Ovarian cancer case-based learning resource

Overview of the ovarian cancer case based learning resource: Jane's story

This case study recounts the experience of Jane, a 36-year-old female diagnosed with ovarian cancer.

The case study contains four sections:

1. Find the condition early.
2. Have the best treatment and support during active treatment.
3. Have the best treatment and support between and after active treatment.
4. Have the best care at the end of life.

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 eight 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.

In the left-side menu, pages containing videos are marked with an asterisk.

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 ovarian cancer module
You can download a PDF version of the ovarian cancer module.
Suggested citation

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Aim of the ovarian cancer case study

This case study aims to facilitate the development of competencies that reflect the role of the Specialist Cancer Nurse (SCN) in preventing, assessing and managing disease and treatment-related care for people affected by ovarian cancer across the cancer journey.

Rationale

One in 81women are diagnosed with ovarian cancer before the age of 85,[7] but the impact on society is far greater than this figure implies.

Women diagnosed with ovarian cancer often have a poor prognosis because, in more than 70% of women, the disease is usually diagnosed at an advanced stage.[8]

There are many points along the cancer journey when the SCN can improve outcomes for people at risk or affected by ovarian cancer. These include:

Section 1: Find the condition early

- Ovarian cancer has mistakenly been called the 'silent killer',[9, 10] because the disease is often not detected until it is at an advanced stage. However, the majority of women do experience symptoms before diagnosis. [9]
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- Women who do not seek medical attention for their symptoms are significantly more likely to be diagnosed with advanced stage disease. Such delays in diagnosis result in loss of opportunity to attain a survival rate of about 78% for women diagnosed with early stage ovarian cancer.[3]

- As the consequences of late stage diagnosis are significant, women and SCNs need to know the symptoms associated with ovarian cancer in order to facilitate appropriate and timely health-seeking behaviours and referral.

Section 2: Have the best treatment and support during active treatment

- Treatment of ovarian cancer is intense and usually involves extensive surgery and antineoplastic agents.

Section 3: Have the best treatment and support between and after active treatment

- While 70 to 80% of women diagnosed with advanced epithelial ovarian cancer will initially respond to antineoplastic therapies, more than 60% of these women will experience a disease recurrence.[11]

- Advanced surgical techniques and more effective, less toxic regimens have steadily increased the survival rate for women with ovarian cancer.

- Despite an increase in longevity, women living with ovarian cancer face unpleasant symptoms and major compromises in quality of life, including fatigue, altered bowel and bladder function, gastrointestinal disturbances, pain, peripheral neuropathy and sexual dysfunction. These conditions often require intervention from an SCN.

Section 4: Have the best care at the end of life

- Once a woman relapses, there is generally no prospect of cure.[12] Aims of treatment shift to disease control, symptom palliation, and prolongation of life.

- Women with ovarian cancer have a high symptom burden compared with those living with other cancers.[13] Palliative care services may be beneficial at this stage.

- Although specialist palliative care professionals may be required only intermittently in the early phases of disease, the need may become more intense as the disease progresses.[5]

- Particular challenges in the care of women with advanced ovarian cancer are recurrent accumulation of ascites, bowel obstruction, pleural effusions and malnutrition.[14] Women facing these challenges need monitoring and support from specialist services.

Section 1: Find the condition early

Objectives

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

1. Interpret key epidemiological trends in age-specific incidence, mortality and survival from ovarian cancer.
2. Identify common symptoms of ovarian cancer and factors which may influence how women respond to these symptoms.
3. Explain strategies the SCN may use to promote early detection of ovarian cancer for women at average risk and women at above average risk.
4. Describe principles of support and counselling for women with increased familial or genetic risk of developing ovarian cancer.
5. Discuss the implications of being a BRCA1/2 mutation carrier, and identify the screening and risk reducing strategies available to women.

Ovarian cancer in Australia

In 2013, there were 1,394 new cases of ovarian cancer diagnosed.[75] In 2014, ovarian cancer was the sixth most common cause of death from cancer in females with 974 deaths.[75] It is the most common cause of death from gynaecological malignancy in the developed world, with women dying from ovarian cancer losing an average of 18 years of life.[5]

The number of women diagnosed with ovarian cancer is expected to continue to grow in the future, due to the continued ageing of the population.[3] In 2017, about 1,580 Australian women are expected to be diagnosed with ovarian cancer.[75] An estimated 1,640 are expected to be diagnosed in 2020.[15]

In 2011, the average age of ovarian cancer diagnosis was 64.5 years.[7] Whilst the large majority of cases occur in women aged 60 years and over, in 2006, one in fourteen cases (7%) were diagnosed in women under the age of 40 years, and one-third (33%) were diagnosed in those aged 40-59 years.[3]

The five-year relative survival rate for stage IV disease is approximately 7-12%, whereas those diagnosed at stage I have a five-year survival rate of 86-88%.[5] Relative survival rates for ovarian cancer have increased in recent years in Australia. Between 1984-1988 and 2009-2013, 5-year relative survival from ovarian cancer improved from 34.1% to 44.4%.[75]

At the end of 2012, there were 10, 468 people living who had been diagnosed with ovarian cancer in the previous 31 years (from 1982 to 2012).[75]

The challenge of diagnosis

Currently, only a small proportion of ovarian cancers are found at an early stage due to:[13]

- the physically inaccessible location of the ovaries
- the lack of specific symptoms in early disease
- the lack of an effective screening test
- the limited understanding of ovarian oncogenesis.

The late stage at presentation has been attributed to the insidious nature of the disease and the vagueness of ovarian cancer symptoms, which women often interpret as effects of normal life stage changes such as childbearing, menopause and ageing.

Women often ignore or dismiss the initial symptoms of ovarian cancer. However, despite the perception that ovarian cancer is a 'silent' disease, 94% of women do experience symptoms in the months leading to diagnosis.[17] Although 95% of healthy women may experience similar symptoms, their symptoms are less frequent and less severe.[17]

Findings from a case control study indicate that the following symptoms, when present for less than one year, and occurring more than 12 days per month were associated significantly with ovarian cancer.:[18]

- abdominal bloating
- increased abdominal size
- urinary urgency / frequency
- pelvic and / or abdominal pain
- difficulty eating and/ or early satiety.

Other associated symptoms include: [19]

- changes in toilet habits
- unexplained weight loss or weight gain
- indigestion or heartburn

fatigue.

Ovarian Cancer Australia (OVCA)[20] and the Cancer Australia[21] have resources for women and health professionals to raise awareness of the signs and symptoms of ovarian cancer.

Responding to symptoms

Seeking a diagnosis is often difficult and distressing for women as there may be frequent visits to health professionals to try and find a reason for their symptoms.

Because gynaecological symptoms are relatively insidious, women may not realise that they had been experiencing symptoms until reflecting after their diagnosis. Women may experience difficulty or delays in obtaining an accurate diagnosis.[22]

As a consequence, a diagnosis of ovarian cancer can be associated with feelings of frustration or anger at the perceived failure of health professionals to make an earlier diagnosis.[22]

Resource link

Ovarian Cancer Australia[20] provides a symptom diary on their website. It allows women who are worried about symptoms that may suggest ovarian cancer to document their experiences before consulting their doctor about any concerns.

Appropriate referral for women with suspected ovarian cancer[6]

Learning activities	
Completed	Activities
☐	1 Explain the pathophysiology of the following early signs and symptoms of ovarian cancer: • urinary frequency • pelvic or abdominal pain.
☐	2 Access the Ovarian Cancer Australia[20] and Cancer Australia[21] websites. Outline how you could use the information and resources on these sites to raise awareness of ovarian cancer amongst the following groups: • members of the public • nurses in general community and specialist cancer settings • general practitioners.

Screening issues

There is no evidence to indicate a decrease in mortality as a consequence of ovarian cancer screening.[3, 17] Furthermore, ovarian cancer is not amenable to a population based screening program for several reasons including:[3, 22, 23]

- the lack of specificity of the screening tests, therefore screening asymptomatic people at this stage is ineffective
- the lack of specificity may result in false positive tests which may cause undue anxiety.

While routine screening of the general population is not recommended, the theoretical advantage of screening is much higher for women at high risk (such as those with BRCA1 or BRCA2 mutations). However, not all women who have BRCA mutations will go on to develop cancer, and even for these women, there is no evidence to support the benefits of routine screening.[23, 24]

Early detection methods

Women with stage I disease have a five-year survival rate of 86-88%, yet less than 30% of women are diagnosed at this stage.[9] Research is currently investigating ways to improve early detection of ovarian cancer. These studies include investigation of detection methods, including: [5, 18]

- symptom index
- transabdominal ultrasound
- CA-125 test
- transvaginal ultrasound
- presence of protein bio-markers.

Women with suspicious symptoms on clinical examination should be referred for a transvaginal ultrasound and a serum CA 125.[6]

CA-125 alone is neither sufficiently sensitive nor sufficiently specific to be diagnostic.[5] CA -125 is elevated in 67% of women with stage II disease, in over 90% of women with stage III and IV disease, but only 49% of women with stage I disease.[25] Elevated levels can be associated with benign conditions and some women with ovarian cancer have a normal level.[5] However, an elevated level in the presence of other signs and symptoms is likely to lead to more definitive investigations.[26]

Current guidelines recommend if ovarian cancer is suspected, a clinical history, a physical examination and imaging such as transvaginal ultrasound or computerised tomography can be used to assist in further evaluation. While transvaginal ultrasound may be useful for identifying some ovarian abnormalities, it cannot reliably distinguish between benign and malignant lesions.[5]

Learning activities		
Completed	Activities	
☐	1	Explain why population based screening programs are not offered for ovarian cancer.
☐	2	Outline the information which would be provided to a woman in preparation for CA-125 testing and vaginal ultrasound as methods of testing for possible ovarian cancer.
☐	3	Role play an interaction between an SCN and a woman discussing methods of testing for ovarian cancer.
☐	4	A recent Australian study[27] has suggested that once ovarian cancer is symptomatic, reducing the time to diagnosis does not greatly alter stage of disease at diagnosis, or survival. Discuss the implications of the study's conclusion.

Familial aspects of ovarian cancer

Genetic mutation is responsible for the development of all cancers. However, only a small proportion of cancer is due to an inherited predisposition. Although ovarian cancer is relatively uncommon, the risk is greater for the small number of women who have one of the hereditary ovarian cancer syndromes.

Cancer-predisposing genes account for up to 15% of all ovarian cancers.[5, 28]

Mutations in recognised genes that substantially increase the risk of developing ovarian cancer include:[5, 28]

- BRCA1
- BRCA2.

Women with BRCA1 mutation have a 10-60% risk of developing ovarian cancer and women with BRCA2 mutation have 10-40% increased risk before age 75.[29]

In families with hereditary nonpolyposis colorectal cancer (HNPCC, also known as Lynch Syndrome), mutation carriers have a 70-90% lifetime risk of developing any cancer.[28] Women with this mismatch repair gene mutation have a lifetime risk of up to 10% for ovarian cancer.[28, 29]

There is a tendency for these women to be younger when diagnosed and the cancers to be of lower grade and earlier stage, and synchronous ovarian/endometrial cancers may occur.[7]

Resource link

Cancer Australia provides an online tool – Familial Risk Assessment (FRA-BOC)[30] for estimating a woman's risk of developing breast or ovarian cancer, based on their family history.

Position Statement – Surveillance of women at high or potentially high risk of ovarian cancer[31] (National Breast and Ovarian Cancer Centre, 2009)

Advice about familial aspects of breast cancer and epithelial ovarian cancer[29] (National Breast and Ovarian Cancer Centre, 2010)

Explaining genetic risk

For women at potentially high risk of ovarian cancer, referral to a specialist familial cancer clinic is recommended.[28] This will allow for risk assessment, possible genetic testing, and management planning.[28]

Drawing a family pedigree is a helpful aid for the individual and healthcare provider to conceptualise and explain the family history, which may indicate a sporadic or hereditary cancer profile.

Genetic counselling and the taking of a family history have a role in:[5, 32]

- educating the person about their risk of developing cancer
- recognising patterns of inheritance
- helping to make or refine a diagnosis
- assessing the likelihood of genetic disease in relatives
- testing, treatment and management strategies in families at risk
- identifying the need for referral for specialist opinion
- helping people understand the implications of genetic information so they can make informed decisions about testing.

Learning activity	
Completed	Activity
☐	1 Access the resource Taking and drawing a family history[33] • Outline the information that is needed to develop a family pedigree for two women with cancers associated with BRCA1, BRCA2 or HNPCC.

Management options for women at high risk of developing ovarian cancer obviously aim to reduce this risk. Options to do so include surgery or preventative therapy.[28] The most effective risk-reducing strategy for preventing ovarian cancer is bilateral salpingo-oophorectomy, though this has many physical and psychosocial implications for the woman considering it.[28] Preventative therapy, through use of the oral contraceptive pill, may also be an option to reduce risk of ovarian cancer in pre-menopausal women at increased risk of ovarian cancer.[28]

Resource link

Recommendations for the management of women at high risk of ovarian cancer. [34] (Cancer Australia, 2011)

NCCN Clinical Practice Guidelines in Oncology. Genetic/Familial High-Risk Assessment: Breast and Ovarian.[35] The NCCN resources are free to use, but you must register and login to access them.

Case Study: Meet Jane

Case study: meet Jane
Jane is a 36-year-old female who was recently diagnosed with ovarian cancer. Watch Jane's first video and work through the accompanying learning activities. Use your notebook at the top of the screen to answer the questions and record your thoughts. **Jane's story 1: Meet Jane**   

Learning activities		
Completed		Activities
☐	1	Outline support services and health professionals available in your local area to provide genetic counselling and support for women with Jane's history.
☐	2	Discuss how you would explore with Jane her feelings regarding having known her mother had 'the gene' and that regular screening did not pick up the diagnosis earlier.
☐	3	Access Familial Risk Assessment FRA-BOC[30] and NCI's Genetics of Breast and Ovarian Cancer,[36] and: • Outline issues which may be discussed with Jane's sister Sheila who is found to carry a BRCA2 mutation regarding cancer screening and risk reducing strategies.
☐	4	Jane is relieved that her children are boys as she believes that they are not affected by the fact she is a BRCA2 mutation carrier. Discuss information you would give to Jane regarding the risks for her sons.
☐	5	Access the Familial Risk Assessment FRA-BOC[30], and: • Identify Jane's risk category, and the management that would be recommended for her given this risk category.
☐	6	Access Ethical issues related to BRCA gene testing in orthodox Jewish women,[37] and: • Outline the ethical issues that may be experienced by women of Orthodox Jewish background in relation to genetic testing. • Discuss how you would assess the beliefs and customs that may influence Jane's decisions about testing.

Section 2: Have the best treatment and support during active treatment

Objectives

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

1. Summarise the FIGO staging for epithelial ovarian cancer.
2. Describe the different subtypes of ovarian cancer that exist and briefly discuss their epidemiology, management and prognosis.
3. Explain why the outcomes for women with ovarian cancer are better when their care is provided by a gynaecological oncologist who functions as part of a multidisciplinary team (MDT).
4. Use evidence based approaches to facilitate the person affected by ovarian cancer to participate in decisions about treatment and care, according to their preferences.
5. Discuss the role of surgery in the management of ovarian cancer.
6. Implement evidence based pre- and post-operative care for women undergoing debulking surgery for ovarian cancer.

Staging and grading of ovarian cancer

Epithelial ovarian cancer is the dominant group of ovarian malignancies, accounting for over 90% of primary ovarian tumours and representing the everyday usage of the term 'ovarian cancer'.[5, 38]

Germ cell malignancies and sex cord stromal tumours account for less than 10% of ovarian cancers and have very different patterns of pathogenesis, epidemiology, management and prognosis.[5]

Germ cell tumours are:[39]

- seen most often in young women
- generally uncommon but aggressive tumours
- frequently unilateral
- usually curable if found and treated early.

Understanding the histopathology of ovarian cancer and its staging is necessary for determining treatment options and prognosis. For the SCN, such information can assist with tailoring information and support to the woman's needs and can enable planning to meet current and future needs.

Ovarian cancer usually spreads via local shedding into the peritoneal cavity via lymphatic channels or haematogenous dissemination, resulting in implantation on the peritoneum and local invasion of bowel and bladder. Cells can also disseminate via the ovarian lymphatics into the pelvic and para-aortic nodes.[40]

Most women with ovarian cancer have widespread disease at presentation. This may be partly due to the relatively early spread (and implantation) of high grade papillary serous cancers to the rest of the peritoneal cavity.[40]

A comprehensive surgical staging procedure using exploratory laparotomy is usually undertaken. Ovarian cancer is staged based on the International Federation of Obstetrics and Gynecology (FIGO) staging system.[5]

Learning activities		
Completed	Activities	
☐	1	Describe the pathophysiology of invasion and metastatic spread of ovarian cancer.
☐	2	Access the following resources: • NCI Ovarian Germ Cell Tumors Treatment - Stage information[41] • NCI Ovarian Epithelial Cancer Treatment - Stage information[42] Recommendations for the use of first-line chemotherapy for the treatment of women with epithelial ovarian cancer[5] • NCCN Clinical Practice Guidelines in Oncology: Ovarian Cancer[43] (a free resource, but you must register and then click 'Remember me' to bypass the login page in future) Summarise the FIGO staging system for epithelial and germ cell ovarian cancer. For each stage: • Describe the degree of spread and involvement of surrounding and distant organs. • Identify current five-year survival rates.
☐	3	Access NCI Ovarian Epithelial Cancer Treatment - General information[44] • Outline factors impacting upon ovarian cancer prognosis.
☐	4	Discuss the implications on a woman's psychological reactions to diagnosis at early versus late stage.

Multidisciplinary care delivery

There is evidence to suggest that outcomes for a woman with ovarian cancer are improved if she is referred to be managed under the care of a multidisciplinary team (MDT) including:[5]

- pathologists and nursing staff specially trained in the management of ovarian cancer
- subspecialty-trained gynaecological oncologists
- medical and radiation oncologists with expertise in the management of ovarian cancer.

The involvement of a broad range of health professionals considering the care plan requirements for a woman results in a planned approach that takes into consideration all the nuances of the woman, her disease and psychosocial situation.

The role of the certified gynaecological oncologist is significant in the management of epithelial ovarian cancer. Staging and debulking are consistently found to be performed more adequately by gynaecologic oncologists. Surgery by a gynaecologic oncologist in a specialist hospital results in longer survival for women with ovarian cancer.[5, 45]

Resource link

Cancer Learning Multidisciplinary Care Package

Cancer Australia Multidisciplinary care webpages

Learning activities		
Completed		Activities
☐	1	Explain the factors that are likely to contribute to better outcomes for women when they are treated in centres which specialise in gynaecological oncology.
☐	2	Discuss the role of the SCN in advocating to ensure women with ovarian cancer are referred to a specialist gynaecological cancer treatment centre.
☐	3	Access the Clinical practice guidelines for the management of women with epithelial ovarian cancer,[5] and summarise the roles of key health care professionals in the MDT caring for a woman affected by ovarian cancer.

Providing care for the woman having surgery

The treatment for ovarian cancer is intense and usually involves both surgery and chemotherapy. Ideally surgery is performed first (before chemotherapy), with the aim of decreasing tumour bulk and reducing the symptoms experienced.

Surgery has a major role in the initial cytoreduction, for interval cytoreduction, and in the management of persistent or recurrent disease.[5]

Ovarian cancer surgery typically involves:[5]

- total abdominal hysterectomy
- bilateral salpingo-ophorectomy
- omentectomy
- resection of metastatic lesions from the peritoneal surfaces or from the bowel.

The aim of surgery is optimal debulking, leaving no tumour greater than 1cm. Debulking resulting in optimal cytoreduction of less than 1cm residuum is associated with a higher likelihood of the tumour responding to chemotherapy.[16] Standard surgical approaches involve:[5]

- total hysterectomy
- bilateral salpingo-oophorectomy
- removal of involved omentum
- resection of metastatic lesions from the peritoneal surfaces or from the bowel.

Further procedures that may be considered to ensure optimal surgical cytoreduction include:[43]

- radical pelvic dissection
- bowel resection
- diaphragm or other peritoneal surface stripping
- splenectomy.

Interval cytoreductive surgery is defined as surgery undertaken after a period of neoadjuvant chemotherapy. Neoadjuvant chemotherapy is given either because optimal primary cytoreduction (residual disease of less than 2cm) was not achieved, or because the woman's general medical condition was too poor initially to undergo surgery.[5]

Secondary cytoreductive surgery is undertaken to further debulk the cancer in women who have persistent disease following a completed course of chemotherapy, or who subsequently experience biochemical and/or clinical relapse. Secondary cytoreductive surgery may benefit women with:[5]

- long disease-free interval (especially intervals greater than two years)
- younger age
- good performance status
- isolated recurrences, especially in the pelvis, if resection can be completed.

Women undergoing surgery for ovarian cancer have a range of needs across all health domains and require a range of supportive care interventions.

Many women with ovarian cancer have a compromised health status before surgery, as a result of malnutrition and ascites. In addition, the surgery results in large fluid losses in the form of blood.

Specific acute post-operative complications may include infection, circulatory complications, fluid and electrolyte imbalances, and pain.[46]

Learning activities		
Completed	Activities	
☐	1	Develop an evidence-based care plan to address the pre-operative supportive care needs for a woman having debulking surgery for ovarian cancer.
☐	2	Develop an evidence-based care plan to address prevention of the following post-operative complications for a woman who's had debulking surgery for ovarian cancer: • circulatory complications • fluid and electrolyte imbalances • ileus or bowel obstruction.
☐	3	Outline which referrals for supportive care services you would discuss with a woman to help her manage the impact of disease and treatment.
☐	4	Distinguish between indications for interval cytoreductive surgery and secondary cytoreductive surgery.

Case study

[Jane's story 2: Jane returns home]

Learning activities	
Completed	Activities
☐	5 Jane indicates that she experienced pain following surgery. Explain pharmacological and non-pharmacological strategies that may improve the management of Jane's pain immediately post-operatively and when she returned home.
☐	6 Discuss how you would prepare Jane, Andrew and the children for drains and other invasive equipment post-operatively.
	7 Explain nursing and multidisciplinary strategies for encouraging Jane's early mobility following surgery.
	8 Discuss the advice you would give Jane about management of the following: • pain • wound care • mobility • bowel care • nutrition • returning to work.

Providing care for the woman having antineoplastic therapy

Antineoplastic agents from a wide variety of different classes have been shown to produce responses in ovarian cancer, and clinical trials of numerous combination antineoplastic regimens have been undertaken.

The current standard of care for women with high-risk early stage disease and for women with advanced disease is the combination of a platinum agent and taxane.[5]

The following guideline statements relate to the use of adjuvant antineoplastic agents in early ovarian cancer:[5]

- Adjuvant therapy with a platinum agent is recommended for women with high grade or clear cell histology because they are known to have a higher relapse rate.
- Women with stage IA or IB well or moderately differentiated tumours do not require adjuvant therapy because their risk of relapse is low, and the toxicity not justified.
- Adjuvant therapy is not indicated in women with borderline tumours (unless invasive implants are confirmed histologically).
- Platinum-based adjuvant therapy improves recurrence-free and overall survival in women with surgically resected early ovarian cancer who are at high risk of relapse.

A challenge in the area of treatment of ovarian cancer is drug resistance. Approximately 20% of women are intrinsically resistant to antineoplastic agents and further individuals develop resistance during treatment after an initial response. Ovarian cancer drug resistance has been associated with decreased susceptibility to apoptosis.[47] Recent studies have suggested that the use of biologic and targeted therapy for ovarian cancers may have a valuable role to play in extending overall survival from this disease.[48-50]

Learning activities	
Completed	Activities
☐	1 For each of the following drugs commonly used to treat ovarian cancer: • paclitaxel • carboplatin. Complete the following: • Identify the classification of the drug. • Discuss potential short and long term toxicities associated with the drug. • Outline the nursing interventions to prevent, detect early and manage these toxicities. • Outline other nursing considerations associated with administering these drugs.
☐	2 Explain why some tumours are considered platinum sensitive or platinum resistant.
☐	3 Access the ONS Peripheral neuropathy resource[51] and NCCN Clinical Practice Guidelines in Oncology - Cancer-related fatigue[52] (a free resource, but you must register and then click 'Remember me' to bypass the login page in future). • Develop an evidence based plan for the prevention, assessment and management of chemotherapy related fatigue and peripheral neuropathy.

Intraperitoneal therapy

Intraperitoneal therapy is the administration of antineoplastic or biologic agents directly into the peritoneal cavity. The therapeutic advantage of intraperitoneal therapy include:[53]

- its ability to deliver a higher concentration to the direct area
- a longer exposure of active drug
- penetration directly into small tumour tissue in the peritoneal cavity
- a systemic cytotoxic effect through capillary flow into the tumour bed.

Current Australian clinical guidelines do not recommend intraperitoneal therapy as standard care, yet acknowledge that its use may be considered on an individual basis in a designated cancer centre.[5] Whilst it has been acknowledged that there is a survival benefit among women with Stage III ovarian cancer, using a combination of intravenous and intraperitoneal therapy compared with standard intravenous therapy, further trials are required.[54] Significant toxicities and complications are associated with intraperitoneal therapy and the most effective regimen has not yet been identified and supported by high level evidence.[54]

US guidelines include recommendations for the use of intraperitoneal therapy in Stage II and III ovarian cancers.[43]

Learning activity	
Completed	Activities
☐	1 Access the Gynaecology Oncology Group's IP Chemotherapy: Educational Materials[55] and the Cochrane review Intraperitoneal chemotherapy for the initial management of primary epithelial ovarian cancer[56] and identify: • information to be included in an education for the woman and her family • information to be included in a staff education package.

Neoadjuvant antineoplastic therapy

It is not always possible to use a primary surgical approach. Ascites, pleural effusions, malnutrition, liver metastases and co-existing medical conditions can all mean that some women are either too unwell to undergo primary surgery or have disease that is not amenable to surgery.[43]

In these cases, neoadjuvant antineoplastic therapy is initiated before surgery. Interval debulking is then performed after three or four cycles of chemotherapy in those women who demonstrate a response to therapy.[43]

Potential advantages of neoadjuvant chemotherapy appear to be a much more rapid improvement in quality of life and an easier operation requiring shorter hospitalisation.

Learning Activity	
Completed	Activity
☐	1 Access the Cochrane Review Chemotherapy versus surgery for initial treatment in advanced ovarian epithelial cancer[57] and identify which women may be considered for neoadjuvant chemotherapy.

Targeted therapies

The term 'targeted therapies' refers to agents that target particular cellular processes involved in cancer development. Recent trials have explored the role of targeted therapies in epithelial ovarian cancer. Promising agents to emerge include the anti-angiogenic agents and Poly ADP-ribose polymerase (PARP) inhibitors.[58]

Vascular endothelial growth factor (VEGF) has been associated with tumour progression, ascites formation, and, when elevated, poorer prognosis in ovarian cancer. PARP inhibitors inhibit base excision repair, which is required by BRCA deficient cells to repair endogenous DNA damage. BRCA1 and BRCA2 deficient cells are then susceptible to apoptosis from increased DNA damage.[58]

Although targeted therapies are unlikely to replace traditional therapies, they will increasingly be used in combination with antineoplastic agents to improve the prognosis of women with ovarian cancer.[58]

Learning activity	
Completed	Activity
☐	1 Access Targeted therapies in ovarian cancer,[58] and explain the implications of emerging targeted therapies for SCNs who provide care for women with ovarian cancer.

Case study

Jane's story 3 : support for treatment decision making

Learning activities	
Completed	Activities
☐	2 Describe strategies to support Jane consider her treatment options.
☐	3 Discuss evidence-based strategies to inform and prepare Jane for her treatment and to help her discuss the cancer and treatment with her children.

Section 3: Have the best treatment and support between and after active treatment

Objectives

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

1. Identify the current management options for women with recurrent ovarian cancer.
2. Discuss the implications of routine monitoring of CA 125 for women who have ovarian cancer and describe management options for women who are asymptomatic but have rising CA 125.
3. Describe the impact of ovarian cancer and how it differs in younger and older women.
4. Implement evidence based clinical and supportive care nursing interventions for women affected by ovarian cancer between and after active treatment.
5. Explain the concept and utilise resources to support women with ovarian cancer who face survivorship issues.

Following treatment

Follow-up care post-treatment for ovarian cancer is provided to identify relapse and manage effects of treatment.[4] It is recommended that a clear and mutually agreed follow up routine be provided at appropriate intervals to all women who have been treated for epithelial ovarian cancer. While the optimal method of follow-up is not yet established, possible options and their implications should be discussed with the woman at the completion of primary treatment.[4] A common follow up program is:[5]

- review every 2-3 months for 2 years then
- review every four months for the next 2 years and
- review 6 monthly for a year before moving to annual review.

Follow up reviews involve updating the woman's history, physical examination including pelvic examination and blood taken for CA125 cancer marker. Further blood chemistry and full blood count and radiological imaging should not be done routinely, but should be performed if there is clinical or CA125 evidence of recurrence.[5, 43]

The use of alternate models of follow-up care for women with ovarian cancer, such as GP or nurse-led follow-up, telephone follow-up and patient initiated care is an area for future research. Some of the issues that would need to be addressed in any future studies include individual and clinician preferences, the effectiveness and cost effectiveness of the alternate models and the ability of health services to support them.[4]

Resource link:

Follow up of women with epithelial ovarian cancer. [4] (Cancer Australia, 2011)

Survivorship issues

More effective and less toxic treatment regimens introduced since the 1970s have steadily increased survival for women with ovarian cancer. The numbers of women living five years or longer are significant, increasing from 37% for cases diagnosed between 1975 and 1977 to an estimated 45% for cases diagnosed between 1996 and 2002.[59]

Despite such improvement, surviving ovarian cancer often brings an array of unpleasant effects and major compromises in quality of life. The treatment for ovarian cancer may cause symptoms which can impact on the quality of life of survivors of ovarian cancer. Fatigue, ongoing pelvic pain, bladder and bowel problems, persistent neuropathy, premature menopause, loss of fertility and changes in body image and sexual dysfunction are common.[60, 61]

High levels of anxiety can continue to be experienced by survivors one to eight years after diagnosis with a gynaecological cancer, reinforcing the need for follow up care.[62] Health professionals should be aware that follow-up appointments are a cause for concern and anxiety for women, and that consideration should be given to strategies to lessen anxiety.[4] Causes of distress in women after treatment for ovarian cancer include living with uncertainty, the stigma of cancer, facing death, fear of recurrence and changes in their appearance.[4]

Resource links

Cancer Learning Survivorship Package
The Australian Cancer Survivorship Centre[63]
Ovarian Cancer Australia's Support resources page[64]

Several state-based Cancer Councils offer different programs that are designed for all cancer survivors, not just women with ovarian cancer. See, for example, Cancer Council Queensland's C-vivor[65] program and Cancer Council New South Wales' Living well after cancer program[66] . Cancer Council also offers a survivor forum on their Cancer Connections website[67].

Younger womens' concerns

While ovarian cancer predominantly affects postmenopausal women, up to 15% of women with the disease are less than 45 years old.[68] Younger people affected by cancer are more likely to report higher levels of psychological distress during treatment compared to older people affected by ovarian cancer.[69]

Loss of fertility can be devastating for younger women diagnosed with ovarian cancer. This consequence of treatment can be more difficult to accept than the original diagnosis and is associated with poorer physical and mental health and greater distress.

Resource link:

Psychosexual care for women affected by gynaecological cancers (PSGC) website

Case study

Jane's story 4: Jane's issues following treatment

Learning activities		
Completed	Activities	
☐	1	Discuss the implications of a woman's life stage on her responses to ovarian cancer.
☐	2	Explain the physiological and psychological mechanisms which result in occurrence of the following effects for women following treatment for ovarian cancer: • fatigue • persistent neuropathy • changes in body image • sexual dysfunction • menopausal symptoms.
☐	3	Outline current evidence-based interventions to address these survivorship needs for women following treatment for ovarian cancer.

Relapse and management

Despite recent advances in the treatment of ovarian cancer, disease relapse occurs in over 60% of women overall and in over 80% of women who are diagnosed initially with advanced disease. The median time to progression is less than two years.[70]

The management of recurrent ovarian cancer is not clearly defined but numerous treatment options are available, and women may live for several years with their disease being well controlled with palliative chemotherapy.[5]

Platinum sensitivity is a major factor to be taken into account when considering treatment in relapsed disease. Women who relapse within six months of treatment with platinum-containing drugs are considered to be platinum resistant, whereas those who relapse after six months are considered to be platinum sensitive. The longer the remission the more likely the woman is to respond to further chemotherapy.[5]

In most women who have been treated for ovarian cancer, CA 125 levels will rise on average four months before the women will develop symptoms or signs of relapse.[71]

Whether or not early reintroduction of treatment improves survival is unclear. Although a high chance exists that tumour response can be achieved with antineoplastic agents, complete cure of these women is rarely possible.[5]

Potential advantages of early treatment reintroduction include delaying cancer-related symptoms, and psychological reassurance. Potential disadvantages include less time without treatment, and the associated side effects.[71]

Treatment for advanced and recurrent ovarian cancer is aimed at control of disease, quality of life and palliation of symptoms.[5]

Learning activity	
Completed	Activity
☐	1 Access the NCCN Clinical Practice Guidelines in Oncology - Ovarian Cancer[43] (a free resource, but you must register and click 'Remember me' to bypass the login page in future). Describe factors which should be taken into account when considering further treatment for a woman whose disease has relapsed.

Case study	
Jane's story 5: The impact of relapse	

Learning activities		
Completed	Activities	
☐	2	Outline how you could develop education materials to help Jane understand the relationship between CA 125 and the management of ovarian cancer.
☐	3	Describe how you would respond to Jane's concerns about CA 125 levels.
☐	4	Discuss factors the MDT may consider when discussing further treatment for Jane now that her disease has relapsed.
☐	5	For the following interventions, describe in detail the information an SCN would provide to Jane and how this information would be delivered: • hormone replacement therapy • complementary therapies • nutrition • exercise.
☐	6	Describe interventions that may assist Jane to deal with the uncertainty she's experiencing.

Section 4: Have the best care at the end of life

Objectives

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

1. Analyse the supportive care needs of people affected by advanced and progressing ovarian cancer across all domains of health.
2. Implement evidence based nursing interventions relevant to the needs and preferences of the woman with advanced ovarian cancer.
3. Identify current evidence-based recommendations for the management of bowel obstruction and ascites in women with advanced ovarian cancer.

Specialist palliative care

Due to the biology of ovarian cancers and the high incidence of advanced stage at presentation, many people with ovarian cancer will progress to advanced disease. The natural history of ovarian cancer, especially for women with stage III, stage IV and recurrent disease, is that there will be one or several remissions with therapy, before the final failure of treatment.[5]

Appropriate referral to specialist palliative care services can improve outcomes in relation to the woman's satisfaction, women being cared for in their place of choice, family satisfaction and control of pain, symptoms and family anxiety.[5] The precise timing at which specialist palliative care is introduced will depend predominantly on:[5]

- the woman's wishes and readiness
- the behaviour of her cancer and her symptoms
- psychosocial factors.

Involvement of specialist palliative care team members as part of the MDT can assist with determining appropriate referral. People affected by ovarian cancer may need reassurance that the involvement of palliative care services does not preclude, and frequently supports the continuation or commencement of active treatment efforts.[5]

Learning activities		
Completed	Activities	
☐	1	Discuss what the term 'palliative care' means to you.
☐	2	Discuss factors which should be considered in making timely and appropriate referrals for women with ovarian cancer to specialist palliative care services.

Case study

Jane's story 6: Introducing palliative care consultancy

Learning activities		
Completed	Activities	
☐	3	Describe in detail how you, as an SCN, would introduce the concept of palliative care to Jane.
☐	4	Jane returns from her consultation with the specialist palliative care physician and asks you how she'll know when she needs specialist palliative care. Describe how you would respond.

Common supportive care needs during the palliative phase

Some common supportive care needs for the person with ovarian cancer relate to the following areas:

- Late-stage symptoms.
- Supporting preferences for care.
- Practical concerns.

Late-stage symptoms

Women with advanced ovarian cancer vary considerably in the symptoms they experience. Commonly reported issues include:[5, 14]

- bowel obstruction
- pain
- ascites
- pleural effusion
- fatigue
- dyspnoea
- nausea and vomiting
- lymphoedema of the extremities.

Malignant bowel obstruction is particularly frequent in women with advanced ovarian cancer. It occurs in 15% -25% of women overall, and in 45% of women with advanced ovarian cancer.[5]

The treatment of women with malignant bowel obstruction must be individualised on the basis of:[14]

- the stage of the disease
- the possibility of further response to treatment
- the performance status of the woman.

Bowel obstruction management involves relief of nausea and vomiting, rehydration and possibly venting gastronomy.[5]

Ascites can be a significant concern in up to two thirds of women with advanced stages of disease. The tumour obstructs the diaphragmatic or abdominal lymphatic channels and the tumour itself can produce excessive fluid.[46] A fluid increase of about 500mls can result in symptoms such as:[46]

- weight gain
- abdominal bloating
- shortness of breath
- indigestion
- altered bowel habits.

Drainage through paracentesis, as well as symptomatic relief, may be required.

Body image and sexuality are often neglected in caring for women in the palliative phase of their disease. Loss of dignity can have a profound impact. Some women prefer not to have their partners involved in their physical care because they feel that a shift to a caring role accentuates the loss of sexuality.

Resource link

Psychosexual care for women affected by gynaecological cancers (PSGC) website
In particular, you might want to have a look at part two of Susan's story. It highlights the concerns of a young woman with relapsed ovarian cancer.

Learning activities		
Completed	Activities	
☐	1	Identify the signs and symptoms of bowel obstruction.
☐	2	Outline the pathophysiology of bowel obstruction and ascites.
☐	3	Outline evidence-based nursing and MDT approaches and supportive care interventions to alleviate bowel obstruction and ascites and their associated symptoms.
☐	4	Describe interventions to promote body image and sexuality for people in the palliative phase of their illness.

Case study

Jane's story 7: Management of late stage symptoms

Learning activities		
Completed	Activities	
☐	5	Discuss ethical principles to be considered when making decisions about nutrition and hydration support for Jane as her illness progresses.
☐	6	Describe how you would respond to Andrew's question 'Does this mean she's going to starve to death?'
☐	7	Explain why surgery may be contraindicated in Jane's case.

Supporting preferences

Appropriate palliative care recognises the person's wishes and needs in determining approaches to care.[72] Dying at the place of the person's choice is an important aspect of quality palliative care.

For many people, home is the preferred place to die. However, limited resources and complex care needs may prevent this.

Learning activity	
Completed	Activity
☐	1 Discuss factors to consider in supporting a person to die in their chosen location.

Case study

Jane's story 8: Supporting end of life preferences

Learning activities	
Completed	Activities
☐	2 Discuss factors that may be taken into account when discussing where Jane will die.
☐	3 Discuss how you would support Jane's husband and children as she nears the end stages of life.
☐	4 If Jane's care was provided at home: • discuss services that could be engaged to ensure quality end of life care • describe preparation for Jane's husband.

Resource link

CareSearch have a list of resources available to help children deal with their grief and loss when a parent dies. Children grieve in different ways to adults, and there are many resources available to help parents, teachers and other family members to support children and adolescents in this time.

Practical concerns

People undergoing any treatment for cancer may have many concerns about financial issues.[73] For a person like Jane, financial concerns may include the cost of child care, and the loss of ability to work full time. Other financial concerns for people with ovarian cancer may also include the cost of: [73]

- supportive treatments like seeing a counsellor or psychologist
- wigs
- continence aids.

Many health services have social workers who are available to provide advice on where to seek financial assistance.

Resource links

People receiving treatment for cancer may be unaware of the financial assistance available to them.[73] 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 (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.

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