Breast cancer case based learning resource

Overview of the breast cancer case based learning resource: Libby's story

This case study recounts the experience of Libby, a 48-year-old female diagnosed with breast cancer.

The case study contains four sections:

1. Reduce risk.
2. Find the condition early.
3. Have the best treatment and support during active treatment.
4. Have the best treatment and support between and after active treatment.

It is recommended that you complete the sections and their related activities in order. This is because each section and each activity includes information that will help you complete the sections and activities that follow.

Learning activities

At times, you will have learning activities to complete. Click on the learning activities button and a list of questions will pop up. The questions will relate to the content you've just read or the video you've just watched.

Videos

There is a video component to this case study that is presented in seven parts. You can watch the video clips when prompted throughout this case study, or at any time by clicking on the video icon in the right-side menu. Learning activities throughout the case study will discuss the video and ask questions about it.

Resource links

Resource links are included throughout the case study. These links lead to interesting articles or websites, and are designed to encourage you to explore other available resources.

PDF of breast cancer module
You can download a PDF version of the breast cancer module.

Suggested citation:

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Aim of the breast cancer case study

This case study aims to facilitate the development of competencies that reflect the role of the Specialist Cancer Nurse (SCN) in providing supportive care, information, and education to a person diagnosed with breast cancer at various points across the cancer journey.

This case study focuses on issues during and following active treatment, including specific issues associated with diagnosis and treatment of a contralateral second primary breast cancer.

Rationale

For Australian women, breast cancer was the most commonly diagnosed cancer in 2011, and the second most common cause of cancer-related death in 2012.[6] While breast cancer may occur in men, it is relatively rare and the focus of this case-based learning resource is on breast cancer in women.

Developments in early diagnosis, treatment and supportive care mean that 89.6% of women will be alive five years after diagnosis of breast cancer. [6] However, treatments for breast cancer are complex, given over extended periods of time, and often result in short and longer term effects across a range of domains of health.

A supportive care approach involving multidisciplinary treatment planning and care is recommended to ensure optimal management of people affected by breast cancer during and after treatment.[7]

There are many points along the cancer journey when the SCN can improve outcomes for people at risk of or affected by breast cancer. This module focuses on support for people during and after treatment for a second primary breast cancer.

Section 1: Reduce risk

- Risk factors for breast cancer include older age, having a strong family history of the disease, being overweight and increased alcohol intake. There are also some factors that may have a protective effect against breast cancer, such as having children at a younger age and breastfeeding.[8]
- While there is little evidence to support prevention programs in reducing the risk of developing breast cancer, SCNs can play an important role in reducing engagement in behaviours that may increase a person's risk.[9]

Section 2: Find the condition early

- The benefits of early detection include increased survival, increased treatment options and improved quality of life.[10]
- Rates of participation in screening programs are lower for some groups, such as Indigenous women and women from non-English speaking backgrounds. [11]
- SCNs play a major role in promoting breast awareness, encouraging participation in screening programs, as well as in care and support for women participating in screening programs.

Section 3: Have the best treatment and support during active treatment

- The treatment of breast cancer generally involves multimodality therapy that may include surgery, radiotherapy and systemic therapy such as antineoplastic therapy, hormone therapy and targeted therapies.
- People undergoing treatment for breast cancer can experience a range of effects across all domains of health. SCNs act to prevent these effects, identify their occurrence early, and reduce their impact on the person's health and wellbeing.

- The array of treatment options provided over extended periods of time means that people affected by breast cancer face many challenges navigating the health care system. SCNs play an important role in providing information and support relevant to the individual's clinical, personal and social circumstances during this time.

Section 4: Have the best treatment and support between and after active treatment

- Supportive care and information provision is required to address short and longer term sequelae of treatment, including risks for:
    - premature menopause
    - lymphoedema
    - impaired cardiac function
    - bone density
    - fertility
    - cognitive impairment
    - psychosocial distress, anxiety and/ or depression.

- Women who have had breast cancer have a higher risk than the general population of developing another breast cancer.[12] The SCN can assist people who have been treated for breast cancer to follow recommended guidelines for follow up including:[13]
    - clarifying the goals of follow up
    - understanding their individual risk of breast cancer recurrence
    - assessing new symptoms in light of their risk of recurrence
    - seeking appropriate follow up care in line with evidence based protocols.

Section 1: Reduce risk

Objectives

On completion of this section, you should be able to:

1. Interpret key epidemiological trends in age-specific incidence, mortality and survival from breast cancer.
2. Explain current evidence regarding risk factors associated with the development of breast cancer.

Breast cancer in Australia

For Australian women, the risk of being diagnosed with breast cancer before the age of 85 is one in eight. [6]

Although the incidence of breast cancer for women has increased over the past 20 years, the risk of dying from breast cancer has decreased. Between 1994 and 2012, the age-standardised mortality rate for breast cancer in women decreased by 30 per cent (from 30.9 deaths per 100,000 women in 1994 to 20.6 deaths per 100,000 women in 2012).[6, 7]

Improvements in early detection and treatments have significantly contributed to lower mortality rates.[11] The five-year relative survival rate for Australian women with breast cancer during 2007-2011 was 89.6%[6], compared with 73% in 1982-87.[4]

Consequently, the number of people living with a breast cancer diagnosis has increased. At the end of 2008, 159,325 women living in Australia had been diagnosed with breast cancer in the previous 27 years.[4]

Age-standardised incidence of female breast cancer is significantly higher in major cities than in other areas. During 2004-2008, 114 new cases of breast cancer were diagnosed per 100,000 women in major cities. Comparatively, incidence rates were lower in remote and very remote areas (94 per 100,000 women) .[4] This is related to a significantly higher incidence of breast cancer in high socioeconomic status areas.[4] A contributing factor may be the lower rates of mammographic screening in very remote regions.[4]

Learning activities	
Completed	Activities
☐	1 Access Breast Cancer in Australia: an overview[4] and identify the following: • predicted number of new breast cancer cases in 2020 • mean age of a first diagnosis of breast cancer • relative five-year survival rate for breast cancer • prevalence of breast cancer • trends in survival from breast cancer. • Australia's incidence of breast cancer in comparison to other countries. • incidence and survival rates of Indigenous versus non-Indigenous women.

Risk factors

Risk factors for breast cancer include:[4, 14]

- age: in Australia in 2008, more than two thirds (69%) breast cancers in women were diagnosed in those aged 40-69, while one quarter (25%) were diagnosed in those aged 70 and over[4]
- familial risk: having a mother, sister or daughter and/or father, brother or son who has had breast cancer increases the risk of a woman developing breast cancer. The more first-degree relatives affected and the younger the age at diagnosis, the higher the breast cancer risk
- inherited genetic susceptibility: BRCA1, BRCA2 and CHEK2 mutations are associated with increased risk
- early menarche, late menopause, and no children or a first child at 30 years or older
- alcohol consumption of more than two standard drinks a day increases the risk (about 5%)
- overweight and obesity in postmenopausal women.

In addition, diet, physical activity and the maintenance of a healthy weight may play a role in protecting against breast cancer.[14] The risk for invasive breast cancer is also higher in smokers than non-smokers.[15]

SCNs can contribute to efforts to modify lifestyle-related factors that are associated with breast cancer. However, as most risk factors for breast cancer are not readily amenable to change, opportunities for prevention of breast cancer are limited.[14]

Women who have had breast cancer are at increased risk of another breast cancer diagnosis.[12] With current treatment protocols, the risk of in-breast recurrence is 1-2% per annum and 1% after mastectomy. The risk of a second primary cancer increases by two to five times in people with a history of breast cancer. A reported 5-10% of women with breast cancer develop a second primary breast cancer in their lifetime.[13]

Resource link

Familial Risk Assessment – Breast and Ovarian Cancer (FRA-BOC) is an on-line tool designed for use by health professionals
FRA-BOC:[3]
* Provides an estimation of the risk of developing breast or ovarian cancer, based on family history, for unaffected women
* Assists health professionals to reassure the majority of women who are at population risk, based on their family history
*Identifies women who should be referred to a family cancer clinic for further assessment and advice

Learning activities	
Completed	Activities
	Access Breast cancer risk factors: a review of the evidence[16] and complete the following:
☐	1. Summarise the risk and protective factors associated with invasive breast cancer, outlined in Table 1 (p. xi), related to: • sex, age and residence • family history and genetics • breast conditions • reproductive and menstrual history • endogenous and exogenous hormones • body size and lifestyle behaviours • medical history • environmental exposures.
☐	2 What risk factors are associated with the development of breast cancer in men? You may wish to access the Cancer Australia resource – Breast Cancer in Men[5].
☐	3 A woman asks you for health advice about how to prevent breast cancer. Discuss how you would respond, referring to evidence to support your advice.

Section 2: Find the condition early

Objectives

On completion of this section, you should be able to:

1. Explain the key components of Australia's population screening program for breast cancer and the rationale for this program.
2. Identify the factors which may influence women's participation in screening programs.
3. Describe early detection strategies for people who have an increased risk of developing breast cancer.
4. Explain strategies the SCN may use to promote early detection of breast cancer.
5. Describe common concerns and reactions of people with new breast symptoms.
6. Implement strategies to provide information, education and support to women undergoing breast cancer screening or investigation of new breast symptoms.

Early detection

Benefits of early detection include increased survival, increased treatment options and improved quality of life. Methods of early detection of breast cancer include:[17]

- breast awareness – awareness by the woman of the normal look and feel of her breasts
- screening mammography – use of mammography in asymptomatic women to detect breast cancer at an early stage
- clinical breast examination – physical examination of an asymptomatic woman's breast by a medical or allied health professional.

Breast awareness

Being aware of the normal look and feel of one's breasts is important for early detection, as more than half of breast cancers are diagnosed after investigation of a breast change found by the woman or by her doctor. However, while there is evidence that women can find breast changes due to early breast cancer, there is no evidence to promote the use of any one self-examination technique over another.[10]

Mammography

BreastScreen Australia is the national program of screening mammography in Australia. The program aims to reduce mortality and morbidity from breast cancer by actively recruiting and screening women aged 50–69 years every two years, using mammography for early detection of the disease. Women aged 40–49 years and 70 years or over may also be screened. [11]

It is estimated that screening 10,000 women aged 50–69 years will prevent about 10–20 deaths from breast cancer over 10 years, with similar results for women aged between 65-74 years who do not have other diseases or conditions affecting their survival.[10] Screening mammography is less beneficial for younger women, due to the reduced accuracy of mammography resulting in a higher risk of false positive and false negative results.[10]

In the 2009-2010 two-year period, the participation rate was 55% for women in the target age group of 50-69.[4] Participation rates in screening mammography vary, with significantly lower rates found in populations of Aboriginal and Torres Strait Islander women (36%)[4] and women whose main language spoken at home was not English.[11]

Clinical breast examination

For women who are not participating in regular mammographic screening, regular clinical breast examination may offer some benefit.[10]

Screening programs may appear to be a routine part of health checks for women. However, social and cultural meanings of breast cancer can mean that mammographic screening can cause distress for some women. In particular, women who perceive themselves at greater risk, or who have experienced a false negative or false positive diagnosis may be at greater risk of experiencing psychological distress.[18]

Learning activities		
Completed	Activities	
☐	1	Access the National Cancer Prevention Policy - Principles of screening[19] and the Cancer Australia position statement - Early detection of breast cancer[17] and: • Justify why breast cancer meets the criteria for a population screening program. • Debate whether, with increasing life expectancy, the value of screening women over 70 years should be investigated.
☐	2	Using available evidence, justify the advice you would give women in the following age groups about how to detect breast cancer early: • younger than 40 years • 40-49 years • 50-69 years • 70 years or over.
☐	3	Discuss the advice you would give a woman on how she should check her breasts and what breast changes would warrant further review by a health professional.
☐	4	Access BreastScreen Australia Program[20] website and: • Review the major aims of the BreastScreen Australia program Identify strategies that an SCN could use to promote achievement of the aims of the BreastScreen Australia program.
☐	5	Identify reasons for lower mammographic screening rates among Aboriginal and Torres Strait Islander women, and women from non-English speaking backgrounds.

Screening for women at risk

Individualised surveillance programs may be developed for women who are at increased risk of developing breast cancer.

Women who have a previous breast cancer may be followed up according to schedules recommended in evidence-based guidelines, depending on the type of breast cancer they have had. It is recommended that these women consult their general practitioner (GP) or specialist for monitoring. Depending on which state or territory a woman is in, she may no longer be able to have mammograms at BreastScreen. Arrangements may be made to attend a hospital breast clinic or radiological practice for follow-up mammogram and/or ultrasound.[10]

Women who have a strong family history of breast cancer may require other investigations and surveillance. It may be appropriate for some women with a strong family history to be referred to a family cancer clinic, where risks of developing cancer and appropriate counselling support and intervention can be determined.

Women under 50 years who are at high risk of developing breast cancer, and who have no signs or symptoms of the disease are eligible under Medicare benefits for magnetic resonance imaging (MRI) surveillance.[21]

A person with increased risk of cancer is likely to experience a range of fears and concerns that may be heightened at times of screening. SCNs play a critical role in supporting people at this time, and in providing evidence-based information and advice to reduce anxiety and encourage adherence to recommended surveillance advice.

Learning activities		
Completed	Activities	
☐	1	Access the Familial Risk Assessment FRA-BOC[3] and discuss advice you would give a 42 year old woman about her recommended breast cancer surveillance if she had one first degree relative over 50 years of age with breast cancer.

Case Study: Meet Libby

Case study: meet Libby

Libby is a 48-year-old female who was first diagnosed with breast cancer eight years ago. This case study follows Libby's journey through diagnosis of a second primary breast cancer in the contralateral breast.

Read Libby's healthy history, watch the video, and then work through the learning activities. Use your notebook at the top of the screen to answer the learning activity questions and record your thoughts.

Libby's story 1: meet Libby

Learning activities

Completed	Activities
☐	1 After watching Libbys' story, access the Familial Risk Assessment FRA-BOC[3], and outline her estimation of risk for developing future breast or ovarian cancer.
☐	2 Access Advice about familial aspects of breast cancer and epithelial ovarian cancer – a guide for health professionals[22], and; • Outline evidence-based recommendations for follow up to detect recurrence or a second primary breast cancer for Libby who has received treatment for invasive breast cancer.

Responding to a new breast symptom

Identifying changes in one's breast, or being recalled for further investigation following routine screening or surveillance, can cause fear and anxiety.[18] At this time, the SCN has an important role in providing information to allay anxiety, and conveying support through active listening, asking open ended questions, and use of supportive non-verbal communication.[23]

A guide is available to assist General Practitioners in investigating symptoms that could be breast cancer – The investigation of a new breast symptom: a guide for General Practitioners.[24] The guide emphasises the role of the 'triple test', as well as the importance of understanding an individual woman's risk to determine the appropriate action.

The triple test refers to three diagnostic components:[24]

- medical history and clinical breast examination
- imaging – mammography and/or ultrasound
- non-excision biopsy – fine needle aspiration (FNA) cytology and/or core biopsy.

Learning activity

Completed	Activity	
☐	1	Access The investigation of a new breast symptom: a guide for General Practitioners.[24] Outline the advice you would give to a 40 year old woman about what is involved in the 'triple test' investigation she is likely to have for new breast lump: • compare this advice with the advice you might provide a women who was 55 years old • discuss specific communication strategies you would use to convey support to a woman at this time.

Case study

Libby's story 2: new symptoms

Learning activities

Completed	Activities	
☐	2	Explain how you would assess Libby's main concerns at this time.
☐	3	Describe how Libby's previous experience with breast cancer may influence her responses to a new breast symptom.
☐	4	Discuss the investigations that Libby is likely to undergo and the rationale for these investigations.

☐	5	Formulate a nursing care plan to provide information, education and support to Libby at this time.

Section 3: Have the best treatment and support during active treatment

Objectives

On completion of this section, you should be able to:

1. Describe the pathophysiological features of the different types of breast cancer.
2. Discuss the implications of staging and histopathology of breast cancer for a person's breast cancer journey.
3. Discuss the key supportive care needs of people diagnosed with and undergoing treatment for breast cancer.
4. Discuss current treatment approaches for the management of different types and stages of breast cancer.
5. Analyse factors that might influence the treatment decisions of people with breast cancer.
6. Use evidence-based approaches to facilitate the ability of the person affected by breast cancer to participate in decisions about their treatment and care, according to their preferences.
7. Implement evidence-based interventions to respond to the supportive care needs of people affected by breast cancer.
8. Tailor supportive care interventions to an individual's personal and social circumstances.
9. Discuss strategies to improve cancer control efforts in rural and remote settings.

Types and staging of breast cancer

As the biology of breast cancer becomes better understood, treatments are being increasingly tailored to the individual person and tumour factors. Understanding the histopathology and stage of breast cancer is important for determining treatment options, and supporting the person diagnosed to understand their likely care pathway and prognosis.

The majority of invasive breast cancer starts in the ducts or lobules of the breast. Other less common types of breast cancer include inflammatory breast cancer, medullary carcinoma and Paget disease.[4] These are described further on the Cancer Australia website.

Following non-excisional biopsy or surgery, pathological examination of the tumour has three main aims:[13]

- to provide a diagnosis
- to confirm the complete removal of the lesion
- to provide extra information useful for management, such as tumour markers and hormone receptor status.

The following information can be identified through pathological examination of the excised tumour:[13]

- tumour size
- type
- histological grade
- tumour margins
- presence or absence of multifocality
- the presence or absence of DCIS, both within the tumour and around it
- the presence or absence of vessel space invasion in the main tumour
- number of axillary nodes identified and examined
- extracapsular spread
- oestrogen receptor status
- progesterone receptor status.

The multidisciplinary team (MDT) would consider this information when determining treatment options for each individual.

Based on histopathology results breast cancer is categorised into the following groups:[25]

- pre-invasive breast cancer is confined to the milk ducts or lobules of the breast. Ductal carcinoma in situ (DCIS) and lobular carcinoma in situ (LCIS) are types of pre-invasive breast cancer
- invasive breast cancer spreads outside the ducts or lobules of the breast into surrounding tissue.
- early breast cancer is an invasive breast cancer which is confined to the breast and axilla
- locally advanced breast cancer is the term used to describe disease spread limited to the skin, muscles, or bones of the chest
- metastatic, or advanced, breast cancer describes disease spread to other areas of the body.

Staging of the disease occurs following surgical excision and considers tumour information from the pathological report, nodal spread and metastases. Stages are numbered, ranging from zero (0) to four (IV):[26]

- stage 0 refers to 'pre-invasive' breast cancer
- stage I, stage IIA and stage IIB (early) refer to early breast cancer
- stage IIB, stage IIIA, stage IIIB, stage IIIC, stage IV refer to metastatic breast cancer.

Learning activities	
Completed	Activities

☐	1 Access the Cancer Australia webpage What does the pathology report mean[26] and Stage information for breast cancer,[27] and:
	• Discuss your response, and information resources that you would provide to a woman who asks you what stage IIA breast cancer means.
	• Provide definitions of the following terms in the context of reporting on breast cancer:
	  • tumour margins
	  • multifocality
	  • extracapsular spread
	  • histological grade
	  • oestrogen and progesterone receptors.

☐	2 Compare the likely prognosis for women diagnosed at stage IIA and stage IV.

Specialist Breast Care Nurses

Cancer nurses may choose to specialise in the care of particular populations of people with cancer, such as breast cancer. The role of the Specialist Breast Care Nurse (referred to as the breast care nurse or BCN) has been described for more than two decades.

BCNs are core members of the MDT, and they:[28]

- provide specialist physical and psychological support
- coordinate the passage of women from diagnosis through to therapy
- identify and facilitate referral for counselling
- collaborate to establish and strengthen links and feedback between women and the treatment team.

Several studies report that a person with breast cancer who has had access to a BCN is more likely to:[29]

- report less psychological distress
- have a better comprehension of their treatment
- be more aware of supportive resources.

Learning activities		
Completed	Activities	
☐	1	Access the Cochrane review, Specialist breast care nurses for supportive care of women with breast cancer[29] and summarise the key areas in which interventions carried out by BCNs improved quality of life outcomes for women with breast cancer.
☐	2	If you are able, contact a BCN and ask them about the key domains of their role.
☐	3	Differentiate the roles of the following health professionals involved in the care of women with breast cancer: • cancer care coordinator • breast care nurse (BCN) • specialist cancer nurse (SCN).
☐	4	Discuss strategies that the various nursing health professionals involved in breast cancer care can use to ensure a coordinated team approach to care.

Case study	
Libby’s story 3: specialist breast cancer nurses	

Learning activities		
Completed	Activities	
☐	5	Discuss the main priority areas which would be included in Annie's (Breast care nurse) care planning at the time of Libby's new diagnosis.
☐	6	Describe how this care plan may vary from that developed for a heterosexual female in an urban setting.
☐	7	Discuss strategies for promoting effective communication between Annie and other members of the MDT, including other nurses, at this point in Libby's care.

Treatment options

Although breast cancer treatment varies between individuals, most people with breast cancer will usually have multimodal treatment consisting of surgery and radiotherapy to treat local disease, and antineoplastic agents, hormone therapy and/or targeted therapies such as Herceptin to target micrometastases. The use of multimodal therapies for treatment of breast cancer today may affect the person's quality of life because of the range of adverse effects that may be experienced with combining treatments.[13, 30-36]

Treatment recommendations are based on the final histopathological features and prognostic factors of the tumour such as grade, size, hormone receptors (including C-erb2 status) and nodal status. Other factors such as age, menopausal status, pre-existing co-morbidities, logistics, costs, treatment adverse effects, treatment outcomes, and individual preferences are also considered.[30-36]

A person with breast cancer is faced with making complex treatment decisions at a time when they may be extremely anxious and stressed. People vary in the extent to which they wish to participate in treatment related decisions, although most prefer a collaborative approach rather than being given a choice without adequate information and support.[23]

Clinical practice guidelines

Evidence-based information about current and new treatments to support the information needs of people affected by breast cancer and clinicians can be found in clinical practice guidelines. These documents guide appropriate practice, and are followed subject to the clinician's judgment and the woman's preference in each individual case. The following are key Australian guidelines available through the Cancer Australia website:

- Recommendations for the management of central nervous system (CNS) metastases in women with secondary breast cancer (2014)
- Recommendations for the management of early breast cancer in women with an identified BRCA1 or BRCA2 gene mutation or at high risk of gene mutation (2014)
- Recommendations for use of bisphosphonates in early breast cancer (2011)
- Recommendations for use of hypofractionated radiotherapy in early (operable) breast cancer (2011)
- Recommendations for staging and managing the axilla in early (operable) breast cancer (2011)
- Recommendations for follow-up of women with early breast cancer (2010)
- Recommendations for use of Taxane-containing chemotherapy regimens for the treatment of early (operable) breast cancer (2008)
- Recommendations for use of Sentinel node biopsy in early (operable) breast cancer (2008)
- Recommendations for Aromatase inhibitors as adjuvant endocrine therapy for post-menopausal women with hormone receptor-positive early breast cancer (2006)
- Recommendations for use of bisphosphonates for advanced breast cancer (2011)
- Recommendations for use of chemotherapy for the treatment of advanced breast cancer (2010)
- Recommendations for use of endocrine therapy for the treatment of hormone receptor-positive advanced breast cancer (2008)
- Recommendations for use of Trastuzumab (Herceptin®) for the treatment of HER2-positive breast cancer (2007)

Case study

Treatment Summary

Patient's name: Libby

Sex: M ☐ F ☑
Age: 48

Summary: Left-sided wide local excision and sentinel lymph node biopsy (three positive nodes) - clear margins were obtained. This was followed by a second procedure for axillary clearance due to the positive lymph nodes.

Libby's story 4: clinical practice guidelines

Learning activities		
Completed	Activities	
☐	1	Describe the key tumour-related factors which will be considered in planning Libby's treatment.
☐	2	Explain why it is likely that Libby will receive combined modality treatment.
☐	3	Discuss how the MDT could assess Libby's preferences for information and involvement in decision making.

Surgery

The aim of surgery for primary breast cancer is to eradicate the primary tumour and any local extension in the hope of achieving total disease control.[13]

The type of surgical intervention offered to a woman depends on clinical and pathological aspects of the cancer. Irrespective of the eventual procedure selected, the diagnostic biopsy and surgical procedure that will be used as primary treatment should be performed as two separate procedures.[35]

The axilla is assessed to determine if the cancer has spread to surrounding lymph nodes (usually in the axilla) and to determine treatment options and prognosis.[35]

Sentinel node biopsy is a minimally invasive surgical technique used to assess the axilla, that may offer less arm morbidity for the patient (for example, less risk of lymphoedema).[35] Dye or radioactive isotopes are injected around the cancer to locate the lymph node/s which will be removed for testing to determine whether they are positive for cancer cells. If cancer cells are found (a positive sentinel node), further surgery to remove more lymph nodes, and/or radiotherapy to the area may be required.[35]

Clinical practice guidelines recommend that sentinel node biopsy should be offered as a suitable alternative to axillary dissection for women with unifocal tumours equal to or less than three centimeters in diameter and clinically negative nodes.[35]

Treatment of early breast cancer involves surgery to remove the tumour (a lumpectomy or mastectomy) and management of the axilla.[35]

Many women opt to have breast conserving surgery (lumpectomy) when diagnosed with breast cancer. Breast conserving surgery may be suitable when:[13]
- single lesions are 4cm or less in diameter
- there are no signs of local advancement
- there is extensive involvement of lymph nodes or metastases and surgery is for local control only.

A total mastectomy includes complete excision of the breast parenchyma with preservation of the underlying pectoral muscles. Mastectomy is usually recommended if the breast cancer is large compared to the size of the breast or there is more than one cancer in the breast (multifocal disease). It may be also recommended after breast conserving surgery if:[37]
- there are cancer cells in the surgical margin around the breast cancer that was removed
- breast cancer comes back in the same breast
- the woman has previously had radiotherapy to the area.

Resource link

Cancer Australia website – Breast cancer surgery

Learning activity	
Completed	Activity
☐	1 Access: Recommendations for use of Sentinel node biopsy in early (operable) breast cancer[35] (2008) - Describe the rationale for this procedure. - Compare indications for sentinel node biopsy and axillary dissection. - Discuss the adverse effects of sentinel node biopsy. - Outline how you would explain the procedure to women.

After surgery

Women should be clearly informed of potential side effects when surgical options are being discussed, so they may make an informed decision.

People undergoing surgery are at risk of the standard post-operative complications. Specific acute post-operative complications relevant to surgery for breast cancer include:[13]

- post-operative wound infection
- haematoma
- deep venous thrombosis.

Following breast conserving surgery, mastectomy and/or axillary dissection, a woman may also experience:[13]

- seroma of the axilla (following axillary dissection) or skin flap
- altered body image and self-esteem
- lymphoedema of the arm (following axillary dissection) - which can occur at any stage, even years after treatment
- chest wall discomfort - which should settle within six months
- breast pain and/or chest wall pain - which may last from three months to up to several years in some cases
- breast oedema
- limitation of shoulder movement (particularly abduction and elevation) usually during the first few weeks
- sensory loss in the chest wall below or posterior to the axilla and in some cases on the medial and posterior aspect of the upper arm.

Breast reconstruction may improve a woman's psychological and social wellbeing and improve their body image. Adverse effects following breast reconstruction may include:[13]

- partial necrosis of a soft tissue reconstruction
- infection and delayed healing
- infection and rejection of a prosthesis (in prosthetic breast reconstruction)
- a second primary tumour in retained breast tissue
- weakness of the abdominal wall (where tissue is in the rectus flap method of reconstruction).

Learning activities

Completed	Activities
☐	1 For women undergoing breast conserving surgery and mastectomy, discuss the following: • indications • pre-operative preparation • potential post-operative complications.
☐	2 Access the Cancer Australia webpage – Breast reconstruction. Describe how you would respond to the following questions: • What would be the advantages of reconstruction for me? • Will my breasts look and feel the same? • When should I have the procedure? • What complications might occur? • Will it make it more difficult to detect another breast cancer? • Is it available in public hospitals?

Systemic therapies

Systemic adjuvant therapy includes all forms of hormonal manipulation (known as endocrine therapy) and/or antineoplastic agents administered in conjunction with local therapy for breast cancer. The aim of such therapy in early breast cancer is to treat undetectable remaining cancer, which will reduce the risk of clinically evident metastatic disease and local recurrence.[13] For some women, use of targeted therapy is also indicated. The goals of treatment in advanced breast cancer are to maximise overall survival and quality of life.[38]

Systemic treatment recommendations in the adjuvant setting for breast cancer are based on several factors, these include:[13]
- risk of cancer recurring
- nodal status
- survival benefit versus risk of potential adverse side effects of adjuvant therapies
- oestrogen and progesterone receptor status
- menopausal status
- age
- willingness to undergo treatment.

Antineoplastic agents

Clinical guidelines recommend the use of moderately prolonged (several months) combination treatment for early stage breast cancer. Evidence supports the use of anthracycline-containing regimens which are superior to the older regimen of cyclophosphamide, methotrexate and 5-fluorouracil (CMF) for both recurrence-free survival and overall survival. However, it is acknowledged that there is increased risk of alopecia, cardiac toxicity and neutropenia.[13]

Dose intensity is important to outcomes for women affected by breast cancer. Higher doses (not requiring colony stimulating factor support) achieve more effective results than lower doses.[13]

The use of taxanes is becoming common, with improved disease-free and overall survival reported with their use. A taxane-containing regimen is considered for women at intermediate-to-high risk of breast cancer recurrence, taking into consideration her individual risk profile and co-morbidities.[36]

Agents used to treat advanced breast cancer include:[38]
- alkylating agents, e.g. cyclophosphamide
- anthracyclines, e.g. doxorubicin, epirubicin
- antimetabolites, e.g. capecitabine, 5-fluorouracil, gemcitabine, methotrexate
- taxanes, e.g. docetaxel, paclitaxel, nab-paclitaxel
- vinorelbine.

Endocrine therapy

The action of endocrine therapy is to inhibit the growth of breast cancer cells which are hormone receptor positive. Endocrine therapies include:[33]
- ovarian suppression/ablation, e.g. luteinising hormone-releasing hormone agonists (goserelin, buserelin), ovarian irradiation, and surgical oophorectomy
- anti-oestrogens or selective oestrogen receptor modulators, e.g. tamoxifen. Tamoxifen is recommended for most women with oestrogen receptor positive tumours, as it significantly improves recurrence-free and overall survival in women of all age groups. Tamoxifen reduces the incidence of contralateral breast cancer[10]

- selective oestrogen downregulators, e.g. fulvestrant
- progestins, .e.g. megestrol acetate and medroxyprogesterone
- aromatase inhibitors, e.g. anastrozole, letrozole, and exemestane, which block the conversion of androgens to oestrogen. They are only effective for women who have gone through menopause.[39] Adjuvant endocrine therapy with an aromatase inhibitor significantly improved disease-free survival in post-menopausal women with hormone receptor-positive early breast cancer compared with tamoxifen or placebo.[31]

Side effects of hormonal therapies include hot flushes, vaginal dryness, and reduced libido.[33] Tamoxifen can also be associated with venous thrombosis, stroke, cancer of the uterus, and changes in vision.[33] Additional side effects of aromatase inhibitors include bone pain, arthralgia, and osteoporosis.[31]

Targeted therapies

Trastuzumab (Herceptin) is a monoclonal antibody which targets breast cancer cells that over-express the HER2 protein. This protein is present in approximately 20% of newly diagnosed breast cancers. In women with HER2-positive early, advanced or metastatic breast cancer, the addition of adjuvant trastuzumab to adjuvant antineoplastic therapy improves disease-free, overall survival and/or disease progression.[32] Side effects of trastuzumab include increased risk of cardiac dysfunction. Long-term effects are not known.

Bevacizumab and lapatinib are also used to treat advanced breast cancer.[38]

Learning activities		
Completed	Activities	
☐	1	Discuss the nursing implications associated with administration of anthracycline- based toxic drugs.
☐	2	Explain the term 'dose intensity' and the implications of sub-optimal dose intensity in the management of breast cancer.
☐	3	Compare aromatase inhibitors and anti-oestrogen therapies in the management of breast cancer on the following criteria: • indications for use (tumour related factors and menopausal status) • side effects.
☐	4	Explain why trastuzumab (Herceptin) is considered a targeted therapy.
☐	5	Identify the key toxicities associated with trastuzumab and explain inventions for prevention, early detection, and management of these effects.

Systemic treatment protocol	
Patient's name	Libby
Sex	F
Age	48
Treatment	FEC 5-FU 500mg/m^2 IV D1 Epirubicin 100mg/m^2 IV D1 Cyclophosphamide 500 mg/m^2 IV D1 Followed by Anastrozole 1mg/day orally

Case study

Libby's story five: systemic therapies

Learning activities

Completed	Activities
☐	6 Discuss the implications of Libby's previous treatment for breast cancer in determining her current treatment.
☐	7 For each of the drugs in Libby's treatment protocol, describe the: • classification of the drug • common toxicities associated with the drug • nursing interventions for prevention, early detection, and management of these toxicities • other nursing considerations associated with administering these agents.
☐	8 Outline the differences between tamoxifen and anastrozole and discuss the indication of each in Libby's disease management.
☐	9 Discuss how an SCN would prepare Libby and Samantha for Libby's first course of therapy in an ambulatory care setting?
☐	10 Outline the service capability requirements for a rural or remote facility that would ensure an individual such as Libby could safely receive her adjuvant systemic therapies closer to home if she chose.

☐	11	If you were the SCN working in the major tertiary hospital, how would you provide support to a satellite regional centre administrating Libby's therapy?

Radiotherapy

The majority of people with breast cancer will undergo surgery in combination with radiotherapy to decrease the risk of local recurrence. Clinical practice guidelines recommend:[13, 39]

- radiotherapy after complete local excision, as it significantly reduces the risk of local recurrence in the breast and the need for further surgery
- postmastectomy radiotherapy for women at high risk of local or regional relapse.

Conventional adjuvant whole breast radiotherapy is typically delivered over a period of five weeks using a standard dose of two Gray (Gy) per treatment episode (fraction) in 25 fractions to a total dose of 50 Gy.[40] Hypofractionated whole breast radiotherapy involves fewer fractions; however each fraction contains a larger daily dose of radiation than the conventional two Gy per fraction. Compared to conventional radiotherapy regimens, the duration of a hypofractionated radiation treatment course is shorter by several days or weeks, as fewer fractions are required. A hypofractionated regimen may be more convenient for patients and less-resource intensive than a conventionally fractionated regimen. It is recommended that hypofractionated radiotherapy can be offered as a suitable alternative to conventionally fractionated radiotherapy for women:[41]

- aged 50 years and over
- with pathological stage T1-2, N0, M0
- with low or intermediate histologic grade breast cancer
- who have undergone breast conserving surgery
- with clear surgical margins.

A substantial body of evidence reports that women receiving multimodal therapy for breast cancer will often experience fatigue.[42] Skin reactions range from a mild erythema to dry desquamation or moist desquamation over the area of treatment and usually resolve within two weeks of completion of treatment. Late effects in the months or years after radiotherapy include tight skin and lymphoedema (if the axilla is irradiated).[13]

Resource link

EdCaN module: Fundamentals of radiotherapy for cancer

Learning activities

Completed	Activities	
☐	1	Discuss the common side effects for a person undergoing radiation therapy for breast cancer.
☐	2	Prepare a skin care education plan to prevent skin reactions for women undergoing radiotherapy for cancer.

Case study

Libby's story 6: radiotherapy

Learning activities

Completed	Activities	
☐	3	Describe how you would assess and diagnose Libby's radiation skin reaction.
☐	4	Describe the nursing interventions to manage Libby's radiation skin reactions.
	5	Access the systematic review Exercise for women receiving adjuvant therapy for breast cancer.[42] Discuss how you could use the findings of the systematic review, in the resource below, in Libby's care.

Supportive care needs

'Supportive care' is an umbrella term used to describe all services that may be needed to support people with cancer.[7] Significant others, such as partners and families, may also experience supportive care needs related to the diagnosis of breast cancer.[43, 44] Assessment and discussion of individuals' supportive care needs should be undertaken at key points, such as diagnosis; at commencement, during, and at the end of treatment; at relapse; and when death is approaching.[45]

People with cancer represent the full demographic spectrum of the Australian population. They may face pre-existing medical problems, mental illness and social adversity, and life may be further affected by disruptions to their:[23]

- social role
- family functioning
- occupational or employment status
- financial status.

Other social and demographic factors such as culture, rurality, age and sexual orientation may also influence supportive care needs.[23]

Many of these demographic, social and personal factors influence how a person responds to a diagnosis and the impact that cancer may have on their lives. For example, although lesbians and bisexual women usually face similar health care issues to heterosexual women, research suggests that they find it difficult to access care that is appropriate, non-discriminatory, and conducive to their specific needs.[23]

To meet these needs, SCNs should aim to implement supportive care strategies and provide evidence-based information and education for people at these key points. The provision of accurate, appropriate information has been shown to help people comprehend their situation and enhance their well-being.[23]

Specific supportive care needs are influenced by a range of disease, treatment and person related factors.[7, 23] These needs may be broken down into 3 main groups:

Physical needs
Psychological needs
Practical needs

These needs are reviewed in more detail in the following sections.

Learning activity	
Completed	Activity
☐	1 Access the Supportive Care Screening resource page[46] or a supportive care screening tool used in your practice setting: • Discuss the extent to which the tool adequately assesses the specific needs of a person diagnosed with breast cancer. • Compare the extent to which current assessment tools in your workplace adequately assess the supportive care needs of people diagnosed with breast cancer.

Physical needs

People who are diagnosed with cancer experience a number of disease and treatment-related effects that may affect their quality of life, and can increase the risk of developing serious psychological issues.[23]

These physical effects may include:[47]

- numbness
- weakness
- pain
- loss of range of motion
- lymphoedema
- fatigue
- loss of fertility
- neuropathy
- cognitive dysfunction
- weight gain
- sexual dysfunction
- increased risk of osteoporosis
- cardiac late effects of some treatments.

These may be long-term or late effects of treatment for breast cancer, affecting individuals long after treatment has finished.[47]

Some of the most significant physical needs of people diagnosed with breast cancer are explored in more detail in the research links below.

Cognitive dysfunction

Some people receiving cancer treatment have reported a condition affecting cognitive function and memory known as 'chemo brain':[48]

Most literature on this topic relates to people who have had adjuvant antineoplastic agents, reporting problems with their memory and losing the capacity to think clearly during or after treatment. Impairment of a person's cognitive faculties may affect their quality of life and ability to function.[49]

Resource link

Nail, L. (2006). Cognitive changes in cancer survivors, AJN, American Journal of Nursing. 106: 48-54[50]

Lymphoedema

Lymphoedema is the regional accumulation of excessive amounts of protein-rich fluid in body tissue causing swelling.[51] It occurs when the demand for lymphatic drainage exceeds the capacity of the lymphatic circulation.[51]

Secondary lymphoedema is estimated to occur in about 30% of women following treatment for breast cancer, and can occur at any time following surgery, radiotherapy, trauma or other damage to the lymphatic system.[51]

Resource link

The management of secondary lymphoedema- a guide for health professionals National Breast and Ovarian Cancer Centre, (2008)[51]

Sexual dysfunction

Treatment for cancer can affect a person's sexuality, including their interest in sex and their self-esteem.[52] Reduced sexual satisfaction and difficulty maintaining their sexual life have been reported in women with breast cancer. Factors affecting sexual wellbeing include pain, fatigue, decreased vaginal lubrication, decreased sexual interest or desire, decreased sexual arousal and difficulty achieving orgasm.[53] An individuals' sense of sexual wellbeing may be impacted regardless of their sexual preference or relationship status.[52]

Resource link

Starting the conversation: supporting sexual wellbeing for women with breast cancer[53]

The psychosexual care of women affected by gynaecological cancers (or PSGC) website[54] contains six learning modules help all health professionals develop the knowledge and skills to support women and their partners experiencing psychosexual concerns following gynaecological cancer. Principles within this resource may be adapted to the learning needs of SCNs caring for women affected by breast cancer.

Sexuality, intimacy and cancer: a guide for people with cancer, their families and friends[52]

Survivorship module – Sexuality factsheet

Loss of fertility

Surgery, radiation, and systemic therapies may all cause varying degrees of infertility.[23] Fertility preservation is sometimes possible for people undergoing treatment for cancer.

Resource link

American Society of Clinical Oncology recommendations on fertility preservation in cancer patients[55]

Cancer Australia webpage – Breast cancer and fertility

Psychological needs

Most people with cancer will experience at least transient symptoms of anxiety and/or depression.[23] Some of these people will go on to develop severe problems and will require specialised treatment.[23] Psychological distress can also be a potential long-term or late effect of being diagnosed with breast cancer.[47] People who perceive that they have poor emotional and social support available to them are more likely to experience greater psychological distress,[23] as are younger women.[56]

Breast cancer survivors have reported significant psychological burdens related to altered body image and fear of cancer recurrence.[23] Specific emotional issues identified after the experience of cancer involve reflection on values, and challenging assumptions about life, relationships and mortality and sense of personal identity.[23]

For some people with breast cancer, high levels of intrusive symptoms (such as recurrent thoughts about the cancer diagnosis or aspects of treatment) may interfere with their daily activities.[7] People receiving treatment for breast cancer should be screened to identify those at high risk of anxiety or depression at each visit.[7] Strategies such as relaxation techniques and meditation may be helpful.[7]

Some people with cancer will benefit from meeting others who have had similar personal experiences; support and counselling by psychologists, psychiatrists, or social workers may also be helpful.[7]

Resource link

Cancer Australia webpage – Managing emotional changes due to breast cancer

Practical needs

People diagnosed with breast cancer may incur considerable costs as a result of this diagnosis.[7, 23] These costs may be related to:[23]

- diagnosis and treatment
- supportive treatments like physiotherapy and reconstructive surgery
- prostheses and wigs.

People who develop lymphoedema will require ongoing physiotherapy, compression garments, and access to trained therapists.[23]

Those living in rural and remote areas have unique supportive care needs, as they are more likely to face disadvantages in accessing cancer services and support.[57] While the emotional needs of people affected by cancer in rural areas are similar to those in urban areas, greater disruption to family life and work may be experienced due to more time spent away from home. In addition: [23]

- Geographical isolation can lead to burdensome travel and accommodation costs. Organising and obtaining financial assistance can be difficult. Lack of knowledge of financial assistance may compound the sense of difficulty.
- Access to health and community support services may be limited in rural settings. Telephone and internet peer support groups are recommended.

Some people with cancer may experience extensive periods off work while recovering from treatment.[23] This can lead to loss of income, and severe financial burden.[23] Many people may experience psychological distress due to the financial effects of their illness.

Resource links

People receiving treatment for cancer may be unaware of the financial assistance available to them.[23] Access the following sites for further information on financial assistance:

- Centrelink has a range of payments that may be paid for people living with illness, injury or disability. They also have a range financial assistance and services for those caring for someone with an illness or disability.
- Some states subsidise the cost of travel for people who are required to travel over 100km to receive specialist medical treatment. For instance, South Australia has the Patient Assistance Transport Scheme (PATS) and Queensland has the Patient Travel Subsidy Scheme (PTSS).
- The Cancer Voices SA website has information on financial issues.
- Veterans and war widows who develop cancer may receive financial assistance from the Department of Veterans Affairs for services, equipment and medications.
- Some state-based cancer organisations provide limited financial assistance; their contact details can be accessed via the Cancer Council Australia website.

Learning activities	
Completed	Activities
☐	1 Access Regional cancer services in Australia: some evidence of improvement but a long way to go[57] and Disparities in cancer outcomes in regional and rural Australia[58] and: - Summarise the key disparities in cancer control efforts in rural and regional Australia - Critically review recommendations to improve the provision of supportive care to people in rural and remote areas.
☐	2 Access the following resources. Support in rural areas. Breast Cancer Network Australia (2015) Women in rural areas. Cancer Australia (2015) Discuss how you might use these resources to support people in rural and remote settings.
☐	3 Access Dealing with practical aspects of a breast cancer diagnosis[59] - Identify information about travel, accommodation, and financial support that could be provided to people from rural areas.

Section 4: Have the best treatment and support between and after active treatment

Objectives

On completion of this section, you should be able to:

1. Explain the short and longer term supportive care needs of people following completion of primary treatment for breast cancer.

2. Implement evidence-based clinical and supportive care nursing interventions for the person following completion of primary treatment for breast cancer.

3. Collaborate with other care providers to ensure a coordinated, planned and documented approach to meeting supportive care needs for the person following primary treatment for breast cancer.

4. Make appropriate and timely referrals for health and psychological care and support for the person with breast cancer.

Follow up care

The completion of treatment is an important period of transition for the person as they shift from regular contact with the treatment team and away from the safety of the hospital. Individuals may feel anxious at the prospect of no longer having the treatment centre as a support system.[60] Treatment centre staff must communicate effectively with the person's local community health services, ensuring information and support needs continue to be met.

Recommendations for follow-up of women with early breast cancer are available, but may need to be individualised.[18, 61] A minimal follow up schedule is recommended, with the core components including clinical review (history and examination) and mammography.[13]

While the goals of follow up in people affected by breast cancer include the early detection of a local recurrence and screening for a second primary breast cancer, they also extend to:[13]

- detection and management of treatment-related toxicities
- psychosocial support
- promoting well-being with a focus on lifestyle factors such as diet, exercise, and weight management
- identification of family history that may warrant additional education, support or intervention.

Shared follow-up care is an innovative model of care that shares the delivery of follow-up care after early breast cancer between the General Practitioner and the specialist. Its use is currently being evaluated in a number of Australian settings. A summary of this work can be found on the Cancer Australia Shared follow-up care webpage.

Learning activities		
Completed	Activities	
☐	1	Identify the common emotional concerns of people affected by breast cancer following completion of breast cancer treatment.
☐	2	Discuss the role of the SCN and other members of the health care team in follow up care of people who have completed treatment for breast cancer.

Surviving breast cancer

While definitions of cancer survivorship vary, the National Coalition for Cancer Survivorship in the US considers a person to be a cancer survivor from the time of cancer diagnosis through the remainder of their life.[62]

The US Institute of Medicine report on Cancer Survivorship[62] recommends that health care providers should use systematically developed evidence-based clinical practice guidelines, assessment tools, and screening instruments to help identify and manage late effects of cancer and its treatment.[62]

A range of personal factors can affect someone's health after treatment for cancer. For example, a recent study reports that lesbian and bisexual cancer survivors were twice as likely to report poorer health outcomes when compared to their heterosexual counterparts.[63] Further work is required to elucidate the possible causes behind this discrepancy in self-reported health outcomes.[63]

Learning activities		
Completed	Activities	
☐	1	Interview two or three people who have had cancer about what the term 'cancer survivor' means to them. Discuss similarities and differences in the meaning of survivorship to people with breast cancer, and the possible reasons for these.
☐	2	Access Implementing a Survivorship Care Plan for Patients With Breast Cancer.[47] Formulate a survivorship care plan for Libby for her short term and longer term health care.

Supportive care needs after treatment has ended

Breast cancer survivors have reported significant, continuing psychological burdens related to altered body image and fear of cancer recurrence.[23] Specific emotional issues identified after the experience of cancer involve reflection on values, and challenging assumptions about life, relationships and mortality and sense of personal identity.[23]

Breast cancer survivors can also continue to experience physical side effects from treatment, even after it has finished. The most common long-term physical effects related to endocrine sequelae of breast cancer treatment are on reproductive, bone and sexual health[64]. Other symptoms include fatigue and early menopause.[33]

These long-term treatment effects require attention to reduce the potential significant negative impact on the long-term health and quality of life of women with breast cancer.[64]

Breast cancer survivors may also have to consider returning to work.[65] Individual needs of cancer survivors returning to the workplace will vary, though supportive work environments have been identified as being helpful to this process.[65]

Resource link

Cancer Australia website – Life after breast cancer

Case study

Libby's story 7: adverse effects

Learning activities

Completed		Activities
☐	1	Identify the risk factors associated with the following health issues for people following treatment for breast cancer: • menopausal symptoms • cognitive changes • fatigue • osteoporosis • arthralgia • cardiotoxicity • lymphoedema.
☐	2	Access Management of secondary lymphoedema - a guide for health professionals[66], and: • Discuss interventions for minimising the risk from lymphoedema. • Identify appropriate referral points for further information and advice about prevention and management of lymphoedema.
☐	3	Discuss current evidence regarding interventions for managing menopausal symptoms and cognitive changes experienced by women following treatment for breast cancer.
☐	4	Reflect on Libby's experiences of being diagnosed with a second primary breast cancer and consider how these experiences may influence her perspectives of health.
☐	5	Given Libby's treatment history, outline potential health problems she may experience in the short and longer term, providing an explanation for why she is at risk of these health problems.

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