South Australian Upper Gastrointestinal Cancer Care Pathway

Optimising outcomes for all South Australians diagnosed with an upper gastrointestinal cancer

Developed by the Upper GI Working Party of the Statewide Cancer Clinical Network with project support from CanNET SA

July 2010
The pathway development project was undertaken by the Upper GI Working Party under the auspices of the Statewide Cancer Clinical Network.

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This clinical pathway was developed by the Upper Gastrointestinal (Upper GI) Working Party of the Statewide Cancer Clinical Network. This Working Party is one of the first created by the Optimising Cancer Care Sub-committee to address key priorities in cancer care delivery in South Australia.

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EXECUTIVE SUMMARY

The South Australian (SA) Upper Gastrointestinal Cancer Care Pathway was created under the auspices of the SA Cancer Clinical Network. It provides recommendations based on current evidence for best practice in the management of patients diagnosed with oesophageal, gastric-oesophageal junction or gastric cancer (including squamous cancer of the thoracic oesophagus and adenocarcinomas of the oesophagus or stomach). These cancers are collectively referred to as upper gastrointestinal tract (upper GI) cancers.

The SA Upper Gastrointestinal Cancer Care Pathway has been developed through a collaborative effort involving a wide range of health professionals, including upper GI cancer specialist practitioners, generalist staff and consumers. It is a statement of consensus based on current best practice, evidence and accepted approaches to upper GI cancer treatment and management. Recommendations should be followed subject to the health professional’s independent medical judgment and the patient’s preference in each individual case.

The Pathway adopts a multidisciplinary approach to the care of people affected by upper gastrointestinal cancers, with involvement of all relevant health professionals.

In South Australia, oesophageal and gastric cancers contribute to approximately 6% of all cancer deaths. As the average life expectancy of patients with oesophageal and gastric cancers is short, coordinated service provision between private and public hospitals, general practitioners (GPs), Aboriginal Health Services – community controlled, community and palliative care services is essential to expedite treatment and access to supportive care and maximise quality of life.

Key recommendations

This document contains 57 recommendations relating to the diagnosis, treatment and supportive care of people with upper GI cancers in South Australia. A complete list of recommendations is provided at Appendix A. Key recommendations are highlighted overleaf.

Pathway Flow Chart

This executive summary includes a fully integrated flow chart (below) providing a detailed overview of the pathway for all users. The flowchart includes an outline of information requirements and maximum acceptable waits for the key pathway stages.
Locally advanced gastric cancer clinical decision-making flow chart

The gastric cancer treatment flow diagram outlines the management steps for staging, assessment and treatment for a patient diagnosed with a gastric cancer. Pre-treatment assessment is essential to avoid subjecting patients to radical treatment if it is not likely to be beneficial, and to ensure that appropriate treatment is offered to all those who are likely to benefit.

**SYMPTOMATIC**
- obstructive symptoms
- bleeding
- vomiting

**NOT SYMPTOMATIC**
- Metastatic disease
- NO metastatic disease

**Medically fit for surgery:**
- Consider neoadjuvant chemotherapy
- pre-operative nutritional support

**Not medically fit for surgery**
- No metastatic disease
  - Surgical resection
  - Consider:
    - limited resection / bypass
    - enteric feeding
- Metastatic disease

**Gastrectomy**
- ± Pre- and post-operative chemotherapy
- Consider post-operative chemo/radiotherapy in those who have NOT received pre-operative chemotherapy

Refer to Palliative Care Service

Refer to multidisciplinary team discussion for consideration of palliative interventions including chemotherapy/radiotherapy or other procedures and to review plan for ongoing supportive care.
Oesophageal Cancer Clinical Management Decision-making flow chart

The oesophageal cancer treatment flow diagram outlines the management steps for staging, assessment and treatment for a patient diagnosed with an oesophageal cancer. Pre-treatment assessment is essential to avoid subjecting patients to radical treatment if it is not likely to be beneficial, and to ensure that appropriate treatment is offered to all those who are likely to benefit.

- **Medically fit for surgery**
  - Localised disease
  - No metastatic disease detected

  - **YES**
  - **NO**

  - **Upper 1/3 tumour:** *Consider ENT opinion*

  - **NO**
  - **YES**

  - **T1-2NOMO**
    - *Consider: radical chemotherapy / radiotherapy*
    - *Surgical resection*

  - **≥T3NOMO Any N+ MO**
    - *Consider: neoadjuvant therapy and surgical resection*

- **Not medically fit for surgery**
  - Localised disease
  - No metastatic disease detected

  - **NO**
  - **YES**

  - **Consider:**
    - Radical chemotherapy / radiotherapy / regimen

  - **Refer to Palliative Care Service**
    - *Consider:*
      - enteric feeding
      - stenting for dysphagia
      - palliative radiotherapy / chemotherapy

- **YES**
  - **Refer to Palliative Care Service**
  - *Consider:*
    - enteric feeding
    - stenting for dysphagia
    - palliative radiotherapy / chemotherapy
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<th>Pathway recommendation</th>
<th>Service/system recommendation</th>
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| i Enable rapid access to endoscopy for patients at high risk of upper GI malignancy | • Standardise statewide endoscopy referral documentation and related processes.  
• Implement a statewide endoscopy triage system.  
• Provide education to health professionals regarding identification of patients at high risk of upper GI malignancy and appropriate referral pathways.  
• Facilitate ready access to information on high-risk patients, referral processes and the Upper Gastrointestinal Cancer Care Pathway.  
• Undertake an audit of the current demand on endoscopy services, associated waiting times and triage systems across multiple sites, including public and private settings.  
• Audit waiting times for endoscopic services in rural centres and determine processes to improve access for high-risk groups. |
| ii Implement synoptic reporting of upper GI pathology as standard | • Implement synoptic reporting within all South Australian pathology services. |
| iii All upper GI malignancies are referred to specialists with adequate experience and expertise in the management of upper GI cancers | • Specialist surgical procedures to be undertaken only by surgeons who have the volume and complexity of cases to maintain high-level expertise in upper GI surgery. |
| iv All patients with upper GI malignancies are referred to services with adequate workforce and infrastructure to care for them safely and effectively | • All patients with an upper GI malignancy receive treatment where there are appropriately trained clinical specialists available (as noted in recommendation iii).  
• Provide acute care of upper GI cancer in a service with access to high-level supportive care infrastructure including that required for patients with complex post-operative care needs.  
• Upper GI cancer patients receive active treatment, including medical oncology and/or radiation oncology, and are managed in a service with adequate access to these specialties.  
• All patients with an upper GI cancer are referred to a dietitian for nutritional assessment and specialist advice. |
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| v All patients with an upper GI malignancy (including high grade dysplasia) are prospectively discussed at an Upper GI multidisciplinary team meeting within 2 weeks of diagnosis | • Participation in the multidisciplinary team becomes an accepted component of core business for cancer health professionals.  
• Participation in the multidisciplinary team and/or preparation of diagnostic materials and/or results is included as core business of diagnostic service providers within South Australia.  
• The role of multidisciplinary team administrative assistant is introduced to provide support for preparation, monitoring and follow-up functions required by the multidisciplinary team.  
• Appropriate information and communications (ICT) technology is implemented to enable multidisciplinary team participation across multiple sites with high resolution support for radiology and pathology imaging review. |
| vi Ensure timely access to results of investigations including endoscopy, radiology and pathology | • Undertake urgent improvements to ICT links between public sites and across regions to enable adequate access to radiology images and pathology results.  
• Install endoscopic reporting software across South Australia |
| vii All patients with upper GI cancer have access to specialist nursing care and cancer care coordination throughout the cancer pathway | • Introduce the role of upper GI Cancer Clinical Practice Coordinator (CPC) to provide and coordinate supportive care from diagnosis throughout treatment to follow-up, survivorship or referral for end of life care.  
• Determine the number of CPCs required based on the volume and complexity of patients and the number of services/sites covered. |
| viii Ensure quality and safety of upper GI cancer care is monitored at a state level | • Provide a statewide systematic centralised database that captures minimum agreed data of all persons with a diagnosis of an upper GI cancer to allow all treatment outcomes to be reported, reviewed and measured.  
• Initiate a process for centralised review and reporting of key performance indicators (KPIs) and benchmarks for clinical and service outcomes. |
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| ix All patients with upper GI cancer have access to culturally appropriate care and effective communication throughout the cancer pathway | • Use qualified interpreters in all consultations where English proficiency and fluency are limited.  
• Develop culturally appropriate resources and services.  
• Provide cross-cultural training for all staff involved in cancer care.  
• All cancer services foster links with culturally relevant resources and services. |
| x  Aboriginal Health Impact Statement for Cancer Pathway development in South Australia | • A comprehensive companion document be written to support all future cancer pathway development in South Australia which addresses the South Australian Aboriginal Health Impact Statement checklist.  
• This to be completed in 2010 under the auspices of the Aboriginal and Torres Strait Islander Committee of the Cancer Clinical Network. |
1. INTRODUCTION

1.1 Pathway development

The Upper Gastrointestinal Cancer Care Pathway was developed by a multidisciplinary working party, under the auspices of the South Australian (SA) Cancer Clinical Network.

The statewide Cancer Clinical Network Steering Committee (CCNSC) was formed by SA Health and first met in May 2007. The main objective of the CCNSC was implementation of the Statewide Cancer Control Plan 2006–2009. Subcommittees were created to address six key areas:

- Prevention and Early Detection
- Optimising Cancer Care
- Infrastructure Planning
- Information
- Workforce
- Research.

The Optimising Cancer Care subcommittee prioritised the development of three cancer care pathways as proof of concepts for the SA setting. The three pathways are:

- upper gastrointestinal (upper GI) cancer
- lymphoma
- adolescents and young adults with cancer.

A comprehensive cancer pathway model was developed with the aim of improving and standardising cancer care for all South Australians, regardless of their location, origin, age or financial status. The pathways are based on available evidence and clinical expertise, with a strong emphasis on clinical and supportive care within the local SA context.

The Optimising Cancer Care subcommittee subsequently established working parties to undertake the development of each clinical pathway. The working parties were chaired by clinical leaders in the relevant clinical field and included multidisciplinary membership from public and private health settings, non-government organisations (NGOs), general practitioners (GPs) and consumers.
Project support for the development of the three pathways was provided by the Cancer Service National Network Demonstration Program of South Australia (CanNET SA). CanNET is a Cancer Australia initiative, funded by the Australian Government.

Each working party utilised the common cancer pathway model (Figure 1) as a basis for individual pathway development to ensure consistency with the concept.

Figure 1: Cancer pathway model

Explanatory notes
- Pillars represent the key requirements that provide support for cancer services.
- Central cancer pathway illustrates the clinical aspects of the cancer journey.
- Hands represent supportive care, which is integral to clinical care.
- Circles or ‘pods’ surrounding the pathway highlight the key issues that require due consideration in planning all cancer clinical and supportive care.
1.2 Pathway target audience

Each pathway addresses the clinical aspects of the cancer journey and provides recommendations based on current evidence. It is anticipated that the pathway and the pathway recommendations will be of interest to:

- SA Health
- the three health regions in South Australia: Country Health SA, Southern Adelaide Health Service and Child Youth Women’s Health Service
- Aboriginal community-controlled health services
- the CCNSC and associated committees and working groups
- people involved in cancer care projects
- consumers of cancer care
- NGOs
- GPs
- all health care professionals involved in cancer care.

1.3 SA Health Aboriginal Health Impact Statement and Checklist

A workshop for the Upper GI and Adolescent and Young Adult cancer pathways towards the preparation of a SA Health Aboriginal Health Impact Statement was held in November 2009. The workshop attendees provided support for these two initial state-wide cancer pathways. It was acknowledged that there are many gaps in cancer care for Aboriginal and Torres Strait Islander People and that it would not be feasible to comprehensively address these for each individual cancer pathway developed in South Australia.

The key recommendation arising from this workshop is the need to create a comprehensive companion health impact document that addresses Aboriginal and Torres Strait Islander cancer care needs in South Australia. This document would complement all future cancer pathways developed in South Australia. It was proposed that this work will completed under the auspices of the Aboriginal and Torres Strait Islander Committee of the Cancer Clinical Network.

It was agreed that this pathway may proceed for implementation and will be linked to the companion document at the first review of this pathway.

2. UPPER GASTROINTESTINAL CANCER CARE PATHWAY FOR SOUTH AUSTRALIA

2.1 Purpose

The SA Upper Gastrointestinal Cancer Care Pathway is a guide to the optimal management and care of patients diagnosed with upper GI cancers. The Pathway provides a guide for the patient journey to ensure patients with an upper GI cancer and their families receive optimal care and support.

‘Upper GI cancers’ is a collective term describing cancers of the oesophagus and stomach (gastric cancers). In South Australia, upper GI cancers contribute to approximately 6% of all cancer deaths. There is an identified need to improve outcomes for patients with these cancers. Furthermore, as the current average life expectancy of patients with upper GI cancers is short, coordinated service provision between private and public hospitals and service providers, GPs, community and palliative care services is essential.2

This SA Upper Gastrointestinal Cancer Care Pathway provides recommendations based on current evidence for best practice in the management of patients diagnosed with oesophageal, gastric-oesophageal junction or gastric cancer (including squamous cancer of the thoracic oesophagus and adenocarcinomas of the oesophagus or stomach). It adopts a multidisciplinary approach to the care of people affected by upper GI cancers, with involvement of all relevant health professionals.

The Pathway has been developed through a collaborative effort involving a wide range of health professionals, including upper GI cancer specialist practitioners, generalist staff and consumers. It is a statement of consensus based on current best practice, evidence and accepted approaches to upper GI cancer treatment and management. The Pathway is not intended to be used as a standard of care. Standards of care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve.

Adherence to Pathway recommendations will not ensure a successful outcome in every case, nor should they be considered as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgement must be made by the appropriate health care professional(s) responsible for clinical decisions regarding a particular clinical procedure or treatment plan. Recommendations
should be followed subject to the health professional’s independent medical judgment and the patient’s preference in each individual case. Final decisions should be made only after discussion of the diagnosis and available treatment options with the patient. It is advised, however, that significant departures from the SA Upper Gastrointestinal Cancer Care Pathway should be documented in the patient’s case notes at the time the relevant decision is taken.

**Aims of the Pathway**

- To improve care and outcomes for patients with oesophageal and gastric cancers in South Australia.
- To provide guidance and ensure consistency of practice in the management of patients with oesophageal and gastric cancers and to reduce the wide variation in current practice observed throughout South Australia.
- To encourage appropriate referral and early diagnosis of oesophageal and gastric cancers in the general population and in high-risk groups.
- To ensure that all patients with oesophageal and gastric cancers are offered the best chance of cure or palliation irrespective of where they present or are treated.
- To optimise care delivery for patients with oesophageal and gastric cancers at all stages of their disease.

**2.2 Structure**

The SA Upper Gastrointestinal Cancer Care Pathway provides a structured pathway to guide the patient journey. Figure 2 (page 22) identifies the critical steps involved. It is acknowledged that there will be some variation in approach, with factors including cancer type, timing and method of diagnosis, prognosis, management decisions and patient preference will all impact on the management of an individual patient.

**2.3 Key principles**

Several key principles have been identified that support each stage of the Pathway.

**Patient-centred care**

- Patients and their families/caregivers are encouraged to be involved as active participants in care planning and decision making. Ultimately, treatment decisions rest with the patient or designated person. Information and discussion should be provided in their preferred language and in a manner that is sensitive to their culture.³
Safe and high-quality care

- Cancer care is complex, involving a range of specialist providers and clinicians with varied clinical expertise. To ensure safe and high-quality cancer care, it is essential for clinicians to possess the technical skills and experience to undertake the relevant aspects of cancer care and to have access to appropriate infrastructure to support such care.\(^4\)

Multidisciplinary care

- Best practice in cancer care involves a multidisciplinary approach to treatment planning and care delivery.\(^5\)
- Effective multidisciplinary approaches in the management of patients with cancer have demonstrated positive outcomes,\(^6\) including increased survival, a greater understanding that a comprehensive team is providing care, a greater likelihood of receiving care in accordance with clinical practice pathways (including psychosocial and practical support), increased access to information for patients and increased patient satisfaction with care.

Supportive care

- Patients with cancer have psychological and social needs that are frequently undetected and unmet and have the potential to cause long-term distress.\(^7\)
- Supportive care includes the acknowledgement of all domains of patient needs – physical, psychological, social, cultural, informational and spiritual – that may be required to support the patient and their families/caregivers.\(^8\)

Care coordination

- Patients require their health care to be coordinated. A variety of strategies have been shown to improve coordination of care, including multidisciplinary team meetings, clinical protocols, access to cancer nurse specialists and utilisation of appropriate performance indicators.\(^9\)

2.4 Review and updating

The SA Upper Gastrointestinal Cancer Care Pathway was released as final draft in early 2009. It is expected that, after refinement and review during 2009, it will be due for periodic review every 2 years. Interim updates of the Pathway will be undertaken as
recommended by the statewide Upper GI Multidisciplinary Team and Upper GI Working Party.


4 ibid

5 ibid


8 ibid

9 ibid

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* The statewide Upper GI Multidisciplinary Team commenced in December 2008 as a pilot project supported by CanNET SA under the auspices of the Optimising Cancer Care Committee/CCNSC. The multidisciplinary team is continuing and provides access to specialist upper GI expertise across metropolitan Adelaide.
**Figure 2: Key stages in the Upper Gastrointestinal Cancer Care Pathway**

**Prevention; Minimising cancer risk; Screening and early detection**
- Recognising symptoms of upper GI cancer
- Identifying the need for medical review

**Initial diagnosis**
Role of GPs/emergency health services in:
- initial assessment
- relevant investigations
- diagnosis
- timely referral to cancer specialist

**Referral**
Referral to cancer specialist and/or staging investigations

**Determination of treatment – the multidisciplinary team**
- Assessment and treatment
- Presentation at an upper GI Multidisciplinary Team meeting
- Treatment recommendations

**Treatment**
- Endotherapy
- Surgery
- Radiotherapy
- Chemotherapy
- Palliative care
- Supportive care

**Follow-up**
Post-treatment follow-up and management

**Survivorship needs**

**Survivorship**
- Monitoring and management of long-term sequelae of treatment or disease sequelae

**Disease recurrence**
- Reassessment of disease status
- Presentation at MDT to determine management plan

**End-of-life care**
3. UPPER GASTROINTESTINAL CANCER IN SOUTH AUSTRALIA

Cancer remains one of the leading causes of morbidity and mortality in South Australia. In 2006, there were 8592 new cancer cases and 3436 cancer deaths. One in three South Australians will be diagnosed with cancer at some time during their lives. Cancer is the second highest cause of death following cardiovascular disease.$^{10}$

Upper GI cancers have a relatively low incidence in South Australia by world standards,$^{11}$ but account for approximately 3% of all new cases of cancer reported$^{12}$ with a total of 253 cases diagnosed in 2005.

Upper GI cancers account for approximately 6% of cancer deaths in South Australia, with 182 deaths recorded in 2005. These cancers are rarely diagnosed before reaching an advanced stage, as the symptoms of early disease are very common and are not specific to cancer. Consequently, prognosis for most patients is poor, with over 75% of those diagnosed with an upper GI cancer dying within 1 year of diagnosis.$^{13}$

The anatomy of the upper GI tract, showing the sites of the cancers discussed in this Pathway, is pictured in Figure 3.

**Figure 3: Upper gastrointestinal cancers$^{14}$**
3.1 Incidence and mortality rates and trends

In South Australia in 2001–2006:

- the average annual incidence of gastric cancer among South Australians was 9.3 cases per 100,000
- approximately one-quarter of these cancers occurred in the gastric oesophageal junction, with an average annual incidence of 2.5 cases per 100,000
- the average annual incidence of oesophageal cancer was 5.2 cases per 100,000
- upper GI cancers were more common in men:
  - the rate of gastric cancer for males was twice the rate for females
  - the rate of oesophageal cancer was 2.5 times higher for males than females
- average annual mortality rates were:
  - gastric cancer: 7.0 per 100,000
  - oesophageal cancer: 4.3 per 100,000
  - cancers of the gastro-oesophageal junction: 1.9 per 100,000.

Incidence and mortality rates for gastric cancer in South Australia have decreased by more than one-third over the past two decades for both males and females (see Figures 4 and 5). Declines in mortality are likely to be due largely to the decrease in incidence.

A similar trend is, however, not evident for cancers located near the gastro-oesophageal junction. Incidence and mortality rates for gastro-oesophageal junction cancers appear to have increased slightly over time (although differences are not statistically significant). The incidence of oesophageal cancer has increased (although differences are not statistically significant for females) over the past two decades. Similarly, oesophageal cancer deaths have increased (although not statistically significantly).

Aboriginal and Torres Strait Islander peoples have a higher rate of deaths from cancer than non-Indigenous Australians. Cancers of the digestive organs and lungs (largely smoking-related cancers) are the most common types of cancer responsible for deaths in Aboriginal and Torres Strait Islander peoples.
Figure 4: Trends in incidence of cancers of the upper gastrointestinal tract (South Australia, 1977–2006) 22
Figure 5: Trends in mortality from cancers of the upper gastrointestinal tract (South Australia, 1977–2006)\textsuperscript{23}

Gastric

- 1997–2006: 3.9 [3.9–5.2]

Oesophagus

- 1977–1986: 5.7 [5.0–6.5]

Gastric junction

- 1977–1986: 2.8 [2.3–3.3]
- 1987–1996: 3.8 [3.3–4.3]
- 1997–2006: 3.3 [2.9–3.8]

male
female
3.2 Survival outcomes

Survival outcomes for gastric cancer (excluding cancers of the gastro-oesophageal junction) are relatively poor compared with other cancers, with only 24% of patients surviving 5 years after diagnosis (1997–2006; see Figure 6). There has been only a marginal improvement in survival over the past two decades (from 22% among those diagnosed during the period 1977–86).²⁴

Figure 6: Five-year survival for cancers of the upper gastrointestinal tract by period of diagnosis (South Australia, 1977–2006)²⁵

Survival outcomes for oesophageal cancer are also poor when compared with other types of cancer, with only 17% of people diagnosed surviving their cancer for 5 years or more. Treatment advances have led to improvements in oesophageal cancer survival over the past two decades in South Australia (5-year survival for those diagnosed during 1977–1986 was 11%).²⁶

Cancers occurring around the gastro-oesophageal junction have poorer outcomes compared with those occurring in other regions of the stomach (collectively) but slightly better outcomes than for cancers of the oesophagus, with 5-year survival of 19% (for cases diagnosed 1997–2006). Similarly, there has been a slight increase in survival over the past two decades (up from 12% for the period 1977–86).²⁷
3.3 Ethnic and socio-economic differences

The incidence of upper GI cancers is higher in certain demographics of the South Australian population, as summarised below. Risk factors that contribute to these differences are discussed in Section 8.

- Gastric cancer rates are 75% higher among South Australians born overseas than among Australian-born residents.
- People from low socio-economic areas have higher rates of gastric cancer (observed internationally).
- The incidence of gastric cancer is 22% higher among metropolitan Adelaide residents than among rural South Australians, and is higher in the Western region of Adelaide, reflecting the distribution of overseas-born residents. 28
- Rates of oesophageal cancer are generally lower among overseas-born residents than for Australian-born residents. However, females born in the United Kingdom or Ireland have a higher incidence of oesophageal cancer than Australian-born females. 29
- There is a higher incidence of oesophageal cancer among males from lower socio-economic areas (consistent with patterns observed overseas), but no difference in incidence among females across the socio-economic gradient. 30

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11 ibid

4. UPPER GASTROINTESTINAL CANCER CARE PATHWAY

People affected by upper GI cancer have diverse and complex clinical and supportive care needs. Figure 7 illustrates and identifies the steps and optimal care requirements for the Upper Gastrointestinal Cancer Care Pathway. The Pathway promotes care coordination and a consistent, standardised approach to managing care. A well-coordinated and managed cancer journey will ensure that people affected by upper GI cancer experience coordinated care.

It is acknowledged that many people affected by an upper GI cancer may not follow every step of the Pathway, due to variations in clinical presentation that will influence individual decisions about patient care.

On the left side of the Pathway are recommended timeframes from presentation of symptoms to presentation at the multidisciplinary team meeting. Timeframes beyond the multidisciplinary team meeting are not considered in this Pathway due to complexity and variability of individual clinical and patient decisions.

On the right side of the Pathway are recommended key performance indicators (KPIs). This is not a complete list of recommended KPIs for a cancer pathway but represent the priority performance measures required to close the gaps in current upper GI cancer care, as identified by the Upper GI Working Party.
Figure 7: Upper Gastrointestinal Cancer Care Pathway
This diagram shows the steps along the upper GI cancer diagnosis and treatment pathway and the optimal care required. Not all patients will follow every step of the pathway.

Maximum wait

Patient with upper GI symptoms:
- Recent onset or progressive dysphagia; unintentional weight loss.
- Dyspepsia combined with: recurrent vomiting, unintentional weight loss and anorexia, gastrointestinal blood loss/proven anaemia

Key Performance Indicators

Presentation

Referral

Day 1

2 week time maximum wait from urgent GP referral to specialist appointment

Day 14

Patient reviewed by cancer specialist within 4 weeks of confirmed diagnosis

Day 28

Maximum time from diagnosis to presentation at the MDT meeting: 2 weeks

Day 42

General practitioner

Gastroenterologist

Upper GI surgeon

Diagnostic test

- Minimum data set required for presentation at the multidisciplinary team meeting (endoscopy, PET, CT scan)
- CT/PET recommended for oesophageal cancer, gastric cancer at clinical discretion.
- CT scan to include chest, abdomen, pelvis.
- Laparoscopy, multidisciplinary team recommendation.
- Endoscopic ultrasound, if fit for surgery, no metastasis

Upper GI nurse specialist

- Assessment and/or provision of referral for supportive care needs
- Identification and implementation of care coordination requirements
- Patient education and counselling

Multidisciplinary team (MDT) meeting

- The multidisciplinary team provides individualised treatment (care) recommendations.

Treatment

Endotherapy (EMR, ESD)

Surgery

All patients should undergo assessment of performance status and respiratory function

Chemotherapy

All patients should undergo assessment of performance status and respiratory function

Radiotherapy

Palliative care

Supportive care

Follow-up care

- All patients should be followed up systematically

Follow-up care

- All patients should be followed up systematically

KPI 2-week time point from urgent GP referral to specialist appointment

KPI 2-week time point from specialist to endoscopy / confirmation of diagnosis

KPI 2-week time point from confirmed diagnosis to presentation at the MDT meeting

KPI Number of patients presented at the MDT meeting against cancer registry data.
5. MULTIDISCIPLINARY AND COORDINATED CARE

Multidisciplinary care is a collaborative approach to health care that aids treatment planning and ongoing management and is integral to providing coordinated care to people diagnosed with cancer.

Multidisciplinary care is provided by a team that meets regularly, either face-to-face or via teleconference/videoconference, to prospectively plan care and treatment for patients. This approach to care is essential for patients with upper GI cancer in both public and private healthcare settings.\(^{31}\)

5.1 Benefits of multidisciplinary care

Evidence supporting a multidisciplinary approach to cancer care is increasing. Demonstrated benefits include:\(^{32}\)

- increased provision of evidence-based care in accord with clinical practice pathways (where available) with implications for both clinical outcomes and cost effectiveness
- all treatment options are considered and treatment plans are individualised to each patient
- improved referral pathways
- increased referrals for psychosocial support
- increased discussion of patient eligibility for clinical trials
- enhanced clinical education opportunities
- opportunity for clinicians to interact.

Positive outcomes identified for patients include:\(^{121}\)

- increased survival when care is managed by a multidisciplinary team
- increased patient satisfaction with care
- increased access to information for patients, particularly psychosocial and practical support
- increased perception by the patient that care is being managed by a team.
5.2 Multidisciplinary care principles

A set of principles underpinning multidisciplinary care have been identified.\textsuperscript{33}

A team approach\textsuperscript{34,35}

- There is an established multidisciplinary team that comprises relevant core disciplines including allied health and psychosocial health specialists.
- The GP is regarded as a team member and effective communication processes between the multidisciplinary team and the GP are established.
- Effective communication processes exist with access and referral links between all core and non-core team members.

Communication among team members\textsuperscript{36,37}

- All the core team members regularly attend the multidisciplinary team meetings to provide input into diagnostic, treatment, supportive and palliative care planning.
- Processes are in place for communication of treatment recommendations and care plans between core team members.

Access to the full therapeutic range for all patients, regardless of geographical remoteness or size of institution\textsuperscript{38,39}

- All patients, regardless of where they live and their cultural background have information about and access to relevant treatment and services.
- Clinical trial involvement is considered for all eligible patients who will be undergoing cancer treatment.

Provision of care in accord with agreed standards/pathway\textsuperscript{40,41}

- Decisions, protocols and care pathways are in line with current best practice, including standards, research and where these are not available, currently accepted approaches to treatment.
- All the relevant diagnostic results, reports and pathology and radiology images are available for multidisciplinary team meetings.
- Professional development activities for all multidisciplinary team members are offered and supported.
Involvement of patients in decisions about their care\textsuperscript{42,43}

- Patients are informed of the multidisciplinary team approach to care.
- Patients are informed of the multidisciplinary team recommendations, provided with information about all aspects of their treatment and participate in the decision-making process.
- Patients are routinely provided with culturally appropriate information about and access to supportive care services.

5.3 Role of the general practitioner in upper gastrointestinal cancer care

GPs have a critical role to play in the care of patients with upper GI cancer, particularly in relation to early detection of disease in order to maximise the possibility of cure. The role of the GP is paramount in the aspects of care outlined below.

Early detection, investigation and referral

- Early recognition of individuals at high risk of upper GI cancers
- Documentation of history and clinical findings
- Initiation and review of results of initial investigations
- Prompt referral to an appropriate upper GI cancer specialist, with detailed synopsis of:
  - history of presenting symptoms
  - past medical history, including any current medications
  - relevant psychosocial history and/or current concerns
  - patient preferences (if any).
- Provision of information and support to patients throughout investigations, including information about suspected diagnosis and possible treatment options.\textsuperscript{44}

Ongoing care throughout treatment, post-treatment follow-up and long-term follow-up

GPs may wish to attend and participate in discussion about their patient at the Upper GI multidisciplinary team meeting. The GP may be able to negotiate a role in the patient’s treatment, particularly in rural/remote areas.\textsuperscript{45}

Follow-up care post-treatment will be determined by the treatment regimen and requires negotiation with the patient’s cancer specialist.
Possible roles for the GP in treatment and follow-up care are outlined below.

1. Patient assessment:
   o pre-chemotherapy assessment of haematological and biochemical status, for example in rural locations where chemotherapy services are provided under the guidance of the medical oncologist
   o monitoring of toxicities (chemotherapy, radiation therapy) – liaison with the medical oncologist or radiation oncologist to manage toxicities and develop a treatment plan.

2. Provision of supportive care:
   o psychosocial support and referrals as required
   o development of a mental health plan with input from a psychologist may be considered to proactively assess for anxiety or other distressing psychological symptoms.  

3. Post-treatment surveillance (in collaboration with the specialist team):
   o use of protocols that identify the recommended tests or investigations.
   o monitoring and management of symptoms, including prompt referral to specialist
   o ongoing provision of psychosocial and practical support to both the patient and caregiver(s).

4. Long-term monitoring after cancer treatment:
   o regular review of patients to monitor potential long-term complications of chemotherapy, radiotherapy and surgery (in partnership with relevant cancer specialist(s) with referral to supportive care services as required.

Palliative care and end-of-life care
If the focus of care is providing supportive and palliative treatment, the GP may refer and participate in shared care with palliative care services. The GP has a particular role in palliative and end-of-life care given their awareness of the whole person, the needs of their family, and the context in which the person lives their life.

Support for caregivers
Caregivers have physical, social, cultural and emotional needs that need to be recognised. The GP is well-placed to provide support to the patient’s caregiver(s) given that they may have regular contact with them and have knowledge of their history and social situation.
5.4 Specialist nursing roles

Specialist nurses have been involved in the upper GI cancer setting in the United Kingdom (UK) for a number of years, and more recently have been introduced in Australia in institutions such as the Peter MacCallum Cancer Centre in Victoria. In the UK, the specialist nurse’s role is now regarded as pivotal to the delivery of good care to patients with upper GI cancers, and they are employed at all institutions that manage these diseases.

The establishment of specialist nursing roles in South Australia is essential for the delivery of appropriate care to upper GI cancer patients. Specialist upper GI cancer nurses provide a central contact point for cancer patients and their family members and are well-recognised in the literature as playing a central role in coordinating and improving overall care. They also play an essential role in the multidisciplinary team and have been shown to have a positive effect on economic performance of their employing institution.

The Nurse Clinical Practice Coordinator, Advanced Nurse Clinical Practice Consultant or Nurse Practitioner acts as the central contact point for the primary treatment team and for patients. This is a multi-faceted and important role that includes:

- coordination and liaison with other health care professionals
- facilitation of informed patient consent and provision of culturally appropriate information, with involvement of a qualified interpreter as required
- requesting appropriate investigations in accordance with protocols
- interpretation of diagnostic results
- facilitation of the patient’s understanding of the disease, related investigations and treatment regimen; provision of specialised written information to enhance the patient’s understanding of and participation in decision making about their care
- provision of ongoing support throughout the cancer journey from early detection, diagnosis, staging and treatment to post-treatment follow-up via nurse-led clinics, allowing medical staff greater capacity for review of new patients.
Recommendations:

1. Patients with upper GI cancers should have access to appropriate interpretative services or a culturally appropriate support health worker during consultations with cancer specialists.

2. Rural and remote Aboriginal Health Care Workers should receive regular communication from the treating team/care coordinator regarding cancer treatment plans and appointments.

3. All patients with an upper GI cancer diagnosis should have access to an upper GI specialist cancer nurse throughout their cancer journey.


33 ibid


40 ibid

41 ibid

42 ibid

43 ibid

44 ibid

45 ibid

46 ibid

47 ibid


50 ibid

51 ibid


6. SUPPORTIVE CARE

6.1 Supportive care principles
Supportive care is a term used for all health services (generalist and specialist) to describe the care that may be required to support people with cancer and their families and/or caregivers.\textsuperscript{56}

The spectrum of supportive care includes:
- management of physical and psychological symptoms and side effects across the cancer continuum from diagnosis through treatment to post-treatment care
- enhancing rehabilitation
- secondary cancer prevention
- survivorship support and care
- end-of-life care.\textsuperscript{57}

Supportive cancer care addresses:
- physical needs, such as pain, nausea and fatigue
- psychological needs, such as anxiety and distress
- social needs, including practical support and caregiver needs
- information needs, regarding diagnosis, prognosis, treatment types etc
- spiritual needs, such as addressing hopelessness or despair.

All needs must be addressed in a culturally and linguistically appropriate manner.

Supportive care for patients with upper GI cancers and their families and/or caregivers is an integral component of evidence-based best practice clinical care. Research indicates that people with cancer who receive appropriate information and psychosocial interventions have lower rates of anxiety, mood disorders, nausea, vomiting, pain, as well as a greater knowledge and understanding about their disease and treatment.\textsuperscript{58}

The specific supportive care needs of people affected by upper GI cancers are considered in Section 7.

\textbf{Figure 8} identifies components required to achieve best practice supportive cancer care.\textsuperscript{59}
Providers of supportive care

All members of the multidisciplinary team have a role in the provision of supportive care. In addition, the patient may gain support from family, friends, support groups, volunteers and community-based organisations.

As a specialist service, palliative care may provide many elements of supportive care and specific expertise, such as management of refractory symptoms of cancer and/or its treatment, complex psychosocial issues and end-of-life and bereavement issues.\textsuperscript{50}

Achieving best practice in supportive care\textsuperscript{61,62}

Supportive care service provision requires an initial assessment and identification of the patient’s specific needs. This is achieved through regular discussion and systematic review of the needs of patients and their caregivers. Regular reassessment is essential, as needs change frequently throughout the cancer journey.

This review process assists in identifying those patients who are experiencing significant levels of distress and are at higher risk of psychological morbidity, and facilitates appropriate referral for further assessment and specific interventions. The Australian \textit{Clinical Practice Guidelines for the Psychosocial Care of Adults with Cancer}\textsuperscript{63} and the
National Comprehensive Cancer Network’s clinical practice guidelines for distress management recommend the use of a validated screening tool, such as the distress thermometer.

**Establishing a supportive care model**

The type and level of interventions required to meet supportive care needs for patients and their caregivers will vary. Many patients’ needs will be met adequately through the provision of general information, while only a few patients will require specialised intervention.

As a range of professionals and services provide supportive care, it is important to have in place:

- processes that assist the identification of patient, family and/or caregiver supportive care needs
- a clear referral pathway to specialised supportive care services
- adequate training of staff in identifying and responding to supportive care needs of patients
- promotion of supportive care as an integral component of cancer service delivery.

**6.2 Psychosocial needs**

A routine and systematic approach should be used to identify patients who are at higher risk of psychological or social distress. Identifying patients who are at high risk provides the opportunity for referral for assessment that is specific to their needs and recognises the individual factors that may place them at increased risk of psychological morbidity. A detailed assessment of supportive care needs will help identify those patients who require more specific one-to-one intervention and follow-up.

**Managing psychosocial needs**

A screening tool (such as the Distress Thermometer) can indicate factors contributing to distress, which may include practical, emotional, social/family, spiritual or physical issues or a combination of these.

Once patient needs have been assessed, referral can then be made to an appropriate supportive care professional, for example a specialist nurse, psychologist, social worker, welfare worker or allied health professional:
• patients experiencing **high levels of distress** are at risk of developing symptoms including anxiety and depression; referral to a psychologist or psychiatrist is likely to be appropriate

• patients experiencing **emotional, family, practical or financial issues** or who have minimal social supports require referral to a social worker or welfare worker

• patients with **information or physical needs** require referral to the specialist nurse or to a community support group.

Self-management strategies, such as relaxation techniques and meditation, may also be beneficial.

Where necessary, it is important to ensure patients and their caregiver(s) have access to:

• an interpreter

• culturally appropriate resources

• culturally appropriate support.

**Social, financial and practical needs**

Patients may experience a range of social, financial and practical needs, including:

• additional costs related to meal preparation, aids to assist with cooking and enteric feeding may be significant

• patients travelling from rural and remote areas may require assistance with travel and accommodation, including assistance with the Patient Assistance Transport Scheme (PATS).

Referral to a social worker for further assessment and identification of appropriate funding support may be required.

**Informational needs**

Information related to communication with patients and caregivers and provision of information about complementary therapies is provided below.
Other specific information needs may include:

- assistance with smoking cessation pre- and post-treatment may be required,\textsuperscript{73} this is particularly relevant prior to surgery to reduce the likelihood of post-operative complications\textsuperscript{74} (information is available from the upper GI cancer specialist nurse and the \textit{Quitline} on 13 78 48)

- Aboriginal and Torres Strait Islander peoples and culturally and linguistically diverse communities have specific informational needs that require culturally appropriate resources (the local Aboriginal Health Service may be able to assist patients and caregiver(s) in their region).

See \textit{Appendix E} for a list of cancer resources and support groups.

\textbf{Communication with patients and caregivers}

Patients and caregivers should receive both individual support and guidance and well-produced information leaflets. Verbal and written information should be culturally appropriate and some patients and caregivers may require access to a qualified interpreter.

Information required includes detail about the disease, reasons for and likely effects of diagnostic procedures, as well as treatment options, including known risks and potential adverse effects. A clear explanation should be also given when interventions that patients might anticipate are not offered; for example, when histological confirmation of cancer is not sought.

It is recommended that health care providers ask patients if they want additional information and discuss how much the patient wishes to be involved in decisions about treatment. Patient needs and preferences for information about treatment should be determined, and family members, caregivers and/or others should be encouraged to provide culturally appropriate support to the patient during consultations.\textsuperscript{75}

All health professionals involved in the care of an individual patient should know what information has been given to the patient. A record of information provided, along with the patient’s preferences for information and involvement in decision-making, should be included in the patient notes. A copy should be given to the patient’s GP together with a comprehensive summary of the management plan. Many patients with upper GI cancers do not survive for more than a few months after diagnosis. Hence, communication needs to be effective, with fast and efficient links between hospitals and primary care teams.\textsuperscript{76}
Patients with upper GI cancer have identified the need for information about their supportive needs/requirements to be given to their family and/or caregiver(s) when they return home from treatment in hospital. Patients have also identified the importance of having a dietitian involved in their care, given the change of diet required to improve an upper GI cancer patient’s quality of life. The importance of patient support groups has also been stressed, as well as the need for a nurse specialist to support patients and their caregivers.77

**Further information and resources**

- [Appendix F](#): Common questions/concerns raised by people with an upper GI cancer.
- [Appendix D](#): Upper GI Cancer Care Patient Information Pathway.

### 6.3 Respecting diversity

**Aboriginal and Torres Strait Islander Peoples**

Australia’s Indigenous population is comprised of Aboriginal and Torres Strait Islander people. One in four Aboriginal and Torres Strait Islander people live in rural and remote regions of Australia. Aboriginal and Torres Strait Islander people are more likely to present with advanced illnesses and may have multiple co-morbid illnesses in addition to cancer.

The concept of health and wellbeing for Aboriginal and Torres Strait Islander people is a holistic one, encompassing all aspects of physical, emotional, social, spiritual and cultural wellbeing and a specific kinship with family.78,79 Many Aboriginal and Torres Strait Islander people believe that wellbeing is determined socially, rather than biologically or pathologically.80,81 Given the powerful role of traditional beliefs about illness and health, it is important when managing the health care of Aboriginal and Torres Strait Islander people to include the input of those who are familiar with their culture80 and language and to incorporate specific understandings of the needs of those residing in rural and remote areas.

Staff with specific expertise in the management and support of Aboriginal and Torres Strait Islander patients are located in the larger metropolitan public hospitals. Aboriginal health nurses and Aboriginal hospital liaison workers are available to provide assistance following patient referral by the multidisciplinary team and to provide advice on culturally safe and respectful care.

For more information and resources see [Appendix E](#).
**Culturally and linguistically diverse communities**

Australia has one of the most culturally diverse communities in the world. In 2004, one in four Australians was born outside Australia.\(^{83}\) It is therefore essential to consider the culturally and linguistically diverse needs of all people in relation to diagnosis, treatment and management of cancer.\(^{84}\)

All consumers/patients are individuals and require a person-focused approach to care. Health professionals should engage in respectful enquiry about preferences that intersect with health care, including religious or spiritual values, cultural values, gender preferences and dietary requirements. These aspects are connected to a successful health care experience and outcomes.\(^{85}\)

Gastric cancer rates are 75% higher among South Australians born overseas than among South Australian-born residents. Rates of oesophageal cancer are generally lower among overseas-born residents than for Australian-born residents. Within the culturally and linguistically diverse community, language barriers and lack of knowledge of the South Australian health care system limit access to health information and health care services.\(^{86}\)

Cultural perspectives or preferences may include:\(^{87}\)

- patient preference to see a medical professional of their own sex
- myths and misconceptions about cancer diagnosis
- cancer may be a taboo subject or cause discrimination, contamination, shame, or retribution
- religion may play a fundamental role in the person’s attitude towards their disease and treatment
- patients may have perceptions attributed to pain and suffering.
- family (including extended family) have a central role in many cultures with family members often sharing the rights and responsibilities for decision-making, which may influence the choice of treatment.

Attitudes to caring and support may vary between and within cultures. It is important for health professionals not to make assumptions or stereotype individual patients. Patients should be encouraged to seek support from family and friends, and from community, ethnic and religious organisations, if appropriate. Regardless of cultural background, wherever possible, patients should be offered the opportunity to bring a family member or friend with them to consultations and treatment. People may not be accustomed to the
concept of support from external agencies, so this requires a sensitive and respectful approach.

Further information

Appendix E lists key sources of information for South Australian people with cancer including services available for Aboriginal and Torres Strait Islander peoples and culturally and linguistically diverse communities.

Recommendations:

4. Regular psychological assessment of patients/caregivers should be undertaken along the cancer continuum to identify individuals experiencing significant levels of distress who are at increased risk of psychological morbidity.

5. Patients should be screened at each visit to identify those at high risk of anxiety or depression.  

6. All people with an upper GI cancer diagnosis should have the opportunity to receive culturally appropriate information and counselling (via a qualified interpreter if appropriate) regarding their diagnosis, options and care needs by a health professional with appropriate communication skills and knowledge of upper GI cancer.

57 MASCC. Supportive Care makes Excellent Cancer Care Possible. 2008.
59 MASCC. Supportive Care makes Excellent Cancer Care Possible. 2008.
68 Ibid.
70 Gessler S et al. Screening for distress in cancer patients; is the distress thermometer a valid measure in the UK and does it measure change over time? A prospective validation study. Psycho-oncology 2007; 17:538-547.
74 Ibid
76 Ibid
81 CALD steering committee for the Central Northern Adelaide Health Service. *Cultural and linguistic diversity, a resource for health staff*.
82 Ibid
84 CALD steering committee for the Central Northern Adelaide Health Service. *Cultural and linguistic diversity, a resource for health staff*.
85 Ibid
88 Ibid
7. SPECIFIC SUPPORTIVE CARE NEEDS OF PEOPLE AFFECTED BY UPPER GASTROINTESTINAL CANCERS

The specific supportive care needs of patients with upper GI cancer and their families and caregivers will vary in complexity and severity along the disease trajectory. A supportive care assessment includes a general assessment of the physical, psychosocial, spiritual and informational needs of the patient and requires input from all members of the upper GI multidisciplinary team. The domains to be considered are outlined below.

7.1 Physical needs
In its early stages, the symptoms of upper GI cancer may be minimal; however, with disease progression or as a result of treatment, symptoms may become problematic. Common symptoms or side effects of treatment are listed below.

Oesophageal cancer
- Dysphagia and/or oesophagitis – a feeling that food or fluids are ‘getting stuck’; usually progressive, beginning with solids and worsening until there is difficulty swallowing soft foods and liquids. May be caused by disease or following radiation therapy and/or oesophageal strictures, which necessitates a dietetics referral and medical review and input either prior to or following treatment.89
- Weight loss – a common feature of disease due to difficulty in swallowing food or fluids. Anorexia and the later effects of malnutrition require a referral to a dietitian in pre- and post-operative periods. A referral to a home enteral nutrition program during chemotherapy and radiotherapy treatments may also be required.90
- Coughing, choking or hoarseness of voice.
- Chest pain when swallowing.

Gastric cancer
- Painful or burning sensation in the abdomen.
- Heartburn or indigestion (dyspepsia).
- Weight loss and anorexia.
- Vomiting.
7.2 Nutritional support
As upper GI cancers directly affect patients’ ability to eat and drink, help in ensuring adequate nutrition is essential. All patients should be provided with practical information about optimising nutritional intake before, during and after cancer treatment.

The role of the dietitian is to:
- conduct a nutrition assessment
- develop an individualised nutrition support care plan to meet patients’ daily nutritional requirements
- provide practical and culturally appropriate information on how to meet and maintain dietary requirements via oral or enteral routes
- consider ongoing nutritional support and provide culturally appropriate advice and information to patients/caregivers regarding future requirements
- provide advice on effective management of treatment side effects.

Weight loss
Many patients with a cancer diagnosis present with weight loss and many experience ongoing weight loss as their cancer progresses or while they undergo treatment. Weight loss is an indicator of poor survival and may have an impact on response to cancer treatment.\(^91\)

Cancer cachexia is a syndrome characterised by excessive loss of lean tissue and body fat. It has been reported to affect up to 85% of patients with gastrointestinal malignancy at the time of diagnosis.\(^92\) Cancer cachexia is associated with:
- increased risk of complication
- decreased tolerance and response to treatment
- lower quality of life
- reduced survival
- higher health care costs.\(^93,94,95\)

The weight loss that is commonly associated with gastrointestinal malignancy is assumed to be secondary to mechanical effects of the tumour itself, including obstruction to swallowing, early satiety, nausea and vomiting. Weight loss is also associated with reduced dietary intake, palliative treatment modalities and advanced stage of disease. Mechanisms other than reduced dietary intake or mechanical obstruction by the tumour
may also be involved in the nutritional decline in patients with gastro-oesophageal malignancy.\textsuperscript{96}

Aside from pure weight loss, evidence indicates that many patients presenting with upper GI cancers are nutritionally compromised at diagnosis and prior to treatment.\textsuperscript{97,98} Furthermore, the nutritional status of patients with upper GI cancer generally declines following treatment.\textsuperscript{99} Based on these factors, assessment of nutritional status and identification of malnutrition in patients is essential at the time of diagnosis. Use of an appropriate assessment tool, such as the Patient Generated Subjective Global Assessment Tool (PG-SGA), may be appropriate.\textsuperscript{100}

### Nutrition goals
During discussion of nutrition intervention options with patients and carers, it is important that realistic potential outcomes are presented. The goals and outcomes of the nutrition intervention depend on the patient’s diagnosis, prognosis and wishes. All methods of nutrition support (oral, enteral and parenteral) should be considered in achieving goals.

Intervention to prevent further weight loss may improve survival and quality of life\textsuperscript{101,102} and is an appropriate goal for cancer patients who are losing weight with life expectancy of at least 2 months.\textsuperscript{103}

During treatment, ongoing reassessment of stage of disease and change to palliative care status is essential. During palliative treatment or end-stage disease, intensity of dietary intervention may need to be adapted. Liaison with the patient, their family/caregivers and medical team is required to determine the level of intervention required. Unnecessary dietary treatments (e.g. cholesterol lowering) can be relaxed.

Key nutritional goals:
- weight stabilisation is an appropriate goal for selected weight-losing cancer patients
- during palliative treatment, quality of life and patient comfort are appropriate goals.

### Nutrition requirements
The following nutritional requirements are estimates only. Each individual should be monitored regularly as protein and energy goals may require adjustment.
1. The pre-operative nutritional requirement for cancer patients is 20–25 kcal/kg body weight/day (bed-ridden patients) or 30–35 kcal/kg body weight/day (ambulant patients) and 1.5 kg protein/kg/day.\textsuperscript{104}

2. Energy and protein requirements for weight stabilisation in patients with cancer cachexia receiving supportive care are approximately 120 kJ/kg/day and 1.4 g protein/kg/day.\textsuperscript{105}

3. Energy and protein requirements for weight stabilisation in patients with cancer cachexia receiving chemotherapy are approximately 120 kJ/kg/day and 1.4 g protein/kg/day.\textsuperscript{106}

4. Energy and protein intakes of at least 125 kJ/kg/day and 1.2 g protein/kg/day are recommended for patients receiving radiation therapy. Patients should have their weight and food/energy intake monitored regularly to determine whether their energy requirements are being met.

5. Prescription of eicosapentanoic acid (EPA) may improve outcomes in patients with cancer cachexia (NHMRC Grade of Recommendation C). EPA can be considered as a component of nutrition intervention in cancer cachexia, but patients should first be assessed for adequate nutritional intake. If using EPA, aim for 1.4–2.0g EPA/day to be consumed for at least 4 weeks to achieve clinical benefit.

**Nutrition implementation**

Nutrition implementation includes counselling of the patient and/or caregivers to maximise nutritional intake and facilitate optimal symptom control. Counselling in conjunction with high protein energy supplements has been shown to increase oral intake and attenuate weight loss.\textsuperscript{107,108,109} Nutritional counselling is effective during phases of treatment and supportive care. Recommendation for initial consultation is 45–60 minutes and 15–30 minutes for review consultation.\textsuperscript{110} Effective clinical outcomes have been reported in patients receiving weekly to fortnightly dietetic intervention.\textsuperscript{111,112,113}

In the short term, nutrition follow-up is recommended for approximately 6 weeks post-radiation therapy. In the long term, a minimum of 6-month follow-up is recommended for patients who require alternative feeding during radiation therapy.

**Nutrition support**

Early nutrition support for patients with gastric or oesophageal cancer is essential, especially in those patients assessed to be malnourished. Early and intensive nutrition intervention has been shown to minimise weight loss and deterioration in nutritional status.\textsuperscript{114}
Dietitians have an important role in providing specialist supportive care to ensure adequate nutrition and weight maintenance despite complications such as nausea, vomiting, difficulties with swallowing, and/or problems with digestion or cancer treatment. Nutrition support should be provided via the oral and enteral routes in preference to parenteral nutrition. High protein, high-energy oral supplements are useful pre- and post-surgery.

Enteral feeding is often used in patients who have undergone surgery and should be initiated for malnourished patients where possible. The use of enteral nutrition 5–7 days peri-operatively is recommended in patients with oesophagectomy and gastrectomy. Enteral feeding is routinely used in patients undergoing total gastrectomy or oesophagectomy.

Nutrition support after surgery is often by a feeding jejunostomy due to inaccessible upper GI system.

Traditionally, standard enteral formulations have been used routinely for patients with oesophageal or gastric cancer after surgery. However recent studies have investigated the role of enteral formulations with immunonutrients (IN) including arginine, omega-3 fatty acids and nucleotides. There are data to indicate benefits for pre-operative immune-containing enteral formulae (specifically the product IMPACT™) for the prevention of post-operative complications in elective surgical patients. However, there is still debate about the use of pre-, peri-, and post-operative specialised nutrition support in patients undergoing resection of oesophageal or gastric cancer due to the poor quality of all of the currently reported clinical trials.

**Dietary advice and nutritional support for patients who have undergone surgery**

Patients who have undergone surgery for cancer of the oesophagus or stomach are likely to suffer from a variety of post-surgical syndromes, which can lead to nausea, reflux, abdominal discomfort and diarrhoea. The impact of these problems can often be reduced by appropriate dietary adjustments. This includes the use of small, frequent meals or snacks, a diet high in protein and energy, and separation of food from fluids. Oral supplements are often useful in this setting.
Dietary advice and nutritional support for patients who have had chemotherapy or radiotherapy

Chemotherapy and radiotherapy to the GI tract result in several side effects of that will have a direct impact on an individual's ability to eat and drink. These include anorexia, dysphagia, xerostomia, dysgeusia and early fatigue.

Dietary modifications, including small frequent meals, high protein intake, high energy food and fluids and texture modification of the diet, will help to achieve weight maintenance during cancer treatment. If nutritional requirements cannot be met via oral intake alone, a feeding tube should be recommended to provide all or part of the individual's requirements.

Patients with cancer of the oesophagus receiving naso-gastric feeding have significantly less weight loss during chemo-radiation compared with those receiving a standard oral diet. In addition, oropharyngeal cancer patients who receive pre-treatment percutaneous endoscopic gastrostomy (PEG) have significantly less weight loss at the end of radiation therapy compared with those receiving an oral diet.

7.3 Peer support

South Australian Oesophageal Cancer Support Group

The South Australian Oesophageal Cancer Support Group was established in 2006 by a patient with oesophageal cancer with the assistance of the Cancer Council South Australia. It provides ongoing support for patients and their families by allowing them a forum for sharing experiences patients. Regular meetings are held in the form of social gatherings, often with presentations from guest lecturers on particular aspects of oesophageal cancer treatment and management.

Contact details of the South Australian Oesophageal Cancer Support Group and other organisations that provide information and support to people with cancer, including people from culturally and linguistically diverse communities, are included in Appendix E.
Recommendations:

7. All patients with an upper GI cancer diagnosis require referral to a dietitian at diagnosis and access to a dietitian throughout the cancer pathway to optimise nutritional support.

8. A dietitian should be included as a core member of the upper GI multidisciplinary team.

9. Patients require provision of culturally appropriate nutritional advice and access to culturally appropriate nutrition.

10. Identification of malnutrition at the time of an upper GI cancer diagnosis (using an appropriate assessment tool) is essential.

11. Frequent nutritional counselling should be undertaken during the treatment phase to improve clinical outcome.

12. In the absence of evidence from good quality clinical trials, the use of immunonutrient formulations in the care of patients with an upper GI cancer pre- and post-surgery should remain investigational.

Isenring E, Capra S, Bauer J. Nutrition intervention is beneficial in oncology patients receiving radiotherapy to the gastrointestinal, head or neck area. *Br J Cancer* 2004; 91:447-452.


Moses AWG, Slater C, Preston T, Barber MD, Fearon KCH. Reduced total energy expenditure and physical activity in cachectic patients with pancreatic cancer can be modulated by an energy and protein dense oral supplement enriched with n-3 fatty acids. *Br J Cancer* 2004; 90:996-1002.

Isenring E, Capra S, Bauer J. Nutrition intervention is beneficial in oncology patients receiving radiotherapy to the gastrointestinal, head or neck area. *Br J Cancer* 2004; 91:447-452.


Isenring E, Capra S, Bauer J. Nutrition intervention is beneficial in oncology patients receiving radiotherapy to the gastrointestinal, head or neck area. *Br J Cancer* 2004; 91:447-452.


8. PREVENTION AND MINIMISING RISK

8.1 Cancer risk factors and prevention advice
Cancer incidence is expected to increase by 31% between 2002 and 2011, with more than 115,000 new cancer cases expected by 2011.\textsuperscript{119} Cancer now represents Australia’s greatest disease burden, ahead of cardiovascular disease.\textsuperscript{120} Given the ageing population, cancer incidence is projected to continue rising, with the number of people over 65 years of age set to double by 2051.\textsuperscript{121}

Current evidence indicates that approximately one-third of cancer deaths in Australia can be attributed to known and avoidable risk factors. Appropriate prevention strategies have the potential to reduce cancer incidence. Use of evidence-based screening programs and increased awareness of appropriate early detection measures can optimise outcomes following a diagnosis of cancer or early treatment of precancerous conditions.\textsuperscript{122}

Risk factors
The key \textbf{modifiable risk factors for cancer} are:
- poor diet
- smoking tobacco/exposure to tobacco smoke
- high risk levels of alcohol consumption
- inadequate exercise or being overweight
- exposure to ultraviolet radiation.

Adopting a healthy lifestyle can reduce the risk of developing cancer.\textsuperscript{123} Cancer prevention strategies include:\textsuperscript{124}
- promotion of healthy lifestyles (stopping smoking, healthy diet, healthy weight, limiting alcohol intake)
- reducing risky behaviours (stopping smoking, being sun smart)
- screening (participating in the national breast, cervical and bowel cancer screening programs)
- referral (encouraging appropriate, timely referral for investigation of suspicious symptoms).
Further information

The following websites provide additional information about reducing cancer risk:


8.2 Risk factors for upper gastrointestinal cancers

Most upper GI cancers are sporadic and reflect the gradual accumulation of genetic errors with age, combined with environmental factors, age and chance. Risk factors for sporadic disease are listed below. 125

Risk factors for sporadic gastric cancer include:

- a diet that is low in fruit and vegetables
- a diet that is high in salted, pickled, smoked or cured foods
- poor access to refrigeration (which relates to diet and food hygiene)
- existing *Helicobacter Pylori* infection.

Risk factors for sporadic oesophageal cancer include:

- tobacco smoking
- excessive alcohol consumption
- high consumption of pickled food
- being overweight
- (potentially) consumption of very hot beverages.

Alcohol and tobacco consumption can both increase risk independently and act synergistically to increase risk of cancer of the oesophagus.

Risk factors for cancers occurring in the region of the gastro-oesophageal junction are likely to include a mix of factors associated with both cancer types. 126

There has been a shift in the predominant cell types in oesophageal cancers diagnosed in South Australia from squamous cell carcinomas to adenocarcinomas, which is thought to relate to an increase in chronic reflux. This in turn may relate to an increase in obesity rates in South Australia. 127
It is critical that any person with high lifestyle risk factors that are associated with upper GI cancers is urgently referred for investigations upon presentation of symptoms that are likely to be due to an upper GI cancer.

**Familial gastric cancer**\(^{a}\), \(^{128}\)

Approximately 10% of gastric cancers show familial clustering suggestive of an inherited genetic predisposition. The genetic factors involved in most familial gastric cancers are poorly understood, although specific mutations have been identified in a small subset of families. The Lauren system is widely used to divide gastric adenocarcinoma (which makes up 90% of all gastric cancers) into two major histological variants, each with clinically relevant differences.

Type I or intestinal-type intestinal type gastric cancer is associated with most of the environmental risk factors (see above) and is not usually associated with a familial history of gastric or other cancers. In rare families where intestinal-type gastric cancer does occur as a component of a familial cancer syndrome it is usual for non-gastric cancers to predominate. Mutation testing of the appropriate gene(s) should be considered where there is a family history suggestive of one of these syndromes. \(^{129}\)

The most commonly implicated genes are:

- genes associated with Lynch syndrome (MLH1, MSH2, MSH6 and PMS2 genes), where colorectal, endometrial and ovarian cancers dominate the family history
- Li-Fraumeni syndrome (TP53 gene), where sarcoma, breast and brain cancers dominate the family history
- familial adenomatous polyposis (APC gene), where colorectal adenomas and colorectal cancer dominate the family history
- Peutz-Jeghers syndrome (STK11 gene), where hamartomatous polyps of the small intestine and mucocutaneous pigmentation dominate the family history
- BRCA2-associated hereditary breast and ovarian cancer (BRCA2 gene), where breast and ovarian cancer dominate the family history.

Type II or diffuse-type (also known as linitis plastica or signet ring adenocarcinoma) is not strongly associated with environmental or dietary risk factors, occurs more often in relatively young patients (mean 40 years; range 14–85 years)\(^{130}\) and is commonly

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\(^{a}\)This information based on an article by Dr Nicola Poplawski, Familial Cancer Unit, SA Pathology, Women’s and Children’s Hospital Site, North Adelaide; Poplawski, N. (2009). Familial gastric cancer – an update. *Cancer Council SA Cancer Genetics Gazette*, Issue 7. (abridged with the author’s permission)
associated with a family history of gastric cancer. Germline (inherited) mutations of the E-cadherin (CDH1) gene are detected in up to 50% of families with a history of diffuse gastric cancer in multiple family members (i.e. have familial diffuse gastric cancer). In CDH1 mutation carriers, the estimated cumulative risk of advanced gastric cancer to age 80 years is 67% for men and 83% for women.\textsuperscript{131}

Familial diffuse gastric cancer usually presents as the predominant feature of an autosomal dominant gastric cancer pedigree with no striking family history of other cancers (except, perhaps, lobular breast cancer). Genetic testing in the CDH1 gene should be considered in families where:

- a familial mutation in the CDH1 gene has been identified, or
- a patient has diffuse gastric cancer diagnosed under the age of 40 years, or
- a patient has lobular breast cancer and a first or second degree relative with diffuse gastric cancer (or vice versa), with one of diagnoses being under the age of 50 years, or
- a patient has diffuse gastric cancer (any age) and a first, second, or third degree relative with diffuse gastric cancer (any age).

The Familial Cancer Unit at the Women's and Children's Hospital offers genetic counselling and genetic testing for familial gastric cancer in South Australia. Familial Cancer Clinics are held at most major public hospitals in Adelaide and in some regional centres (Port Augusta and Mount Gambier).

Recommendations:

13. Health promotion strategies should promote the importance of a healthy lifestyle for all South Australians.

14. Aboriginal health services, health workers and culturally and linguistically diverse communities should be supported to develop and promote appropriate interventions to encourage smoking cessation, reduce high-risk alcohol intake and promote regular medical review (which may be known locally as ‘health checks’), and to encourage prompt medical investigation of symptoms that may be upper GI cancer.

15. Programs should be developed aimed at closing the gap in cancer care and addressing inequities in accessing cancer care for Aboriginal and Torres Strait Islander peoples and culturally and linguistically diverse groups.
16. Where there is an apparent family history of gastric cancer, the clinician should consider referral to or advice from the Familial Cancer Unit.

120 ibid  
121 ibid  
122 ibid  
127 ibid  
129 Further information is available online from  
9. EARLY DETECTION

For many cancers, early detection and prompt, appropriate referral is associated with improved treatment outcomes and survival rates.

9.1 Screening
The term ‘screening’ refers to testing people who do not have symptoms of cancer to identify those who may have or are at high risk of cancer for further investigation. No formal screening programs for upper GI cancers currently exist.

9.2 People at higher risk
Identifying people who may be at higher risk of upper GI cancers enables the GP or other health professionals to develop a surveillance plan and/or monitor for symptoms that may require further investigation. There are few people at a very high risk of upper GI cancers. Hereditary gastric cancer has been documented, but is extremely rare (see Table 1 for risk factors for upper GI cancers).

Increased awareness is indicated for people with:
- a history of heavy alcohol and/or tobacco use
- a history of gastric surgery, especially more than 5–10 years ago, usually for benign ulcer disease
- high lifestyle risk factors that may be associated with upper GI cancers (refer to previous section) and who may face barriers to early detection due to socio-economic factors, cultural and linguistic considerations and/or geographic locations
- a family history of gastric/oesophageal cancer.

Surveillance is required for people with the following syndromes.
- Barrett’s oesophagus – increases the risk of developing oesophageal adenocarcinoma 30–150 fold and at a cumulative rate of 0.5–2% per year.\(^\text{133}\) Dysplasia occurs in approximately 5% of patients with Barrett’s oesophagus. In patients with low-grade dysplasia, 10–50% will progress to high-grade dysplasia or adenocarcinoma in 2–5 years. Patients who present with high-grade dysplasia have a 40–50% chance of having an adenocarcinoma in the oesophagus on resection.
- Oesophageal achalasia – male achalasia patients have substantially greater risks for both squamous cell carcinoma and adenocarcinoma of the oesophagus.\textsuperscript{134}

Table 1: Risk factors for upper gastrointestinal cancers

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Oesophagus (squamous cell)</th>
<th>Oesophagus and gastro-oesophageal junction (adenocarcinomas)</th>
<th>Gastric (stomach) (adenocarcinoma)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>&gt;50 XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>XX</td>
<td></td>
</tr>
<tr>
<td>Current/previous medical conditions</td>
<td>BO XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td></td>
<td>GORD XX</td>
<td>XX</td>
<td></td>
</tr>
<tr>
<td>Achalasia</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAG</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genetics</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tylosis</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excess alcohol</td>
<td>XX</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Tobacco</td>
<td>XX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obesity</td>
<td>&gt;30 BMI XX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diet</td>
<td>Low fruit/vegetable intake X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>High salt/preserved foods X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Occupational exposures</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family history</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explanatory notes:
- X: Low risk factor
- XX: High risk factor
- BO: Barrett’s oesophagus: a condition that occurs when abnormal cells develop on the inner lining of the lower part of the oesophagus.
- GORD: Gastro-oesophageal reflux disease: a condition that involves acidic contents of the stomach (chime) to regurgitate of reflux into the oesophagus.
- Achalasia: A rare disease of an oesophageal muscle; refers to a functional obstruction of the oesophagus, which causes an inability of the lower oesophageal sphincter to open and let food pass into the stomach.
- CAG: Chronic Atrophic Gastritis: stomach lining inflammation.
- Tylosis: A genetic disorder characterised by thickening (hyperkeratosis) of the palms and soles and white patches in the mouth (oral leukoplakia). The disorder also influences a high risk of oesophageal cancer. This is the only genetic syndrome known to predispose to squamous cell carcinoma of the oesophagus.
- Tobacco: Tobacco use
- Excess alcohol: Excess alcohol consumption
9.3 Improving community awareness

Improving community awareness about the possible symptoms of upper GI cancers and the importance of seeing a GP promptly would improve early detection and thus outcomes for people diagnosed with these cancers.

Signs and symptoms

The following signs and symptoms require **prompt assessment by a GP (within 2 weeks)**, particularly where there are changes in long-term symptoms or new onset of symptoms:

- chronic heartburn
- dysphagia (difficulty swallowing, especially bread or meat)
- persistent epigastric pain/dyspepsia
- pain on swallowing
- haematemesis (vomiting blood)
- anorexia and unintentional weight loss
- long term antacid replacement
- vomiting.

The following symptoms require **urgent GP assessment (as soon as possible)**:

- progressive dysphagia
- progressive/new epigastric pain persisting more than 2 weeks.

These symptoms are of particular concern and require consultation to a GP as soon as possible.

9.4 Management of a patient with upper gastrointestinal cancer symptoms

Initial presentation

Patients presenting to a GP or hospital emergency unit with symptoms that may be due to an upper GI cancer require rapid access to assessment and appropriate investigations in order to minimise any delay in diagnosis.

Figure 9 provides a flow chart outlining advice for GPs about management of patients presenting with upper GI cancer symptoms, and includes an overview of signs/symptoms,

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*a For the purpose of this document dyspepsia is defined as ‘a group of common symptoms originating in the upper digestive system [including] indigestion, heartburn, reflux, and pain or discomfort in the area of the stomach, chest or upper abdomen’. 

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required investigations and referral process required to the point of the multidisciplinary team meeting.

**Initial investigational requirements**

1. **Endoscopy:** referral for an investigational endoscopy requires a comprehensive summary of all relevant clinical information to ensure appropriate and timely triage for the procedure and subsequent detailed inspection of the gastric mucosa.

2. **Pathology:** All patients require baseline pathology testing, including full blood examination, electrolytes, liver function tests and coagulation studies.

**Initial management**

Symptoms of uncomplicated dyspepsia in patients require empiric management. Should endoscopy reveal or suggest the presence of a tumour, the patient requires referral to an upper GI specialist (upper GI surgeon or gastroenterologist) and to the Upper GI Multidisciplinary Team.

If the symptoms are not explained by the results of the endoscopy, or if there is no improvement in symptoms after standard treatment, discussion with an appropriate specialist is required.

As per the management of suspected upper GI cancer flow chart (Figure 9), patients presenting with any of the aforementioned symptoms or characteristics should be referred to an upper GI specialist for investigation within 4 weeks.

**After diagnosis of an upper gastrointestinal cancer**

Following confirmation of a diagnosis of upper GI cancer:

- all patients require referral to and appointment with an upper GI surgeon within 2 weeks
- the cancer specialist will refer all newly diagnosed patients to the upper GI multidisciplinary team meeting for prospective treatment planning discussion, irrespective of whether staging tests or procedures have been completed
- urgent referrals to other health care professionals, including allied health staff (e.g. dietitian), prior to the multidisciplinary team meeting may be required for assessment and management of symptoms.
Recommendations:

17. Structured surveillance programs should be maintained or developed for people with Barrett’s oesophagus.

18. All people identified in high-risk categories should be triaged for rapid access to endoscopy if presenting with symptoms consistent with upper GI cancer.

19. Access to community-based health care and education for Aboriginal and Torres Strait Islander peoples about having regular ‘health checks’ should be improved.

20. Culturally appropriate educational resources on gastrointestinal cancer should be improved.

21. Culturally appropriate consumer information should be created and promoted highlighting signs and symptoms of upper GI cancer, outlining timeframes for review by a GP and describing the role of GPs and specialists in the care of upper GI cancers.

22. Health services should promote access to screening for relevant community groups.

23. Culturally appropriate strategies should be developed to identify and address reasons for delayed reporting of upper GI symptoms and reluctance to seek medical care by some population groups.

24. Emergency care should be provided as determined on clinical presentation.

25. All patients who have a confirmed diagnosis of upper GI cancer while in emergency care require urgent referral to an upper GI cancer specialist.

26. Interventional treatment procedures, including radical treatment for upper GI cancers, should not occur prior to presentation at an upper GI multidisciplinary team meeting unless there is an urgent requirement.

27. Consultation with an upper GI surgeon is required for all patients in a serious or life-threatening situation (as some interventions may affect future surgical treatment and patient outcomes).

28. All patients with a confirmed diagnosis should be referred to an upper GI cancer nurse specialist.

29. The patient’s GP should be included in the extended membership of the upper GI multidisciplinary team, and there should be regular communication between the GP and treating cancer specialists.

30. A copy of the upper GI multidisciplinary treatment recommendations and the agreed treatment plan should be provided to the GP.
31. Key performance indicators (KPIs) of 2 weeks to specialist appointment following identification of upper GI cancer symptoms by GP and referral to upper GI cancer specialist.

32. A benchmark of 4 weeks from GP identification of upper GI cancer symptoms to GP referral to an upper GI specialist should be utilised.

33. Following confirmation of an upper GI cancer diagnosis, referral to and appointment with cancer specialist should occur within 2 weeks.

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Figure 9: Management of suspected upper gastrointestinal cancer: advice for GPs

**Upper Gastrointestinal Cancer Care Pathway**

**Patient Presentation to GP or Emergency Service:**
- Dyspepsia* and any of the following:
  - Chronic gastrointestinal bleeding
  - Unintentional weight loss
  - Recurrent vomiting
  - Iron deficiency anaemia
  - Epigastric mass
  - Suspicious barium meal
  - Persistent vomiting and unintentional weight loss

- Dysphagia
  - without any of the above

- Dyspepsia* alone
  - Unexplained
  - Persistent
  - Recent onset

**Unexplained worsening of dyspepsia*, plus any of the following risk factors:**
- Family history of upper GI cancer
- Barrett’s oesophagus
- Previous peptic ulcer
- Peptic ulcer surgery
- Previous partial gastrectomy ≥10 years ago
- Pernicious anaemia
- Known dysplasia, atrophic gastritis or intestinal metaplasia
- Those with high risk factors

**Clinical Assessment / Initial diagnosis:**
- Initial assessment (case history, physical examination)
- Baseline pathology testing, including full blood examination, electrolytes, liver function tests and coagulation studies
- Information provided re planned or likely investigations.
- Refer for endoscopic assessment

**Gastroenterologist / Upper GI Surgeon assessment**
- Staging investigations including endoscopy and biopsy
  - Section 10.2

**Upper GI Multidisciplinary Team meeting**
- Section 11

**Upper GI nurse specialist**
- (MDT and patient care coordination role)
  - Section 2.3

**Locally-advanced Gastric Cancer Clinical Management**
- Section 12

**Oesophageal Cancer Clinical Management**
- Section 12

**Treatment decision-making consultation with patient and family**

**Endotherapy (EMR, ESD)**
- Section 12.1

**Surgery**
- Section 12.2

**Radiotherapy**
- Section 12.3

**Chemotherapy**
- Section 12.4

**Follow-up care**
- Section 14

**End-of-life care**
- Section 16.3

**Disease recurrence**
- Section 15

**Survivorship / Long term effects follow-up**
- Section 17

**Supportive Care**
- Section 6

**Complementary Care**
- Section 13

**Palliative Care**
- Section 16
10. DIAGNOSIS AND STAGING

10.1 Endoscopic assessment
Following presentation of symptoms that may be due to upper GI cancer, an endoscopy is typically the first investigation conducted, and most often provides the clinician with a definitive diagnosis of an upper GI tract tumour. Most endoscopists have access to a video gastroscope, although fibre-optic instruments are still used in some endoscopy units.

The endoscopy report should provide a detailed description of the lesion, with details as outlined below.

1. Location
   • Oesophageal or junctional tumour:
     i. Distance from the teeth to the proximal and distal margins of the tumour
     ii. Distance from the gastro-oesophageal junction to the distal margin of the tumour.
   • Gastric tumour:
     i. Greater or lesser curve, anterior or posterior wall
     ii. Fundus, corpus (upper, middle or lower), antrum or prepyloric region
     iii. Determine relationship to pylorus distally and the gastro-oesophageal junction proximally.

2. Size
   • Small tumours estimated relative to the open biopsy forceps.
   • Large tumours estimated according to the circumferential extent of the tumour, and the length of the tumour.

3. Associated features
   • Presence or absence of stricture:
     i. If stricture present, whether the gastroscope was able to negotiate stricture.
   • In the case of oesophageal or junctional tumours, presence or absence of:
     ii. Barrett’s oesophagus
     iii. Hiatus hernia (measure length of hiatus hernia).

The lesion should be imaged or videotaped where possible.
Endoscopic staging
Assessment of the lesion with endoscopic ultrasound is useful to provide information regarding the loco-regional extent of the lesion, including:

- tumour (T) and node (N) stage
- description and measurement of any proximal and distal sub mucosal extension that is not visible at conventional endoscopy
- involvement of the trachea / bronchi, left crus of the diaphragm, and/or aorta.

Lesions associated with tight oesophageal strictures are particularly difficult to assess and it is recommended that a guide wire be first passed through the stricture. The lesion can then be assessed using a narrow-bore wire-guided ‘blind’ radial probe (Olympus MH 101 or equivalent).

10.2 Staging investigations
Staging is the cornerstone of treatment planning for upper GI cancers. Table 2 provides a list of staging investigations. Staging provides an indication of disease status, gives information about whether disease is resectable and assists in determining whether patients are suitable to undergo palliative or radical surgery. The process is summarised in the flow diagrams for gastric and oesophageal cancer management (Appendix B and C). Regardless of cancer stage, all patients require referral to the multidisciplinary team meeting for prospective treatment planning.

Table 2: Recommended staging investigations for upper gastrointestinal cancers

<table>
<thead>
<tr>
<th>Investigation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endoscopy</td>
<td>Biopsy lesions History</td>
</tr>
<tr>
<td>CT PET scan</td>
<td>CT to include: ω chest, ω abdomen, ω pelvis PET CT recommended for all oesophageal cancer and if medically fit for surgery</td>
</tr>
<tr>
<td>CT scan</td>
<td>PET CT recommended for gastric cancer at clinical discretion or as required</td>
</tr>
<tr>
<td>EUS</td>
<td>If medically fit for surgery and there is no evidence of metastases.</td>
</tr>
<tr>
<td>Laparoscopy</td>
<td>Assessed on individual patient clinical need/MDT recommendation for junctional tumours and gastric cancer</td>
</tr>
</tbody>
</table>

Explanatory notes:
CT  Computed tomography
PET  Positron emission tomography
EUS  Endoscopic ultrasound
Additional staging information

- During initial endoscopy, biopsy samples should be taken for all suspected lesions. Both histological and cytological biopsy specimens are required to confirm diagnosis.
- The stage and spread of the cancer is assessed using computed tomography (CT). If the CT scan reveals inoperable or metastatic disease, there may be no advantage in further assessment of the primary tumour.
- All oesophageal cancer diagnoses require a positron emission tomography (PET)/CT scan. A PET scan is a sensitive method of assessing distant lymph node involvement and metastases.
- If the patient is medically fit to undergo radical treatment and radiological imaging demonstrates no evidence of widespread or metastatic disease, an endoscopic ultrasound (EUS) is performed to estimate the depth of tumour penetration to assist work up for proposed surgery.
- If the EUS indicates that radical surgery may be successful, patients whose tumours may involve the peritoneal cavity require a laparoscopy at or prior to radical surgery.
- Radical treatment for cancer of the oesophagus, oesophago-gastric junction or stomach should occur after the patient has been presented at the upper GI multidisciplinary team meeting to ensure there is group consensus regarding treatment management plans. Patients may need to undergo further pre-surgical workup including anaesthetic assessment where appropriate.
- All patients fit for surgery are required to undergo pre-surgical assessment, including anaesthetic assessment.
- All pathology reports should include a synoptic format, in particular, the post-resection report (where appropriate) to optimise communication of pathological staging.

Recommendations:
34. Synoptic reporting should be implemented as a standard procedure across all health services in South Australia, including the private sector.
11. PRESENTATION AT AN UPPER GASTROINTESTINAL MULTIDISCIPLINARY TEAM MEETING

The multidisciplinary team meeting is the forum for all relevant health care professionals involved in the care and management of patients with upper GI cancers to meet and collaboratively review, discuss and develop individualised treatment and supportive care recommendations for each patient. The meeting allows the team to consider individual patient preferences and circumstances when developing the treatment recommendations.  

11.1 Multidisciplinary team meetings

The multidisciplinary team meeting provides the opportunity for discussion of all new patient presentations as well as review of patients following neoadjuvant treatment, surgery or at tumour recurrence as required. Should complications in care arise along the care continuum, any health care professional participating in the patient’s care may refer the patient to the multidisciplinary team meeting for additional discussion and management planning.

The specialist who refers a patient to the multidisciplinary team meeting is responsible for the patient’s care until care is formally referred and passed to another practitioner.

After presentation at the multidisciplinary team meeting, the referring specialist is required to discuss the following with the patient and their caregiver (as requested), with consideration and discussion of patient preferences:

- nature of the diagnosis
- multidisciplinary team treatment recommendations (including rationale, aims, likely effects)
- possible treatment outcomes
- other possible treatment options
- psychosocial support needs, including referral to psychosocial support for the patient and caregivers.

After due consideration between the specialist and the patient, the treatment plan is agreed. The agreed treatment plan must be clearly documented and communicated to relevant team members, including the patient’s GP.
Progression of care within the multidisciplinary team should be well coordinated, ensuring the patient, GP and the multidisciplinary team members understand their individual responsibilities for coordination of care.\textsuperscript{138}

**Clinical trials**

The multidisciplinary team meeting discussion includes consideration of patient eligibility and access to clinical trials. Evidence suggests that a multidisciplinary approach may increase patient recruitment into clinical trials.\textsuperscript{139} For sources of further information for consumers about clinical trials please refer to contact details for the **Cancer Council South Australia** provided in Appendix E. The Cancer Council has information booklets for patients and caregivers on clinical trials.

### 11.2 Upper gastrointestinal multidisciplinary team members

The recommended core members of an upper GI cancer multidisciplinary team are:

- Upper GI specialist surgeons
- Medical oncologists
- Radiation oncologists
- Gastroenterologist or interventional endoscopist
- Palliative medicine consultants
- Dietitians
- Upper GI nurse specialist(s)
- Radiologist with PET expertise +/- nuclear physician (with PET expertise).

The team also should have access and referral processes to:

- Social worker
- Psychologist
- GP
- Pathologist
- Pharmacist
- Geriatric Cancer Assessment Team
- Adolescent and Young Adult Cancer Assessment Team
- CALD and ATSI services
- Welfare worker
- Rural/remote liaison nurse
- Clinical trials coordinator
- Oesophageal cancer support group.
Recommendations:

35. All patients with an upper GI cancer should be discussed prospectively at a multidisciplinary team meeting within 2 weeks of a confirmed diagnosis.

36. For all patients presented at an upper GI multidisciplinary team meeting, a copy of the treatment plan, including any revisions made following patient discussion, should be sent to the referring GP within 7 working days.

37. A key performance Indicator (KPI) should be developed to monitor the proportion of patients referred to the upper GI multidisciplinary team meeting for prospective treatment planning.

139 ibid
12. TREATMENT OF UPPER GASTROINTESTINAL CANCERS

Management of upper GI cancers is complex. The choice of treatment for patients with oesophageal and gastric cancer depends on the stage of the disease, and on the condition and preferences of the patient. Patients with resectable lesions may be unfit for surgery or potentially curative chemoradiotherapy due to existing co-morbidities. The patient’s preoperative status and co-morbidity are strong predictors of treatment outcome. Pre-treatment assessment is essential to avoid subjecting patients to radical treatment if it is not likely to be beneficial, and to ensure that appropriate treatment is offered to all those who are likely to benefit.

The Locally Advanced Gastric Cancer Clinical Management flow diagram (p 10) and the Oesophageal Cancer Clinical Management flow diagram (p 11) outline the management steps for staging, assessment and treatment of a patient diagnosed with gastric or oesophageal cancer, respectively. Features common to both pathways are:

- prospective development of a treatment plan for all patients at an upper GI multidisciplinary team meeting where all staging and other relevant information is available to all members of the multidisciplinary team
- referral of all patients with a confirmed gastric or oesophageal cancer to an Upper Gastrointestinal Cancer Nurse Specialist
- provision of information to patients about the treatment options available and the risk and benefits of each.

The treatment interventions described in this section include endotherapy, surgery, radiotherapy and chemotherapy.

12.1 Endotherapy

Endotherapies are advanced techniques for managing superficial neoplastic lesions and are predominantly reserved for early stage malignancies. Such techniques have applications in the management of premalignant lesions, including Barrett’s oesophagus or advanced adenomatous lesions in addition to early stage oesophageal and gastric malignancies.
1. Adenocarcinoma

Endotherapy has a limited role in oesophageal adenocarcinoma. The best results for endotherapy have been achieved by specialised centres and have not been duplicated elsewhere. Only patients with T1 disease after staging investigations (including endoscopic ultrasound) should be offered endotherapy.

In a recent German study, patients with mucosal adenocarcinoma were treated with endoscopic mucosal resection and photodynamic therapy, with success rates in excess of 96%. Metachronous tumours have been observed after endotherapy and it is recommended that ablation of the residual Barrett's segment be performed, using photodynamic therapy, mucosal resection or argon plasma coagulation. It is important to emphasise that there are no randomised clinical trials to assist with decision making for patients who may be considered candidates for endotherapy.

2. High-grade dysplasia

Patients with high-grade dysplastic lesions should be informed about options for ongoing surveillance and endoscopic mucosal resection with ablation or surgery.

Current guidelines indicate that biopsies should be repeated in 4 weeks following double dosing with proton pump inhibitors. If subsequent biopsies are positive, treatment (endoscopic mucosal resection (EMR) with ablation or surgery) should be offered. At this time, long-term outcome data are only available for surgical treatments, with oesophagectomy recognised as the 'gold standard' for management of high-grade dysplasia in patients deemed fit for surgery.

3. Oesophageal cancer and cancer of the oesophageal-gastric junction

Endoscopic treatments may be considered as an alternative to surgery for early invasive cancer of the oesophagus and oesophago-gastric junction, particularly where surgical intervention is not feasible. Treatments may include EMR, endoscopic sub-mucosal dissection (ESD) or ablation.

Endoscopic techniques

A number of endoscopic techniques are available to treat oesophageal malignancies with curative intention. These techniques can be subcategorised into endoscopic resection/dissection and tumour ablation. Resected/dissected specimens offer more accurate staging of lesions. Patients should be offered realistic verbal and written
information about potential benefits and risks, including complications and recurrence of malignancies.

**Endoscopic Mucosal Resection (EMR)**
There are no randomised trials comparing outcomes from surgery versus endoscopic treatment, and the level of evidence in this area is poor. However, success rates for EMR in case series are acceptable in selected cases, with fewer complications compared to surgery.

A large retrospective study examined the long-term outcomes of 349 patients who underwent endoscopic therapy for Barrett’s oesophagus with high-grade dysplasia and early stage adenocarcinoma. Of 288 patients with early stage adenocarcinoma, 279 were treated with EMR alone and 13 patients had a combination of EMR and photodynamic therapy to ablate remaining areas of high-grade dysplasia. Complication rates for EMR alone were not stated, but the overall complication rate for EMR, EMR with photodynamic therapy, photodynamic therapy and argon plasma coagulation was 17.2%, with major complications occurring in two patients (0.6%). Complete response rate in the EMR alone for mucosal cancer patient group was 97.4% (225 patients) and 87% (201 patients) at a median of 3 months and 61 months, respectively. Metachronous neoplasia was noted in 49 patients (21.2%) but after re-treatment, the long-term complete response rate was 95.7%.

Another retrospective study examined 72 patients with superficial oesophageal malignancies confined to the mucosa: 35 underwent EMR and the other 37 underwent resection. Morbidity and mortality rates were higher in the oesophagectomy cohort. Survival rates were the same and no recurrences were noted.

**Argon Plasma Coagulation (APC)**
Argon plasma coagulation to superficial oesophageal malignancies requires further evaluation. Few studies have examined this treatment method and those that exist are small in size.

The largest published study was a retrospective study of 10 patients with superficial squamous cell carcinomas treated with argon plasma coagulation between February 2001 and January 2002. Disease recurred in two patients and high-grade dysplasia occurred in one patient. Only three patients had not undergone prior treatment for their malignancy; three underwent chemotherapy, and four underwent EMR.
Another study of 10 patients (three with early adenocarcinoma, seven with high-grade dysplasia) demonstrated regression in eight patients. None of the patients with adenocarcinoma developed a recurrence.\textsuperscript{147}

4. Gastric cancer

**Endoscopic treatments with curative intent**

Endoscopic treatments may be considered as an alternative to surgery for early invasive cancer of the stomach, particularly where surgical intervention is not feasible. However, in the Australian context, suitable patients are rarely identified.

Treatments may include EMR, ESD or ablation. Patients should be offered realistic information about potential benefits and risks, including complications and recurrence of malignancies.

**Endoscopic Mucosal Resection (EMR)**

Again, a lack of randomised controlled trials comparing EMR with gastrectomy is noted.\textsuperscript{148} Four trials have compared EMR to surgery but these were not randomised studies. Tumours suitable for EMR are as stated below, as nodal involvement in such tumours is small (reported as 0.36%):

A. well-differentiated adenocarcinoma  
B. a tumour of size 20 mm or less in elevated types  
C. a tumour of size 10 mm or less in depressed types  
D. not associated with peptic ulcer  
E. invasion is limited to the mucosa.

One study reported a cure rate of 67%.\textsuperscript{149} Another study reported 5- and 10-year survival rates of 99% and 99% (cause-specific), respectively, when retrospectively reviewing 124 of 131 patients who underwent EMR for early gastric cancer.\textsuperscript{150}

Two further large studies include a retrospective multicentre study, which reviewed EMR for early gastric cancer in Korea,\textsuperscript{151} and a retrospective comparative study of EMR to ESD.\textsuperscript{152} The Korean study retrospectively reviewed 514 early gastric cancers. Complete resection was achieved in 399 lesions with a recurrence in 24 patients. The comparative study included 1020 early gastric cancers, 825 of which were treated with EMR. Recurrence was reported as 3.1% (31 of 1011 lesions). The study found ESD to be more favourable to EMR in respect to complete resection (en bloc and histological).
Endoscopic Submucosal Dissection (ESD)

ESD offers similar benefits to that of EMR. A number of large trials (non-randomised), have demonstrated complete resection rates between 83% and 94.8%. One study retrospectively reviewed 383 ESD procedures for gastric lesions and found a complete resection rate of 94.8%; however no recurrence rate was reported. Another study of 196 gastric cancers reported a complete resection rate of 83.7%, with recurrence reported for 32 lesions (16.3%). Further studies are needed to assess the long-term outcomes of ESD.

As noted for endoscopic treatment of oesophageal malignancies, endoscopic ultrasound and CT should be carried out for all patients. Consideration can be given to the use of EMR as a staging method.

Argon Plasma Coagulation (APC)

A number of small studies have evaluated the efficacy and long-term outcomes for patients with early gastric cancer treated with APC. One retrospective pilot study reviewed 40 patients with varying early gastric cancers. Recurrence was noted in 4 patients; however, longer term follow-up is needed. The authors concluded that APC may be used to treat early gastric cancer where EMR or surgery is contraindicated. A smaller study of 27 patients noted only 1 recurrence during the follow-up period (median 30 months). A more recent study noted recurrence in 4 of 23 patients over a follow-up period of over 12 months (median 42.0 ± 20.8 months).

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142 ibid
149 ibid


12.2 Surgery

1. Oesophageal cancer

At present, surgical resection offers the best chance of long-term survival from oesophageal cancer. Although there are reports of long-term survivors following radical chemoradiotherapy, at this time it is not possible to determine which patients will have a complete pathological response (i.e. absence of viable cancer cells) following this treatment.

Resection of oesophageal cancer requires a multidisciplinary approach in hospitals that have intensive care units familiar with oesophagectomies. Management of these patients must involve discussions with upper GI surgeons who have documented expertise and/or training in upper GI surgery and who work within a team with upper GI surgical expertise, as there is evidence that patients will have more favourable peri-operative outcomes and better long-term survival when managed in a high-volume specialist unit. ¹⁶⁵,¹⁶⁶,¹⁶⁷,¹⁶⁸,¹⁶⁹,¹⁷⁰

Squamous cell carcinomas and adenocarcinomas

Squamous cell carcinomas usually present in the upper or middle oesophagus, although they may also present in the lower oesophagus.

Adenocarcinomas of the oesophagus may present in the middle or lower oesophagus or within 5 cm proximal or distal to the gastro-oesophageal junction (GOJ). These tumours are classified as a Type I, II, or III Siewert tumour⁷¹,⁷² (see Table 3). Types I and II are considered under Oesophageal cancer, and Type III tumours are discussed in the following section under Gastric cancer.

Table 3: Classification of adenocarcinomas of the oesophagus

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>Adenocarcinoma of the distal oesophagus arising from an area with specialised intestinal metaplasia of the oesophagus, and may infiltrate the GOJ from above.</td>
</tr>
<tr>
<td>Type II</td>
<td>True carcinoma of the cardia arising from cardiac epithelium or short segments with intestinal metaplasia at the GOJ.</td>
</tr>
<tr>
<td>Type III</td>
<td>Subcardial gastric carcinoma infiltrating the GOJ from below.</td>
</tr>
</tbody>
</table>
Patient selection

- Patients must have a resectable tumour. Patients with distant metastases (lung, liver, bone, brain, adrenal, peritoneal, pleural) or patients with distant lymph node metastases (cervical, para-aortic) are not suitable for oesophagectomy.
- Patients must be fit for surgery. Apart from clinical assessment, including consideration of existing co-morbidities, objective data is gathered from transthoracic echocardiogram and pulmonary function tests (spirometry, arterial blood gas).
- Patients who are 80 years old or more are generally better suited to non-surgical treatment options.

Pre-operative staging

Pre-operative clinical staging includes:

- upper GI endoscopy and biopsy
- CT scans (chest, abdomen, pelvis)
- endoscopic ultrasonography
- PET scan
- diagnostic laparoscopy (if Siewert Type II or III)
- transthoracic echocardiogram
- pulmonary function tests.

Neoadjuvant therapy

- Patients who are clinically T2 or greater, or N1 (positive lymph node disease) are candidates for neoadjuvant therapy.\textsuperscript{173,174}
- Neoadjuvant therapy regimens are discussed in sections 12.4 (Chemotherapy) and 12.3 (Radiotherapy).
- Patients must be re-staged following neoadjuvant therapy:
  - CT scans of the chest, abdomen and pelvis
  - upper endoscopy
  - further staging (bone scan, PET scan, etc) as indicated
  - re-discussion at multidisciplinary team meeting if re-staging is not favourable.

Surgical resection

- If re-staging is favourable, patients must undergo surgical resection 4–8 weeks after completion of neoadjuvant therapy.
- Oesophagectomy can be performed by a variety of techniques.\textsuperscript{175,176,177}
Ivor-Lewis technique via a right postero-lateral thoracotomy and an upper midline laparotomy
- transhiatal (cervico-abdominal) technique
- 3-stage (cervico-thoraco-abdominal) oesophagectomy
- laparoscopic and thoracoscopic versions of these approaches.

- Transthoracic surgery has been compared with transhiatal surgery in five small RCTs; no significant survival differences were found.\textsuperscript{178,179,180,181}
- A standard or non-radical lymph node dissection (removal of all nodes adjacent to the tumour) is performed in all patients, regardless of operative technique.
- Continuity of the gastrointestinal tract is restored by either a handsewn or stapled end-to-side oesophago-gastrostomy, depending on surgeon preference. Studies comparing different reconstruction techniques have also failed to demonstrate substantial differences in outcome.\textsuperscript{182}
- A feeding jejunostomy tube is usually placed at the time of operation for post-operative enteral feeding.

\textit{Post-operative care}
- Patients are transferred to either intensive care or a high dependency unit following surgery.
- Chest drains (if present) and surgical drains should be monitored carefully for evidence of post-operative bleeding or leak (anastomosis or thoracic duct).
- Enteral feeding (coordinated by a dietitian) commences on the first post-operative day.
- Contrast study should be performed on day 5–7, with oral fluids (followed a day or two later by feeding) to commence if no leak seen.

\textit{Surgical outcomes}
- Peri-operative mortality rates for oesophageal resection in South Australia are approximately 3–5\%.\textsuperscript{183,184} It is important to note that peri-operative mortality rates up to 18\% have been reported in various centres around the world. In South Australia, the low mortality rates are due to three main factors:
  1. operations are performed by specialist upper GI surgeons
  2. oesophageal resections occur in hospitals experienced in providing post-operative care to these patients
  3. a multidisciplinary team approach is used to determine a treatment plan for all patients.
• Peri-operative morbidity rates range from 30 to 50% (depending on how morbidity is defined) and most commonly involve pneumonia and/or wound infection.\textsuperscript{185,186}

• The long-term 5-year survival rate for oesophageal adenocarcinoma in South Australia is approximately 30% while the 5-year survival rate for oesophageal squamous cell carcinoma is approximately 35%. Higher survival rates are expected for patients without invasion of their tumour through the entire oesophageal wall (pT3 to pT4), without lymph node metastases, and with a complete pathological response following neoadjuvant therapy. Five-year survival rates for these patients range from 35 to 75%.\textsuperscript{187,188,189,190}

2. Gastric cancer
Surgical resection offers the best chance of long-term survival from gastric cancer.

Surgery for gastric cancer can be divided into two operations:
  • total gastrectomy (for tumours of the cardia [Siewert Type II\textsuperscript{172,173}] or proximal stomach)
  • subtotal or distal gastrectomy (for tumours of the distal body or antrum).

Proximal gastrectomy is never recommended due to poor post-operative quality of life (severe reflux). Similar to oesophageal resections, patients who require a total gastrectomy require a specialist upper GI surgeon to facilitate an improved surgical outcome. All gastric cancers considered suitable for resections should be managed by specialist upper GI surgeons.\textsuperscript{191}

Patient selection
  • Patients must have either a resectable tumour (i.e. no distant metastases as described above) or a gastric tumour not amenable to curative resection that is symptomatic and not suitable for other means of palliation (i.e. gastric outlet obstruction, anaemia, severe epigastric pain).
  • Patients should be deemed fit for surgery. The morbidity of a total gastrectomy is similar to that of an oesophagectomy except that the chest will not be entered. Operative mortality rates are lower. Therefore, a total gastrectomy may be performed in patients over the age of 80 with reasonable success.
Pre-operative staging
Pre-operative clinical staging includes:
- upper GI endoscopy and biopsy
- CT scans of the chest, abdomen and pelvis
- diagnostic laparoscopy
- PET scan (optional).

Neoadjuvant therapy
Patients who are clinically T2 or greater or N1 (positive lymph node disease) are candidates for neoadjuvant therapy. Neoadjuvant therapy regimens are discussed in Section 12.4 (Chemotherapy).
- Radiotherapy is not advisable for patients with gastric cancer except in isolated cases or well-constructed clinical trials; however, there may be a role in the palliative setting for symptom control.
- Patients must be re-staged following neoadjuvant therapy:
  - CT scan of the chest, abdomen and pelvis
  - upper GI endoscopy
  - further staging (bone scan, PET scan, etc) as indicated
  - re-discussion at multidisciplinary team meeting if re-staging is not favourable.

Surgical resection
- If re-staging is favourable, patients must undergo surgical resection 4–8 weeks after completion of neoadjuvant therapy.
- A curative total gastrectomy involves the removal of the greater omentum, the entire stomach, and adjacent lymph nodes (D1 or ‘Western’ surgery) with a Roux-en-Y reconstruction. A subtotal/distal gastrectomy involves the removal of the greater omentum, the distal stomach, and adjacent lymph nodes with at minimum a 5 cm proximal margin. The surgeon must ensure that all of the antrum is removed. A Roux-en-Y retrocolic reconstruction is preferred. A palliative resection does not require removal of the omentum or adjacent lymph nodes.
- Radical surgery involving extensive removal of regional lymph nodes (D2 or ‘Japanese’ surgery) is not routine in Australia, and its routine application is not supported by evidence from prospective randomised trials. Nevertheless, it remains a point of debate between surgeons as to whether or not an extended lymph node dissection should be undertaken. There is little doubt that more extended operations can lead to higher rates of complications, greater use of blood
transfusion, more post-operative deaths, longer hospitalisation and higher costs. Whether or not this can be offset by improved longer term survival remains controversial. Irrespective of the type of surgery undertaken, the spleen should not be removed, nor should the pancreas, if this is avoidable.

- A feeding jejunostomy or enteral feeding tube may be placed at the time of operation for a total gastrectomy at the discretion of the surgeon. The placement of drains is also at the discretion of the surgeon.

**Post-operative care**

- After total gastrectomy or subtotal/distal gastrectomy, patients are transferred to a high-dependency unit or to an intensive care unit as required.

- Enteral feeding (coordinated by a dietitian) commences on the first post-operative day if a feeding tube is present. Total gastrectomy patients are commenced on oral fluids followed by a soft food diet at the discretion of the surgeon. Some surgeons keep patients nil by mouth until post-operative day 7 (or until the third or fourth post-operative day for subtotal/distal gastrectomy patients), whereas others commence oral fluids on the first or second post-operative day. Earlier oral intake is associated with a shorter post-operative hospital stay and possibly quicker recovery.

**Surgical outcomes**

Peri-operative mortality rates for gastrectomies performed by specialist upper GI surgeons in South Australia are approximately 1–2%. A US study has shown an increase in mortality (by 5 times) when these operations occur in low-volume centres.\(^{194}\)

The long-term 5-year survival rate for patients with gastric cancer is 20–30%. Higher survival rates are expected for patients without invasion of their tumour through the entire gastric wall (pT3 to pT4) and without lymph node metastases.

**Recommendations:**

38. **Only surgeons with documented expertise and/or training in upper GI surgery who work within a team with upper GI surgical expertise should undertake an oesophagectomy in Australia. A high level of consultant commitment is required to manage post-operative complications. Intensive care units familiar with this operation are required for post-operative care.**

39. **All patients should be discussed at the multidisciplinary team meeting prior to surgical resection.**
40. Only surgeons with documented expertise and/or training in upper GI surgery who work within a team with upper GI surgical expertise surgeons should undertake a total gastrectomy.

186 Yong EC, Thompson SK, Watson DI, Han XP, Devitt PG, Jamieson GG. Outcome following surgery for squamous cell carcinoma of the oesophagus. ANZ J Surg 2009 (accepted for publication).
12.3 Radiotherapy

1. Oesophageal cancer
Radiotherapy may be indicated:

- as part of neoadjuvant (pre-operative) therapy
- as part of definitive chemoradiotherapy
- for palliation.

**Neoadjuvant (pre-operative) chemoradiotherapy**
Chemoradiotherapy plays an important role in the primary treatment of operable oesophageal cancer. The latest and largest meta-analysis conducted by Gebski et al. from the Australian Gastrointestinal Tumour Group studied randomised controlled trials comparing neoadjuvant chemoradiotherapy with surgery alone in oesophageal cancer.

Data from 10 neoadjuvant chemoradiotherapy (CRT) trials involving 1209 patients showed an absolute 2-year overall survival benefit of 13% when compared with surgery alone. The benefit was achieved only with concurrent, but not sequential, scheduling of chemotherapy and radiotherapy with similar benefits for both squamous cell carcinoma and adenocarcinoma histological subtypes. Studies have consistently shown higher rates of pathological complete responses (pCR) with neoadjuvant chemoradiation therapy (about 1 in 4 (25%) achieve pCR). Studies have also shown pCR translates to improved survival. There are no data to suggest that T1 oesophageal cancers benefit from pre-operative chemoradiation therapy.

Eight neoadjuvant chemotherapy trials involving 1724 patients when analysed together showed a 2-year survival benefit of 7% compared with surgery alone. When analysed by histology, the results were significant for the treatment of adenocarcinoma, but not for the treatment of squamous cell carcinoma. These results translate into 'numbers needed to treat' (the number of patients who would need to be treated to prevent one adverse outcome, in this case death from oesophageal cancer) of 8 and 15 for neoadjuvant chemoradiotherapy and chemotherapy, respectively.

The true potential of neoadjuvant treatment might still be underestimated in this analysis. Many of the trials were planned or started more than a decade ago and could thus be considered inadequately designed from today’s point of view. Furthermore, the trials only used variations of chemotherapy protocols, consisting mainly of cisplatin and fluorouracil,
and different doses of radiation. Higher rates of complete histopathological responses than those reported in these trials can be achieved by using more effective drug combinations and modern radiation protocols.196

There are no data to suggest that T1 oesophageal cancers benefit from pre-operative chemoradiation therapy. The true difference between chemoradiation and chemotherapy alone is unanswered and a randomised study would be required.

Neoadjuvant radiotherapy
A meta-analysis of individual patient data from trials with 1172 patients showed no benefit in survival for neoadjuvant radiation therapy alone.197

Post-operative radiotherapy in patients with oesophageal cancer
Two randomised studies have assessed surgery alone versus surgery and post-operative radiation therapy.198,199 These trials failed to show improved survival with post-operative radiation therapy, although it is likely that such treatment improves local control. It may be appropriate to consider post-operative radiotherapy for those patients at high risk of local recurrence (involved circumferential margin), but low risk of early distant relapse (no or low numbers of involved lymph nodes). There is currently insufficient evidence on which to base a definitive recommendation.

Post-operative chemoradiotherapy in patients with oesophageal cancer
No data were identified to support the use of post-operative combined chemoradiotherapy for oesophageal cancer. There is increased risk of morbidity in the post-operative setting.

Definitive chemoradiotherapy in oesophageal cancer
External-beam radiation combined with chemotherapy can be used with curative intent in patients with localised oesophageal cancer who are not medically fit for surgery.

In a meta-analysis, concomitant combined chemoradiation was superior to radiation alone in patients with inoperable non-metastatic squamous cancer of the oesophagus.200

In a randomised study, a 5-year survival rate of 26% (95% CI 15–37%) was reported in the chemoradiotherapy arm, which was superior to radiotherapy alone in patients with locally advanced (inoperable) oesophageal cancer.201 This trial also highlighted the need for careful selection of patients as there was increased morbidity noted with the combined modality arm.
**Definitive radiotherapy alone in oesophageal cancer**

External-beam radiotherapy may be used as a single modality curative (radical) treatment for oesophageal cancer in patients who cannot have concurrent chemotherapy.

No randomised studies have compared surgery alone with radiation alone and, in general, radiation alone has been given (in the pre-chemoradiation era) when lesions were deemed inoperable because of tumour extent or medical contraindications. A review of 49 series involving more than 8400 patients primarily using irradiation found overall survival rates at 1, 2 and 5 years to be 18%, 8% and 6%, respectively. Treatment is usually well tolerated with low treatment-related mortality.

**Palliative radiation therapy in oesophageal cancer**

*External-beam radiation therapy (EBRT)*

EBRT can improve dysphagia in up to 75% of patients with oesophageal cancer. It also palliates any pain and bleeding. Benefit appears more likely in patients with mild-to-moderate dysphagia managing a semi-solid diet or better. Time to improvement in swallowing is measured in weeks. The median duration of palliation is 6 months. In other words, more than half of patients are palliated until they succumb to their illness.

Since chemoradiotherapy is shown to be superior to radiation therapy alone in the curative setting, this is being tested in the palliative setting in an international trial (Trans-Tasman Radiation Oncology Group – 03.01). Eligible patients should be considered for enrolment onto this trial or alternate clinical trial if available.

Tumour bleeding and pain from oesophageal cancers respond well to EBRT, but only to sites unaffected by other non-surgical palliative local treatments, such as stent or dilatation. EBRT has an important role in the symptomatic treatment of bone pain from metastatic disease including bulky symptomatic neck nodes, skin pain, and ulceration, and brain metastases.

**Brachytherapy**

Brachytherapy is a form of radiation therapy in which a radioactive source with a short emission distance is placed close to the tumour for a set time (usually around 10 minutes). The source is computer controlled and is guided through a nasogastric tube. The high radiation dose is limited to 1 cm around the radiation source, so the tissues surrounding the tumour receive a lower dose and are not seriously affected. Brachytherapy is given
either as a single treatment or two treatments 1 week apart. It is outpatient-based and is given in a special room that has the radioactive source.

Studies have reported that brachytherapy is an effective endoscopic palliation modality, achieving 60–70% palliation. Suitable patients include those whose tumour is in the thoracic oesophagus, confined to the oesophageal wall and <10 cm. Contraindications include fistula, complete stenosis and bulky lymphadenopathy. Brachytherapy also effectively palliates any pain or bleeding where other endoscopic modalities are unlikely to have an effect.

A randomised trial compared single-dose brachytherapy to metallic stenting. The results showed that brachytherapy provided longer lasting relief of dysphagia (although slower in onset) with better quality of life and no difference is survival compared to stenting.

There are no data from randomised controlled trials comparing external-beam radiotherapy with brachytherapy or external beam radiotherapy with stenting.

2. Gastric cancer

Radiotherapy may be indicated for the treatment of gastric cancer:
- as part of a post-operative chemoradiotherapy program
- for palliation of symptoms.

Neoadjuvant radiotherapy for gastric cancer

There is no reliable evidence to suggest that pre-operative radiotherapy is beneficial.

Adjuvant radiotherapy for gastric cancer

There are no reliable studies to support adjuvant radiation therapy alone in gastric cancer.

Adjuvant (post-operative) chemoradiotherapy in patients with gastric cancer

The largest trial to compare surgery followed by chemoradiotherapy (fluoropyrimidine single-agent chemotherapy) with surgery alone reported that adjuvant treatment for high-risk patients with adenocarcinoma of the stomach or oesophago-gastric junction was associated with improved survival rates at 3 years (52% versus 41%, p=0.03). This trial, which recruited 556 patients with resected adenocarcinoma of the stomach or oesophago-gastric junction, showed a 9-month median survival advantage with post-operative chemoradiation compared to surgery alone.
Concerns have been expressed about the quality and lack of uniformity of the surgical approach in this study (the majority of patients had D0 nodal dissection). However, this is because of a lack of evidence on which to base a recommendation for a standard approach. However treatment-related toxicity was increased, highlighting the importance of careful selection of patients and maintain proper nutrition during post-operative treatment.

**Palliative radiation therapy for gastric cancer**

EBRT improves symptoms such as tumour bleeding, pain and obstruction for 50–75% of gastric cancer patients, with the duration of palliation ranging from 4 to 6 months.\(^{209,210}\)

EBRT also has an important role in the symptomatic treatment of bone pain from metastatic disease, bulky symptomatic nodes and brain metastases.

**Recommendations:**

41. Pre-operative chemoradiation should be considered for patients with resectable oesophageal cancers ≥ uT2/ uN1.

42. Pre-operative chemotherapy could be considered as an alternative option for resectable adenocarcinoma of the oesophagus.

43. Post-operative radiation therapy alone may be considered in patients who have not received radiation therapy pre-operatively and who are thought to have residual disease after surgery.

44. Chemoradiotherapy in the post-operative setting is not recommended for patients with oesophageal cancer.

45. Concurrent chemoradiotherapy using cisplatin-based chemotherapy with curative intent should be considered in patients who have locally advanced disease and who are medically inoperable or who decline surgery and are deemed to tolerate the treatment in the judgment of the treating radiation and medical oncologists.

46. In patients with oesophageal cancer who are not suitable for surgery and who are considered intolerant to chemoradiotherapy, single modality radiotherapy should be considered as a curative treatment in localised disease.

47. Palliative external-beam radiotherapy should be considered for the treatment of dysphagia, bleeding and pain in patients with oesophageal cancer. It should also be considered for patients with bone pain from metastatic disease, bulky symptomatic neck nodes, skin pain or ulceration and brain metastases.
48. Brachytherapy is an effective alternative for palliating dysphagia, pain or bleeding in eligible patients.

49. Post-operative concurrent chemoradiotherapy should be considered in patients who have not received pre-operative chemotherapy and who have had a complete resection. Patients should be carefully selected for this combined modality approach and, in general, a neoadjuvant chemotherapy approach should be considered (refer to Chemotherapy section).

50. Palliative radiotherapy in gastric cancer is recommended for patients with pain, bleeding or obstruction or with symptoms from bone or brain metastases.


12.4 Chemotherapy

Participation in clinical trials should be considered where appropriate for patients being considered for chemotherapy (± radiotherapy).

1. Oesophageal cancer

Chemotherapy may be indicated for patients:

- receiving neoadjuvant therapy, with or without radiotherapy
- with T2, T3 or T4 disease and those who decline surgery or who are medically unfit for surgery
- who require palliation of dysphagia and/or metastatic disease.\(^{211}\)

All patients require realistic information about the potential adverse effects of these forms of treatment and should be encouraged to participate in decision-making. The level of uncertainty about individual responses to treatment in certain circumstances should be acknowledged.

Combined chemoradiotherapy should be considered for resectable disease based on the results of the meta-analysis as discussed in section 12.3; however, further research is required to provide additional evidence of the effectiveness of chemoradiotherapy as first-line treatment for advanced oesophageal cancer. Thus, participation in clinical trials should be considered where appropriate for patients being considered for pre-operative chemotherapy and/or radiotherapy.

Neoadjuvant and adjuvant chemotherapy
(Refer to neoadjuvant radiotherapy section 12.3).

There is no evidence to support the use of adjuvant chemotherapy alone for the treatment of oesophageal carcinoma. Lower oesophageal adenocarcinoma or gastro-oesophageal junctional adenocarcinoma may benefit from a peri-operative approach, as with gastric cancer, based on the MAGIC protocol, which reported a 13% 5-year survival gain (refer to gastric cancer radiotherapy section, page 88).

Neoadjuvant and adjuvant chemoradiotherapy
(Refer to oesophageal cancer radiotherapy section, page 85)
**Palliative chemotherapy**

Palliative chemotherapy regimens may include radiotherapy. Palliative chemotherapy should be available for patients with advanced oesophageal cancer. However, evidence of benefit is conflicting.

A French trial comparing palliative chemotherapy (cisplatin and fluoropyrimidine [FU]) with no treatment found no evidence of improved survival with chemotherapy, with median survival times for the two groups of 13 months and 14 months, respectively. Many patients in this trial had undergone surgical resection and the results may not be applicable to previously untreated patients.

Results from two randomised controlled trials conducted in the UK that included patients with advanced or metastatic tumours of the oesophagus, stomach or gastro-oesophageal junction suggested that chemotherapy may increase survival time and palliate symptoms. In one trial, 51 of 256 patients had oesophageal cancer. The 1-year survival rate for patients treated with ECF (epirubicin, cisplatin and fluoropyrimidine) was 37.0%, compared with 12.5% for patients treated with adriamycin, FU and methotrexate (FAMTX) (p=0.032). Overall survival rates at 1 year were 36.5% with ECF compared with 21.5% with FAMTX.

In advanced disease, chemo-radiotherapy appears to extend survival time more than radiotherapy alone, despite local failure rates of 40–50%. 212

**2. Gastric cancer** 213

Chemotherapy may be indicated:

- for patients receiving neoadjuvant therapy
- as part of post-operative chemoradiotherapy (or alone in selected circumstances; see below)
- for palliation of metastatic disease.

A combination of neoadjuvant and adjuvant chemotherapy should be offered based on the MAGIC protocol (ECF peri-operatively) with evidence of a 13% 5-year survival advantage and with no increase in operative mortality.

For information about adjuvant chemotherapy as part of a combined radiotherapy approach refer to the Section 12.3.
Adjuvant chemotherapy should be discussed with selected patients for whom the risk of recurrence is relatively high. However, it should be recognised that the exact benefit of adjuvant chemotherapy remains unclear. Peri-operative chemotherapy has now generally replaced this mode of treatment for resectable gastric and oesophageal gastric junction cancers. The most recent meta-analysis showed that adjuvant chemotherapy can increase survival rates after curative resection for gastric cancer, with a combined hazard ratio of 0.82 (95% CI: 0.75–0.89) in favour of chemotherapy. These results reflected an absolute survival benefit at 5 years of 4% for patients with stage II or stage III disease and 2% for patients with stage I disease.\textsuperscript{214} Although 2 further meta-analysis have been published since, there is no suggestion of any greater benefit based on these reports.

Adjuvant chemotherapy in a predominantly Asian population with S1 (an oral fluoropyrimidine) showed a 10% 3-year overall survival benefit. This result supports a potential benefit to an adjuvant chemotherapy approach, although this will need to be repeated in a Western population.\textsuperscript{215}

Western trials of intra-peritoneal chemotherapy report increased complication rates with no improvements in survival rates. By contrast, Japanese trials report that intra-peritoneal chemotherapy improves survival. The reasons for this difference are not apparent.

Palliative chemotherapy based on cisplatin and fluoropyrimidine (FU) should be considered for patients with advanced gastric cancer. Over 250 randomised controlled trials and three meta-analyses of chemotherapy have been identified. More recent trials have used various combinations, usually including FU and also often including adriamycin, leucovorin or cisplatin. While some trials suggest that FU alone may have minimal toxicity with survival equivalent to that associated with more complex regimens, most trials demonstrate improved survival with combination chemotherapy. Taxane chemotherapy schedules may offer improvements in response and survival but the increased toxicity is noted and patient selection is important.

Trastuzumab may also have a role in the 20–25% of patients with HER2-positive advanced disease. A recently completed randomised phase III trial reported a 26% improvement in survival with the addition of trastuzumab to cisplatin and fluorouracil chemotherapy for HER2-positive gastric cancers (including gastro-oesophageal junction and lower oesophageal adenocarcinoma cancers).\textsuperscript{216}
Palliative chemotherapy can improve quality of life and may extend survival time in patients with advanced gastric cancer by about 6 months compared with best supportive care. ECF is a particularly effective regime for patients who are reasonably medically fit, although combinations including taxanes may offer advantages in selected patients.

Currently, there is no high-level evidence to support second line palliative chemotherapy.

**Recommendation:**

**51. Chemotherapy for gastric cancer may be indicated:**
- for patients receiving neoadjuvant therapy
- as part of post-operative chemoradiotherapy (or alone in selected circumstances, as above)
- for palliation of metastatic disease.

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13. COMPLEMENTARY THERAPIES

The term ‘complementary therapies’ encompasses a range of approaches to health-care aimed at enhancing quality of life and improving well-being. They may be used alongside standard evidence-based medical (conventional) cancer treatments, such as surgery, radiotherapy, chemotherapy, hormonal therapies or biological therapies. Complementary therapies that have been shown to be helpful in the management of the symptoms of cancer and its treatment include: counselling, meditation and relaxation, support groups, art and music therapy, spiritual practices, massage, aromatherapy, reflexology, acupuncture, yoga and physical activity, tai chi, qi gong, some herbal medicine and nutritional advice¹.

Although the term ‘Complementary and Alternative Medicine (CAM) is frequently used, it is important to distinguish between complementary and alternative therapies. Alternative therapies are used instead of standard evidence-based medical cancer treatments. There is no evidence to support the use of alternative therapies in the treatment of cancer.

It is important that the primary treatment team are aware of complementary therapies, recognise the potential for impact of such therapies in the clinical setting² and promote open discussion about these therapies with their patients.

13.1 How complementary therapies may help cancer patients

Complementary therapies are intended to support patient well-being and are not considered treatments for cancer². Although large-scale clinical trials are still needed, there have been many studies of complementary therapies involving patients with cancer. Scientific data is not available that shows an effect on survival, however the results of studies suggest therapeutic benefits of complementary therapies for management of both the symptoms of cancer and the side effects associated with conventional cancer treatment³.

Beneficial effects reported for some complementary therapies include¹:

- reducing pain or use of analgesia
- reducing chemotherapy-related fatigue
- reducing menopausal symptoms such as hot flushes
- reducing acute nausea
- promoting relaxation
- improving sleep
- improving the sense of well-being
- reducing stress, anxiety and depression
- improving overall coping capacity
- promoting a feeling of self worth;

However, some complementary therapies can interact with conventional cancer treatments and make them less effective. Others may actually be harmful if taken in combination with conventional cancer treatments².

### 13.2 Discussing complementary therapies with patients and/or caregivers

Based on current guidelines³⁴ it is recommended that oncology health professionals provide an opportunity for patients to talk openly about complementary therapies in the context of the overall health care plan. The multidisciplinary team should identify which member of the clinical team should be best placed to conduct this discussion.

- All patients with cancer should be asked specifically about their use of complementary and alternative therapies (CAM) at multiple time points in the treatment pathway
- Communication about CAM should be conducted in an open, evidence-based and patient-centred manner by the cancer-specialist clinician.
- Detailed enquiries by the patient and family/carers about those complementary therapies deemed suitable in their particular case should be directed to the complementary therapist/prescriber.
- Responses to questions about CAM use should be documented in the case notes.

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• In order to ensure that those patients considering Complementary Therapy are well informed, they should be offered the Understanding Complementary Therapies\(^1\) booklet and/or the Cancer Council SA Helpline number (13 11 20) both of which provide balanced, evidence-based information about the advantages and limitations, including contraindications, of complementary therapies. A brochure\(^2\) providing guidance to identifying qualified complementary therapists should also be offered.

It is also recommended that patients seeking complementary therapies should be encouraged to ask questions of any complementary health practitioners to ensure the appropriateness and safety of their care. Questions may include:

- what is your training?
- exactly what is the therapy you are proposing?
- what do you hope it will do?
- what is the evidence for the success of this therapy?
- what side effects could there be?
- how common are the side effects?
- will this therapy affect other treatments I am receiving?
- how much will this therapy cost?

### Information for patients and caregivers

The Cancer Council Australia “urges people with cancer to remain in the care of qualified doctors who use proven methods of treatment and participate in clinical trials of promising new treatments. If you are using, or considering, a complementary or alternative treatment, it's important to discuss it with your doctor or call the Cancer Helpline for advice’.

Also, ‘If (people) are thinking about using any other method instead of conventional medical treatment, (they) should carefully consider and investigate the claims made and any evidence for those claims, the credentials of the people or organisation promoting the treatment, the costs and the potential risks of delaying conventional treatments.’\(^{218}\)

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\(^1\)Understanding Complementary Therapies, Cancer Council publication (Nov 2008)

\(^2\)Complementary Therapies
The American Cancer Society (ACS)\(^1\) recommends the following checklist to flag approaches or therapies that might be open to question and advises that *if the answer to any of these questions is 'yes', people should carefully consider whether the proposed treatment is of any value.*

- Is the treatment based on an unproven theory?
- Does the treatment promise a cure for all cancers?
- Are you told not to use conventional medical treatment?
- Is the treatment or drug a ‘secret’ that only certain providers can give?
- Does the treatment require you to travel to another country?
- Do the promoters attack the medical/scientific establishment?

**Recommendations**

**Recommendation 1**
All patients with cancer should be specifically asked about their use of complementary and alternative therapies (CAM)

**Recommendation 2**
Responses to questions about CAM use should be briefly documented in the case notes.

**Recommendation 3**
Patients should have access to the Understanding Complementary Therapies\(^2\) booklet and the Cancer Council SA Helpline number (13 11 20).

**Further information resources**
- Cancer Council resources on complementary care are available online or by phoning the Cancer Helpline (13 11 20):
  - Cancer Council Victoria brochure: ‘Complementary and alternative cancer therapies – for people with cancer, their family and friends’.

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Useful web sites on complementary and alternative therapies

- Quackwatch is an international network of people who are concerned about health-related frauds, myths, fads, fallacies, and misconduct. The website has a search engine of therapies and services. [http://www.quackwatch.com/](http://www.quackwatch.com/)

- The Memorial Sloan Kettering Cancer Center (US) webpage ‘About Herbs, Botanicals & Other Products’ at [www.mskcc.org/mskcc/html/11570.cfm](http://www.mskcc.org/mskcc/html/11570.cfm) provides objective information for oncologists, healthcare professionals, and consumers. *Note: this is an American website and not all of the products listed may be available in Australia.*


14. FOLLOW-UP CARE

Ongoing monitoring of patients following a diagnosis of upper GI cancer is intended to enable early detection of metastatic disease and facilitate the management of side effects of the cancer and its treatment. It may also include ongoing monitoring of nutrition and psychosocial support.

The follow-up care required will vary according to the intent of initial treatment. Development of a clear follow-up plan is necessary to provide streamlined follow-up and to avoid duplication of care by multiple specialists. All multidisciplinary team members may have a role in planning and providing ongoing follow up care.

14.1 Post-treatment follow-up

There is currently no high-level evidence on which to base advice about medical follow-up after treatment of upper GI cancers. A general guide is provided below.

**Gastric cancer**

All patients treated for gastric cancer require systematic follow-up. Follow-up assessment includes a comprehensive history, physical examination and nutrition assessment at intervals of 3–6 months for 2 years, and then 6-monthly until 5 years post-treatment. Investigations should only be undertaken if clinically indicated. After 5 years, no further regular follow-up is required unless clinically indicated.

All patients require monitoring of vitamin B12 levels. For patients who have had a total gastrectomy, replacement of vitamin B12 by intramuscular injection is required at 3-monthly intervals.

Ongoing nutritional counselling and support may be required and information on how to access nutritional services should be provided to the patient and/or caregiver.

**Oesophageal cancer**

All patients require systematic follow-up following treatment for oesophageal cancer. Asymptomatic patients require 3-monthly follow-up, including a comprehensive history and physical examination, for 2 years, followed by 6-monthly assessment until 5 years post-surgery. After 5 years, no further regular follow-up is required unless clinically indicated. Investigations should only be undertaken if clinically indicated.
Patients with TIS or T1a tumours who have had an EMR or other ablative procedures require 3-monthly endoscopic surveillance for 1 year and annually thereafter. In addition, some patients may require dilatation of an anastomotic or a chemoradiation-induced stricture.

Ongoing nutritional counselling and support may be required and information on how to access nutritional services should be provided to the patient and/or caregiver.

14.2 Follow-up care plan
Prior to discharge, multidisciplinary team members are required to develop a specific follow-up care plan, which includes recommendations for ongoing supportive care and medical surveillance.

- Planning requires involvement and agreement by the patient and family or their caregiver(s).
- Follow-up may be provided by a multidisciplinary team or the patient’s GP, depending on the patient’s preference, availability of local resources and the health professional’s capacity to coordinate multidisciplinary care. Either way, the GP is pivotal in the coordination of follow-up care.
- The multidisciplinary team and primary specialist, in consultation with the GP will determine who will coordinate follow-up care and which clinicians will provide follow-up care.

**Recommendation:**
52. Relevant multidisciplinary team members should complete an end-of-treatment summary, which includes a documented plan for follow-up.
15. CANCER RECURRENCE

Treatment of a recurrent upper GI cancer is rarely curative and usually focuses on disease control. In many instances it may be purely palliative. Treatment plans are determined by clinical evaluation and exploration of patient preferences. All patients require a referral to the multidisciplinary team meeting for discussion.

A diagnosis of disease recurrence can be extremely challenging; it may be more confronting than the experience of any other stage of the cancer illness\textsuperscript{219} and may be associated with greater adjustment problems and more pessimism than the original diagnosis.\textsuperscript{220}

15.1 Investigation and management of recurrent disease

Investigations to be performed to investigate recurrence are:

- endoscopy
- CT ± PET scanning.

Management by the multidisciplinary team

- Either the referring specialist or a nominated specialist (surgeon, medical or radiation oncologist) has responsibility for managing treatment of recurrence.
- Active involvement by the patient’s GP and review by a specialist palliative care team is essential.

Likely treatments for recurrent upper gastrointestinal cancer

Treatment for recurrent disease will depend on the location and extent of the recurrence and on previous management and may include:

- radiotherapy for localised recurrence
- chemotherapy for systemic disease
- surgery (unlikely apart from localised problems such as obstructions).

Recommendation:

53. All patients with recurrent upper GI cancers should be referred to the upper GI multidisciplinary team meeting for discussion and consideration of palliative interventions including chemotherapy and/or radiotherapy or other procedures, and to review the plan for ongoing supportive care.
16. PALLIATIVE CARE

16.1 Palliative interventions and care

The majority of patients diagnosed with advanced upper GI cancer do not survive for more than a few months following presentation.

All patients with poor prognostic indicators or with advanced disease require early referral to a palliative care service to ensure coordinated and holistic care is provided to the patient, their family and/or caregiver(s) throughout end-of-life care. The patient’s quality of life and comfort is of paramount importance and can be managed through excellence in symptom control and support for family and/or caregivers. Considering the role of palliative interventions is a pivotal part of care planning and ongoing assessment of upper GI cancers. The psychological and social wellbeing of patients, family and/or caregiver(s) and the role of supportive community-based services remain critical throughout the course of the illness.221

Palliative care is recognised as an integral component of patient care and is a positive and active approach to the management of life-limiting illnesses. Specialist multidisciplinary palliative care teams bring specific expertise to the phase of disease, including support in complex decision making, skills in the management of symptoms and social and psychological support for patients and their families and/or caregiver(s) when needs cannot be met by primary care teams.222 Palliative care is available across health care services, from the acute setting to hospice or in the community. Ongoing communication and clarification of roles between the patient’s nominated specialist, GP and the nominated member from the palliative care team is essential.

16.2 Palliative interventions for upper gastrointestinal cancers

Oesophageal cancer

- Approximately 40% of patients with oesophageal cancer require stents to widen the oesophagus and provide a seal for any fistulae that may be present. A range of stents may be used for patients with oesophageal strictures or fistulae; the choice of type (metal or polythene) is determined by individual features of disease.
- Approximately two-thirds of patients with oesophageal cancer have inoperable disease at the time of diagnosis and most will require active treatment for dysphagia.223 The interventions outlined in Table 4 may be used singly or together,
as required, and are undertaken by specifically skilled members of specialist oesophago-gastric cancer teams.

**Gastric cancer**

- While most symptoms of gastric cancer can be managed conservatively, some patients will require input from specialist surgical or other teams.
- A stent, surgical resection or palliative bypass may be required for palliation of symptoms of advanced gastric cancer.
- Palliative chemotherapy may be appropriate for some patients.\(^{224}\)

**Symptoms of advanced upper gastrointestinal cancer**

The following are symptoms of advanced cancer, requiring specialist palliative interventions (see Table 4):

- **Dysphagia:** Where surgery is not appropriate, a patient may require access to urgent endoscopy for removal of food causing obstruction. In such cases, insertion of an oesophageal stent or PEG tube or enterostomy may be required. The intention of the placement of a PEG tube requires clear explanation, i.e. whether it is for feeding or venting purposes.
- **Acute events:** Many patients with advanced oesophageal or gastric cancer may follow a course of progressive deterioration. However, there is a risk of acute events that are potentially fatal (e.g. catastrophic haemorrhage, perforation or obstruction). Patients and their families or caregiver(s) require clear, simple and appropriate information about possible acute events and should have 24-hour access to support services for advice and management.

**Managing nutritional and hydration needs**

Interventions to manage nutritional and hydration needs include:

- insertion of an enteral feeding tube when food and drink is unable to be taken by mouth, either via a PEG tube or enterostomy; although these enteral means permit nutritional maintenance, they do not relieve the debilitating inability to swallow saliva
- careful assessment of oral health including management of oral and oesophageal candidiasis and reflux oesophagitis.

**External-beam radiation therapy (EBRT)**

EBRT can improve dysphagia in 50–85% of patients with oesophageal cancer and may also palliate pain. Benefit appears more likely in patients with milder dysphagia who are
managing a semi-solid diet or better. The time to improvement in swallowing is measured in weeks.\textsuperscript{225}

Tumour bleeding and pain from oesophageal cancers may benefit from external-beam radiotherapy but only to sites unaffected by other non-surgical palliative local treatments, such as a stent or dilatation. EBRT has an important role in the symptomatic treatment of bone pain from metastatic disease, as well as brain metastases. See Section 12.3 for more information about palliative radiotherapy.

**Table 4: Palliative interventions and referrals for upper gastrointestinal cancers\textsuperscript{226}**

<table>
<thead>
<tr>
<th>Cancer site</th>
<th>Disease symptoms noted</th>
<th>Main specialist palliative interventions</th>
<th>Referrals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oesophagus</strong></td>
<td>Dysphagia</td>
<td>Stent Chemotherapy or radiotherapy to shrink tumour Interventions to remove obstruction (e.g. laser therapy)</td>
<td>• Interventional gastroenterologist / upper GI surgeon</td>
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<td></td>
<td></td>
<td></td>
<td>• Dietitian</td>
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<td></td>
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<td>• GP</td>
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<tr>
<td><strong>Gastric</strong></td>
<td>Nausea and vomiting</td>
<td>Surgical resection, bypass, stent</td>
<td>• Upper GI surgeon</td>
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<td></td>
<td>• Dietitian</td>
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<td>• GP</td>
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<tr>
<td></td>
<td>Dysphagia</td>
<td>Stent</td>
<td>• Interventional gastroenterologist / upper GI surgeon</td>
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<td></td>
<td></td>
<td></td>
<td>• Dietitian</td>
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<td></td>
<td></td>
<td></td>
<td>• GP</td>
</tr>
<tr>
<td><strong>Advanced disease</strong></td>
<td>Pain, nausea, eating problems, weight loss, fatigue, depression</td>
<td>Management of pain and other symptoms should follow evidence based guidelines</td>
<td>• Specialist palliative care consultant</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>• Acute Pain Service</td>
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<td></td>
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<td>• Psychologist / Psychiatrist</td>
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<td></td>
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<td>• Dietitian</td>
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<td></td>
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<td></td>
<td>• Physiotherapist</td>
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<td></td>
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<td>• Occupational therapist</td>
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<td></td>
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<td>• GP</td>
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<td></td>
<td>Poor nutrition and dehydration when food and drink cannot be taken by mouth</td>
<td>Insertion of feeding tube into the digestive tract (by gastrostomy – PEG feeding or enterostomy)</td>
<td>• Interventional gastroenterologist / upper GI surgeon</td>
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<td></td>
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<td>• Dietitian</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Community health supports (e.g. community based nursing services)</td>
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<td>• GP</td>
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</tbody>
</table>
16.3 End-of-life care

In Australia palliative care is most often provided for patients in the last 3–6 months of life, with up to 90% of terminally ill patients spending the majority of their last year of life at home.

During end-of-life care, patients, their family and/or caregiver(s), GPs and acute hospital staff require 24-hour access to a member of the specialist palliative care team for advice and consultative support. Often, multiple community-based services may be required as disease advances. A specialist palliative care team member (e.g. community outreach nurse or liaison nurse) will often be responsible for ensuring effective coordination of palliative care services, continuity of care and rapid communication, both between professionals and with patients and their families.

All efforts are required to ensure that it is possible for patients to spend their remaining time in the place of their choice, whether this is in their home, hospital or inpatient hospice unit. Care providers should be alert to the possibility that this preference may change as death approaches.

Quality of life in people with advanced cancer is affected by symptoms, loss of function and curtailment of activity and physical effects of treatment. Symptoms affecting quality of life may be related to the cancer and/or treatment, and include nausea, pain, dyspnoea, fatigue, anorexia, unintentional weight loss, vomiting, constipation, diarrhoea and abdominal bloating. Patients with metastatic disease have a significantly greater unmet need for assistance with physical aspects of daily living compared with the needs of patients without evidence of active disease.

The physical burden of disease in patients with cancer exerts a major influence on their emotional coping ability and may be exacerbated by the weight of existential and spiritual issues arising from facing death. Existential distress is defined as the worry and concern that arises from confrontation with mortality, and existential concerns are reported to be at least as important as the physical, psychological and social support domains in determining quality of life.
Recommendations:

54. Patients who present with poor prognostic indicators require early referral to a specialist palliative care team to facilitate coordinated and holistic care.

55. Early and clear communication is required between treating specialists and the palliative care specialist team to facilitate seamless transfer of care when the focus of care becomes palliative.

56. Palliative external beam radiotherapy is an appropriate option for the treatment of mild-to-moderate dysphagia in patients with oesophageal cancer.

57. All patients and their families and/or caregiver(s) require information regarding bereavement support services, while some will require specific assessment and input.

222 ibid
223 ibid
224 ibid
227 Keltchear, A. The changing face of dying in Australia. MJA 2001; 175(10):508-570.
17. SURVIVORSHIP

Significant improvements in early detection and treatment of cancer have resulted in increasing survival of patients. There are a range of definitions of cancer ‘survivorship’. The Cancer Council defines a cancer survivor as someone who has completed their active treatment phase and who is not undergoing palliative care.\(^{232}\)

A review of studies of patients with cancer who had survived for 5 or more years reported that many continued to experience negative effects of cancer and/or treatment in their daily lives well beyond the completion of therapy.\(^{233}\)

It is important to recognise that many cancer survivors have not returned to their pre-cancer level of physical functioning. Studies of survivors of oesophageal cancer have demonstrated that symptoms such as dysphagia, heartburn, and problems with saliva may persist, and are associated with functional impairment.\(^{234}\)

It is reported that:

- 20% of cancer survivors have some impairment from the disease itself or related treatment 1–5 years following diagnosis\(^{235}\)
- 66% of people experience long-term psychological distress
- up to 30% experience clinically significant anxiety
- approximately 20–35% experience clinical depression.\(^{236}\)

In order to optimise survival outcomes and quality of life, patient needs for information, symptom management, support and education must each be assessed and addressed accordingly.

## APPENDICES AND ATTACHMENTS

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<thead>
<tr>
<th></th>
<th>Description</th>
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<td>List of all recommendations</td>
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<tr>
<td>B</td>
<td>Locally Advanced Gastric Cancer Clinical Management flow diagram</td>
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<td>C</td>
<td>Oesophageal Cancer Clinical Management flow diagram</td>
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<td>D</td>
<td>Upper GI Cancer Care Patient Information Pathway flow diagram</td>
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<td>Resources for people affected by upper GI cancer in South Australia</td>
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<td>Questions asked by patients and caregivers about upper GI cancer</td>
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<td>I</td>
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### Attachments

1. Synoptic reporting: Gastric cancer
2. Synoptic reporting: Oesophageal cancer
## Appendix A

### Summary of recommendations

#### Key recommendations

<table>
<thead>
<tr>
<th>Pathway recommendation</th>
<th>Service/system recommendation</th>
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</table>
| **i** Enable rapid access to endoscopy for patients at high risk of upper GI malignancy | • Standardise statewide endoscopy referral documentation and related processes.  
• Implement a statewide endoscopy triage system.  
• Provide education to health professionals regarding identification of patients at high risk of upper GI malignancy and appropriate referral pathways.  
• Facilitate ready access to information on high-risk patients, referral processes and the Upper Gastrointestinal Cancer Care Pathway.  
• Undertake an audit of the current demand on endoscopy services, associated waiting times and triage systems across multiple sites, including public and private settings.  
• Audit waiting times for endoscopic services in rural centres and determine processes to improve access for high-risk groups. |
<p>| <strong>ii</strong> Implement synoptic reporting of upper GI pathology as standard | • Implement synoptic reporting within all South Australian pathology services. |
| <strong>iii</strong> All upper GI malignancies are referred to specialists with adequate experience and expertise in the management of upper GI cancers | • Specialist surgical procedures to be undertaken only by surgeons who have the volume and complexity of cases to maintain high-level expertise in upper GI surgery. |</p>
<table>
<thead>
<tr>
<th>Pathway recommendation</th>
<th>Service/system recommendation</th>
</tr>
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<tbody>
<tr>
<td>iv  All patients with upper GI malignancies are referred to services with adequate</td>
<td>• All patients with an upper GI malignancy receive treatment where there are appropriately</td>
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<td>workforce and infrastructure to care for them safely and effectively</td>
<td>trained clinical specialists available (as noted in recommendation iii).</td>
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<td></td>
<td>• Provide acute care of upper GI cancer in a service with access to high-level supportive</td>
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<td>care infrastructure including that required for patients with complex post-operative care</td>
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<td></td>
<td>needs.</td>
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<td></td>
<td>• Upper GI cancer patients receive active treatment, including medical oncology and/or</td>
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<td></td>
<td>radiation oncology, and are managed in a service with adequate access to these specialties.</td>
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<td>• All patients with an upper GI cancer are referred to a dietitian for nutritional assessment</td>
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<td>and specialist advice.</td>
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<tr>
<td>v  All patients with an upper GI malignancy (including high grade dysplasia) are</td>
<td>• Participation in the multidisciplinary team becomes an accepted component of core business</td>
</tr>
<tr>
<td>prospectively discussed at an Upper GI multidisciplinary team meeting within 2 weeks</td>
<td>for cancer health professionals.</td>
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<td>of diagnosis</td>
<td>• Participation in the multidisciplinary team and/or preparation of diagnostic materials</td>
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<td>and/or results is included as core business of diagnostic service providers within South</td>
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<td>Australia.</td>
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<td>• The role of multidisciplinary team administrative assistant is introduced to provide</td>
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<td>support for preparation, monitoring and follow-up functions required by the multidisciplinary</td>
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<td>team.</td>
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<td>• Appropriate information and communications (ICT) technology is implemented to enable</td>
</tr>
<tr>
<td></td>
<td>multidisciplinary team participation across multiple sites with high resolution support for</td>
</tr>
<tr>
<td></td>
<td>radiology and pathology imaging review.</td>
</tr>
<tr>
<td>vi Ensure timely access to results of investigations including endoscopy, radiology</td>
<td>• Undertake urgent improvements to ICT links between public sites and across regions to</td>
</tr>
<tr>
<td>and pathology</td>
<td>enable adequate access to radiology images and pathology results.</td>
</tr>
<tr>
<td></td>
<td>• Install endoscopic reporting software across South Australia.</td>
</tr>
<tr>
<td>Pathway recommendation</td>
<td>Service/system recommendation</td>
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<tr>
<td>---------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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</tbody>
</table>
| vii All patients with upper GI cancer have access to specialist nursing care and cancer care coordination throughout the cancer pathway | • Introduce the role of upper GI Cancer Clinical Practice Coordinator (CPC) to provide and coordinate supportive care from diagnosis throughout treatment to follow-up, survivorship or referral for end of life care.  
• Determine the number of CPCs required based on the volume and complexity of patients and the number of services/sites covered. |
| viii Ensure quality and safety of upper GI cancer care is monitored at a state level    | • Provide a statewide systematic centralised database that captures minimum agreed data of all persons with a diagnosis of an upper GI cancer to allow all treatment outcomes to be reported, reviewed and measured.  
• Initiate a process for centralised review and reporting of key performance indicators (KPIs) and benchmarks for clinical and service outcomes. |
### Pathway recommendation

<table>
<thead>
<tr>
<th>Service/system recommendation</th>
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</thead>
<tbody>
<tr>
<td>ix  All patients with upper GI cancer have access to culturally appropriate care and effective communication throughout the cancer pathway</td>
</tr>
<tr>
<td>• Use qualified interpreters in all consultations where English proficiency and fluency are limited.</td>
</tr>
<tr>
<td>• Develop culturally appropriate resources and services.</td>
</tr>
<tr>
<td>• Provide cross-cultural training for all staff involved in cancer care.</td>
</tr>
<tr>
<td>• All cancer services foster links with culturally relevant resources and services.</td>
</tr>
</tbody>
</table>

|x Aboriginal Health Impact Statement for Cancer Pathway development in South Australia |
| • A comprehensive companion document be written to support all future cancer pathway development in South Australia which addresses the South Australian Aboriginal Health Impact Statement checklist. |
| • This to be completed in 2010 under the auspices of the Aboriginal and Torres Strait Islander Committee of the Cancer Clinical Network. |

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### South Australian Upper Gastrointestinal Cancer Care Pathway recommendations

1. **Patients with upper GI cancers should have access to appropriate interpretative services or a culturally appropriate support health worker during consultations with cancer specialists**

2. **Rural and remote Aboriginal Health Care Workers should receive regular communication from the treating team /care coordinator regarding cancer treatment plans and appointments.**

3. **All patients with an upper GI cancer diagnosis should have access to an upper GI specialist cancer nurse throughout their cancer journey.**

4. **Regular psychological assessment of patients/caregivers should be undertaken along the cancer continuum to identify individuals experiencing significant levels of distress who are at increased risk of psychological morbidity.**

5. **Patients should be screened at each visit to identify those at high risk of anxiety or depression.**

6. **All people with an upper GI cancer diagnosis should have the opportunity to receive culturally appropriate information and counselling (via a qualified interpreter if appropriate) regarding their diagnosis, options and care needs**
by a health professional with appropriate communication skills and knowledge of upper GI cancer.

7. All patients with an upper GI cancer diagnosis require referral to a dietitian at diagnosis and access to a dietitian throughout the cancer pathway to optimise nutritional support.

8. A dietitian should be included as a core member of the upper gastrointestinal multidisciplinary team.

9. Patients require provision of culturally appropriate nutritional advice and access to culturally appropriate nutrition.

10. Identification of malnutrition at the time of an upper GI cancer diagnosis (using an appropriate assessment tool) is essential.

11. Frequent nutritional counselling should be undertaken during the treatment phase to improve clinical outcome.

12. In the absence of evidence from good quality clinical trials, the use of immunonutrient formulations in the care of patients with an upper GI cancer pre- and post-surgery should remain investigational.

13. Health promotion strategies should promote the importance of a healthy lifestyle for all South Australians.

14. Aboriginal health services, health workers and culturally and linguistically diverse communities should be supported to develop and promote appropriate interventions to encourage smoking cessation, reduce high-risk alcohol intake and promote regular medical review (which may be known locally as ‘health checks’), and to encourage prompt medical investigation of symptoms that may be upper GI cancer.

15. Programs should be developed aimed at closing the gap in cancer care and addressing inequities in accessing cancer care for Aboriginal and Torres Strait Islander peoples and culturally and linguistically diverse groups.

16. Where there is an apparent family history of gastric cancer, the clinician should consider referral to or advice from the Familial Cancer Unit.

17. Structured surveillance programs should be maintained or developed for people with Barrett’s oesophagus.

18. All people identified in high-risk categories should be triaged for rapid access to endoscopy if presenting with symptoms consistent with upper GI cancer.

19. Access to community-based health care and education for Aboriginal and Torres Strait Islander peoples about having regular ‘health checks’ should be improved.
20. Culturally appropriate educational resources on gastrointestinal cancer should be improved.

21. Culturally appropriate consumer information should be created and promoted highlighting signs and symptoms of upper GI cancer, outlining timeframes for review by a GP and describing the role of GPs and specialists in the care of upper GI cancers.

22. Health services should promote access to screening for relevant community groups.

23. Culturally appropriate strategies should be developed to identify and address reasons for delayed reporting of upper GI symptoms and reluctance to seek medical care by some population groups.

24. Emergency care should be provided as determined on clinical presentation.

25. All patients who have a confirmed diagnosis of upper GI cancer while in emergency care require urgent referral to an upper GI cancer specialist.

26. Interventional treatment procedures, including radical treatment for upper GI cancers, should not occur prior to presentation at an upper GI multidisciplinary team meeting unless there is an urgent requirement.

27. Consultation with an upper GI surgeon is required for all patients in a serious or life-threatening situation (as some interventions may affect future surgical treatment and patient outcomes).

28. All patients with a confirmed diagnosis should be referred to an upper GI cancer nurse specialist.

29. The patient’s GP should be included in the extended membership of the upper GI multidisciplinary team, and there should be regular communication between the GP and treating cancer specialists.

30. A copy of the upper GI multidisciplinary treatment recommendations and the agreed treatment plan should be provided to the GP.

31. Key performance indicators (KPIs) of 2 weeks to specialist referral following identification of upper GI cancer symptoms and GP referral.

32. A benchmark of 4 weeks from GP identification of upper GI cancer symptoms to GP referral to an upper GI specialist should be utilised.

33. Following confirmation of an upper GI cancer diagnosis, referral to and appointment with cancer specialist should occur within 2 weeks.

34. Synoptic reporting should be implemented as a standard procedure across all health services in South Australia, including the private sector.
35. All patients with an upper GI cancer should be discussed prospectively at a multidisciplinary team meeting within 2 weeks of a confirmed diagnosis.

36. For all patients presented at an upper GI multidisciplinary team meeting, a copy of the treatment plan, including any revisions made following patient discussion, should be sent to the referring GP within 7 working days.

37. A key performance Indicator (KPI) should be developed to monitor the proportion of patients referred to the upper GI multidisciplinary team meeting for prospective treatment planning.

38. Only surgeons with documented expertise and/or training in upper GI surgery who work within a team with upper GI surgical expertise should undertake an oesophagectomy in Australia. A high level of consultant commitment is required to manage post-operative complications. Intensive care units familiar with this operation are required for post-operative care.

39. All patients should be discussed at the multidisciplinary team meeting prior to surgical resection.

40. Only surgeons with documented expertise and/or training in upper GI surgery who work within a team with upper GI surgical expertise surgeons should undertake a total gastrectomy.

41. Pre-operative chemoradiation should be considered for patients with resectable oesophageal cancers $\geq uT2/ uN1$.

42. Pre-operative chemotherapy could be considered as an alternative option for resectable adenocarcinoma of the oesophagus.

43. Post-operative radiation therapy alone may be considered in patients who have not received radiation therapy pre-operatively and who are thought to have residual disease after surgery.

44. Chemoradiotherapy in the post-operative setting is not recommended for patients with oesophageal cancer.

45. Concurrent chemoradiotherapy using cisplatin-based chemotherapy with curative intent should be considered in patients who have locally advanced disease and who are medically inoperable or who decline surgery and are deemed to tolerate the treatment in the judgment of the treating radiation and medical oncologists.

46. In patients with oesophageal cancer who are not suitable for surgery and who are considered intolerant to chemoradiotherapy, single modality radiotherapy should be considered as a curative treatment in localised disease.
47. Palliative external-beam radiotherapy should be considered for the treatment of dysphagia, bleeding and pain in patients with oesophageal cancer. It should also be considered for patients with bone pain from metastatic disease, bulky symptomatic neck nodes, skin pain or ulceration and brain metastases.

48. Brachytherapy is an effective alternative for palliating dysphagia, pain or bleeding in eligible patients.

49. Post-operative concurrent chemoradiotherapy should be considered in patients who have not received pre-operative chemotherapy and who have had a complete resection. Patients should be carefully selected for this combined modality approach and, in general, a neoadjuvant chemotherapy approach should be considered (refer to Chemotherapy section).

50. Palliative radiotherapy in gastric cancer is recommended for patients with pain, bleeding or obstruction or with symptoms from bone or brain metastases.

51. Chemotherapy for gastric cancer may be indicated:
   • for patients receiving neoadjuvant therapy
   • as part of post-operative chemoradiotherapy (or alone in selected circumstances, as above)
   • for palliation of metastatic disease.

52. Relevant multidisciplinary team members should complete an end-of-treatment summary, which includes a documented plan for follow-up.

53. All patients with recurrent upper GI cancers should be referred to the upper GI multidisciplinary team meeting for discussion and consideration of palliative interventions including chemotherapy and/or radiotherapy or other procedures, and to review the plan for ongoing supportive care.

54. Patients who present with poor prognostic indicators require early referral to a specialist palliative care team to facilitate coordinated and holistic care.

55. Early and clear communication is required between treating specialists and the palliative care specialist team to facilitate seamless transfer of care when the focus of care becomes palliative.

56. Palliative external beam radiotherapy is an appropriate option for the treatment of mild-to-moderate dysphagia in patients with oesophageal cancer.

57. All patients and their families and /or caregiver(s) require information regarding bereavement support services, while some will require specific assessment and input.
Appendix B: Locally advanced gastric cancer clinical management

The gastric cancer treatment flow diagram outlines the management steps for staging, assessment and treatment for a patient diagnosed with a gastric cancer. Pre-treatment assessment is essential to avoid subjecting patients to radical treatment if it is not likely to be beneficial, and to ensure that appropriate treatment is offered to all those who are likely to benefit.

**ENDOSCOPIC ASSESSMENT AND BIOPSY → Confirmed diagnosis**

**Staging investigations:**
- Limited staging at discretion of physician if patient is deemed unfit to undergo surgery or has overt metastatic disease
- Staging laparoscopy and CT scan
- CT/PET at clinical discretion
- Endoscopic ultrasound at clinical discretion
- Blood tests (CBE, ECaLFT)

**MULTIDISCIPLINARY TEAM MEETING**

ALL patients with an upper GI cancer are to be presented at this meeting

The Upper GI multidisciplinary team meeting provides specialist advice in oesophago-gastric cancer; a review of diagnostic investigations, nutritional assessment and subsequent individualised treatment recommendations.

**NOT SYMPTOMATIC**

- **Metastatic disease**
  - Not medically fit for surgery

- **NO metastatic disease**
  - **Fit for Surgery**
    - **Gastrectomy**
      - ± Pre- and post-operative chemotherapy
      - Consider post-operative chemo/radiotherapy in those who have NOT received pre-operative chemotherapy

**SYMPTOMATIC**

- **SYMPTOMATIC**
  - **obstructive symptoms**
  - **bleeding**
  - **vomiting**

- **Medically fit for surgery:**
  - Consider neoadjuvant chemotherapy
  - pre-operative nutritional support

- **Not medically fit for surgery**
  - **Metastatic disease**
    - **Surgical resection**
      - Consider:
        - limited resection / bypass
        - enteric feeding

**Follow-up care**

**Cancer recurrence**

**Refer to Palliative Care Service**

Refer to multidisciplinary team discussion for consideration of palliative interventions including chemotherapy/radiotherapy or other procedures and to review plan for ongoing supportive care.

**NOTE:** This diagram provides an overview of treatment paths. ALL patients with an oesophageal-gastric cancer diagnosis require discussion at the Upper GI MDT for individualised treatment recommendations.
Appendix C: Oesophageal Cancer Clinical Management Flow Diagram

The oesophageal cancer treatment flow diagram outlines the management steps for staging, assessment and treatment for a patient diagnosed with an oesophageal cancer. Pre-treatment assessment is essential to avoid subjecting patients to radical treatment if it is not likely to be beneficial, and to ensure that appropriate treatment is offered to all those who are likely to benefit.

ENDOSCOPIC ASSESSMENT AND BIOPSY → Confirmed diagnosis

ASSESSMENT OF MEDICAL FITNESS for surgery or radical chemotherapy or radiotherapy

**Medically fit for surgery**

- Pre-treatment assessment
  - CT/PET scan
  - CT scan to include chest, abdomen, pelvis
  - Endoscopic ultrasound
  - Staging laparoscopy
    - if the gastro-oesophageal junction is involved
  - Blood tests (CBE, ECaLFTs)
  - Pulmonary Function Tests
  - Echocardiogram

**Not medically fit for surgery**

- Limited staging investigations at discretion of physician

MULTIDISCIPLINARY TEAM MEETING

ALL patients with an upper GI cancer are to be presented at this meeting

The Upper GI multidisciplinary team meeting provides specialist advice in oesophago-gastric cancer; a review of diagnostic investigations, nutritional assessment and subsequent individualised treatment recommendations.

**Medically fit for surgery**

- Localised disease
- No metastatic disease detected

**Not medically fit for surgery**

- Localised disease
- No metastatic disease detected

**Upper 1/3 tumour: Consider ENT opinion**

- NO
- YES

- T1- 2NOMO
- ≥T3NOMO
  - Any N+ MO
  - Surgical resection
  - Neoadjuvant therapy and surgical resection

**Consider:**

- radical chemotherapy / radiotherapy
- surgery

- Refer to Palliative Care Service
  - Consider:
    - enteric feeding
    - stenting for dysphagia
    - palliative radiotherapy / chemotherapy

**Follow-up care**

**Cancer recurrence**

- Refer to MDT discussion for consideration of palliative interventions including chemotherapy/radiotherapy or other procedures and to review plan for ongoing supportive care.
- Refer to palliative care service.

NOTE: This diagram provides an overview of treatment paths. ALL patients with an oesophageal-gastric cancer diagnosis require discussion at the Upper GI MDT for individualised treatment recommendations.
Appendix D: Upper Gastrointestinal Cancer Care Patient Information Pathway

South Australian Upper Gastrointestinal Cancer Care Patient Information Pathway

Information to be provided to patients with upper GI cancers
- Patients/families/carers may be offered a range of information, in either verbal or written format, according to patient need and preference. Patients have the option to refuse or accept written information offered.

When symptoms are noted:
Information about:
- Dysphagia
- Unexplained weight loss
- Patients with unexplained and persistent recent onset dyspepsia

General practitioner visit:
Information, likely to be verbal, about:
- referral for endoscopy
- referral to upper GI cancer specialist (upper GI surgeon, gastroenterologist for investigation within four weeks)
- planned or likely investigations

Hospital appointment/investigations
- Verbal introduction of consultant
- Verbal/written information about investigations e.g. endoscopy, barium meal
- Introduction and contact numbers of upper GI cancer nurse specialist if appropriate
- Information from supportive pathway as appropriate
- Sources of information/emotional support
- Dietary advice and/or referral to dietitian if appropriate
- Provision of culturally appropriate information and referral to relevant culturally appropriate services as required

Prior to first upper GI specialist appointment:
- Information from the relevant hospital (public/private), including an appointment letter detailing:
  - the appointment time
  - which clinic
  - which consultant/team
  - likely length of time of appointment
  - any likely investigations
  - car parking.

Patients requiring urgent referral may be given their appointment via the telephone.

Results of investigations:
Detailed disease specific information including:
- Contact details/introduction to upper GI cancer nurse specialist.
- Staging information e.g. CT, PET, EUS.
- Possible treatment plan
- Information about the upper GI cancer multidisciplinary team meeting, and benefits of consent to be presented at the multidisciplinary team meeting.
- Information and referral to sources of information/emotional support.
- Information about transfer to other hospital or cancer centre if necessary.
- Dietary advice and/or dietitian referral.
- Information about upper GI cancer support groups.

Treatment:
- Information about referral to the upper GI multidisciplinary team and discussion of all treatment options with specialist.
- Detailed information about the risks and benefits of treatment options such as:
  - endotherapy
  - surgery
  - chemotherapy
  - radiotherapy
  - palliative care
  - no active treatment.
- Referral to further sources of information and support as required.
- Information from supportive pathway as appropriate.
- Information about complementary therapies.
### Follow up:
- Information about the response of disease to treatment
- Details of the follow up plan and ongoing management

### Continuing care:
Information about:
- Management of likely side effects of the cancer and treatment
- Possible symptoms caused by disease
- Nutritional needs, and referral to dietitian as appropriate
- Further sources of information/emotional support and referral if necessary
- Complementary therapies.

### Recurrence:
Information about:
- Treatment/no treatment option
- Symptom management
- Supportive information as appropriate
- The role of palliative care and community based services
- Referral to the upper GI multidisciplinary team meeting.

### Palliative care:
Information about:
- Managing symptoms
- Side effects of treatment
- Local palliative care services
- Bereavement support for the carer/family.

### Survivorship
Information about:
- Support agencies
- Role of rehabilitation therapy
- Nutritional needs and referral to dietitian if appropriate
- Learning to live beyond cancer
- Cancer screening and maintaining wellness e.g. quitting smoking, healthy diet, exercise
- Complementary therapies.
## Appendix E: Resources for people affected by upper gastrointestinal cancer in South Australia

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Contact details</th>
<th>Available resources</th>
</tr>
</thead>
</table>
| Cancer Council South Australia                    | 202 Greenhill Road, Eastwood SA 5063  
Tel: 08 8291 4111  
Freecall: 1800 188 070  
Fax: 08 8291 4122  
Website: [www.cancersa.org.au](http://www.cancersa.org.au) | For information on cancer, its treatment and side effects, support services, medical terminology, and research.  
| Cancer Council Helpline                            | Tel: 13 11 20  
Email: [chl@cancersa.org.au](mailto:chl@cancersa.org.au) | For telephone peer support from people who have had cancer experiences or for information on cancers.                                                                 |
| Cancer Council Australia                           | Website: [www.cancer.org.au](http://www.cancer.org.au) | Fact sheets:  
| Cancer Care Centre                                 | 76-78 Edmund Ave, Unley SA  
Cancer support line: 08 8272 2411  
Administration: 08 8373 1470  
Fax: 08 8357 1979  
Website: [www.cancercarecentre.org.au](http://www.cancercarecentre.org.au)  
Email: [admin@cancercarecentre.org.au](mailto:admin@cancercarecentre.org.au) | Notes: Meets quarterly on first Sunday of month. Social activities at various venues, surgery information and hospital visiting if requested. |
| The South Australian Oesophageal Support Group     | South Australia 5068  
Contact: Graeme Hall  
Tel: 08 8364 6737  
Mobile: 0409 091904 |                                                                                                                                                      |
| Palliative Care Council of SA Inc                  | 202 Greenhill Road, Eastwood SA 5063  
Tel: 8291 4137  
Website: [www.pallcare.asn.au](http://www.pallcare.asn.au) |                                                                                                                                                      |
### Resources for Aboriginal and Torres Strait Islander Peoples

<table>
<thead>
<tr>
<th>Aboriginal Health Council of South Australia Inc (AHCSA)</th>
<th>9 King William Rd Unley SA 5061 (08) 8273 7200 Website: <a href="http://www.ahcsa.org.au/home/">http://www.ahcsa.org.au/home/</a></th>
<th>The primary role of this council is to be the 'health voice' for all Aboriginal People in South Australia through advocating for the community and supporting workers with appropriate Aboriginal health programs. The Council consists of several Aboriginal Health Advisory Committees and local Aboriginal Community Controlled Health Services. The location of these are shown on the map at this web link: <a href="http://www.ahcsa.org.au/media/docs/ahcsa_map_new.pdf">http://www.ahcsa.org.au/media/docs/ahcsa_map_new.pdf</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>National Aboriginal Community Controlled Health Organisation (NACCHO)</td>
<td>Website: <a href="http://www.naccho.org.au/">http://www.naccho.org.au/</a></td>
<td>Information on national roles and activities for Aboriginal Community Controlled Health Services across Australia</td>
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</tr>
<tr>
<td>The Queen Elizabeth Hospital Aboriginal Liaison Officers Woodville Road Woodville, SA 8222 6000 (via switch board) Or office 82228597</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lyell McEwin Hospital Muna Paidendi Aboriginal Health Team Haydown Road, Elizabeth Vale (08) 8182 9206</td>
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<tr>
<td>Australian Indigenous Health Web site: <a href="http://www.healthinfonet.ecu.edu">http://www.healthinfonet.ecu.edu</a></td>
<td>This is a national website to promote knowledge and information sharing on all health issues for Aboriginal and Torres</td>
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</tr>
</tbody>
</table>
Strait Islander People. Information is provided for both consumers and health care professions.

<table>
<thead>
<tr>
<th>Resources for culturally and linguistically diverse communities</th>
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<tbody>
<tr>
<td><strong>Migrant Health Service</strong></td>
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<tr>
<td><strong>Migrant Resource Centre of South Australia</strong></td>
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<tr>
<td><strong>Multicultural Communities Council of SA (MCC)</strong></td>
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<td><strong>Multicultural SA</strong></td>
</tr>
<tr>
<td><strong>Translating and Interpreting Service (TIS)</strong></td>
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</table>

**Women's health information and resources**

| Women's Health Statewide Information Service                 | 64 Pennington Terrace, North Adelaide 5006 Website: www.whs.sa.gov.au Rural Women’s Telephone Counselling Service, Tel: 8239 9600 or 1800 182 098 Health line: 1300 882 880 | Services include women’s health line and counselling. |
Appendix F: Questions asked by patients and caregivers about oesophageal or gastric cancer diagnosis, treatment and care during consultation with health care professionals

(Scottish SIGN Guidelines: Management of oesophageal and gastric cancer, June 2006)

At the time of diagnosis and staging

- Will I live?
- What can be done?
- Who can I talk to?
- What is the staging process?
- What are the options available for the treatment of my cancer?
- Although an operation may be available to cure my cancer are there any alternatives?
- What are the advantages and disadvantages of each of the alternative options?
- Although my cancer may be operable are there reasons why an operation is not felt to be the best way to treat the cancer?

Around the time of surgery

- What is involved in the surgery?
- How often is this operation carried out at this hospital?
- What are the risks involved?
- What happens immediately after surgery?
- How much pain will be involved?
- What immediate difficulties will I face?
- What are the long term prospects?
- What effect will this surgery have on my quality of life including eating/drinking, fatigue, sleeping, work/social activities?
- What about scarring?
- What follow up will there be?
- Questions about practical issues such as care planning, financial security etc

Questions about potential physical problems including:

- Difficulties around eating and drinking, in particular the social difficulties associated with eating in public
- Difficulty with swallowing that may require an endoscopic dilatation
- Dumping syndrome (nausea, weakness, sweating, palpitations after ingestion of food)
- Diarrhoea/constipation
- Acid reflux
- Vomiting
- Unintentional weight loss
- Problems sleeping comfortably
- Fatigue
- Reduced capacity for physical activity
- Need for long term medication/dietary supplementation (iron, folate, vitamin B12, vaccination, and antibiotic therapy).

On commencing palliative treatment

- What does palliative care mean?
- What treatment do you recommend?
- Why?
- Which symptoms can it help?
- How will it help?
- What is involved?
• What are the side effects/drawbacks/limitations?
• What alternatives can be considered?
• Are there any clinical trials that I should consider?
### Appendix G: Glossary of terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
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<tbody>
<tr>
<td>Achalasia</td>
<td>An oesophageal motor disorder characterised by increased lower oesophageal sphincter (LES) pressure, diminished-to-absent peristalsis in the distal portion of the oesophagus composed of smooth muscle, and lack of a coordinated LES relaxation in response to swallowing.</td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>Malignant growths of glandular tissue that can develop in the lower part of the oesophagus at the junction between the oesophagus and the stomach and in the stomach. May be associated with Barrett’s oesophagus.</td>
</tr>
<tr>
<td>Adjuvant treatment</td>
<td>Treatment used in addition to main treatment, usually radiotherapy or chemotherapy given after surgery.</td>
</tr>
<tr>
<td>Aetiology</td>
<td>The origins or causes of disease.</td>
</tr>
<tr>
<td>Anastomosis (plural, anastomoses)</td>
<td>Connection of tissues after surgical resection; the point at which the cut ends of a tube such as the oesophagus are re-joined after a section has been removed.</td>
</tr>
<tr>
<td>Anorexia</td>
<td>Loss of appetite; inability or refusal to eat.</td>
</tr>
<tr>
<td>Atrophic gastritis</td>
<td>Inflammation and shrinkage of the stomach lining.</td>
</tr>
<tr>
<td>Audit</td>
<td>A method used by service providers to measure quality of care. Results of a process or intervention are assessed, compared with a pre-existing standard, changed where necessary, and reassessed.</td>
</tr>
<tr>
<td>Barium meal/barium swallow</td>
<td>A technique used to produce images of the upper part of the digestive system. The patient swallows barium sulphate, which coats the lining of the oesophagus and stomach. The shape outlined by barium can be seen in X-ray photographs.</td>
</tr>
<tr>
<td>Barrett’s oesophagus</td>
<td>A condition in which the normal lining of the lower oesophagus is replaced by a characteristic columnar tissue as a result of damage caused by chronic reflux of stomach acid. Barrett’s oesophagus is associated with an increased risk of oesophageal cancer.</td>
</tr>
<tr>
<td>Biopsy</td>
<td>Removal of a sample of tissue or cells from the body to aid diagnosis of a disease.</td>
</tr>
<tr>
<td>Brachytherapy</td>
<td>Radiotherapy delivered within an organ such as the oesophagus.</td>
</tr>
<tr>
<td>Cardia</td>
<td>The upper (proximal) part of the stomach; close to the junction with the oesophagus.</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>The name for drugs used to treat cancer. The aim of chemotherapy is to kill cancer cells, or prevent or slow cancer cell growth.</td>
</tr>
<tr>
<td>Computed tomography (CT)</td>
<td>A specialist X-ray imaging technique.</td>
</tr>
<tr>
<td>Cytology</td>
<td>The study of the appearance of individual cells under a microscope.</td>
</tr>
<tr>
<td>Cytotoxic</td>
<td>‘cyto’ – cells; cytotoxic – toxic to cells. This term is used to describe medications that kill cancer cells or slow their growth.</td>
</tr>
<tr>
<td>Dumping</td>
<td>A syndrome that may develop after surgery to the oesophagus or stomach. It causes abdominal discomfort and diarrhoea after meals.</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>A general term for a group of common symptoms originating in the upper digestive system. It includes indigestion, heartburn, reflux, and pain or discomfort in the area of the stomach, chest or upper abdomen.</td>
</tr>
<tr>
<td>Dysphagia</td>
<td>Difficulty with swallowing.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>-------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dysplasia</td>
<td>Abnormal changes in the morphology (form, appearance or nature) of tissues.</td>
</tr>
<tr>
<td>ECF</td>
<td>Epirubicin, cisplatin and Fluorouracil (5-FU): a combination of drugs often used for chemotherapy.</td>
</tr>
<tr>
<td>Endoscope</td>
<td>A medical instrument consisting of a flexible tube with a light at the end that transmits images to aid diagnosis or therapy. A specialised endoscope may be threaded down the oesophagus to the stomach or beyond, or through an incision in the abdomen. It may also be used to take samples of tissues (biopsy) or to carry out therapeutic functions such as inserting stents.</td>
</tr>
<tr>
<td>Endoscopic mucosal resection (EMR)</td>
<td>An endoscopic technique whereby a lesion on the surface lining of the upper digestive tract can be removed for pathological examination</td>
</tr>
<tr>
<td>Endoscopic submucosal dissection (ESD)</td>
<td>A variation of EMR which allows the en bloc removal of a larger lesion in the upper digestive tract for pathological examination</td>
</tr>
<tr>
<td>Endoscopic ultrasound (EUS)</td>
<td>Imaging using high-frequency sound waves, carried out inside the body using an endoscope.</td>
</tr>
<tr>
<td>Endoscopy</td>
<td>In this guideline endoscopy refers only to examination of the upper gastro-intestinal tract (oesophagogastroduodenoscopy).</td>
</tr>
<tr>
<td>Esophagus</td>
<td>The passage between the pharynx and the stomach.</td>
</tr>
<tr>
<td>Gastrectomy</td>
<td>Surgical removal of the stomach (total gastrectomy) or a substantial part of it (partial gastrectomy).</td>
</tr>
<tr>
<td>Gastric</td>
<td>Relating to or involving the stomach.</td>
</tr>
<tr>
<td>Gastric bypass</td>
<td>A surgical manoeuvre whereby the intestine is attached directly to the stomach, so that food no longer passes through the duodenum.</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>The branch of medicine that specialises in the digestive system.</td>
</tr>
<tr>
<td>Gastroenterologist</td>
<td>A physician who specialises in diseases of the digestive system.</td>
</tr>
<tr>
<td>Gastrooesophageal reflux</td>
<td>A condition in which stomach acid rises into the oesophagus.</td>
</tr>
<tr>
<td>Gastrostomy</td>
<td>A surgical procedure to create a hole (fistula) through the body wall, leading into the stomach. Patients can be fed via a tube through this hole when the digestive tract is blocked higher up (PEG feeding).</td>
</tr>
<tr>
<td>Helicobacter pylori</td>
<td>A bacterium that lives in the stomach and may cause ulcers.</td>
</tr>
<tr>
<td>Heterogeneous</td>
<td>Of differing origins, or different types.</td>
</tr>
<tr>
<td>Histological grade</td>
<td>Degree of malignancy of a neoplasm, usually judged from its histological features.</td>
</tr>
<tr>
<td>Histological type</td>
<td>The type of tissue found in a tumour.</td>
</tr>
<tr>
<td>Histology</td>
<td>Examination of the microscopic structure of tissue.</td>
</tr>
<tr>
<td>Interventional radiologist</td>
<td>A doctor who specialises in imaging and the use of imaging techniques to guide the placement of therapeutic devices like stents inside the body.</td>
</tr>
<tr>
<td>Intestinal metaplasia</td>
<td>A type of abnormal tissue in the stomach.</td>
</tr>
<tr>
<td>Intra-luminal radiotherapy</td>
<td>See brachytherapy.</td>
</tr>
<tr>
<td>Intra-peritoneal chemotherapy</td>
<td>Chemotherapy delivered inside the abdomen (peritoneum).</td>
</tr>
<tr>
<td>Laparoscopy</td>
<td>Visualisation of the interior of the abdomen using a special type of</td>
</tr>
<tr>
<td>Definition</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Endoscope, inserted through a small incision in the abdominal wall.</td>
<td></td>
</tr>
<tr>
<td>Laparotomy</td>
<td>Surgical opening into the abdomen.</td>
</tr>
<tr>
<td>Laser treatment</td>
<td>Removal of tissue using laser. Laser treatment may be used for patients with oesophageal cancer to re-open the oesophagus when it has become blocked by tumour.</td>
</tr>
<tr>
<td>Localised disease</td>
<td>Tumour confined to a small part of an organ.</td>
</tr>
<tr>
<td>Lymph node status</td>
<td>The presence or absence of tumour in a lymph node.</td>
</tr>
<tr>
<td>Lymph nodes</td>
<td>Small organs that act as filters in the lymphatic system. Lymph nodes close to the primary tumour are often the first sites to which cancer spreads.</td>
</tr>
<tr>
<td>Magnetic resonance imaging (MRI)</td>
<td>A non-invasive method of imaging that allows the form and metabolism of tissues and organs to be visualised.</td>
</tr>
<tr>
<td>Medical oncologist</td>
<td>A doctor who specialises in the treatment of cancer using chemotherapy.</td>
</tr>
<tr>
<td>Meta-analysis</td>
<td>A form of statistical analysis used to synthesise results from a collection of individual studies.</td>
</tr>
<tr>
<td>Metastases/metastatic disease</td>
<td>Spread of cancer away from the primary site.</td>
</tr>
<tr>
<td>Neo-adjuvant treatment</td>
<td>Treatment given before the main treatment; usually chemotherapy or radiotherapy given before surgery.</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>The passage between the pharynx and the stomach.</td>
</tr>
<tr>
<td>Oesophageal obstruction/stricture</td>
<td>Narrowing of the oesophagus. Obstruction is most often due to tumour, but stricture may also result from physical damage (including surgery) or radiotherapy.</td>
</tr>
<tr>
<td>Oesophagectomy</td>
<td>Removal of part of the oesophagus.</td>
</tr>
<tr>
<td>Oesophago-gastric junction</td>
<td>The junction where the oesophagus opens into the stomach.</td>
</tr>
<tr>
<td>Oncologist</td>
<td>A doctor who specialises in treating cancer.</td>
</tr>
<tr>
<td>Oncology</td>
<td>The study of the biology and physical and chemical features of cancers. Also the study of the cause and treatments of cancers.</td>
</tr>
<tr>
<td>Palliative</td>
<td>Anything that serves to alleviate symptoms due to the underlying disease but is not expected to cure it. Hence palliative care, palliative chemotherapy.</td>
</tr>
<tr>
<td>PEG feeding</td>
<td>Feeding by a tube that leads directly into the stomach.</td>
</tr>
<tr>
<td>Peptic ulcers</td>
<td>Ulcers in the lining of the stomach.</td>
</tr>
<tr>
<td>Peritoneal disease</td>
<td>Disease (in this context, tumour) that develops on the inner surface of the abdominal cavity or on the outer surface of abdominal organs.</td>
</tr>
<tr>
<td>Peritoneum</td>
<td>The delicate membrane that lines the abdominal cavity and covers the abdominal organs.</td>
</tr>
<tr>
<td>Pernicious anaemia</td>
<td>A type of anaemia caused by abnormalities in the stomach lining.</td>
</tr>
<tr>
<td>Positron emission tomography (PET)</td>
<td>An imaging method that reveals the level of metabolic activity of different tissues. PET scans are used in diagnosis.</td>
</tr>
<tr>
<td>Post-gastrectomy syndromes</td>
<td>Problems with digestion that develop after surgical removal of all or a major part of the stomach.</td>
</tr>
<tr>
<td>Quality of life</td>
<td>An individual's overall appraisal of their situation and subjective sense of wellbeing.</td>
</tr>
<tr>
<td>Randomised</td>
<td>A type of experiment used to compare the effectiveness of different</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>controlled trial treatments</td>
<td>The crucial feature of this form of trial is that patients are assigned at random to groups that receive either the interventions being assessed or control treatments. Randomised controlled trials offer the most reliable form of evidence on effectiveness.</td>
</tr>
<tr>
<td>Radiotherapy</td>
<td>The use of radiation, usually X-rays or gamma rays, to kill tumour cells.</td>
</tr>
<tr>
<td>Radical radiotherapy</td>
<td>Radiotherapy given with curative, rather than palliative intent.</td>
</tr>
<tr>
<td>Remission</td>
<td>A period when cancer has responded to treatment and there are no signs of tumour or tumour-related symptoms.</td>
</tr>
<tr>
<td>Resection</td>
<td>The surgical removal of all or part of an organ.</td>
</tr>
<tr>
<td>Squamous cell carcinoma</td>
<td>A common type of cancer that originates in superficial layers of tissue (squamous epithelium).</td>
</tr>
<tr>
<td>Staging</td>
<td>The allocation of categories (stage I to IV) to tumours defined by internationally agreed criteria. Stage I tumours are localised, whilst stages II to IV refer to increasing degrees of spread through the body from the primary site.</td>
</tr>
<tr>
<td>Stent</td>
<td>A tubular device made of metal or polythene designed to hold open a tube or opening in the body, such as the oesophagus (oesophageal stent).</td>
</tr>
<tr>
<td>Stenting</td>
<td>Placement of a stent.</td>
</tr>
<tr>
<td>Stomach</td>
<td>An enlarged and muscular sac-like organ of the alimentary canal, the principle organ of digestion.</td>
</tr>
<tr>
<td>Tube feeding</td>
<td>Feeding through a tube leading directly into the stomach.</td>
</tr>
<tr>
<td>Tumour penetration</td>
<td>The depth of extension of tumour into tissue.</td>
</tr>
</tbody>
</table>
### Appendix H: Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC</td>
<td>Adenocarcinoma</td>
</tr>
<tr>
<td>APC</td>
<td>Argon Plasma Coagulation</td>
</tr>
<tr>
<td>ATSI</td>
<td>Aboriginal and Torres Strait Islander peoples</td>
</tr>
<tr>
<td>CALD</td>
<td>Culturally and Linguistically Diverse</td>
</tr>
<tr>
<td>CanNET SA</td>
<td>Cancer Service National Network Demonstration Program of South Australia</td>
</tr>
<tr>
<td>CCNSC</td>
<td>Cancer Clinical Network Steering Committee</td>
</tr>
<tr>
<td>CT</td>
<td>Computed tomography</td>
</tr>
<tr>
<td>EMR</td>
<td>Endoscopic Mucosal Resection</td>
</tr>
<tr>
<td>CPC</td>
<td>Clinical practice coordinator</td>
</tr>
<tr>
<td>CRT</td>
<td>Chemoradiotherapy trials</td>
</tr>
<tr>
<td>EBRT</td>
<td>External-beam radiation therapy</td>
</tr>
<tr>
<td>ESD</td>
<td>Endoscopic Submucosal Dissection</td>
</tr>
<tr>
<td>EUS</td>
<td>Endoscopic ultrasound</td>
</tr>
<tr>
<td>GI</td>
<td>Gastrointestinal</td>
</tr>
<tr>
<td>GOJ</td>
<td>Gastroesophageal junction</td>
</tr>
<tr>
<td>GP</td>
<td>General practitioner</td>
</tr>
<tr>
<td>HGD</td>
<td>High-grade dysplasia</td>
</tr>
<tr>
<td>KPI</td>
<td>Key performance indicators</td>
</tr>
<tr>
<td>MDT</td>
<td>Multidisciplinary team</td>
</tr>
<tr>
<td>N</td>
<td>Node</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-government organisation</td>
</tr>
<tr>
<td>NNT</td>
<td>Number needed to treat</td>
</tr>
<tr>
<td>pCR</td>
<td>Pathological complete response</td>
</tr>
<tr>
<td>PET</td>
<td>Positron emission tomography</td>
</tr>
<tr>
<td>SA</td>
<td>South Australia</td>
</tr>
<tr>
<td>SCC</td>
<td>Squamous cell carcinoma</td>
</tr>
<tr>
<td>T</td>
<td>Tumour</td>
</tr>
<tr>
<td>Upper GI</td>
<td>Upper gastrointestinal</td>
</tr>
</tbody>
</table>
Appendix I: Evidence levels

NHS evidence grading

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Evidence derived from randomised-controlled trials or systematic reviews of</td>
</tr>
<tr>
<td></td>
<td>randomised trials</td>
</tr>
<tr>
<td>B</td>
<td>Evidence from non-randomised controlled trials or observational studies</td>
</tr>
<tr>
<td>C</td>
<td>Professional consensus</td>
</tr>
</tbody>
</table>

NHMRC grade recommendations

<table>
<thead>
<tr>
<th>Grade of recommendation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Body of evidence can be trusted to guide practice</td>
</tr>
<tr>
<td>B</td>
<td>Body of evidence can be trusted to guide practice in most situations</td>
</tr>
<tr>
<td>C</td>
<td>Body of evidence provides some support for recommendation(s) but care should</td>
</tr>
<tr>
<td></td>
<td>be taken in its application</td>
</tr>
<tr>
<td>D</td>
<td>Body of evidence is weak and recommendation must be applied with caution</td>
</tr>
</tbody>
</table>

NHMRC designation of levels of evidence

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Evidence obtained from a systematic review of all relevant randomised</td>
</tr>
<tr>
<td></td>
<td>controlled trials.</td>
</tr>
<tr>
<td>II</td>
<td>Evidence obtained from at least one properly randomised controlled trial.</td>
</tr>
<tr>
<td>III-1</td>
<td>Evidence obtained from well designed pseudo-randomised controlled trials</td>
</tr>
<tr>
<td></td>
<td>(alternate allocation or some other method).</td>
</tr>
<tr>
<td>III-2</td>
<td>Evidence obtained from comparative studies with concurrent controls and</td>
</tr>
<tr>
<td></td>
<td>allocation not randomised (cohort studies), case-control studies, or</td>
</tr>
<tr>
<td></td>
<td>interrupted time series with a control group.</td>
</tr>
<tr>
<td>III-3</td>
<td>Evidence obtained from comparative studies with historical control, two or</td>
</tr>
<tr>
<td></td>
<td>more single-arm studies, or interrupted time series without a parallel</td>
</tr>
<tr>
<td></td>
<td>control group.</td>
</tr>
<tr>
<td>IV</td>
<td>Evidence obtained from case series, either post test or pre test and post-</td>
</tr>
<tr>
<td></td>
<td>test.</td>
</tr>
</tbody>
</table>
Attachment 1: Dataset for the Pathological Reporting of Oesophageal Carcinoma

Macroscopic findings

<table>
<thead>
<tr>
<th>Macroscopic findings</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum length of specimen</td>
<td></td>
</tr>
<tr>
<td>Length of oesophagus</td>
<td></td>
</tr>
<tr>
<td>Length of stomach</td>
<td></td>
</tr>
<tr>
<td>Greatest dimension of tumour</td>
<td></td>
</tr>
<tr>
<td>Distance to nearest distal margin</td>
<td></td>
</tr>
<tr>
<td>Distance to nearest proximal margin</td>
<td></td>
</tr>
</tbody>
</table>

Configuration of tumour:  
☐ polypoid
☐ other

Location of tumour in relation to gastro-oesophageal junction:
☐ below
☐ at
☐ above GOJ

Microscopic findings

Tumour type
☐ Squamous cell carcinoma
☐ Adenocarcinoma
☐ Other (specify) ..........................

Assessment of Grade (highest grade in any part of the tumour)
☐ Well / moderately differentiated
☐ Poorly differentiated

Local invasion
☐ T0 no tumour identified
☐ Tis high grade dysplasia
☐ pT1 invasion of lamina propria or submucosa
  ☐ T1a invasion of lamina propria
  ☐ T1b invasion of submucosa
☐ T2 invasion of muscularis propria
☐ T3 invasion beyond muscularis propria (adventitia)
☐ T4 invasion of adjacent structures

Proximal margin
☐ Normal
☐ Dysplasia
☐ Carcinoma
☐ Barrett’s mucosa

Distal Margin:
☐ Normal
☐ Dysplasia
☐ Carcinoma
Serosal involvement
☐ Present
☐ Absent

Circumferential margin
☐ Involved (including distance <1mm)
☐ Free – please specify distance in mm: ...............mm.
☐ Not assessable (when oesophageal lymph nodes removed from main specimen prior to gross pathological examination)

Vascular invasion
☐ Present
☐ Absent

Neural invasion
☐ Present
☐ Absent

Barrett’s mucosa adjacent to tumour
☐ Present
☐ Absent

Regional lymph nodes
☐ pN0 (No regional lymph node metastases)
☐ pN1 (Regional lymph node metastases)
Number of lymph nodes examined: ............
Number of positive lymph nodes: ............

Extracapsular lymph node involvement:
☐ Present
☐ Absent
☐ Not applicable (negative nodes).

Completeness of resection
☐ R0 - all margins clear
☐ R1 - macroscopically clear resection but microscopically positive margin(s)
☐ R2 - macroscopically positive margin(s)

Distant metastases
☐ Yes (specify site).........................
☐ No
☐ Unknown

Pathological staging
(y) pT.... pN... pM.... (TNM 5th edition)
(y) pT.... pN...(i+/-) pM.... (TNM 6th edition)
(“y” post neoadjuvant therapy, “i” – isolated tumour cells)
Pathological assessment of residual carcinoma – treatment effect (for patients with neoadjuvant treatment only):

<table>
<thead>
<tr>
<th>Indicate assessment:</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 0:</td>
<td>No regression</td>
<td></td>
</tr>
<tr>
<td>Grade 1</td>
<td>Dominant tumour mass with obvious fibrosis and/or vasculopathy</td>
<td></td>
</tr>
<tr>
<td>Grade 2</td>
<td>Dominant fibrotic changes with few tumour cells or groups (easy to find with 10x ocular)</td>
<td></td>
</tr>
<tr>
<td>Grade 3</td>
<td>Very few (difficult to find microscopically) tumour cells in fibrotic tissue with or without mucous substance</td>
<td></td>
</tr>
<tr>
<td>Grade 4</td>
<td>No tumour cells, only fibrotic mass (total regression or response)</td>
<td></td>
</tr>
</tbody>
</table>

COMMENTS
Attachment 2: Dataset for the Pathological Reporting of Gastric Carcinoma

Macroscopic findings

Type of specimen
- Partial gastrectomy:
  - proximal
  - distal
- Total gastrectomy
- Local resection
- Other (specify): ..................................

Specimen dimensions

<table>
<thead>
<tr>
<th></th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stomach - greater curve</td>
<td></td>
</tr>
<tr>
<td>Length of stomach - lesser curve</td>
<td></td>
</tr>
<tr>
<td>Length of oesophagus</td>
<td></td>
</tr>
<tr>
<td>Length of duodenum</td>
<td></td>
</tr>
</tbody>
</table>

Site of tumour
- Cardia
- Fundus
- Body
- Antrum
- Other (specify)..........,

Maximum tumour diameter .................mm
Distance of tumour to nearest margin .........mm

Configuration of tumour
- Polypoid, ulcerating or fungating
- Diffusely infiltrating

Microscopic findings:
- Adenocarcinoma
- Other (specify).................

Lauren classification
- Intestinal
- Diffuse/mixed

Assessment of Grade (highest grade in any part of the tumour)
- Well/moderately differentiated
- Poorly differentiated
**Local invasion**

- □ T0  No tumour identified
- □ Tis  Carcinoma *in situ*: intraepithelial tumour without invasion of lamina propria
- □ T1  Invasion of lamina propria/submucosa
- □ T2a  Invasion of muscularis propria
- □ T2b  Invasion into subserosa
- □ T3  Invasion of serosa (visceral peritoneum) without invasion of adjacent structures
- □ T4  Invasion of adjacent structures

**Proximal margin involved**

- □ Yes
- □ No

**Distal margin involved**

- □ Yes  □ No

**Circumferential margin lower oesophagus**

Involvement (< 1 mm):

- □ Yes
- □ No
- □ N/A

If no, distance of tumour to nearest circumferential margin: ………… mm

**Lymphatic/vascular invasion:**

- □ Yes
- □ No

**Lymph nodes**

- □ N0  (0 nodes)
- □ N1  (1–6 nodes)
- □ N2  (7–15 nodes)
- □ N3  (>15 nodes)

Number examined: ………
Number positive: ………

**Distant metastases**

- □ No  (M0)
- □ Yes  (M1)
- □ Unknown/cannot be assessed (MX)

**Completeness of resection**

- □ R0  all margins clear
- □ R1  macroscopically clear resection but microscopically positive margin(s)
- □ R2  macroscopically positive margin(s)

**Pathological Staging:**

(y) pT….  pN…  pM….  (TNM 5th edition)
(y) pT….  pN…(i+/-)  pM….  (TNM 6th edition)

(“y” post neoadjuvant therapy, “i” – isolated tumour cells)
Pathological assessment of residual carcinoma: Treatment effect (for patients with neoadjuvant treatment only)

<table>
<thead>
<tr>
<th>Indicate assessment:</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 0:</td>
<td>No regression</td>
<td></td>
</tr>
<tr>
<td>Grade 1</td>
<td>Dominant tumour mass with obvious fibrosis and/or vasculopathy</td>
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</tr>
<tr>
<td>Grade 2</td>
<td>Dominant fibrotic changes with few tumour cells or groups (easy to find with 10x ocular)</td>
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<tr>
<td>Grade 3</td>
<td>Very few (difficult to find microscopically) tumour cells in fibrotic tissue with or without mucous substance</td>
<td></td>
</tr>
<tr>
<td>Grade 4</td>
<td>No tumour cells, only fibrotic mass (total regression or response)</td>
<td></td>
</tr>
</tbody>
</table>

Comments: