Colorectal cancer case based learning resource

Overview of the colorectal cancer case study: John's story

This case study recounts the experience of John, a 62-year-old male diagnosed with colorectal 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 five 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 resource. These links lead to interesting articles or websites, and are designed to encourage you to explore other available resources.

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

Suggested citation:

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Aim of the colorectal cancer case based learning resource

This case study aims to facilitate the development of competencies that reflect the role of the Specialist Cancer Nurse (SCN) in managing disease and treatment related care for a person at risk of or diagnosed with colorectal cancer across the cancer journey.

Rationale

Colorectal cancer is the second most common cancer diagnosed in Australia, affecting both men and women, and the second most common cause of cancer-related death. In 2011 colorectal cancer represented 12.8% of all cancer diagnoses and was responsible for 9.3% of cancer deaths.[6]

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

Section 1: Reduce risk

Interactions between inherited susceptibility and environmental factors appear to be the cause of colorectal cancer.[7]

The SCN has a role in informing people of risk factors and promoting healthy lifestyles to reduce the risk of colorectal cancer.

Section 2: Find the condition early

The biology of colorectal cancer provides the opportunity for a variety of approaches to primary prevention.

Early detection is key as cancers detected at the earliest (localised) stage have 90% five-year survival.[4]

The Australian Government supports a national screening program for colorectal cancer.[4] The SCN can provide education to promote participation of target groups in screening and support people throughout the screening process.

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

Depending on the type, stage and site of the tumour, there are a number of treatment options for colorectal cancer, including surgical resection with or without adjuvant antineoplastic agents or radiotherapy.

Colorectal cancer and its treatments can have substantial effects on: [7]

- psychological wellbeing
- social functioning, affecting work and productivity
- relationships with friends, relatives, and partners
- other social activities.

A range of symptoms associated with the disease and its treatments can interfere with the person's quality of life. Such symptoms can relate to altered bowel function and include:

- flatus
- odour
- dietary disruptions

- diarrhoea
- constipation.

For those who require a stoma, specialised education and support is required to enable the person to adjust to body image changes and to manage stoma care.

SCN interventions can:
- prevent or minimise symptoms and treatment side effects
- support effective treatment decision making
- reduce psychological distress
- promote optimal functioning across all domains of health.

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

People with colorectal cancer can experience ongoing effects across all domains of health following treatment. Follow up surveillance, according to evidence-based guidelines, is required:[7]
- for ongoing support
- to enable detection and removal of metachronous polyps and cancers
- to enable detection of potentially curable recurrent disease.

SCN interventions may prevent and minimise the longer-term impact of the diagnosis and treatment of colorectal cancer and promote self-care.

Section 1: Reduce risk

Objectives

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

1. Interpret key epidemiological trends in incidence, mortality and survival from colorectal cancer.
2. Explain current evidence regarding risk factors associated with the development of colorectal cancer.
3. Explain factors which influence an individual's engagement in behaviours that reduce the risk of colorectal cancer.
4. Describe the key principles associated with a health education program aimed at reducing the risk of developing colorectal cancer.

Colorectal cancer in Australia

In 2013, the risk of being diagnosed with colorectal cancer by age 85 was one in 13.[34] The risk markedly increases from age 45.[8]

In 2013, there were 14,962 new cases of colorectal cancer.[34] In 2014, there were 4,071 deaths from colorectal cancer, accounting for 9.2% of all cancer deaths in Australia.[34]

At the end of 2012, there were 52,630 people living who had been diagnosed with colorectal cancer in the previous five years (from 2008 to 2012).[35]

At the end of 2012 it was the third most prevalent cancer, with a prevalence of 29,049 men diagnosed in the past five years.[35]

In women, it was the third most prevalent cancer, with a prevalence of 23,581 women diagnosed in the past five years.[35]

Five-year relative survival from colorectal cancer for diagnoses in 2009-2013 was 68.1% for males and 69.4% for females.[35] This was a significant improvement compared with survival statistics from 1982-1986 (48% for males, 50% for females).[10]

In the period 2006 – 2010, there were some significant disparities in five-year relative survival from colorectal cancers based on regional differences and socioeconomic status, including:[10]

- higher survival (67%) for individuals in major cities compared with individuals in inner regional (65%) and outer regional (63%) areas
- higher survival in individuals in the highest socioeconomic status quintile (69%) compared with those in the three lowest socioeconomic status quintiles (65% or 66%).

Learning activities	
Completed	Activities
☐	1 Access Cancer in Australia: an overview[6] and summarise information to distinguish between cancers of the small intestine, colon, and rectum on the following criteria: • projected incidence in 2011 • risks by age 75, and by age 85 • annual change in incidence and mortality between 2007 and 2011 (projected) • trends in five-year survival.
☐	2 Access Cancer survival and prevalence in Australia: period estimates from 1982-2010[10], and compile information to compare colorectal cancer and other common cancers on the following criteria: • cancer survival and prevalence in Australia: period estimates from 1982-2010 relative five-year survival rate for colorectal cancer • prevalence of colorectal cancer • trends in survival from colorectal cancer.
☐	3. Access the American Cancer Society's Colorectal Cancer Facts and Figures 2014-2016 [11] and review the table on page 3 outlining colorectal cancer incidence and mortality in America from 2008-2012.

	Then, access the equivalent Australian data by going to the AIHW's Australian Cancer Incidence and Mortality books[12] and selecting 'bowel cancer'; open the summary section for 2007. • Data on incidence and mortality rates are presented as 'age standardised rates per 100 000 people'. What does this term mean? (You might find a site like the AIHW's Metadata Online Registry[13] helpful). • Looking at the data for both countries, identify the similarities and differences between incidence and mortality rates for males and females.

Risk factors

The aetiology of colorectal cancer is complex and involves interactions between inherited susceptibility and environmental factors. These cancers result from a multi-step process involving genetic mutations in cells lining the bowel wall, with most colorectal cancers arising from adenomatous polyps.[14]

About 15-20% of people who develop colorectal cancer have a first-degree relative (parent, sibling, child) also affected by the disease.[14] The reasons this may occur include:[14]

- chance (this is the most common reason)
- family members have environmental and lifestyle factors in common (e.g. some aspects of their diet)
- presence of an inherited genetic predisposition to bowel cancer (relatively uncommon but when present significantly increases susceptibility).

Two specific syndromes that increase risk of developing colorectal cancer due to genetic susceptibility include familial adenomatous polyposis (FAP) and hereditary non-polyposis colorectal cancer (HNPCC).[3, 14, 15]

Modifiable dietary and lifestyle factors have been estimated to account for 70% of the attributable risk for colorectal cancer in Western populations[7]. Factors which have been investigated include:[15]

- diet
- obesity (particularly central obesity)
- physical activity
- alcohol.

Learning activities	
Completed	Activities
☐	1 Access Familial aspects of bowel cancer: a guide for health professionals[14] and explain the significance of an individual's 'family history of colorectal cancer' in determining their risk for developing colorectal cancer.
☐	2 Access the National Cancer Prevention Policy Wiki page[16] and summarise evidence relating to the following risks factors implicated in the development of colorectal cancer: • diet (including nutritional supplements) • body weight • physical activity • intake of aspirin and other non-steroidal anti-inflammatory drugs • alcohol consumption.

Prevention strategies

There are a number of modifiable risk factors in the development of colorectal cancer. Many of these risk factors also increase a person's risks of developing other types of cancer and other chronic diseases. In response, the Australian government has numerous initiatives, at a national and local level, forming a comprehensive chronic disease prevention approach.

The National Cancer Prevention Policy[16] provides specific recommendations for prevention and early detection of many of the common cancers in Australia, including colorectal cancer.

Specific recommendations include appropriate dietary changes which, together with regular physical activity and maintenance of healthy weight, could substantially reduce an individual's risk of developing colorectal cancer.[16]

The following healthy lifestyle recommendations may reduce risk of colorectal cancer and should be recommended to people of all ages:[14]

- exercise regularly
- maintain a healthy weight including:
  - limiting energy intake
  - reducing dietary fat (less than 25% of calories as fat)
  - consuming poorly soluble cereal fibres
  - eating vegetables and fruit
- avoid or limit alcohol consumption (no more than two standard drinks per day for men and no more than one standard drink per day for women)
- do not smoke.

Agents such as aspirin and COX-2 inhibitors are being investigated for their cancer prevention activities following incidental reduction in colorectal cancer incidence in studies of their use for cardiovascular and stroke prevention.[17]

Learning activities	
Completed	Activities
☐	1 Identify two public health education campaigns at local/national level which are relevant to reducing modifiable risk factors that may contribute to the development of colorectal cancer. For each initiative outline: • specific health messages relevant to the prevention of colorectal cancer • factors which may influence the effectiveness of the campaign.
☐	2 Access the National Cancer Prevention Policy[16] and outline your response to a daughter of a 65-year-old man diagnosed with colorectal cancer who asks if increasing fibre in the diet can reduce the risk of developing this cancer. You may also find it useful to access the Cochrane review, Dietary fibre for the prevention of colorectal adenomas and carcinomas[18]

Meet John

Case study: meet John
John is a 65-year-old male who is about to be tested for colorectal cancer. Watch John's first video and then work through the learning activities. John's story 1: meet John   

Learning activities	
Completed	Activities
☐	1 Outline the role and describe opportunities that the SCN has to address modifiable risk factors in the development of colorectal cancer for a person such as John.

Section 2: Find the condition early

Objectives

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

1. Evaluate the evidence for the benefits of population-based screening programs for colorectal cancer.
2. Identify factors which may influence a person's participation in screening programs for colorectal cancer.
3. Explain strategies the SCN may use to promote early detection of colorectal cancer.
4. Identify implications of a genetic predisposition for colorectal cancer for early detection strategies.
5. Describe common concerns and reactions of people with symptoms which may be associated with colorectal cancer.
6. Implement strategies to provide information, education and support to people undergoing colorectal cancer screening or investigation of symptoms of colorectal cancer.

Early detection

Symptoms of colorectal cancer are not generally exhibited until the cancer has reached a relatively advanced stage. While colorectal cancer can be treated successfully if detected in its early stages, fewer than 40% of colorectal cancers are detected early.[7]

The World Health Organisation (WHO) has endorsed nine principles of screening to assist in determining whether there is sufficient evidence to warrant the consideration of an organised, population-based screening program.[7] Based on these principles, there are three national population-based screening programs in Australia for cervical, breast, and colorectal cancer.

Screening for colorectal cancer involves testing people who do not have any obvious symptoms. The aim is to find polyps, or to find cancers early when they are easier to treat and cure.[8]

The principal screening test in Australia to reduce morbidity and mortality from colorectal cancer is the faecal occult blood test (FOBT). Key points about FOBTs include:[8]

- FOBT may produce normal results even when a cancer is present as not all polyps or cancers bleed
- if a FOBT is positive for blood, further tests (most commonly a colonoscopy) are needed to investigate the bleeding
- the main harm identified with use of FOBT is anxiety from a false positive test.

Clinical trials have demonstrated a 15-33% reduction in mortality with regular screening (biennial) using FOBT. Clinical guidelines recommend screening with a FOBT, at least once every two years from the age of 50.[19] The Australian government established a National Bowel Cancer Screening program in 2006 for people over 50 years old.[8] Around 93% of bowel cancers occur in people over the age of 50.[8] From 2013, the Program will be progressively expanded to include more age groups, starting with 60 year olds and then 70 year olds in 2015.[4]

Barriers to participation in FOBT screening may include:[7]

- inconvenience of the testing process
- aversion to manipulating faeces
- lack of perceived benefit of screening
- fear of a diagnosis of cancer
- cost
- views about personal invulnerability
- cultural beliefs and attitudes.

Resource links

National Bowel Cancer Screening Program website[4]

Bowel Cancer Screening Resources are available to support the program in primary health care settings

Screening for people at above average risk

Individuals with a personal history of colorectal cancer or certain bowel disorders, or who have a family history of colorectal cancer, may be at increased risk and are encouraged to discuss individual screening and monitoring requirements with their health professionals.

For some with a strong family history, referral to a familial cancer service may be recommended for advice. People with familial adenomatous polyposis with high risk of developing colorectal cancer are recommended for colonoscopy every one to two years from age 25, or five years earlier than the youngest diagnosis in the family (whichever comes first).[14]

Learning activities	
Completed	Activities
☐	1 Access the Population Based Screening Framework[20] and the National Cancer Prevention Policy[16], and justify why colorectal cancer meets the criteria for a population screening program.
☐	2 Access the National Bowel Cancer Screening Program: monitoring report 2017. Identify the: • overall participation rate for FOBT screening • number of bowel cancers and adenomas detected.
☐	3 Access Familial Aspects of Bowel Cancer: a guide for health professionals:[14] • identify criteria for determining people who are at average, moderately increased or potentially high increased familial risk of colorectal cancer • outline the advice that may be given to people in each of these categories regarding screening for colorectal cancer.
☐	5 Identify supportive care needs which may be experienced by a young adult who learns they have a strong family history of colorectal cancer.

Case study

John's story : screening

Learning activities	
Completed	Activities
	Access the following resources to develop your responses: • Bowel Cancer Screening Resources (National Bowel Cancer Screening Program). • Colorectal Cancer Facts and Figures 2014-2016 [11](American Cancer Society) (American Cancer Society).
☐	6 Referring to literature on barriers to cancer screening discuss possible reasons that John did not follow up on the invitation to participate in the screening program.
☐	7 Outline evidence based strategies that could be used to encourage John's participation in cancer screening.
☐	8 Prepare a short education session to explain to John the purpose of FOBT and how to ensure an accurate test.

Responding to symptoms or a positive screening test

Symptoms of colorectal cancer include:[7]

- bleeding from the rectum, either mixed with or separate from the faeces
- symptoms of anaemia
- a recent and persistent change in bowel habit
- abdominal pain, especially if of recent onset
- unexplained weight loss.

Other symptoms may include bloating, malaise, or mucus in the faeces.[7] Further investigations of these symptoms are required. In addition to the FOBT, general practitioner examinations may include:[21]

- rectal examination
- rigid and /or flexible sigmoidoscopy, if appropriately trained
- full blood examination, including iron studies.

At this time in the cancer journey, effective coordination of primary care, screening and relevant diagnostic services is essential. The person with a positive FOBT or other symptoms suggestive of colorectal cancer should be referred to a physician or surgeon for colonoscopy (including biopsy). The specialist should provide timely communication to the GP regarding the consultation and examinations, and should notify the GP if the individual does not attend.[21]

A person who undergoes investigation of symptoms which may indicate colorectal cancer, or who has a positive screening test which requires further investigation, has particular information and support needs. Individuals affected are likely to be extremely anxious.

Appropriate information provision and supportive interventions that respond to these uncertainties and fears will be important.

Learning activities		
Completed		Activities
☐	1	Outline the signs and symptoms of early and advanced colorectal cancer.
☐	2	Access the section on 'Diagnostic tests and pre-operative assessment' in the Clinical practice guidelines for the prevention, early detection and management of colorectal cancer[7] and discuss the indications, complications, and specific pre- and post-procedure interventions associated with the following diagnostic tests for colorectal cancer: • digital rectal examination • sigmoidoscopy • colonoscopy • CT colonoscopy. Discuss additional investigations that might be undertaken to assess for local or regional spread of a tumour or distant metastases.
☐	3	Explain how an SCN would incorporate the recommendations of the Clinical practice guidelines for the psychosocial care of adults with cancer[22] to support a person referred for colonoscopy following a positive FOBT.

Case study

Johns' faecal occult blood test was positive. He presents to his GP to discuss the results of a colonoscopy

John's story 3: John sees his GP

Learning activities	
Completed	Activities
☐	1 Discuss the potential concerns that John and Carol may have at this time.
☐	2 Access the Clinical practice guidelines for the psychosocial care of adults with cancer,[22] and outline strategies to: • Provide support to John and Carol as they respond to a diagnosis of colorectal cancer. • Provide information to respond to questions and clarify John and Carol's understanding of the diagnosis.

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

Objectives

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

1. Discuss the implications of staging of colorectal cancer for a person's colorectal cancer journey.
2. Discuss key supportive care needs for people diagnosed with and undergoing treatment for colorectal cancer.
3. Discuss current treatment approaches for the management of different stages, histologic types and sites of colorectal cancer.
4. Apply evidence based pre- and post-operative nursing care for people undergoing surgery for colorectal cancer.
5. Identify the possible early and late effects associated with modalities used in the treatment of colorectal cancer.
6. Implement evidence-based interventions to respond to the health needs of people undergoing the various treatments for colorectal cancer.

Staging of colorectal cancer

Colorectal cancer is a malignant tumour that starts in the bowel wall. Usually, the tumour is confined locally for a relatively long period before spreading through the bowel wall and metastasising to lymph nodes and other parts of the body.[7]

Histologic types of colon cancer include:[7]

- adenocarcinoma (most colon cancers)
- mucinous (colloid) adenocarcinoma
- signet ring adenocarcinoma
- scirrhous tumours
- neuroendocrine - typically have a poorer prognosis than pure adenocarcinoma variants.

Staging is the cornerstone of treatment planning for colon cancer. However, there is no reliable pre-operative staging system.[7]

Pre-operative staging including CT scan of abdomen and pelvis and chest x-ray or CT is used to define the extent of tumour spread at diagnosis. The addition of MRI has improved the accuracy of staging of primary and detection of secondary tumours. PET scanning in combination with CT has also improved selection of patients with limited liver metastases who are suitable for curative hepatic resection.[23]

Pre-operative locoregional staging of rectal cancer is conducted to plan for surgery and to consider the possible need for pre-operative adjuvant chemoradiotherapy.[7]

Clinicopathological staging will occur after surgery and is needed to inform the treatment plan.[7]
The ACPS (Australian Clinicopathological Staging System) is recommended as a method of staging, but pTNM (pathological staging of tumour, nodes and metastases) should also be reported to allow for international comparisons.[24]

In addition to reporting on the stage of the tumour, a range of other variables detailed in the histology report can assist with determining prognosis and treatment planning, including:[7]

- extent of tumour spread
- lymph node involvement
- lymphovascular involvement
- perineural invasion
- tumour histology
    - tumour type (adenocarcinoma, mucinous adenocarcinoma, signet ring cell, large cell undifferentiated)
    - grade of differentiation (well, moderately or poorly differentiated)
    - margin (expanding or infiltrating)
    - peritumoural and tumour infiltrating lymphocytes
    - presence or absence of necrosis in those individuals having pre-operative adjuvant therapy
- histology of any biopsy material.

Learning activities	
Completed	Activities
☐	1 Describe common investigations and procedures required to facilitate staging of colon and rectal cancer, including nursing interventions to prepare a person for these investigations.

☐	2	Access the Guidelines for the Prevention, Early Detection and Management of Colorectal Cancer,[7] and: • Review the current recommendations for staging and reporting of colon and rectal cancer, including the features of each stage. • Identify the five-year survival rates associated with each of the ACPS stages.

Surgical approaches

The objective of surgical treatment of colon cancer is to remove the primary tumour and any regional spread, without causing further dissemination of the tumour, while preserving a reasonable quality of life for the patient
The objective of surgical treatment of rectal cancer is to ensure clearance of the tumour whilst preserving of the anal sphincter function and avoiding injury to the pelvic autonomic nerves.[7]

Rectal cancer surgery has the potential for worse clinical outcomes in terms of quality of life, local recurrence, and survival than surgery for colon cancer.[7]

The following list outlines the various roles of surgery in cancer control and their application in the context of colorectal cancer:[7, 25]

- **Preventive (prophylactic)** surgery is undertaken to remove tissue that is not malignant but is likely to become malignant, such as in the case of pre-cancerous conditions such as polyps in the colon.
- **Diagnostic** surgery is used to obtain a tissue sample, which is examined to determine if cancer is present or to tell what type of cancer it is. Biopsy via colonoscopy is the diagnostic procedure of choice for colorectal cancer.
- **Curative** surgery is performed when a tumour appears to be confined to one area, and it is likely that all of the tumour can be removed. Curative surgery is the primary treatment for colorectal cancer. It may be used alone or with chemotherapy or radiation therapy, which can be given before (neo-adjuvant) and/or after (adjuvant) the operation. Sometimes intraoperative radiation therapy or chemotherapy is provided.
- **Debulking** (cytoreductive) surgery is done to debulk a tumour when removing the entire tumour would cause too much damage, or when it cannot be removed because the tumour has invaded or attached to a vital organ or nearby tissues. Palliative chemotherapy or radiation therapy may be offered following debulking to improve control of the primary tumour and increase survival.
- **Palliative surgery** is used to gain some local control of the cancer in an effort to prevent or treat complications of advanced cancer. It is not intended to cure the cancer. Examples are:
    - surgery to bypass a cancer causing obstruction of the colon
    - formation of a defunctioning colostomy or ileostomy to divert the colon and reinstate the gastrointestinal tract proximal to a tumour that has caused or may cause obstruction.

  Palliative surgery may also be used to treat pain when it is hard to control by other means.
- **Supportive** surgery is used to help with other types of treatment - for example, the insertion of a vascular access device such as an implantable port.
- **Restorative (reconstructive)** surgery is used to restore a person's appearance or the function of an organ or body part after primary surgery, such as formation of a pouch to replace the rectum removed during surgery or closure of an ileostomy.
- **Laparoscopic** surgery: Surgery for colon cancer may be performed via an open or laparoscopic technique. Laparoscopic surgery for colon cancer has equivalent outcomes to conventional open surgery if performed by a suitably experienced surgeon. Laparoscopic surgery may be associated with reduced post-operative pain, reduced morbidity and a quicker return to usual activity, leading to a shorter hospital stay.

Emergency presentation occurs in 30% of people with colon cancer and 10% of people with rectal cancers. This is most commonly caused by obstruction (80%) or perforation (15%) requiring urgent or emergency surgery.[7] For most people, resection of obstructing carcinoma is recommended for bowel obstruction.

Advances in surgical stapling techniques to allow ultralow anastomoses has led to very few individuals with a permanent stoma.[23]

Learning activity	
Completed	Activity
☐	1 Access the Guidelines for the Prevention, Early Detection and Management of Colorectal Cancer[7] and: • Review the different types of surgery for colon and rectal cancer. • Discuss the contraindications for laparoscopic surgery.

Preparing for surgery

Colorectal surgery requires a coordinated approach to care with collaboration between the surgeon, stomal therapy nurse and medical and radiation oncologist.[7]

Prior to surgery, the lead clinician (in collaboration with the multidisciplinary team) should ensure there is adequate discussion with the person and their family of the diagnosis and recommended treatment, covering:

- rationale and aim
- likely effects
- possible outcomes
- other treatment options
- psychosocial supports.

Communication needs to continue with the GP about the agreed treatment plan. [7]

Preparatory procedures include:[24]

1. mechanical bowel preparation is not routinely indicated unless there are anticipated problems with faecal loading. There is no evidence that bowel preparation reduces infection rates or morbidity following surgery
2. prophylaxis for thromboembolic disease
3. prophylactic antibiotics, including a single pre-operative dose of intravenous cephalosporin and metronidazole or gentamicin and metronidazole.

Learning activity	
Completed	Activity

☐	1 Access Chapter 10: Preparing for surgery within the Guidelines for the Prevention, Early Detection and Management of Colorectal Cancer[7] and:
	• Discuss the nursing implications of the key principles of preparation for surgery
	• Justify the inclusion or exclusion of the following prior to surgery for colorectal cancer:
	  • Bowel preparation
	  • Preoperative blood transfusion
	  • Thromboembolic prophylaxis
	  • Prophylactic antibiotics
	• Discuss which members of the MDT would be involved in a person's care before surgery for colorectal cancer and their roles in providing optimal outcomes.

Case study: John's surgery

John's story 4: Before surgery

Learning activities		
Completed	Activities	
☐	1	Discuss in detail how you would encourage John and Carol's involvement in treatment decision making, according to their preferences, using principles of good communication.
☐	2	Prepare a pre-operative nursing care plan for John.

The stomal therapy nurse in cancer control

Stomal therapy nurses have expert knowledge to help individuals cope with living with a stoma and provide pre-operative education and follow up education, counselling and support.

Guidelines recommend that all individuals who may require a temporary or permanent stoma should be seen by a stomal therapy nurse before the surgery, when possible.[7] The pre-operative stomal therapy interview serves a number of purposes, including: [7]

- identification of the role of the stomal therapy nurse
- assessment of physical, social, psychological and cultural factors
- initiation of teaching
- selection of potential stomal sites
- reassurance.

Resource link

Australian Association of Stomal Therapy Nurses[26]

Learning activities	
Completed	Activities
☐	1 Explain the disease, treatment and individual characteristics which would indicate a person may require a temporary or permanent stoma and necessitate referral to a stomal therapy nurse.
☐	2 Using the resources below, summarise current evidence-based practice for the care of the person with a stoma: • principles of stoma assessment • assessment of stoma output • peristomal skin care • choosing the correct ostomy appliance • supportive care considerations.

Adjuvant therapy approaches for colorectal cancer

The goal of adjuvant antineoplastic agents after surgical resection of an early-stage colon cancer is to remove the risk of tumour recurrence by destroying any residual microscopic metastatic disease.[27]

A multidisciplinary team (MDT) approach to treatment planning is recommended. Generally this occurs as soon as possible after diagnosis. However, for people with uncomplicated colon cancer, adjuvant therapy options may be discussed after surgery.[21]

Antineoplastic agents and radiotherapy may be used pre- and post-operatively, separately, or in combination, dependent upon each individual case.[7]

Australian clinical guidelines[7] recommend that people with ACPS stage C colorectal cancer should be considered for adjuvant therapy. Antineoplastic agents. With recent advances in adjuvant protocols, it is reported as standard practice in Australia currently.[23] The use of adjuvant therapy in people with ACPS stage B colorectal cancer is less clear with only a small but statistically significant benefit for the use of adjuvant therapy.

The clinical guidelines recommend that a decision regarding treatment should be made following a discussion of the relative merits and effects. High risk sub-groups are more likely to benefit from adjuvant therapy.[7]

Fluoropyrimidines, including 5-fluorouracil, are an integral component of the treatment of colon cancer in the adjuvant setting. Other combination regimens, including oxaliplatin and irinotecan, have also gained support through clinical trials.[7]
LINK to current recommended protocols on EviQ.(You will need to set up a free account with EviQ to access information).

For people with low rectal tumours, pre-operative radiotherapy may shrink the tumour sufficiently to allow limited surgical resection with sphincter preservation and avoidance of a permanent colostomy.[7]

Learning activities	
Completed	Activities
☐	1 Access the Clinical practice guidelines for the prevention, early detection and management of colorectal cancer,[7] and: • Summarise the current arguments for and against adjuvant chemotherapy in ACPS B and C colon cancer. • Discuss factors to be considered in determining the use of adjuvant chemotherapy for ACPS B colon cancer.
☐	2 Outline how you would respond when a person with ACPS B colon cancer asks whether you think they should undergo a course of chemotherapy.
☐	3 Identify three common antineoplastic agents used in the adjuvant therapy for colon cancer, and for each agent, outline: • mechanism of action • principles for administration • common associated toxicities.

Case study: John's surgery

John's story 5: After surgery

Learning activities

Completed		Activities
☐	1	Describe the goal of surgery in John's case.
☐	2	Identify the prognosis associated with John's diagnosis of an ACPS B adenocarcinoma.
☐	3	Prepare a post-operative nursing care plan for John.
☐	4	Identify allied health professionals and local support resources that you could use in planning for John's post-discharge care, providing a rationale for their involvement.
☐	5	Access Making decisions about tests and treatments[28] and: • Review the model on page 58 and discuss how these questions can support individual's to make treatment decisions.

HEALTH HISTORY

Health history

11 May Patient's name:	John
	M ☑ F ☐
10am Sex:	65
Age:	John agrees to receive adjuvant chemotherapy:
Adjuvant chemotherapy regimen:	Calcium folinate (Leucovorin) 50mg IV day 1
	Fluorouracil 400mg/m^2 IV Day 1
	Fluorouracil 2400mg/m^2 by IV infusion over 46 hours commencing on day 1
	Frequency: 14 days
	Cycles: 12
	Source: https://www.eviq.org.au/Protocol/tabid/66/categoryid/328/id/76/Colorectal+Adjuvant+De+Gramont+(Modified)+(Fluorouracil+and+Leucovorin).aspx

Learning activities		
Completed	Activities	
☐	6	For each of the drugs in John's health history, describe in detail nursing interventions to prevent, detect early and manage common toxicities.
☐	7	Discuss how you would promote John's ability to self-manage any treatment-related effects in between cycles of antineoplastic agents.
☐	8	Carol asks whether she needs to take any precautions at home and what she can do to help John during his treatment. Outline how you would respond.

Targeted therapy approaches for colorectal cancer

For people with advanced colorectal cancer, therapeutic options are expanding with the incorporation of targeted molecular agents, greatly improving survival outcomes.[23, 29]
The use of targeted therapies directed against the epidermal growth factor (EGFR), the vascular endothelial growth factor (VEGF), and associated pathways has been associated with prolonged survival and improvements in quality of life in preliminary studies[29] and these two classes have now entered routine practice.[23]

For example, single-agent therapy with cetuximab or panitumumab has demonstrated activity in people with refractory, metastatic EGFR-positive colorectal carcinoma. In addition, bevacizumab (a recombinant humanised monoclonal antibody against VEGF-A ligand), in combination with chemotherapy, has been demonstrated to be better than antineoplastic agents alone in terms of survival for metastatic colorectal cancer.[29]

The use of these drugs for the management of advanced colorectal malignancy is becoming part of standard management.

There has also been a paradigm shift towards 'personalised medicine', aiming to match specific treatments with the tumour and individuals genotype. Understanding of predictive biomarkers will enable better assessment of individuals who may benefit from these therapies. For example, it has been identified that the K-ras gene is predictive of response to anti-EGFR agents.[23]

Learning activity	
Completed	Activity

☐	1 Access Targeted Therapy in Colorectal Cancer[29] and:
	• Briefly describe the key mechanisms by which targeted therapies work for people with advanced colorectal cancer
	• For each of the following drugs, identify the principles for administration, and associated toxicities:
	  • Bevacizumab
	  • Cetuximab
	• Outline key elements of an education plan for a person who is to commence a course of Bevacizumab.

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 recommended follow up regimen after curative treatment for colorectal cancer.
2. Identify signs and symptoms associated with colorectal cancer recurrence.
3. Describe the survivorship issues individuals experience across all domains of health after treatment for colorectal cancer.
4. Evaluate evidence regarding the benefits of the nurse-led model of follow up care.

Follow up treatment and care

Post-treatment surveillance includes serial CEA tests, and periodic chest, abdominal and pelvic CT scans and colonoscopic evaluation.[3] Current Australian guidelines outline the following rationale for follow up after curative resection for colorectal cancer:[7]

- **Detection of second primary tumours**

  The incidence of metachronous primary colorectal cancers and adenomatous polyps four years after curative surgery was 7.7% and 62% respectively.

- **Early detection of recurrence**

  About one in three people who have curative surgery for colorectal cancer will die as a result of recurrent disease. Improved outcomes may be obtained through detection of recurrence at an earlier and potentially curable stage, such as in an asymptomatic person with resectable suture-line recurrence, or resectable liver and lung metastases. An easy-to-use tool has recently been designed to predict the likelihood of colon cancer recurrence after curative surgery. The use of such a tool may aid in individual recurrence monitoring.[30]

Resource link
Colorectal Cancer Nomogram[31]

Treatment options will depend on the location and extent of the recurrence and on previous management. Treatment may include surgery, radiotherapy, and/or drug therapy.[24]

- **Audit**

  A follow up audit provides information on clinical outcomes so clinicians can evaluate their practice against professional standards. National outcomes data can also assess the impact of new guidelines and the introduction of alternative therapies.

- **Individual preference**

  Follow up may provide reassurance, or it may cause increased anxiety. So, it's important to consider each individual's preference.

Learning activities	
Completed	Activities
☐	1 Access Chapter 17 of the Clinical practice guidelines for management of colorectal cancer[7] and identify the role and indications for the following follow up investigations: • colonoscopy • sigmoidoscopy • serum CEA levels • CT scan of the liver • chest x-ray • FOBT • PET scan • follow up care plans.
☐	2 Discuss the feasibility, strengths, and limitations of a nurse-led model of follow up care for people following treatment for colorectal cancer.

Promoting quality of life for colorectal cancer survivors

Prevalence figures for colorectal cancer in Australia indicate that a very large number of people are living as colorectal cancer survivors. A review of studies of individuals with cancer who had survived for five or more years reported that many continued to experience negative effects in their daily lives well beyond the completion of therapy.[32]

A survivorship plan is recommended to manage long-term effects of treatment, facilitate disease prevention, and promote a healthy lifestyle.[3]

Ongoing symptom management may be necessary for ongoing bowel, urinary and sexual dysfunction as a consequence of their disease and/or treatment.[32]

Learning activities	
Completed	Activities
☐	1 Outline the impact of colorectal cancer and its treatment across various domains of health in the first 12 months following treatment completion.
☐	2 Outline how you would respond to a person completing treatment for colon cancer who asks what they can do to maintain their health.

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