Multidisciplinary care						
<i>See also Surgical Oncology Module</i>						
Early SET	<ul style="list-style-type: none"> Review/summarise: <ul style="list-style-type: none"> principles of post-traumatic stress and grieving – individual and family pathophysiology of chemotherapy, hormonal intervention and radiotherapy 	<ul style="list-style-type: none"> Review the clinical features in the history and the examination findings 				

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Multidisciplinary care (continued)						
Mid SET				<ul style="list-style-type: none"> ▪ Review/compare the management of: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - Surgery - Radiotherapy - Chemotherapy - Biological therapy ▪ Hormonal therapy ▪ Consensus and conflict resolution ▪ Communication in a team and sequential follow-up 		
Late SET				<ul style="list-style-type: none"> ▪ Medico-legal aspects associated with multi-disciplinary meetings and genetic counselling 		
Axillary nodes unknown primary <i>See also Surgical Oncology Module</i>						
Early SET	<ul style="list-style-type: none"> ▪ Review Lymphatic anatomy, pathology of primary lymphadenopathy and secondary lymphadenopathy 	<ul style="list-style-type: none"> ▪ Review the clinical features in the history and the examination findings of the lymphatic system 	<ul style="list-style-type: none"> ▪ Review: <ul style="list-style-type: none"> - means of tissue diagnosis - imaging of the breasts - staging tests - use of serum markers 			
Mid SET				<ul style="list-style-type: none"> ▪ Implement/ compare the management: <ul style="list-style-type: none"> - affected axilla - affected breast cancer - systemic 		<ul style="list-style-type: none"> ▪ Axillary node biopsy ▪ Mastectomy

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Axillary nodes unknown primary (continued)						
Late SET					▪ Office ultrasound and guided needle biopsy of axillary node	▪ Axillary dissection
Lymphoedema <i>See also Vascular Module</i>						
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		