South Australian Lung Cancer Pathway

Optimising outcomes for all South Australians diagnosed with Lung Cancer

September 2013
Development

This clinical cancer pathway was developed by the Lung Cancer Working Group under the auspices of the Statewide Cancer Clinical Network. The project was funded by CanNET SA. CanNET is a Cancer Australia initiative, funded by the Australian Government.

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The South Australian Lung Cancer Pathway was released in 2013. Information contained in this pathway may be outdated by changes in policy, the release of new data, research studies and other relevant developments after its publication.

The Statewide Cancer Clinical Network recommends readers also refer to the Cancer Council Australia Wiki Platform for up to date information and education on clinical practice guidelines.

Statement of intent

This pathway is not intended to be used as a standard of care. 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 for management must be made by the appropriate health professional(s) responsible for clinical decisions regarding a particular clinical procedure or treatment plan. This decision 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 South Australian Lung Cancer Pathway should be documented in the patient’s case notes at the time the relevant decision is made.

Navigating the document

This document contains a number of hyperlinks that you can click to navigate between relevant sections of the pathway and other important resources. Hyperlinks appear as blue and underlined copy. You can also search for keywords throughout the document by selecting CTRL+F and typing in the keyword.
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GPs play an important role in the management of patients at many
stages along this patient pathway.

The ‘GP icon’ indicates parts of the pathway of particular relevance to
general practitioners.

A factsheet of relevant information for GPs is provided in Appendix E.
ACKNOWLEDGEMENTS

The South Australian Lung Cancer pathway was developed by the Lung Cancer Working Party of the Statewide Cancer Clinical Network.

Thanks are extended to the clinicians, consumers and non-government organisation contributors to the working party for the personal time and energy afforded to this project.

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EXECUTIVE SUMMARY

BACKGROUND

Lung cancer is the most common cause of cancer related death in Australia and in South Australia (SA) contributes to approximately 19% of all cancer deaths.

Lung cancer is a major health concern in Australia and places a large burden on the community and health service. Currently outcomes are poor as the majority of people have advanced and incurable disease at diagnosis.

A multidisciplinary holistic approach to care is crucial for people diagnosed with lung cancer. Optimal management is achieved through coordinated service provision between health professionals at private and public hospitals, general practitioners (GPs), Aboriginal Health Services, community controlled organisations, community and palliative care services.

Patients with lung cancer can require specific clinical and supportive care due to the complexity of their disease, symptom distress and the impact of the tumour and its treatment on, social interactions and work capabilities.

LUNG CANCER PATHWAY

Purpose

The South Australian Lung Cancer Pathway was developed through a collaborative effort by lung cancer specialist practitioners, generalist staff and consumers, under the auspices of the SA Cancer Clinical Network. It outlines requirements and recommendations for the management of patients with lung cancer, based on current evidence for the provision of best practice and consistent care.

The pathway is a statement of consensus based on current evidence and accepted approaches to the management of lung cancer. Recommendations should be followed subject to the health professional’s independent medical judgment and the patient’s preference in each individual case.

It should be noted that not all patients will progress through each step of the pathway. This is a consequence of many factors, including disease outcomes, management decisions and patient decisions.

Scope

The requirements and recommendations outlined in this pathway relate predominately to small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC). The pathway does not address the management of other malignant lung disease, such as mesothelioma or secondary cancers that have spread to the lungs. The pathway does not address the public health issues associated with smoking.
Navigating the pathway

The following icons are used in this pathway.

The ‘red-flag’ indicates signs and symptoms for earlier detection to expedite referral, treatment and access to supportive care, and maximise quality of life of persons diagnosed with lung cancer.

The ‘GP icon’ indicates parts of the pathway of particular relevance to general practitioners.

SOUTH AUSTRALIA CANCER PATHWAY KEY PERFORMANCE INDICATORS

The SA Cancer Pathway Key Performance Indicators (KPIs) are drawn from the state-wide Performance Indicator Framework for SA Cancer Services (2010). These overarching KPIs provide a standardised framework for annual reporting by Local Health Networks to the SA Cancer Service.

- 100% of patients with an urgent new cancer referral from their general practitioner (GP) see the specialist within 2 weeks.
- 100% of patients diagnosed with cancer have documented clinical staging.
- 100% of patients are offered enrolment in clinical trials where available.
- 100% of patients commence treatment within 42 days of confirmed tissue diagnosis.
- 100% of patients who are admitted to hospital have an advance care directive.
- 100% of patients have a treatment summary (or discharge summary) sent to their nominated GP within 2 days of completion of the treatment episode.
- 100% of relapsed/progressive disease patients have a documented multidisciplinary care plan resulting from a multidisciplinary team meeting.
- 100% of patients have a documented survivorship plan on completion of treatment.
KEY RECOMMENDATIONS

The three pathway recommendations below reflect the priorities and strategic direction of the lung cancer pathway in developing a quality service for patients with lung cancer, their families and carers in SA.

A complete list of recommendations relating to the diagnosis, treatment and supportive care of patients with lung cancer in SA are included at the end of each section, and in Appendix A.

<table>
<thead>
<tr>
<th>Pathway recommendation</th>
<th>Service / system recommendation</th>
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<tbody>
<tr>
<td>Establish and maintain state-wide systems for the collection and analysis of lung cancer patient data.</td>
<td>&gt; Develop a SA state-wide integrated data base that captures minimum data of all persons with a diagnosis of lung cancer.</td>
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<tr>
<td></td>
<td>&gt; Maintain a complete database of lung cancer cases to assist with audit and the development of local evidence and local research and outcomes relevant to the local population.</td>
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<tr>
<td></td>
<td>&gt; All treatment outcomes are reported, reviewed and measured.</td>
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<tr>
<td></td>
<td>&gt; Initiate a process for centralised review and reporting of KPIs and benchmarks of both clinical and service outcomes.</td>
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<td>&gt; All patients diagnosed with lung cancer are managed within a multidisciplinary approach to care.</td>
</tr>
<tr>
<td>Every person diagnosed with lung cancer should have an identified care coordinator along the continuum of care to ensure that care aligns with pathway recommendations.</td>
<td>&gt; Implement and evaluate the state-wide lung cancer pathway and recommendations.</td>
</tr>
<tr>
<td></td>
<td>&gt; Patients with lung cancer should have their cancer journey streamlined by appropriate triage of referrals based on need. Lung cancer care must be coordinated. Care should be coordinated by a responsible health practitioner who will facilitate appointments, referral to social/cultural supports, and provide supportive care from diagnosis during treatment through to follow up, survivorship and referral for end-of-life care.</td>
</tr>
<tr>
<td></td>
<td>&gt; Determine the number of specialist cancer nurses and/or nurse practitioners to provide specialist cancer nursing care based on the volume and complexity of patients and the number of services/sites covered.</td>
</tr>
<tr>
<td></td>
<td>&gt; Early referrals to allied health professionals to maximise wellness and to promote self-management strategies and resources.</td>
</tr>
<tr>
<td></td>
<td>&gt; Assessment is undertaken at key points according to need to support primary health, community engagement and hospital avoidance.</td>
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</table>
1. INTRODUCTION

Comprehensive cancer pathways provide evidence-based recommendations to guide best practice and consistent care in the management of patients diagnosed with cancer in South Australia.

1.1 ABOUT CANCER PATHWAYS

Comprehensive cancer pathways improve and standardise cancer care for all South Australians regardless of their location, origin, age or financial status. The pathways encourage the integration of clinical and supportive care with the associated considerations and key requirements for providing cancer services in SA.

Each cancer pathway is developed to guide delivery of optimal and consistent care and support of cancer patients and their families across SA. Each pathway is underpinned by the key principles of cancer care:

- patient-centred care
- safe and high-quality care
- multidisciplinary care
- supportive care
- care coordination.

Further information on the key principles of cancer care is provided in Appendix B.

Cancer pathways and their recommendations have been developed for the guidance of:

- health professionals involved in the management of patients with cancer; including public and private health professionals, general practitioners and dental practitioners
- SA Health, the Cancer Clinical Network Steering Committee (CCNSC) and associated committees and working groups
- Local Health Networks in South Australia including: Country Health SA Local Health Network; Central Adelaide Local Health Network; Northern Adelaide Local Health Network; Southern Adelaide Local Health Network; and Women’s and Children’s Health Network
- Aboriginal community-controlled health services
- cancer care projects
- stakeholders at non-government organisations (NGOs).
Aboriginal and Torres Strait Islander Companion Document to the Statewide Cancer Control Plan

There is a significant difference in the burden of cancer for Aboriginal and Torres Strait Islander people in Australia due to poorer identification of cancer, higher incidence of preventable cancers, and higher comorbidities that can limit treatment options.

The Aboriginal and Torres Strait Islander Committee of the SA Cancer Clinical Network has developed an *Aboriginal and Torres Strait Islander Companion Document to the Statewide Cancer Control Plan (2011–2015) and Cancer Care Pathway*, to provide **clear direction on approaches to improve outcomes for Aboriginal and Torres Strait Islanders** in South Australian with a cancer diagnosis.


1.2 INTRODUCTION TO THE SOUTH AUSTRALIAN LUNG CANCER PATHWAY

The *SA Lung Cancer Pathway* is a guide to the optimal management and care of patients diagnosed with lung cancer. This pathway is a statement of consensus based on current best practice, evidence and accepted approaches to lung cancer treatment and management. It has been developed through a collaborative effort of a wide range of health professionals including lung cancer specialists, generalist staff and consumers.

<table>
<thead>
<tr>
<th>Aims of the SA Lung Cancer Pathway</th>
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<tbody>
<tr>
<td>&gt; To provide guidance and consistency of practice in patient management and to reduce the variation in current practice observed throughout South Australia.</td>
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<tr>
<td>&gt; To encourage early, appropriate referral and early diagnosis in the general population and in high risk groups.</td>
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<tr>
<td>&gt; To support information provision and decision making tailored to patient’s needs.</td>
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<tr>
<td>&gt; To encourage provision of psychosocial care, including assessing and responding to emotional, psychological, spiritual, social and familial requirements.</td>
</tr>
<tr>
<td>&gt; To ensure that all patients with lung cancer are offered the best chance of cure or palliation irrespective of where they present or are treated.</td>
</tr>
<tr>
<td>&gt; To optimise coordinated care delivery for lung cancer patients at all stages of their disease.</td>
</tr>
<tr>
<td>&gt; Particular attention needs to be paid to the specific needs patients from regional and remote South Australia, and patients from culturally and linguistically diverse backgrounds.</td>
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The *SA Lung Cancer Pathway* promotes a consistent and standardised approach to managing care, to ensure that people affected by lung cancer experience coordinated care. As treatment modalities for patients with lung cancer become increasingly complex, a coordinated service provision between private and public hospitals, GPs, community and palliative care services is essential.

People affected by lung cancer have diverse and complex clinical and supportive care needs.

**Figure 1.1 illustrates the expected steps and optimal care requirements for the person with lung cancer.** It is acknowledged that many people affected by lung cancer may not follow every step of the pathway, due to variations in clinical presentation that will influence individual decisions about care.
Figure 1.1 Lung cancer pathway flowchart

**Prevention and Minimising Risk**
- Promotion of healthy lifestyle (smoking cessation, healthy diet, healthy weight, limiting alcohol intake)
- Reducing risky behaviours (smoking cessation, ‘sun smart’ behaviours)

**Presentation + Early Detection**
- Patient seeks advice/medical review of symptoms
- GP recognises ‘red flag’ symptoms of lung cancer
- GP conducts initial assessment and referral

**Referral**
- GP refers to a specialist respiratory health professional for triage to screening
- The most rapid form of referral technology should be used (e.g. Enterprise Patient Administration System or EPAS)

**Diagnosis + Staging**
- Data sets for presentation at MDT meetings includes:
  - physical examination, weight loss, and ECOG performance status
  - routine FBE, biochemistry, coagulation studies
  - chest X-ray, CT (Chest and upper abdominal to include adrenals)
  - bronchoscopy and biopsy
  - FDG/PET
  - CT FNA
  - Pulmonary function tests.

**Presentation at Multidisciplinary Meeting**
- Assessment of diagnosis and staging results
- Individualised treatment recommendations
- Feedback to GP

**Treatment**
- Surgery
- Chemotherapy
- Radiotherapy
- Clinical trials
- Palliative care
- Complementary therapies

**Follow-up**
- Systematic post-treatment surveillance
- End of treatment summary to GP and patient

**Survivorship**
- Long-term monitoring

**Disease Recurrence**
- Reassessment of disease status
- Referral back to MDT

**Palliative Care**
- Patient-centred approach
- Referral to specialist care services

**Transition to End of Life Care**

**Key Performance Indicators**

**Time Frame**

**Day 1**
- 7–14 days from clinical suspicion to completion of simple investigations

**Referral Before Day 14**
- Referral to respiratory health professional within 14 days
- Molecular diagnosis completed within 7 day of Specialist respiratory referral*
- Staging completed within 7 days of molecular diagnosis
- Stage 4 patients referral to palliative care

**Treatment Starts by Day 42**
- 100% of lung cancer cases presenting to the health service are presented at the MDT meeting with treatment recommendations documented

*Confirmation of molecular diagnosis can take more than 7 days. Delay in molecular diagnosis will affect timeline for staging and presentation at the MDT meeting.
1.3 FURTHER INFORMATION

> Appendix C: Recommended Key Performance Indicators (KPIs). This represents the priority performance measures required to close the gaps in current lung cancer care.
2. LUNG CANCER IN SOUTH AUSTRALIA

Lung cancer occurs when abnormal cells in one or both lungs grow in an uncontrolled way. The most common form of lung cancer is non-small cell lung cancer (NSCLC) (predominantly adenocarcinoma and a minority of squamous cell carcinoma). Almost 20% of lung cancer cases are small cell lung cancer (SCLC).²

The primary cause of lung cancer is cigarette smoking (reported as an association for 80–90% of cases).³,⁴ Other factors include occupational exposures, such as asbestos, ionising radiation, petroleum, chromates, nickel and arsenic.²–⁵ Ongoing molecular and cellular oncology research aims to identify people at higher risk of developing lung cancer, including non-smokers.²

2.1 INCIDENCE AND TRENDS

In 2007, 8989 new cases of cancer were diagnosed in South Australia. At this time, the incidence rate for lung cancer among South Australians was 40 cases per 100,000. Incidence rates were higher in men than women, with a rate of 52.3 cases per 100,000 for men and 31 cases per 100,000 for women.⁶

Incidence rates for lung cancer decreased in men and increased in women between the period from 1977 to 2005 (Figure 2.1 and 2.2). Despite the decrease in incidence seen in men, it is still significantly higher than that seen for women. The decrease in lung cancer incidence in men is due to the decrease in tobacco smoking that has occurred since the 1970s.⁵

Figure 2.1 Incidence and mortality in Men; 1977 – 2005
2.2 MORTALITY AND SURVIVAL

In 2007, there were 3466 deaths from lung cancers in South Australia, accounting for 2.3% of all cancer deaths.\footnote{7}

Survival outcomes vary depending on age at diagnosis and stage of disease, but are relatively poor at any stage, with 5-year survival at 13%.\footnote{9} Outcomes have improved only marginally over time (Figure 2.3).\footnote{6}

Figure 2.3 Survival from lung cancer (SA, 1997–2003)
2.3 ABORIGINAL AND TORRES STRAIT ISLANDER POPULATIONS

Lung cancer is the most common cancer among people from Aboriginal and Torres Strait Islander communities.⁵,⁶

People from Aboriginal and Torres Strait Islander communities in South Australia have a higher incidence of lung cancer compared with those from non-Indigenous backgrounds. This applies in particular to women, in whom the incidence is almost twice that seen for non-Indigenous women.

2.4 ETHNIC AND SOCIOECONOMIC DIFFERENCES

South Australians born overseas have an incidence of lung cancer almost a third higher than those born in Australia, with the highest rates seen in people from the United Kingdom/Ireland and Northern Europe, and the lowest rates seen in people from Asia, the Middle East and Southern Europe.¹,⁵,⁶

Higher incidence rates are typically found in the lower socioeconomic areas of Adelaide.⁵

2.5 FURTHER INFORMATION


RECOMMENDATIONS

> Service providers should promote the use of culturally appropriate health preventative information (e.g. smoking cessation) available from Aboriginal Health Council of South Australia, and Aboriginal and Torres Strait Islander Liaison Unit at specific local hospitals.

> Collection of defined national minimum dataset on all lung cancer patients should be mandated through a national model.
3. MULTIDISCIPLINARY AND COORDINATED TEAM CARE

Multidisciplinary care is a team approach to health care that it is required for effective treatment planning and on-going management of cancer.

3.1 OVERVIEW OF MULTIDISCIPLINARY CARE

A central component of multidisciplinary care is the multidisciplinary team (MDT) treatment planning meeting. MDT meetings, held face-to-face or via tele- or video-conference, bring together health professionals from diagnostic, treatment and support disciplines with relevant expertise to plan care or treatment for all patients. Membership of the MDT for lung cancer is discussed in Chapter 9.

Multidisciplinary care is essential for all patients, regardless of location (rural/metropolitan) or insurance status (public/private). A team approach facilitates enhanced interaction and coordination between health professionals involved in the care of patients with cancer, as well as increased patient satisfaction.

The approach to multidisciplinary care is underpinned by five core principles:

- A team approach
- Communication among team members
- Access to the full range of therapeutic modalities for all patients, regardless of geographical remoteness or size of institution
- Provision of care in accordance with agreed standards/pathway
- Involvement of patients in decisions about their care.

Further information on benefits and principles of MDC is provided in Appendix D.

3.2 ROLE OF THE GENERAL PRACTITIONER IN THE MANAGEMENT OF PEOPLE WITH LUNG CANCER

GPs play an important role in the early detection, treatment and follow-up care of patients with cancer and in communication of prevention messages.

Early detection of cancer through recognition of symptoms, appropriate and timely referral to specialist care and establishment of partnerships with cancer specialists can ensure GPs play a critical role in the quality care, treatment and survivorship for cancer patients.

The role of the GP is paramount in the clinical and supportive aspects of care outlined below.

A factsheet of relevant information for GPs is provided in Appendix E.
### Clinical care\(^{11,12}\)

**Early detection, investigation and referral**
- Recognition of signs/symptoms
- Documentation of history and clinical findings
- Responsibility for initiating and review of results of initial investigations
- Use GP diagnostic flow chart
- Prompt referral to appropriate specialist using GP referral form
- GPs may wish to attend and participate in MDT meetings

**Throughout treatment and post-treatment surveillance**

Liaison with specialist, possible roles include:
- Patient assessment
- Pre-chemotherapy assessment,
- Haematological and biochemical status (particularly in rural areas)
- Monitoring of toxicities

**Post-treatment surveillance**
- Use of protocols that require regular tests/investigations
- Monitoring of symptoms, including prompt referral back to specialist
- Monitoring of long-term complications that arise from chemotherapy, radiotherapy and surgery, reviewing and referring to supportive cancer services as required

### Supportive care\(^{10}\)

**Throughout treatment and post-treatment**
- Patients should be informed and educated of suspected diagnosis and possible treatment options
- Ensure rural/remote patients receive additional information regarding services
- All individuals, particularly those at high risk, i.e. economically disadvantaged, intellectually challenged, mental health issues, limited or no family support, culturally diverse populations, adolescent and young adult (AYA) or geriatric, and rural/remote locations should be provided on going psychosocial support and referral as required
- Ensure patients have access to supportive organisations
- Development of mental health plan and input from psychologist to assess for anxiety and other psychological symptoms

**Support for caregivers**
- Provide support to patient’s caregiver/s

**Palliative care and end-of-life**
- GP has a particular role in palliative and end of life care given their awareness of the whole person, the needs of the family and the context of their life\(^{17}\)

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A factsheet of relevant information for GPs is provided in [Appendix E.](#)
3.3 OVERVIEW OF COORDINATED CARE

Patients with cancer should have their cancer journey streamlined by a recognised coordinator, who will facilitate referral for supportive care from diagnosis throughout the treatment course.

A range of models for cancer care coordination have been established in recent years, with a general consensus that coordinated care assists in ensuring safety and quality outcomes in health care.

Coordinated care can be provided by any health professional on the multidisciplinary team or other members of the hospital support staff. A coordinator provides a central contact point for patients with cancer, their family members and the treating team. Coordination critically underpins the delivery of appropriate care.

The provision of coordinated care can involve clinical and/or supportive care components, and requires:

- highly developed communication and psychosocial skills to recognise a patient's non-clinical needs as well as problems directly associated with cancer treatment
- a strong knowledge base in the management of lung cancer
- knowledge of the system in order to streamline timely referrals, and focus on support and care for the patient throughout the lung cancer journey.

**Clinical care**

- Coordination with other health professionals to streamline the patient journey
- Triage and coordination of investigations
- Care consistent with evidence-based guidelines
- Prompt referral to specialist, allied health and support services

**Supportive care**

- Providing timely and consistent information for patients and their families
- Point of contact for patients along their cancer journey
- Assessment and screening of patients for clinical and supportive needs and to identify people at risk of adverse clinical or psychosocial outcomes
3.4 FURTHER INFORMATION


- Cancer Council SA, Helpline for referral to counselling (or call 13 11 20) [http://www.cancersa.org.au/aspx/Patient_information_and_resources.aspx#Counselling](http://www.cancersa.org.au/aspx/Patient_information_and_resources.aspx#Counselling)


- Chapter 10: Presentation at lung cancer multidisciplinary meetings

3.5 RECOMMENDATIONS

- All patients with a lung cancer diagnosis should have access to a specialist respiratory health professional or cancer care coordinator along the cancer journey. These roles should be incorporated on sites with a lung cancer MDT.

- Cancer Council resources should be used as standard practice, and include the brochure ‘A multidisciplinary team approach to cancer care’.
4. SUPPORTIVE CARE

Supportive care addresses the physical, emotional and practical needs of the cancer patient. Supportive care requires generalist and specialist health services to provide support to people with cancer and their families and/or caregiver/s. Collaboration between all members of the multidisciplinary team is essential and all needs must be addressed in a culturally and linguistically appropriate manner. Further details on the principles of supportive care are provided in Appendix F.

Psychosocial support and referral to supportive care services is vital for all people in the community affected by cancer. Increased support maybe required for those with a number of risk factors such as a history of intellectual impairment or mental illness and/or economic disadvantage, people with little or no family or community support, others who may live in rural/remote locations along with indigenous and non-English speaking community members.

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

A screening tool, such as the NCCN Distress Thermometer, can be used to identify any physical, emotional and practical factors that may be causing a patient to experience distress. A detailed assessment of supportive care needs should be conducted on patients at high risk of distress to help identify those who require more specific one-to-one intervention and follow-up.

Following assessment, patients should be referred to an appropriate supportive care professional, such as a specialist nurse, psychologist, allied health professional or social worker. When required, it is important to ensure patients and their caregiver/s have access to, an interpreter, culturally appropriate resources and support.

This chapter of the pathway explores suggested management for common supportive care needs. Self-management strategies, such as relaxation techniques and meditation, may also be beneficial.

4.1 PHYSICAL NEEDS

Cancer and cancer treatments can often cause a variety of physical side effects and changes to a patient’s physical appearance. Patients with physical supportive care needs require referral to a specialist nurse or to a community support group.

Fatigue

Fatigue is a common and debilitating side effect of cancer and its treatments. Many factors contribute to fatigue, including immobility, sleep disorders, poor nutrition and reduced performance status. It is often experienced along with treatable factors, such as pain, nausea, anxiety, anaemia, medication side effects and other health related co-morbidities.

Fatigue affects physical, recreational and social activities, and can lead to delays in treatment, dose reductions or even discontinuation of therapy. Some patients report that fatigue is extremely distressing and has a negative impact on quality of life – more so than other symptoms, such as pain, nausea and depression.

All patients should be screened for presence and level of fatigue at regular intervals using a simple
validated tool, such as a visual analogue scale (VAS) 0-10 (0 no fatigue, 10 worst fatigue imaginable). Other tools can be used to measure the impact of fatigue.

Management of fatigue should target the contributing factors, with appropriate treatment and referral to appropriate specialists. Evidence has shown that exercise interventions can have the strongest therapeutic benefit. Patients should be encouraged to maintain physical fitness and functional mobility by participating in a regular exercise regime during and after treatment.

Provision of patient and family education about this symptom can allay anxiety.

Pain

Pain is common in patients with cancer, and can be described in terms of soft-tissue pain, bone pain or neuropathic pain.

It is vital to determine the underlying cause of pain in order to direct treatment. Interventions may include opioids, relaxation therapy, massage, and educational programs aimed at enhancing pain control. Radiotherapy is often helpful for localised pain, such as that associated with bone metastases or neural impingement.

Severe pain that is difficult to control generally requires specific pain management from acute and/or chronic pain specialists.

Important principles of pain management are outlined in the Therapeutic Guidelines Palliative Care Version 3, 2010.

Memory and cognitive disturbance

Patients treated with chemotherapy and radiation therapy may experience alterations in cognitive function. A baseline assessment of cognitive function is important to rule out subtle manifestations of metastatic disease and to identify the need for strategies such as repetition of information.

Fertility

Certain cancer treatments can affect a patient’s fertility. The likelihood of infertility in males, and infertility and/or premature menopause in women should be addressed as a component of the education and informed consent prior to treatment commencing.

All patients of reproductive age or younger should have fertility preservation options discussed/offered. Sperm, ovarian tissue or egg banking may be suggested.

If pregnancy is an option for particular patients after treatment, it is important to ensure that counselling addresses the issue of a potential reduced timeframe of fertility.

Discussion and referral to social worker, gynaecologist, psychologist or psychiatrist may be appropriate.

Oral health

Chemotherapy for any cancer type, blood and marrow transplantation and radiation in the area of the lung can cause oral complications ranging from dry mouth to infections that can interrupt treatment regimens.

Close monitoring of oral health is recommended before, during and after treatment for cancer to reduce the severity of complications, optimise treatment and enhance patient quality of life.

Where oral health is of particular concern, collaboration and input from a special needs dentist is recommended as part of the MDT.
4.2 EMOTIONAL NEEDS

Being diagnosed and treated for cancer can affect a patient’s emotional wellbeing. Patients experiencing high levels of emotional distress are at risk of developing symptoms including anxiety and depression. Referral to a psychologist or psychiatrist is likely to be appropriate.

Depression

Patients undergoing treatment for cancer may experience physical and emotional stress and may continue to feel exhausted and depressed for long periods. Depression is linked to poor quality of life, increased length of hospital stay and poor coping skills. Each of these issues affects morbidity outcomes.

Regular screening and ongoing monitoring for depression by health professionals as part of long-term follow-up care is required. Referral to a psychologist or psychiatrist may be appropriate.

Body image

Body image is the way a person feels about their appearance. Some cancer treatments can cause physical changes to a patient’s body, such as hair loss, scars from surgery, loss of a body part, changes to the skin, weight gain or weight loss. Physical changes can result in poor body image.

Patients should be provided with individualised and accurate information about any expected physical changes before treatment.

Support and counselling by a specialist psychologist, psychiatrist or social worker may assist patients to make appropriate treatment decisions that incorporate the potential effect on their appearance.

Sexuality

Sexuality encompasses not only the physical aspects of sexual function, but also refers to how people view themselves and express themselves sexually and how they believe others see them.

Some effects may be temporary, while others are permanent. Physical problems may include low libido, dyspareunia and impotence. Other issues affecting sexuality include coping with changes in appearance, low self-esteem and changes in roles and relationships. Issues of sexuality should be raised with all patients, and identification and referral to a counsellor with expertise in the area may be required.

4.3 PRACTICAL NEEDS

Patients experiencing social, financial or practical issues, or who have minimal social supports, require referral to a social worker or welfare worker.

Social, financial and practical needs

Patients may experience a range of social, financial and practical needs. This can include patients travelling from rural and remote areas who may require assistance with travel and accommodation, such as assistance through the Patient Assistance Transport Scheme (PATS).

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

Clinicians referring patients from rural and remote communities for treatment and support services need to ensure that the patient and their family members are informed about assistance for travel and accommodation costs.

A cancer care coordinator can provide a link to the multidisciplinary team for rural patients and specialist rural nurses can provide access to programs or interventions requiring psychological support. Remote technology providing patients with access to counselling, and enhancement of skills of rural nursing staff have been demonstrated to improve psychological support.

Advanced Care Planning

Advanced care planning allows people make their preferences for important health care and personal decisions known in the event that they lose decision-making capacity. Advanced care planning should be discussed with patients following a cancer diagnosis and early in the course of their disease. Advanced care planning may involve:

- discussing prognosis and possible future scenarios
- appointing of a substitute decision maker, and involving this person in on-going discussions
- deciding on current and future goals of care
- discussing patient choice for place of care
- documenting all discussions in an easily retrievable format.

Patients should be supported to discuss life goals, values and personal views and choices about their preferred outcome of care with a trained professional, family and/or close friend.

Communicating with patients and carers

Patients and their carers require both verbal and written information to assist them in understanding details about the disease, reasons for and likely effects of diagnostic procedures, treatment options (including known risks and potential adverse effects), preventative actions, and information about effective coping strategies.

This information should be culturally appropriate, and individualised where possible. People for whom English is not a first language may require access to a qualified interpreter during verbal communication.

It is recommended that health professionals ask patients whether they want additional information and discuss how much they wish to be involved in decisions about treatment. Family members, carers and/or others should be encouraged to attend consultations to provide support. Specific instructions for self-care may help patients and family members to maintain their desired level of independence throughout the cancer care journey.

All health professionals involved in a patient’s care 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 notes and given to the patient’s GP, together with a comprehensive summary of the management plan. Communication needs to be effective, with fast and efficient links between hospitals and primary care teams.
4.4 RESPECTING DIVERSITY

People from Aboriginal and Torres Strait Islander backgrounds

People from Aboriginal and Torres Strait Islander backgrounds represent approximately 2% of the South Australian population. Just over half live in rural and remote areas, particularly areas to the north of Adelaide. This number is approximately double the state average of 25% for all South Australians.

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. Aboriginal and Torres Strait Islander people also have unique supportive care considerations associated with their cultural concept of health and wellbeing, needs for the delivery of health services, the involvement of family and community in health care and the cultural understanding of cancer.

The unique consideration for the care of Aboriginal and Torres Strait Islander populations are detailed in Box 4.1 overleaf.
Box 4.1 Considerations for the care of Aboriginal and Torres Strait Islander populations

**Aboriginal and Torres Strait Islander people have an holistic view of health and wellbeing**

- Health and wellbeing encompasses all aspects of physical, emotional, social, spiritual and cultural wellbeing and a specific kinship with family.\(^{35,36}\)

- There is a belief that wellbeing is determined socially, rather than biologically or pathologically.\(^{37,38}\)

**Structured and busy specialist clinical services may not cater well for the cultural needs of Aboriginal and Torres Strait Islander people**

- This can contribute to a broader sense of disillusionment, indifference and apathy.

- Adherence to unfamiliar treatments that have unpleasant side effects may be poor, especially when there are competing pressures to meet community responsibilities.

- Without cultural and allied support, patients can become lost in unfamiliar health service environments they do not understand and where their needs are poorly understood.

**Many Aboriginal and Torres Strait Islander people experience discomfort with health professionals of the opposite gender**

- There are divisions in the roles of ‘men’s and women’s business’, including differences from western values in relation to reproduction and sexuality.\(^{39}\)

- For example, it is often not appropriate for Aboriginal and Torres Strait Islander men to discuss any part of their body in the presence of a woman.\(^{40}\)

**Family and community involvement in health decision making is of paramount importance in Aboriginal and Torres Strait Islander culture**

- Aboriginal and Torres Strait Islander culture places a high importance on kin, with holistic, family-based care being valued over segregated care.\(^{41}\)

- Aboriginal and Torres Strait Islander health is more a collective consideration about family and community.\(^{42,43}\)

**Many Aboriginal and Torres Strait Islander people have a strong sense of home, and value being at home or close to home, particularly when ill**\(^{40}\)

- Aboriginal and Torres Strait Islander people have strong links to the land and a sense of ‘home’.\(^{44}\) This connection can be strong regardless of whether they are living a culturally-traditional lifestyle in remote locations, or in urban areas.

- Some patients may be reluctant to leave their community for treatment, even though this care may only be available in a remote urban setting.\(^{44}\)

**The concept of cancer may be poorly understood by some Aboriginal and Torres Strait Islander people, leading to a number of misconceptions**

- It is notable that there is no word meaning ‘cancer’ in most, if not all Aboriginal and Torres Strait Islander dialects. Unlike many other illnesses, the concept of cancer is not embedded in traditional Aboriginal and Torres Strait Islander story-telling.\(^{42}\)

- While cancer ‘spreading’ is widely understood, there is commonly a difficulty in understanding biomedical cancer language and pathology terminologies.\(^{42}\)

- Common misconceptions are that cancer is contagious, only effects non-Aboriginal people, is curable without treatment, and that western treatment is ineffective.\(^{42,45}\) It is commonly believed that a diagnosis of cancer is a death sentence, and that cancer is not treatable.
When managing the health care of Aboriginal and Torres Strait Islander people, it is important to include the input of those who are familiar with the Aboriginal and Torres Strait Islander culture and language.46

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.

Engaging cultural and allied support can:

> help Aboriginal and Torres Strait Islander people navigate unfamiliar health service environments
> provide advice on culturally safe and respectful care to MDTs
> assist in understanding of the needs of Aboriginal and Torres Strait Islander people residing in rural and remote areas.

Culturally and linguistically diverse communities

Australia has one of the most culturally diverse communities in the world. In 2011, one in four of Australia’s population was born outside of Australia.47 It is therefore essential to consider the culturally and linguistically diverse needs of all people in relation to diagnosis, treatment and management of cancer.48

All patients are individuals and require a person-centred 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.49 These aspects are connected to a successful health care experience and outcomes.

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. The unique considerations for the care of culturally and linguistically diverse populations are detailed in Box 4.2.

**Box 4.2 Unique consideration for the care of culturally and linguistically diverse populations**

<table>
<thead>
<tr>
<th>People may have a variety of cultural perspectives or preferences, including:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; patient preference to see a medical professional of their own sex</td>
</tr>
<tr>
<td>&gt; myths and misconceptions about cancer diagnosis</td>
</tr>
<tr>
<td>&gt; cancer may be a taboo subject perceived to cause discrimination, contamination, shame or retribution</td>
</tr>
<tr>
<td>&gt; religion may play a fundamental role in the person’s attitude towards their disease and treatment</td>
</tr>
<tr>
<td>&gt; patients may have perceptions attributed to pain and suffering</td>
</tr>
<tr>
<td>&gt; family and extended family have a central role in many cultures. Family members often share rights and responsibilities for decision-making and this may influence the choice of treatment.</td>
</tr>
</tbody>
</table>

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.
4.5 FURTHER INFORMATION

- **Appendix G** lists **cancer resources and services** in South Australia.
- **Appendix H** outlines the **process for referral of patients to psychosocial care**.
- Cancer Voices South Australia, a volunteer organisation that **serves as a consumer advocate for people living with cancer**: [http://www.cancervoicessa.org.au/](http://www.cancervoicessa.org.au/)
- National Comprehensive Cancer Network (NCCN), **Clinical Practice Guidelines in Oncology Cancer-Related Fatigue**: [www.nccn.org](http://www.nccn.org)
- Bolimos M, 2009, **Coping with cancer related tiredness (fatigue)**, published by the Royal Adelaide Hospital (Occupational Therapy Department and Cancer Centre).
- Eastern Cooperative Oncology Group assessment tool: [http://ecog.dfcio.harvard.edu/general/perf_stat.html](http://ecog.dfcio.harvard.edu/general/perf_stat.html)
- Chris O’Brien Lifehouse at RPA, **An everyday guide to living with cancer in Australia**, includes a detailed Support Directory: [http://www.lifesupportmagazine.co.au](http://www.lifesupportmagazine.co.au)
- Cancer Council SA, **Cancer Helpline**: 13 11 20

**RECOMMENDATIONS**

- Health professionals should be trained in supportive care screening to encourage inclusion of supportive care issues as part of multidisciplinary care.
- The NCCN Distress Thermometer in automated electronic (touch-screen) format may be used to screen patients with results scored and transcribed so that information is readily available to guide the consultation. QUICATOUCH has been found to be effective in monitoring patients and increasing the number of new patients receiving timely and appropriate psychological treatment.
5. SUPPORTIVE CARE NEEDS OF PATIENTS AFFECTED BY LUNG CANCER

The supportive care needs of patients with cancer vary in complexity and severity along the disease trajectory. Some supportive care needs are common to many cancers (See Chapter 4), while others are specific to lung cancer. Patients with lung cancer can experience a number of side effects that result in specific physical, psychosocial, nutritional and communication supportive needs.

Patients with lung cancer experience more symptom distress than patients with other cancers and have a higher incidence of unmet supportive care needs. Early referral to allied health providers can enhance quality of life.

The multidisciplinary team should work closely together to support patients with lung cancer. It is essential that there are established systems for communication and information sharing between all team members.

5.1 SPECIFIC SUPPORTIVE CARE NEEDS FOR PATIENTS WITH LUNG CANCER

Functional assessment

Functional impairment is common in patients with lung cancer and requires recognition, ongoing support and management in both acute and community settings. Functional decline may be due to lethargy, generalised weakness, deconditioning and reduced mobility. This can cause a loss of independence and increasing dependence on family and/or carers.

A functional assessment should be undertaken regularly by a health professional who can undertake appropriate referrals. The assessment requires attention to physical symptoms as well as the functional capacity of the patient. Referrals may be required to a:

- physiotherapist to assist in maintaining current physical function
- occupational therapist to assist with home and lifestyle modifications to promote independent living, as well as energy conservation techniques to improve quality of life and independence
- dietitian to provide advice on appropriate nutrition
- social worker to assist with the financial impact and loss of independence associated with lung cancer.

Validated tools to assess functional status include the Eastern Cooperative Oncology Group (ECOG) Performance Status and Karnofsky Performance Status (KPS) scales (see Appendix I). These scales and criteria are used to assess how a patient's disease is progressing, how the disease affects the daily living abilities of the patient, and to assist in determining prognosis and appropriate treatment. Other specific tools are available for assessment of functional capacity.

Physical needs

The most commonly reported physical symptoms in a patient with newly diagnosed lung cancer include dyspnoea, cough, pain, fatigue, insomnia and loss of appetite. A number of the symptoms described may be exacerbated by local or systemic treatments. Some symptoms, such as cough and dyspnoea, are not lung cancer specific and may be caused by non-malignant underlying medical conditions, such as infection, anaemia, pulmonary oedema, heart failure or chronic obstructive pulmonary disease (COPD).
Patients with lung cancer are frequently older people with multiple co-morbidities. A high symptom burden, functional decline and physiological changes of ageing may mean that patients fail to recognise the significance of symptoms.\textsuperscript{14} Table 5.1 provides a summary of lung cancer-related physical symptoms.

### Table 5.1 Physical symptoms of lung cancer

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Incidence</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cough</strong></td>
<td>&gt; Common symptom of cancer arising in the airways and often occurs in association with dyspnoea and haemoptysis\textsuperscript{22} &lt;br&gt; &gt; Can be exacerbated by cancer invasion into vital structures, malignant pleural effusion, or treatment such as radiotherapy resulting in acute radiation pneumonitis\textsuperscript{22}</td>
<td>&gt; Treatment recommendations based on causative factors and productive or non-productive cough &lt;br&gt; &gt; Consideration given to the level of distress experienced by the patient &lt;br&gt; &gt; Refer to National Health &amp; Medical Research Council Palliative Care Guidelines and the Therapeutic Guidelines Palliative Care 2010 V3</td>
</tr>
<tr>
<td><strong>Dyspnoea</strong></td>
<td>&gt; Common lung cancer-related symptom &lt;br&gt; &gt; Dyspnoea is subjective in nature and can be experienced in varying degrees, making management difficult\textsuperscript{19,23} &lt;br&gt; &gt; Physical factors can include location and stage of tumour, pleural effusion, infection, anaemia, and underlying comorbidities such as COPD and prescribed therapies\textsuperscript{22} &lt;br&gt; &gt; Reported as being more common in older patients, men, and those experiencing pain and anxiety\textsuperscript{24}</td>
<td>&gt; Determining underlying causes of may help to direct management strategies &lt;br&gt; &gt; Investigations include CXR, CT or ventilation/perfusion scan, particularly if pulmonary thrombo-embolism is suspected &lt;br&gt; &gt; Treatment depends on causative factors and may include cancer radiotherapy and chemotherapy, cough suppressants, steroids, anticoagulation and antibiotics\textsuperscript{22} &lt;br&gt; &gt; Education about dyspnoea and management strategies is fundamental for the patient and their family/carers\textsuperscript{24}</td>
</tr>
<tr>
<td><strong>Haemoptysis</strong></td>
<td>&gt; Significant presenting symptom in 7–10% of patients &lt;br&gt; &gt; Presence should immediately trigger diagnostic investigations for lung cancer\textsuperscript{29} &lt;br&gt; &gt; Ongoing haemoptysis is distressing and difficult to manage &lt;br&gt; &gt; Massive haemoptysis (broadly defined as expectoration of 100–600 mls of blood in 24 hours) can lead to airway obstruction through blood clot formation\textsuperscript{29}</td>
<td>&gt; Main treatment priority is to ensure that an adequate airway is maintained &lt;br&gt; &gt; Local interventions, e.g. internal and external radiation or laser treatment, may be useful\textsuperscript{29} &lt;br&gt; &gt; Recommended that patients and carers receive information on management of haemoptysis, including the use of anxiolytic medication\textsuperscript{25}</td>
</tr>
<tr>
<td>Symptom</td>
<td>Incidence</td>
<td>Management</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Superior vena cava obstruction (SVCO)                  | > Lung cancer is the most common cause of SVCO\(^{17,30}\) either via direct extension or regional lymph node metastases\(^{29}\) | > Diagnosis usually confirmed with contrast-enhanced CT scan
> Treatments can include radiotherapy, chemotherapy and stenting depending on individual patient circumstances\(^{3}\) |
| Pain                                                   | > Common                                                                  | > Determine cause                                                          |
> Thoracic and lumber regions                            |                                                                           | > Analgesia opioids                                                        |
> Post-thoracotomy                                        |                                                                           | > Localised radiotherapy                                                    |
> Intercostal nerve block                                |                                                                           | > Intercostal nerve block                                                   |
| Dysphagia and odynophagia                             | > Difficulty swallowing can occur as a result of compression by tumour on the oesophagus | > Determining the underlying cause will guide treatment strategies         |
> Dysphagia may also occur during and after radiation and concurrent chemotherapy/radiation therapy due to local swelling\(^{33}\) (acute oesophagitis)\(^{34}\) | > Systemic analgesia and topical anaesthetics may be prescribed for acute oesophagitis | > A recent literature review revealed a lack of evidence-based research supporting a change in management strategies for acute radiation-induced oesophagitis\(^{35}\) |
> Patients can experience varying degrees of pain on swallowing (odynophagia), increased difficulty in eating and swallowing (dysphagia) leading to weight loss, psychosocial distress, hospitalisation and temporary cessation of treatment\(^{35}\) | > Intensive dietary support via a feeding tube may be recommended\(^{33}\) |
### Symptom Incidence Management

| Weight loss and cachexia | > Patients with lung cancer experience significant weight loss in comparison to other cancers along with a higher prevalence of cancer cachexia\(^{36,37}\)  
> Cancer cachexia is a complex syndrome in which profound muscle and fat wastage occurs due to protein breakdown believed to be caused by inflammatory responses between the host and tumour\(^{38}\)  
> Weight loss is an indicator of decreased survival in lung cancer\(^{21}\) and impairs the overall response to cancer treatment  
> Loss of appetite is commonly reported in people with lung cancer\(^{36}\) | > Little evidence to support the benefits of appetite stimulants  
> Symptoms such as nausea, diarrhoea and constipation require active management\(^{21}\)  
> Currently no specific treatment for management of cancer cachexia; studies examining the Omega-3 fatty acid supplements, nutritional advice and progressive resistive exercise are ongoing  
> In line with national and international guidelines, routine screening and assessment of anorexia in patients undergoing treatment and with advanced cancer should be undertaken, ideally by a dietitian  
> Provision of practical information about diet and advice on minimising problems with eating before, during and after cancer treatment may assist in improving nutritional status  
> Goals and outcomes of the nutrition intervention depend on the patient’s diagnosis, prognosis and wishes |
5.2 FURTHER INFORMATION

> **Appendix I: Functional assessment tools**


> National Comprehensive Cancer Network (NCCN) **Clinical Practice Guidelines in Oncology Cancer-Related Fatigue**: [www.nccn.org](http://www.nccn.org)

> Bolimos M 2009, **Coping with cancer related tiredness (fatigue)**, Royal Adelaide Hospital (Occupational Therapy Department & Cancer Centre)

> National Palliative Care Research Centre, **Measurement and Evaluation Tools**: [http://www.npcrc.org/resources/resources_show.htm?doc_id=376169](http://www.npcrc.org/resources/resources_show.htm?doc_id=376169)

> Eastern Cooperative Oncology Group Assessment Tool: [http://ecog.dfci.harvard.edu/general/perf_stat.html](http://ecog.dfci.harvard.edu/general/perf_stat.html)

> **Cancer Help Line** 131120 or [www.cancersa.org.au](http://www.cancersa.org.au)


**RECOMMENDATIONS**

> A review and endorsement of validated assessment tools used in cancer patients should be undertaken to facilitate uploading of information to the EPAS system to be used in conjunction with clinical history and assessment.

> A standard approach to early assessment for supportive care needs and functional status using validated screening tools should be adopted across community settings to flag required interventions.

> People with lung cancer should have access to appropriate interpretative services or a culturally appropriate support health worker during consultations with cancer specialists and health professionals.

> All patients with lung cancer should be screened for anxiety or depression regularly throughout the care continuum and have access to supportive care as required.

> Patients with lung cancer should have access to allied health services in the inpatient, outpatient, rehabilitation and community settings of both public and private sectors. These services should have a focus on optimising physical and psychosocial function.

> Non-drug interventions for breathlessness should be delivered in a multidisciplinary manner and coordinated by a professional with an interest in breathlessness and expertise in the techniques (e.g. a nurse, physiotherapist or occupational therapist). Although this support may be provided in a multidisciplinary clinic, patients should have access to it in all care settings.

> Education should be provided to lung cancer patients regarding sexuality issues with referral to identified counsellors, who have expertise in the area if required
6. PREVENTION AND MINIMISING RISK

Cancer is one of the most common causes of morbidity and mortality in South Australia, accounting for more potential Years Life Lost (YLL) than any other condition.\textsuperscript{50} Based on current incidence rates by age, at least one in three South Australians is diagnosed with cancer before 75 years of age.\textsuperscript{51}

6.1 CANCER RISK FACTORS AND PREVENTION

Cancer represents Australia’s greatest disease burden, ahead of cardiovascular disease. Cancer is a disease associated with ageing. With the number of people aged over 65 years set to double by 2051, cancer incidence is projected to continue rising.\textsuperscript{51}

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.

**Risk factors**

<table>
<thead>
<tr>
<th>The key modifiable risk factors for cancer are defined as the SNAPSS risk factors. These are:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Smoking/exposure to tobacco smoke</td>
</tr>
<tr>
<td>&gt; Nutrition (concerns about poor diet/nutrition)</td>
</tr>
<tr>
<td>&gt; Alcohol (risky alcohol consumption)</td>
</tr>
<tr>
<td>&gt; Physical activity (inadequate exercise or being overweight)</td>
</tr>
<tr>
<td>&gt; Sun exposure (exposure to harmful ultraviolet radiation)</td>
</tr>
<tr>
<td>&gt; Stress.</td>
</tr>
</tbody>
</table>

**Prevention strategies**

- Prevention and early detection strategies include:\textsuperscript{52}
  - > promotion of healthy lifestyles (stopping smoking, healthy diet, healthy weight, limiting alcohol intake)
  - > reducing risky behaviours (stopping smoking, ‘sun smart’ behaviours).

6.2 MAJOR RISK FACTORS FOR LUNG CANCER

Lung cancer has a number of proven risk factors:\textsuperscript{53-54}

- > smoking (current, ex-smoking and passive)
- > exposure to asbestos, particularly in association with tobacco exposure
- > exposure to other occupational hazards including contact with the processing of steel, nickel, chrome and goal gas
- > exposure to radiation and air pollution
- > previous history of lung cancer or lung cancer
- > family history of lung cancer
- > smoking-related chronic obstructive pulmonary disease
- > previous lung disease.
Tobacco smoking

In Australia, smoking is the largest single cause of lung cancer, responsible for 90% of lung cancers in men and 65% of lung cancers in women. Communities with higher smoking rates include those with documented poor health outcomes related to lower socio-economic or indigenous status.

About one in 10 smokers develop lung cancer. Measures aimed at controlling tobacco use reduce the risk of and mortality from the disease. Evidence suggests that the benefits of giving up smoking before middle age can be substantial in terms of reducing the risk of lung cancer.

Strategies for smoking prevention should be supported and encouraged, especially for people with multiple or high-level risk factors.

For people who smoke, strategies for smoking cessation should be supported and encouraged, including referral to QUIT SA [http://www.quitsa.org.au/aspx/home.aspx]

6.3 FURTHER INFORMATION

- Drug and Alcohol Services South Australia: [http://www.dassa.sa.gov.au]
- Australian Indigenous Health Infonet: [http://www.healthinfonet.ecu.edu.au/]

RECOMMENDATIONS

- Health promotion strategies should promote the importance of a healthy lifestyle for all South Australians.
- Aboriginal health services, Aboriginal Health Workers and health professionals working with culturally and linguistically diverse communities should be supported to promote interventions to encourage smoking cessation.
7. SCREENING AND EARLY DETECTION

For many cancers, treatment outcomes and survival can be improved by finding and treating the disease at an early stage. Uptake of appropriate population-based screening programs and increased awareness of early detection measures can optimise outcomes following a diagnosis of cancer or a precancerous condition.56

7.1 SCREENING

The term ‘screening’ refers to population-based testing of people who do not have symptoms of cancer and are not at high risk of cancer to identify signs of disease requiring investigation before symptoms are apparent.

Clinical trials in the United States have examined screening for people at high risk of lung cancer using low-dose radiation computed tomography (CT). These trials have demonstrated a measurable reduction in mortality.55

Currently in Australia, population-based screening for lung cancer has not been recommended as a public health policy and is not indicated clinically. Further research is recommended to determine costs, risks and benefits as well as implementation strategies of this screening modality.

7.2 SIGNS AND SYMPTOMS OF LUNG CANCER

The signs and symptoms of lung cancer can include:

- cough (> 1 month)
- haemoptysis
- persistent hoarse voice
- non-resolving pneumonia
- unexplained weight loss
- unexplained bone pain or chest wall discomfort
- suspicious radiological lesion
- dyspnoea
- finger clubbing
- features suggestive of metastases from lung cancer
- persistent cervical / supraclavicular lymphadenopathy
- signs of pleural effusion

Improving community awareness

Improving community awareness about the signs and symptoms of lung cancer, and the importance of seeing a GP promptly would improve early detection and outcomes for people diagnosed with the disease.52

The literature highlights lung cancer as a highly stigmatised condition, largely due to its association with smoking. People may not seek medical help when symptoms are apparent due to shame and embarrassment associated with continued smoking.57 Non-specific symptoms also have the potential to delay early diagnosis and treatment.
7.3 IDENTIFICATION AND REFERRAL OF PATIENTS WITH SYMPTOMS OF LUNG CANCER

Initial presentation

Consultation with a GP is required to investigate signs and symptoms of lung cancer. Regardless of level of suspicion of lung cancer, the opportunity should be taken to discuss smoking cessation and offer quitting strategies, such as nicotine replacement therapy.

A patient presenting with any of the signs and symptoms listed above, should receive urgent referral to a respiratory physician.

Assessment and investigation

Steps in the investigation of symptoms suggestive of lung cancer are outlined in Table 7.1. The aim should be for test results to be reported to the patient within 1 week of GP identification of symptoms suggestive of lung cancer.

If cancer is suspected, referral to a respiratory physician should be made as soon as possible.

Table 7.1 Initial assessment and investigations of symptoms of lung cancer

<table>
<thead>
<tr>
<th>Clinical assessment/ investigation</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>History and examination</td>
<td>Clinical assessment</td>
</tr>
<tr>
<td></td>
<td>Case history</td>
</tr>
<tr>
<td></td>
<td>Physical examination</td>
</tr>
<tr>
<td>Blood tests</td>
<td>Full Blood Examination (FBE)</td>
</tr>
<tr>
<td></td>
<td>Serum biochemistry (MBA20)</td>
</tr>
<tr>
<td></td>
<td>Coagulation studies</td>
</tr>
<tr>
<td>Imaging</td>
<td>Chest X-ray – if suspicious, clinical review is required</td>
</tr>
<tr>
<td></td>
<td>Computerised Tomography (CT) chest – if abnormal, referral should be made as soon as possible</td>
</tr>
<tr>
<td></td>
<td>Patients with unexplained or persistent haemoptysis should be referred urgently for a chest CT.</td>
</tr>
</tbody>
</table>

The role of the general practitioner in early detection and investigation of lung cancer and referral includes:

- responsibility of initiating and review of results of initial investigations
- addressing the patient and family needs for continuing support while waiting for the physician appointment.
- attendance and participation in the MDM if desired
Referral

Patients who present to their general GP with respiratory symptoms and who have a subsequent abnormal chest x-ray should be referred to a respiratory physician for tissue confirmation of the diagnosis, staging of disease and cardiorespiratory assessment.

Referral to a respiratory physician is associated with an increase in the likelihood of receiving active treatment and of improved survival.\(^{58}\) The respiratory physician will refer to the multidisciplinary team who will collaborate on the most appropriate treatment plan.

**Table 7.2 Referral to a respiratory physician for suspected lung cancer**

<table>
<thead>
<tr>
<th>How</th>
<th>What</th>
</tr>
</thead>
</table>
| GP referral form can be faxed, emailed or use web referral | > The most rapid form of referral technology should be used (e.g. Enterprise Patient Administration System or EPAS)  
> Key contact should be the specialist respiratory health professional; this health professional is responsible for patient triage into screening  
> Phone discussion is strongly recommended to facilitate an urgent appointment  
> Timeframe to see a specialist should be within 2 weeks of presentation |

The referral letter to a respiratory physician should include:

> history of presenting signs (clinical history)  
> recordings of current and previous weight  
> past medical history, including current medications and allergies  
> relevant psychosocial history  
> all relevant investigations and imaging  
> most appropriate contact details for patient, e.g. mobile phone number or the phone number of a relative or carer if the patient speaks limited or no English
7.4 FURTHER INFORMATION

- **Appendix H**: Cancer Resources In South Australia
- **Appendix I**: Referral for Psychosocial Support
- Country cancer support, resources tailored to the needs of country cancer patients, their families, carers, supporters and health professionals: [http://www.countrycancersupport.com.au](http://www.countrycancersupport.com.au)

**RECOMMENDATIONS**

- A time of 1 week from GP practitioner identification of clinically suspicious symptoms to GP referral to a respiratory physician is optimal.
- State-wide referral documentation and related processes should be standardised.
- All individuals with suspected lung cancer should be referred to a respiratory physician with expertise in the management of lung cancer.
8. DIAGNOSIS AND STAGING

In cases of suspected lung cancer, it is appropriate to confirm the diagnosis and establish the histopathological sub-type in the least invasive manner available.

The diagnostic investigations recommended to obtain the tissue diagnosis will depend on the tumour location together with fitness and preferences of the patient. Investigations should be chosen that will provide the most information.59

At completion of diagnosis and staging, referral to a lung cancer MDT meeting is required for treatment and management recommendations.

8.1 OVERVIEW OF DIAGNOSIS AND STAGING

The goal of histopathological analysis of a biopsy or resected specimen is to make a histological tissue diagnosis and/or obtain histological information that may influence the approach to treatment.

Selection of the most appropriate diagnostic method will be based on respiratory physician review. Adequate tissue samples are required to allow for accurate pathological sub-typing, including molecular biomarker analysis. There is no current evidence to support the use of serum tumour markers in the diagnosis of lung cancer.57 New diagnostic techniques, such as electromagnetic guided bronchoscopy, await clinical validation.

8.2 PATHOLOGICAL INVESTIGATIONS

Table 8.1 provides an overview of the cellular pathological investigations used to inform a diagnosis of lung cancer.

Table 8.1 Histological investigations for the diagnosis of lung cancer

<table>
<thead>
<tr>
<th>Investigation</th>
<th>Sample/type</th>
<th>Aim/comment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibre optic bronchoscopy</td>
<td>&gt; Central lesions:</td>
<td>&gt; To determine local anatomy and the presence of endobronchial pathology and obtain photographic evidence of pathology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- histology</td>
<td>&gt; Preferred diagnostic method because of safety and higher tissue yield for immunohistochemical and molecular tests</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- cytology</td>
<td>&gt; Yield of bronchoscopy depends on the location of the primary tumour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Peripheral lesions:</td>
<td>&gt; Preferred diagnostic technique for peripheral lesions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- histology – core biopsy is preferred for appropriate lesions</td>
<td>&gt; Where there is evidence of distant metastases, biopsies should be taken from the metastatic site if this can be achieved more easily than from the primary site</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- cytology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percutaneous fine needle aspiration</td>
<td>&gt; Mediastinal nodes:</td>
<td>&gt; For diagnosis and staging of mediastinal nodes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- cytology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- cell block</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 8.3 HISTOPATHOLOGY REPORTING

Synoptic reporting is recommended to standardise content and enhance consistency in pathologic diagnosis and patient management. Pathologists are advised to refer to the following guidelines in the reporting of lung cancers:

> Royal College of Pathologists Australasia (RCPA) *Lung cancer structured reporting protocol* (First edition) 2010.

The guidelines describe the minimum data that must be included in the pathology report for resected specimens of lung cancer cancer. This is important, as some aspects of invasive cancer, such as the type, size, and grade of the primary tumour, pattern of invasion, minimum resection margin, lymph node status, and presence of extranodal tumour growth, correlate with the course of the disease.

A copy of all malignant pathology reports should be forwarded to the State Cancer Registry for notification.

**Minimum data set**

Keeping a database of individual cancer presentations and treatment allows not only for optimised individual care of the patient, but also for comparative audit and reporting of outcomes. A database has been accepted as a statutory requirement for cancer registries.

In order to reduce duplication from public and private lung cancer centres, it is recommended that there is standardised and integrated data collection at all lung cancer multidisciplinary team (MDT) meetings. Ideally, this should be in line with a national minimum data set.

### 8.4 STAGING INVESTIGATIONS

Staging is the cornerstone of treatment planning for lung cancers. Lung cancer is staged using the revised International Staging System published by the International Union Against Cancer (IUAC) and the American Joint Committee on Cancer (AJCC) 7th edition.

There are two parts to this staging system:

> cell type

> anatomical staging (TNM), which provides information about the size of the primary tumour (T), degree of regional nodal involvement (N), and extent of metastases (M).

The AJCC TNM status involves combined clinical (cTNM), radiologic (rTNM) and pathological assessment (pTNM), as complementary staging data are acquired with each different approach (Table 8.2). This approach is relevant for staging of non-small cell lung cancers (NSCLC) and small cell lung cancers (SCLC) staging.

<table>
<thead>
<tr>
<th>Investigation</th>
<th>Sample/type</th>
<th>Aim/comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediastinoscopy</td>
<td>Mediastinal nodes:</td>
<td>Selected patients who present with hilar and mediastinal masses - only used if diagnosis has not been achieved by less invasive means</td>
</tr>
<tr>
<td></td>
<td>- histology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- cytology</td>
<td></td>
</tr>
<tr>
<td>Video-assisted</td>
<td>Histology</td>
<td>Used only if diagnosis has not been achieved by less invasive means</td>
</tr>
<tr>
<td>thoracoscopy (VATS)</td>
<td>Cytology</td>
<td></td>
</tr>
</tbody>
</table>
Less extensive staging investigation may be warranted for clinically or radiologically evident metastatic disease or if the patient is considered unfit for treatment after appropriate discussion at an MDT meeting.

Staging investigations for lung cancer require specialised equipment and expertise, including Positron Emission Tomography (PET) / CT scanning and cardio-thoracic surgical services. Staging investigations should be well coordinated to minimise the requirement for travel for patients from regional, rural and remote areas.

Table 8.2 Staging investigations for lung cancer patients considered for treatment with curative intent including surgery or chemo-radiotherapy

<table>
<thead>
<tr>
<th>Staging</th>
<th>Investigation/s</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical (cTNM)</td>
<td>&gt; Physical examination</td>
<td>&gt; Used to identify and evaluate primary lesion</td>
</tr>
<tr>
<td></td>
<td>&gt; FBE, biochemistry, coagulation studies</td>
<td>&gt; Clinical findings documented with particular note of extent of weight loss and ECOG performance status</td>
</tr>
<tr>
<td></td>
<td>&gt; Pre-staging imaging (chest X-ray and contrast-enhanced CT)</td>
<td>&gt; CT to include chest and upper abdomen (to adrenal glands)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pathological (pTNM)</td>
<td>&gt; Bronchoscopy</td>
<td>&gt; Diagnosis and staging of primary tumour (T stage)</td>
</tr>
<tr>
<td></td>
<td>&gt; Linear endobronchial ultrasound (EBUS)</td>
<td>&gt; Nodal staging</td>
</tr>
<tr>
<td>Pathological (pTNM) (cont.)</td>
<td>&gt; Pleural aspiration and biopsy</td>
<td>&gt; Can be indicative of T4 disease therefore pleural effusion must be investigated with pleural aspirate or pleural biopsy to determine the patient’s suitability for curative treatment3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Video-assisted thoracoscopy (VATS)</td>
<td>&gt; Not routine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; In selected patients if the above investigations are inconclusive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiological (rTNM)</td>
<td>&gt; Fluoro-Deoxy Glucose (FDG) PET / CT scan</td>
<td>&gt; If the outcome of the PET / CT will alter the management then PET / CT should be done as soon as possible, in particular to exclude distant metastatic disease</td>
</tr>
<tr>
<td></td>
<td>&gt; CT head</td>
<td>&gt; Limited evidence from retrospective studies except in the presence of overt metastatic disease61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; CT head or MRI brain should be performed for cases of pulmonary adenocarcinoma where radical surgery or chemoradiotherapy is proposed</td>
</tr>
<tr>
<td></td>
<td>&gt; Nuclear bone scan</td>
<td>&gt; Not routine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; May be relevant in selected patients if the above investigations are inconclusive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; Undertaken in patients who have symptoms suggestive of bone involvement67</td>
</tr>
</tbody>
</table>


8.5 CARDIO-RESPIRATORY ASSESSMENT

Cardio-respiratory assessment determines a patient’s reserve for planned curative treatment, including surgical resection and radical chemo-radiotherapy.

It is vital that patients with underlying COPD are not precluded from undergoing surgical resection of lung cancer. Pulmonary lung function and exercise tolerance tests can assist in guiding decision making.62,63

Formal functional quality of life testing and cardio-pulmonary tests are becoming more frequent interventions. Specific specialist review depends on other medical or clinical needs.62,64

Table 8.3 Cardio-pulmonary assessment

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical examination</td>
<td>&gt; ECOG performance status</td>
</tr>
<tr>
<td>Lung function tests</td>
<td>&gt; Routine investigation</td>
</tr>
<tr>
<td></td>
<td>&gt; Lobectomy (FEV1&gt;55% predicted; DLCO&gt;50% predicted)</td>
</tr>
<tr>
<td></td>
<td>&gt; Left pneumonectomy (FEV1&gt;70% predicted; DLCO&gt;60% predicted)</td>
</tr>
<tr>
<td></td>
<td>&gt; Right pneumonectomy (FEV1&gt;80% predicted; DLCO&gt;65% predicted)</td>
</tr>
<tr>
<td>Spirometry</td>
<td>&gt; Optional</td>
</tr>
<tr>
<td>Arterial blood gasses</td>
<td>&gt; Optional</td>
</tr>
<tr>
<td>Cardiology assessment</td>
<td>&gt; Optional</td>
</tr>
</tbody>
</table>

8.6 FURTHER INFORMATION


RECOMMENDATIONS

> Lung cancer diagnosis and staging needs to occur in the context of holistic patient care, including referral to relevant allied health professionals as appropriate.

> A lung cancer coordinator should be available to: (i) coordinate the approach to diagnostic and staging investigations (particularly for rural and remote patients); (ii) support the patient when they are given the diagnosis; and (iii) ensure communication with the patient’s GP.

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

> Access to diagnostic and staging investigations should be local where possible, rapid and coordinated, especially for people at high risk (with routine audit):
  
  o adequate tissue samples for diagnosis (histology, cytology, molecular markers) should be obtained within 1 week of consultation with the specialist to ensure treatment is not delayed for those with a potentially curable cancer
  o staging investigations (note exceptions) should be done within 1 week of tissue confirmation of lung cancer (with routine audit to assess whether this is occurring).

> Optimal patient management requires accuracy and consistency in histopathological diagnosis. It is recommended that anatomical pathologists adopt synoptic reporting of lung cancer as a standard for uniform diagnosis and auditing.

> Following staging early referral to treating specialist is recommended to reduce risk of upstaging disease.

> PET-FDG (used with clear guidelines) should be a routine tool for patients with locally advanced disease, where treatment intent is curative.

> All patients with a confirmed diagnosis of lung cancer should be referred to a multidisciplinary team that includes a lung cancer care coordinator.

> All patients with a confirmed diagnosis should receive a minimum of standardised information that includes:
  

> Radiology and Pathology departments require referrals for patients to be discussed at the MDT meeting at least 2 days before the meeting to enable collation and photography of slides, and ordering of additional tests if needed. If slides need to be sourced from another local laboratory, 5 working days is recommended. This can be modified for urgent requests.

> Resources should be provided to evaluate the lung cancer pathway and to evaluate clinical investigations that currently lack an evidence base.
9. PRESENTATION AT LUNG CANCER MULTIDISCIPLINARY TEAM MEETING

Multidisciplinary team (MDT) members meet regularly to provide treatment recommendations, while taking into account the clinical and psychosocial aspects of patient care, individual patient preferences and circumstances.65

9.1 MULTIDISCIPLINARY TEAM MEETINGS

MDT meetings provide the opportunity for:

> discussion of all new patient presentations
> review of patients following surgery, neoadjuvant treatment and tumour recurrence
> discussion of clinical trial access and patient eligibility.

The benefits of multidisciplinary care for patients, families and clinicians are well documented. Further information on multidisciplinary care is provided in Chapter 3 Multidisciplinary and coordinated care, and in Appendix B.

Treatment and supportive care within the MDT should be coordinated, ensuring that the patient, GP and MDT members are clear about individual responsibilities for coordination of care.

Referral to an MDT meeting

The referring specialist to the MDT meeting is responsible for patient care until care is formally referred or passes to another practitioner. Any health professional can refer to the MDT meeting for additional treatment, discussion and management planning should complexities arise along the care continuum.66 The referral process for presentation at an MDT meeting is outlined in Box 9.1.

Box 9.1 Referral for presentation of a patient with lung cancer at an MDT meeting

> Patient consent must be obtained (written or verbal) before presentation at the lung cancer MDT meeting
> Referring clinician must liaise with MDT meeting Chair or delegate (usually MDT meeting coordinator)
> Referring clinician complete s MDT meeting referral form (specific to each hospital) and ensures submission by the stated date and time. This is usually at least 48 hours prior to the meeting, as the list is finalised by the MDT meeting coordinator 1 day prior
> Referring clinician must ensure radiology is available for the meeting. The MDT meeting co-ordinator may be able to facilitate this when provided with relevant information to source radiology images/pathology (location, day of imaging for private films)
> Routine diagnosis and staging should be complete prior to the MDT meeting
> Access to technology includes; videos, clinical photographs, diagnostic endoscopy/video documentation
Reporting of an MDT meeting

The MDT meeting should be held weekly to allow for timely discussion of patients, avoid delay in management of patients and provide timely feedback to patients.

At the meeting, individual patient data from clinical, medical imaging and pathology sources are reviewed to provide a tissue diagnosis and TNM stage. MDT meeting discussion aims to develop a consensus treatment plan based on clinical characteristics, individual patient preferences and circumstances, tissue diagnosis and TNM stage.

The treatment consensus is recorded by the MDT meeting Chair and is communicated to the referring clinician for discussion with the patient (Box 9.2).

**Box 9.2 Patient MDT meeting summary**

<table>
<thead>
<tr>
<th>Referring documentation records should be:</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ kept by the MDT meeting Chair / MDT meeting coordinator / MDT meeting administrative support</td>
</tr>
<tr>
<td>○ filed in the patient’s clinical record</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MDT meeting recommendation proforma (Oacis or EPAS clinical summary) should include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ treatment and management recommendations</td>
</tr>
<tr>
<td>○ clearly defined goal of treatment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summaries and letters need to be communicated in a timely manner with the patient’s GP and private practitioners who do not have access to EPAS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The primary treating specialist (that is, the specialist with whom the patient primarily discusses decision making for their clinical management) should be documented</td>
</tr>
<tr>
<td>The signature of the MDT meeting Chair is required on the MDT meeting recommendation proforma, and these record should be made available to the referring clinician and inserted into the patient clinical record</td>
</tr>
<tr>
<td>The MDT meeting coordinator should retain the Chair's copy of the agenda in a secure manner for audit purposes</td>
</tr>
</tbody>
</table>

### 9.2 LUNG CANCER MULTIDISCIPLINARY TEAM

The lung cancer MDT comprises both core members who attend all meetings and associate team members who may attend on referral (Table 9.3).

**Table 9.3 Membership of the lung cancer MDT**

<table>
<thead>
<tr>
<th>Core members</th>
<th>Non-core members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory medicine</td>
<td>Social work</td>
</tr>
<tr>
<td>Cardio-thoracic surgery</td>
<td>Physiotherapy</td>
</tr>
<tr>
<td>Medical oncology</td>
<td>Psychology</td>
</tr>
<tr>
<td>Radiation oncology</td>
<td>Dietetics</td>
</tr>
<tr>
<td>Pathology</td>
<td>Speech pathology</td>
</tr>
<tr>
<td>Radiology</td>
<td>Occupational therapist</td>
</tr>
<tr>
<td>Nuclear medicine</td>
<td>Rural/remote liaison nurse</td>
</tr>
<tr>
<td>Palliative medicine</td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
</tr>
<tr>
<td>Clinical trial coordinator</td>
<td></td>
</tr>
<tr>
<td>Data manager</td>
<td></td>
</tr>
<tr>
<td>MDT meeting coordinator /Administrative officer</td>
<td></td>
</tr>
</tbody>
</table>
9.3 COMMUNICATION OF MDT MEETING OUTCOMES

Following presentation at the MDT meeting, the referring clinician or delegate is responsible for discussing the meeting recommendations (including rationale, aims, likely beneficial and adverse side effects and other treatment options) with the patient / family / carer within 3 working days.\(^{64}\)

The final treatment plan, taking into account the patient's preferences, should be documented and communicated to the patient, their family and treating clinicians. Details of changes due to patient preferences or further results should be documented in the patient record by the referring clinician and communicated to the GP and other relevant treating clinicians.\(^{64}\)

9.4 FURTHER INFORMATION

- **Appendix J:** Lung cancer MDT Terms of Reference
- **Appendix K:** Example of MDT Meeting template
- **Appendix L:** Example of MDT Meeting attendance register
- **Cancer Clinical Network Multidisciplinary Team Meeting Terms of Reference:**
RECOMMENDATIONS

➢ All lung cancer MDTs in SA endorse the State-wide Clinical Networks MDT Meeting Terms of Reference to guide meeting processes.

➢ All patients with lung cancer should be discussed at a lung cancer MDT meeting within 2 weeks of confirmed diagnosis.

➢ MDT meetings must be appropriately resourced. This includes administrative support and an MDT meeting coordinator and / or administrative support (administrative A03 level). Administrative processes should be standardised with clear protocols.

➢ TNM staging of lung cancer cases discussed at the MDT meeting should be recorded for all cases.

➢ A copy of the treatment plan, including any revisions made following patient discussion, should be sent to the referring GP within 3 working days of the MDT meeting. A copy should also be placed in the patient’s case file and sent to the specialist responsible until care is formally referred and passed on to another health professional.

➢ Where possible, patients should be offered clinical trial enrolment.

➢ Improvements to telehealth facilities will facilitate initial patient assessment and post-treatment follow-up (where clinically appropriate) with GPs.

➢ The lung cancer MDT should contribute to a complete dataset of lung cancers diagnosed in South Australia.

➢ Resources should be provided for clinical data collection at the MDT meeting (particularly stage, treatment plan and course), and its subsequent analysis, interpretation and reporting (particularly in conjunction with SA cancer registry data).

➢ MDT meeting processes should be monitored, including:
  ▪ attendance of core team members at each meeting
  ▪ number of lung cancer cases presented as a ratio of total new diagnoses
  ▪ time from initial patient presentation to diagnosis and time to treatment
  ▪ number of MDT meeting summaries distributed to GPs within 3 working days of presentation at the MDT.
10. TREATMENT

Treatment of lung cancer requires complex multimodality therapy and surgical expertise from a variety of disciplines. This chapter provides a high-level overview of multimodal therapies employed in the treatment of lung cancer.

Treatment for lung cancer is determined by histology, age, co-morbidities, performance status and patient preference. A multidisciplinary approach is essential to successfully manage care and outcomes.67

This section provides an overview of practice guidelines for the treatment of lung cancer. Further detail on comprehensive guidelines for lung cancer treatment is available in Appendix M.

Clinical judgment and preferences/clinical situations must be taken into account when planning care.

Respecting patient choice

Where patients have been offered curative treatment and decline this, the reasons for doing so should be documented in the medical record, and all attempts made to convey this to all health professionals involved in the care of the patient (especially GP or Aboriginal health workers). It is important that that such patients are not excluded from care, and that they are offered regular attendance at surveillance clinics to review symptoms and offer ongoing supportive care.

The role of clinical trials

As with other types of cancer, clinical trials of new agents for lung cancer should always be considered once standard treatment options have been exhausted.

Ideally, cancer services should aim to have at least 15% of their patients enrolled in clinical trials. The bulk of evidence indicates that patients enrolled in clinical trials receive a higher level of care.

The Consumers Health Forum of Australia have published a Consumer Guide to Clinical Trials, which can be accessed at: https://www.chf.org.au/pdfs/chf/CHF-Clinical-trials_COL__WEB.pdf

10.1 OVERVIEW OF TREATMENT MODALITIES FOR LUNG CANCER

The major modalities of lung cancer treatment are surgery, radiotherapy and systemic therapies including chemotherapy. Treatment aims include cure, increasing disease free survival or time to progression, symptom control and palliation.

Surgery

It is generally accepted that surgical resection is the treatment of choice for early stage NSCLC where the aim of treatment is cure. Key factors for determining success are case load volume, fitness of the patient, complete resection of the cancer, and skill of the cardiothoracic surgeon.69

Surgery is rarely used in the treatment of small cell lung cancer (SCLC).52
### Table 10.1 Selection of patients for lung cancer surgery

<table>
<thead>
<tr>
<th>Disease stage</th>
<th>Type of surgery</th>
<th>Inclusion criteria</th>
</tr>
</thead>
</table>
| Stage 1       | Lobectomy and mediastinal node sampling | ECOG 0–1  
*Pulmonary function tests (PFT):*  
> FEV1 > 55%  
> DLCO > 50% |
| Stage 2       | Lobectomy or pneumonectomy + mediastinal node sampling | Left pneumonectomy:  
> ECOG 0  
> PFT:  
  > FEV1 >70%  
  > DLCO > 60%  
Right pneumonectomy:  
> ECOG 0  
> PFT:  
  > FEV1 > 80%  
  > DLCO > 65% |
| Stage 3A      | No clear evidence that lung resection as first-line treatment offers any survival benefit  
Level 2 evidence (from non-randomised clinical studies) that pre-operative chemo-radiotherapy then surgery, or surgery then post-operative chemo-radiotherapy may provide a modest survival benefit in selected patients |
| Stage 3B      | No benefit from lung resection |
| Stage 4       | No benefit from lung resection |

**Radiotherapy**

Radiation therapy is an established and commonly used treatment in both the radical and palliative treatment of lung cancer.\(^{57}\) Indications (see Table 10.2 and 10.3) include:

- > radical radiotherapy (± chemotherapy) for stage I–III NSCLC
- > post-operative radiotherapy (± chemotherapy) for pN2/3 NSCLC and/or incompletely resected NSCLC
- > radical chemo-radiotherapy for limited stage SCLC
- > prophylactic cranial irradiation for SCLC
- > palliative radiotherapy for symptomatic primary and metastatic disease.

While the TNM staging system is more descriptive in indicating the extent of disease, the Veteran Affairs Lung Study Group (VALSG) two-stage system of ‘limited’ versus ‘extensive’ disease remains of greater clinical utility.

Further detail on delivery techniques and base line requirements for initiation of radiotherapy is provided in Appendix N.

For detailed radiotherapy protocols (including treatment techniques, dose prescriptions and planning requirements for target volumes and organs at risk) refer to [www.eviq.org.au](http://www.eviq.org.au)
Table 10.2 Radiotherapy for lung cancer

<table>
<thead>
<tr>
<th>Type of radiotherapy</th>
<th>Stage of disease</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-small cell lung cancer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Radical radiotherapy** | Medically inoperable stage I or stage II Patients who decline surgery | > Definitive radiotherapy for Stage I–II NSCLC is inferior to surgical resection  
> Overall survival at 5 years: 0–42%  
> Cancer-specific survival at 5 years: 13–39%<sup>53</sup> |
| | Stage III (inoperable): | > Overall survival at 5 years with radical radiotherapy alone is approximately 5%<sup>54</sup> with the majority of patients failing distantly  
> Combined chemo-radiotherapy with platinum-based regimes are superior to radiotherapy, with a 10% reduction in risk of death and a small but significant absolute benefit in survival of 2% at 5 years (Level 1)<sup>55,56</sup>  
> Survival benefit for concurrent chemo-radiotherapy is greater than for sequential chemo-radiotherapy (Level II)<sup>57,58</sup> |
| **Adjuvant (post-operative) radiotherapy** | Stage I–II disease | **Evidence is controversial:**  
> detrimental in completely resected Stage I–II lung cancer<sup>59</sup>  
> growing evidence of improved local control in pN2/N3M0 disease<sup>60</sup> but effect on survival is inconclusive<sup>61,62</sup>  
| Non-small cell lung cancer: superior sulcus tumours | > No randomised trials in the treatment of superior sulcus NSCLC  
> Current management recommendations for preoperative chemoradiotherapy for potentially operable disease is based on phase II data<sup>63</sup> because locoregional control is paramount |
| **Small cell lung cancer** | Limited stage disease | > Addition of radical thoracic (chest) irradiation to chemotherapy improves local control by 25% and overall survival at 2 years by 5% compared to chemotherapy alone  
> Overall survival at 2 years was 20% for chemo-radiotherapy (Level 1)<sup>64,65</sup>  
> radical radiotherapy given early with concurrent chemotherapy (commencing with cycle 1 or 2) is superior in survival than late radiotherapy<sup>66,67</sup>  
> If normal tissue constraints are unacceptable upfront, consider starting radiotherapy planning after 1–2 cycles of chemotherapy to allow for tumour volume reduction before |
### Type of radiotherapy

<table>
<thead>
<tr>
<th>Stage of disease</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prophylactic cranial irradiation (PCI)</td>
<td>proceeding with radical concurrent chemotherapy</td>
</tr>
</tbody>
</table>
| **High-dose PCI:** | reduces rate of brain metastases to 33.3% at 3 years (vs 58.6 no PCI)  
| | improves overall survival at 3 years by 5% (20% vs 15%) (Level 1) |
| **Low-dose PCI:** | PCI in extensive stage chemo-responders more than halves the rate of symptomatic brain metastases and increases overall survival at one year (OS 27.1% vs 13.3%) |

### Table 10.3 Palliative radiotherapy for lung cancer

<table>
<thead>
<tr>
<th>Type of radiotherapy</th>
<th>Stage of disease</th>
<th>Detail</th>
</tr>
</thead>
</table>
| **Local sites**      | Local obstructive symptoms:  
| airways  
| superior vena cava  
| oesophagus  
| haemoptysis  
| pain | Palliative radiotherapy can provide effective symptom relief in 50–90% of patients with local symptoms from primary or metastatic disease  
| Haemoptysis and chest pain are best palliated  
| Shortness of breath is most refractory (and usually multifactorial, including underlying lung disease such as COPD)  
| No advantage of ‘prophylactic’ palliative radiotherapy in asymptomatic patients |
| **Distant sites**    | Bone  
| Brain | Partial/complete relief of pain in 70–80% of patients with symptomatic bone metastases  
| Response rates to palliative whole brain irradiation (WBI) range from 50–75%  
| Pressure symptoms have a greater response rate (75%) than neurological symptoms (~50%)  
| WBI improves median survival from two months to 4–6 months over best supportive care  
| Palliative brachytherapy for symptomatic endobronchial disease can be considered when external beam radiotherapy options are exhausted in combination with or after laser treatment |
| **Solitary brain metastases** | Younger patients (<65 years) of good performance status with controlled primary / extracranial disease | Addition of local treatment significantly reduces brain recurrence rates, median survival and better maintains performance status compared to WBI alone  
| Addition of WBI after resection or stereotactic radiosurgery significantly improves local control and reduces death due to neurological causes without a proven survival benefit |
Systemic therapies

Systemic therapies are typically used to treat advanced lung cancer. Systemic therapies may also be used at the same time as radiotherapy (chemo-radiotherapy) to control the rate of growth of locally advanced cancer. Table 10.4 provides an overview of systemic therapies for lung cancer.

The treatments to be discussed in this section are those that are available on the Australian Government’s Pharmaceutical Benefits Scheme (PBS) [www.pbs.gov.au](http://www.pbs.gov.au). For detailed chemotherapy protocols (including dose prescriptions, supportive therapy requirements and toxicity management) refer to [www.eviq.org.au](http://www.eviq.org.au).

Table 10.4 Systemic therapy for lung cancer

<table>
<thead>
<tr>
<th>Stage of disease</th>
<th>Type of therapy</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-small cell lung cancer</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Resected stage II or IIIA | > Adjuvant chemotherapy | > Recommended for patients with good performance status (ECOG 0–1), without organ impairment and with completely resected disease  
> Most common regimen is 4 x 28-day cycles of cisplatin-based doublet chemotherapy with vinorelbine  
> Benefit only applies to a small subset of patients  
> Benefits and risks should be carefully balanced, including age-associated risk |
| Locally advanced ( unresectable stage IIIA or IIIB) | > Chemo-radiotherapy | > Standard of care for fit patients with good performance status (ECOG 0–1), less than 10% loss of body weight and no major organ impairment  
> Platinum-based therapy (typically cisplatin) is most effective  
> IV delivery at the same time as chest radiotherapy for 4–6 weeks  
> Remission in 1 of 6 patients[^62] |
| Metastatic ( unresectable stage V) | > Treatment with palliative intent | > Treatment decisions based on knowledge of histology, age, co-morbidities, performance status and patients’ preferences  
> Targeted therapy | > Patients whose tumours have an activating mutation of EGFR in Exon 19 and / or 21 have a better prognosis with 50% or more of patients surviving beyond 2 years from diagnosis  
> Tumours with EGFR mutations are acutely sensitive to EGFR-TKI drugs such as gefitinib and erlotinib  
> Benefits shown in progression free survival with rapid and often sustained disease control  
> Patients whose tumours have EGFR mutations should be exposed to an EGFR-TKI at some time during the course of their disease |
<table>
<thead>
<tr>
<th>Stage of disease</th>
<th>Type of therapy</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small cell lung cancer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited stage disease*</td>
<td>Chemo-</td>
<td>&gt; Standard treatment is 4 x 3-weekly cycles of cisplatin / etoposide</td>
</tr>
<tr>
<td></td>
<td>radiotherapy</td>
<td>delivered at the same time as a 4–6 week course of chest radiotherapy</td>
</tr>
<tr>
<td>Extensive stage disease*</td>
<td>Chemotherapy</td>
<td>&gt; Standard treatment is 4–6 x 3-weekly cycles of cisplatin or carboplatin / etoposide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 10% 2-year survival</td>
</tr>
</tbody>
</table>

*Note importance of PCI in patients responding to first-line chemotherapy – see Table 10.2

Further detail on the approach to treatment with systemic therapies, including use of adjuvant treatment for NSCLC and systemic treatments in first, second and third line disease management is provided in Appendix N.

Treatment algorithms
Treatment algorithms for different types of lung cancer by stage are provided in Appendix O.

10.2 SIDE EFFECTS OF TREATMENT FOR LUNG CANCER

Radiotherapy for lung cancer can induce side effects dependent on region and dose (Table 10.5). Side-effects are gradual in onset and will usually be greatest at the end of treatment or shortly after treatment completion. Late side-effects can be minimised by ensuring normal tissue (organs at risk) dose-volume histograms are within tolerance.

Patients undergoing radiotherapy should be reviewed weekly to monitor for treatment-related toxicities.

Table 10.5 Side effects of chest radiation

<table>
<thead>
<tr>
<th>Timing of side effect</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute side effects</td>
<td>&gt; Fatigue/tiredness</td>
</tr>
<tr>
<td></td>
<td>&gt; Radiation skin reaction/dermatitis including:</td>
</tr>
<tr>
<td></td>
<td>o erythema (redness)</td>
</tr>
<tr>
<td></td>
<td>o altered pigmentation</td>
</tr>
<tr>
<td></td>
<td>o depilation (hair loss)</td>
</tr>
<tr>
<td></td>
<td>&gt; Oesophagitis</td>
</tr>
<tr>
<td></td>
<td>&gt; Odynophagia (discomfort in swallowing)</td>
</tr>
<tr>
<td></td>
<td>&gt; Dysphagia (difficulty in swallowing)</td>
</tr>
<tr>
<td></td>
<td>&gt; Dry cough</td>
</tr>
<tr>
<td>Late side effects</td>
<td>&gt; Radiation pneumonitis/lung fibrosis (inflammation and scarring of the lungs)</td>
</tr>
<tr>
<td></td>
<td>&gt; Oesophageal stenosis (narrowing/strictures of the oesophagus)</td>
</tr>
<tr>
<td></td>
<td>&gt; Cardiac (heart) toxicity</td>
</tr>
<tr>
<td></td>
<td>&gt; Brachial plexopathy/spinal cord myelopathy</td>
</tr>
</tbody>
</table>
10.3  FURTHER INFORMATION

> **Chapter 5**: Supportive care needs of patients with Lung Cancer
> **Appendix M**: Further information on comprehensive guidelines for the treatment of lung cancer
> **Appendix N**: Details of treatment modalities
> **Appendix O**: Treatment algorithms by stage

**RECOMMENDATIONS**

> Where possible, patient treatment should proceed according to the algorithms included in Appendix P.
> Clinicians providing treatment to lung cancer patients should have appropriate specialist experience, and ideally be credentialed for this purpose.
> Lung cancer treatments should be provided within an accredited institution and have access to supporting facilities as indicated by the level and intensity of therapy required.
> Patients, families and caregivers should be provided with the opportunity to discuss the benefits and side effects for a particular chemotherapy regime in consultation with a medical oncologist.
> Supportive care principles are considered throughout the treatment pathway with referral to allied health services as identified.
11. COMPLEMENTARY THERAPIES

Many people with a cancer diagnosis use complementary therapies as an adjunct to conventional cancer treatment, usually to assist in the management of symptoms and side-effects of treatment and to improve quality of life.

Given the high symptom burden reported in patients with lung cancer and the potential vulnerability of this group to alternative or unproven therapies, it is critical that the treating team are aware of the increasing use of complementary therapies in conjunction with active cancer treatment and promote open discussion about these therapies with patients.

The South Australian Cancer Clinical Network recommends health professionals take guidance from the available national principles, and refer patients to reputable resources such as the Cancer Council Helpline for further information.

Complementary and alternative therapies are a diverse group of practices and products not considered part of evidence based, conventional medicine. The term Complementary and Alternative Medicine (CAM) is frequently used to describe this group of therapies; however it is important to distinguish between complementary and alternative therapies.

- Complementary therapies may be used together with conventional medicine.
- Alternative therapies are used instead of conventional medicine.

There is no evidence to support the use of alternative therapies in the treatment of cancer. This Chapter of the cancer pathway provides recommendations for health professionals on the use of complementary therapies as an adjunct to conventional cancer treatments.

11.1 THE USE OF COMPLEMENTARY THERAPIES

In Australia, the use of complementary therapies by people with cancer is rapidly increasing. Their use can be of concern to health professionals who are uncertain of evidence for their benefit. This concern is coupled with confusion over professional standards for CAM providers, availability and access to complementary medicines, different varieties of medicines available and the associated costs.

The South Australian Cancer Clinical Network has endorsed the Clinical Oncological Society of Australia (COSA) position statement ‘The use of complementary and alternative medicine by cancer patients’.

The comprehensive statement provides guidance on the use of CAM for health professionals involved in the management of patients with cancer, including key principles of care (See Box 11.1 overleaf), discussing CAM, evidence, risks/benefits, harm reduction and reporting adverse events.
Box 11.1 Key principles for the use of complementary medicine

- Patient-centred care
- Shared decision-making
- Respect for the patient’s right to make their own decisions about their healthcare
- Effective communication through the provision of a supportive environment that encourages patients to communicate how they are managing their health, including the use of any CAM
- Avoiding prejudice
- Application of risk minimisation principles when a patient chooses to use CAM
- Obligation:
  - providing care to a patient choosing to use CAM does not mean the health professional condones the patient’s decision
  - health professionals are not obliged to provide treatments against their medical judgement when providing care for a patient who chooses to use CAM.

11.2 DISCUSSING COMPLEMENTARY THERAPIES WITH PATIENTS AND/OR CAREGIVERS

Health professionals should actively ask patients about their use of CAM to avoid interactions with conventional treatments. When asking a patient about CAM, it is important to remember that many patients may refer to complementary therapies as traditional or natural therapies, herbal supplements, bush medicines or Chinese traditional medicine.

Discussing the evidence

- Health professionals discuss the process of developing evidence for medicines and the value of evidence based clinical studies compared with other sources of information. Health professionals should encourage patients to consider the evidence supporting the use of their chosen CAM.
- Referral of a patient to another health professional with CAM expertise may be appropriate.

Discussing implications

- Health professionals should encourage open communication with their patients regarding use of CAM in order to anticipate the potential of drug interactions.
- Health professionals should discuss the possibility of CAM treatment failure in a similar way as they would discuss possible failure of conventional medicine.

Keeping a record

- Health professionals should document all discussions they have with their patients about CAM including any advice, type of CAM, CAM provider, patient’s reasons for taking CAM and perceived benefits.

Reporting harmful CAM and CAM providers

- Some complementary therapists, such as Chinese medicine practitioners, are regulated by national legislation and registers. This can make choosing a practitioner safer.
- Where there are concerns of CAM services/products or practitioners the SA Health and Community Services Complaints Commissioner may be contacted.
11.3 FURTHER INFORMATION

> Cancer Council, *Understanding Complementary Therapies- A guide for people with cancer, their families and friends* available online or by phoning the Cancer HelpLine 131120.


> Memorial Sloan Kettering Cancer Center (US), ‘About Herbs, Botanicals and Other Products’: www.mskcc.org/mskcc/html/11570.cfm

RECOMMENDATIONS

> The guiding principles should provide the framework for all complementary and alternative therapies discussions with patients and their carers.

> All patients with cancer should be specifically asked about their use of CAM.

> Discussions and patient and family responses to questions about CAM use should be recorded in the clinical record.
12. FOLLOW-UP CARE

Follow-up care after diagnosis and treatment of lung cancer is intended to enable early detection of metastatic disease or a new primary tumour, facilitate the management of side effects and complications of treatment, and allow for on-going monitoring of physical and psychosocial supportive needs.

The approach to follow-up care required will vary according to the intent of the initial treatment.

It is recommended that frequent follow-up occurs in the first 2 years following curative intent therapy by the treating specialist as it is within this time frame that recurrence is most likely to occur. A follow-up plan is recommended to streamline follow-up and avoid duplication of care by multiple specialists.

12.1 FOLLOW-UP CARE FOR PATIENTS WHO UNDERGO TREATMENT WITH A CURATIVE INTENT

Table 12.1 Suggested long-term follow-up care for patients who have received curative intent therapy for lung cancer

<table>
<thead>
<tr>
<th>Time since treatment</th>
<th>Frequency of follow-up</th>
<th>Follow-up care plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–6 weeks</td>
<td>&gt; One visit</td>
<td>&gt; Initial follow-up with specialist</td>
</tr>
<tr>
<td>0–1 year</td>
<td>&gt; Every 3–6 months</td>
<td>&gt; Comprehensive history and physical assessment every three to six months. The optimal frequency and timing of surveillance imaging is not clearly defined by current evidence. &gt; Consider chest x-ray or CT chest every three to six months for the first year by a lung cancer specialist involved in the care of the patient</td>
</tr>
<tr>
<td>1–5 years</td>
<td>&gt; Once per year</td>
<td>&gt; Specialist physician who diagnosed the primary malignancy</td>
</tr>
<tr>
<td>After 5 years</td>
<td>&gt; As required</td>
<td>&gt; Long-term follow-up after five years needs to be undertaken in collaboration with the patient and GP</td>
</tr>
</tbody>
</table>

Each follow-up visit should involve:

> smoking status assessment, offer of specific medication, counselling and referral for cessation as needed

> patient counselling on symptom recognition and reporting of symptoms if concerned

> review of immunisation schedules such as annual flu vaccinations

> health promotion and wellness.

After surgery, the surgeon should follow up all patients initially. Subsequent follow-up appointments should occur according to local policy.

Considerations for improving patient quality of life

Cross-sectional and longitudinal studies have demonstrated that there is a sub-group of NSCLC survivors who report poorer general health status than other cancer survivors which affects their quality of life. Such factors include: being older, having multiple chronic health problems, continued smoking and/or exposure to second hand smoke, alcohol consumption and being overweight. Additionally, there...
is a growing body of evidence indicating the prevalence of fatigue and functional impairment in survivors of early stage NSCLC.

It is recommended that routine screening be undertaken in all lung cancer survivors post treatment in an effort to detect the presence of clinically significant fatigue and allow for the implementation of supportive care measures. A decline in functional status can restrict family and work related responsibilities, and in turn affect socioeconomic status and psychological wellbeing.

Long term medical care guidelines for adult cancer survivors that focus on cardiopulmonary late effects, bone health, second cancers, hormone deficiencies and anxiety depression are being developed by the American Society of Clinical Oncology (ASCO).

12.2 FOLLOW-UP FOR PATIENTS TREATED WITH PALLIATIVE INTENT OR NO ACTIVE TREATMENT

The purpose of follow-up after palliative treatment and/or no active treatment is to monitor disease progression and provide symptom control.

Follow-up care at this stage should involve:

> access to a specialist with an interest in lung cancer
> investigations agreed to by the designated lead specialist, GP and patient
> access to allied health care providers for symptom management such as physiotherapy, occupational therapy and palliative care.

12.3 FURTHER INFORMATION


RECOMMENDATIONS

> It should be clear to the patient as to who is in charge of their follow-up care
> Follow-up (surveillance) policies for lung cancer should be developed within cancer units to meet local needs and resources
> Written information on follow up should be shared between primary, secondary and tertiary care
> Hospital follow-up should be continued where hospital treatment or specialist advice is still required, or whilst clinical trials are ongoing.
13. CANCER RECURRENCE

Recurrence of lung cancer following curative intent therapy is most likely within 2 years of the original cancer diagnosis. Patient treated for lung cancer have an increased lifelong risk of a new primary lung cancer developing. Recurrence can be locoregional or distant, with most occurring outside of the chest.

Treatment of recurrent lung cancer is rarely curative and usually focuses on disease control and a palliative approach to care. Effective treatment of isolated metastases may be possible.

Treatment plans are determined after further diagnostic and staging evaluation and exploration of patient preferences. All patients require a referral to the multidisciplinary team meeting for discussion.

13.1 MANAGEMENT OF RECURRENT DISEASE

Clinical care

- Investigations may involve:
  - chest x-ray/CT/other appropriate radiology
  - bronchoscopy if local recurrence is suspected
  - whole body FDG-PET/CT scan as appropriate
  - tests related to general medical, respiratory or cardiac assessment

- Referral to the multidisciplinary team with either the referring specialist or a nominated specialist (surgeon, medical or radiation oncologist) having responsibility for managing treatment of recurrence

- Active involvement by the patient’s GP and review by a specialist palliative care team is essential

- Treatment for recurrent disease will depend on the location and extent of the recurrence as well as previous management and may include:
  - radiotherapy for localised recurrence
  - systemic therapies for distant metastases
  - surgery if a recurrent cancer is confined to one site in the lung.

- Recurrent tumours may respond to further lines of systematic therapy.

Supportive care

- Recurrence can be extremely challenging, confronting and met with more pessimism than the original diagnosis
- Recurrences are also seen in patients with poor general factors, such as inadequate nutrition, alcohol and tobacco abuse
- Active involvement by the Lung Cancer care co-ordinator to support overall care of patient and family
- Patients and their family/carers should be fully informed and counselled about the likely outcome of surgical and radiotherapeutic salvage, with respect to survival, risk of treatment-related morbidity and mortality, and quality of life
- Best supportive care with the aim of maximum symptom palliation
13.2 FURTHER INFORMATION

> **Chapter 10**: Treatment
> **Chapter 14**: Palliative care

### RECOMMENDATIONS

> All patients with recurrent lung cancers should be referred to the lung cancer MDM meeting for discussion and consideration of interventions including chemotherapy and/or radiotherapy and to review the plan for ongoing best supportive care.
14. **PALLIATIVE CARE**

Palliative care aims to improve the quality of life of patients and their families facing life-threatening illnesses, through the prevention and management of symptoms and pain.

Despite advances in treatment, the median survival of patients with advanced non-small cell lung cancer remains little more than 12 months.\textsuperscript{79} Poor symptom control and reduced quality of life is often an issue for patients with advanced lung cancer.\textsuperscript{80} With such a poor prognosis, palliative care should always be an early consideration. Early referral to palliative care can provide a positive effect on quality of life and end of life care for patients with advanced and metastatic non-small cell lung cancer.

A patient-centred palliative approach should be embedded in all cancer care.

14.1 **PALLIATIVE INTERVENTIONS AND CARE**

The World Health Organisation defines palliative care to be ‘an approach which improves the quality of life of patients and their families facing life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual’.\textsuperscript{81}

The European Society of Medical Oncology (ESMO) defines palliative care as ‘care that aims to optimise the comfort, function and social support of the patient and family when cure is not possible’.\textsuperscript{82}

A palliative approach should be embedded in all cancer care. Care should be patient-centred and focused on symptom control at all stages of the disease. A palliative approach ‘encourages a focus on pain and symptom management, and prompts more open communication about end-of-life issues’.\textsuperscript{83}

**Provision of palliative care**

All professionals caring for cancer patients should **assess palliative and supportive care needs in initial treatment planning** and throughout the illness.

Specialist palliative care teams work in consultation with a patient’s primary health providers to arrange:

> provision of relief from symptoms and symptom control

> physical, social, psychological and spiritual support for patients and their carers when these needs cannot be met by primary care teams.\textsuperscript{84}

Specialist palliative care teams work across a range of health care services, from the acute setting to hospice or in the community.

Specialist palliative care teams will have varying involvement in patient care, depending on the stage of a patient's disease. As the patient nears end of life, the specialist palliative care team may become the primary specialist service involved in patient care, working alongside a GP and other primary care providers. The transition to care primarily led by the specialist palliative care team is best done in a coordinated fashion between the specialist groups, so that the patient understands the reason for transition, how it will occur and ensures the patient, and their family/carers continues to feel well supported.
Referral to specialist palliative care services

A person is eligible for referral to specialist palliative care services if:

- they have progressive, life limiting illness
- they, or their decision maker, is aware of, understands and has agreed to a palliative care referral
- the primary goals of patient care are to control symptoms, maximise function, maintain quality of life and provide comfort.

If a patient does not meet the three eligibility criteria outlined above, the referrer should contact the palliative care service to discuss the referral with a member of the specialist palliative care team.

Referral to a specialist palliative care service can be initiated by health care professionals, patients, carers or family members when:

- the patient requires a palliative care assessment and provision of service information
- symptoms and/or concerns exceed the capacity, resources, knowledge or skills of the primary care provider
- there is difficulty maintaining care at place of residence
- the patient requires terminal care (patient is in the last few weeks of life).

14.2 ADVANCE CARE PLANNING

Advance care planning enables an individual to express their wishes about his or her future health care. Advance directives are based on values of respect, dignity and autonomy. Conversations about the focus of care and the treatment options available should be held early in the course of disease while the patients have the ability to be involved.

Information contained within a patient’s advanced care plan will need to be provided to all health professionals involved in their care including the specialist palliative care team. If a patient does not have a plan in place, the palliative care team can provide support in establishing one with the patient and/or their decision maker. Further information can be found in Chapter 4.

14.3 END OF LIFE CARE

As the end of life approaches, all efforts are made to allow patients to spend their remaining time in the place of their choice, whether this is in their home, hospital or inpatient hospice unit. Health professionals should be mindful of the possibility that this preference may change close to the end of life.

Quality of life in people with advanced cancer is affected by symptoms, loss of function and curtailment of activity, physical effects of treatment, and psychosocial needs.85

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.86

The physical burden faced by patients at the end of life can have a major effect on their emotional wellbeing, and emotional wellbeing of their family/carers. This may be exacerbated by existential and spiritual issues arising from facing death.

Distress can arise as patients and carers are confronted with their own mortality. Existential concerns are reported to be at least as important as the physical, psychological and social supportive care needs of patients and their family/carers in determining quality of life.87
14.4 FURTHER INFORMATION

- Information on the management of symptoms of lung cancer is presented in Chapter 5: Table 5.1.
- Palliative Care Australia: www.palliativecare.org.au
- Palliative Care Council of South Australia: www.pallcare.asn.au
- Caresearch: www.caresearch.com.au
- Respecting Patient Choices, Advanced Care Planning www.respectingpatientchoices.org.au/
- National Comprehensive Cancer Network, Clinical Practice Guidelines in Oncology- Palliative Care: http://www.nccn.org

RECOMMENDATIONS

- A palliative approach should be a core principle of care for all treating clinicians
- Palliative care referral should be made early in the course of disease for people with complex and unmet needs
- All patients and their families and/or caregiver should have access to specialist palliative care services if required
- All patients and their families and/or caregivers would benefit from having a clinician who provides case coordination to ensure that they can navigate the health system
- All patients and their families and/or care giver(s) require information regarding bereavement support services, while some will require specific assessment and support.
15. SURVIVORSHIP

With early detection and improved outcomes of cancer treatment, the number of Stage 1 lung cancer patients surviving is increasing.

The USA National Cancer Institute describes survivorship in cancer as covering the ‘physical, psychosocial, and economic issues of cancer, from diagnosis until the end of life. It focuses on the health and life of a person with cancer beyond the diagnosis and treatment phases. Survivorship includes issues related to the ability to get health care and follow-up treatment, late effects of treatment, second cancers, and quality of life. Family members, friends, and caregivers are also part of the survivorship experience’.88

15.1 OVERVIEW OF SURVIVORSHIP

Survivors face many issues affecting quality of life, including socioeconomic, psychological, functional and family domains. As many of these domains are integrated, a problem in one area may affect other domains. For example, a survivor may experience a decline in their functional status, restricting family and work related responsibilities, in turn affecting their socioeconomic status and psychological wellbeing.

Figure 15.1 Aspects of survivorship

- **Psychosocial**
  - Integrating back into the community
  - School/employment
  - Change in roles/relationships
  - Loss of hospital support ‘in limbo’

- **Survivorship**
  - Specialised clinics to coordinate care
  - Counselling, social worker and support groups
  - General practitioner
  - Use of distress tools and appropriate referrals

- **Health promotion**
  - Smoking
  - Alcohol use
  - Weight control
  - Diet/nutrition
  - Exercise
  - Suncare

- **Fear of relapse**
  - Changes in perception of life expectations
  - Changes in priorities

- **Life long surveillance**
  - Late effects, such as secondary malignancy, hyperthyroidism, cardiovascular effects

- **Information needs**
  - To have the best chance of survival, the patient and caregivers need information, support and education

- **Medical issues**
  - Depression
  - Fatigue
  - Fertility
  - Cognitive impairment
  - Chronic illness
  - Body image

- **Integrating back into the community**
- **School/employment**
- **Change in roles/relationships**
- **Loss of hospital support ‘in limbo’**

- **Specialised clinics to coordinate care**
- **Counselling, social worker and support groups**
- **General practitioner**
- **Use of distress tools and appropriate referrals**

- **Smoking**
- **Alcohol use**
- **Weight control**
- **Diet/nutrition**
- **Exercise**
- **Suncare**

- **Changes in perception of life expectations**
- **Changes in priorities**

- **Late effects, such as secondary malignancy, hyperthyroidism, cardiovascular effects**

- **To have the best chance of survival, the patient and caregivers need information, support and education**

- **Depression**
- **Fatigue**
- **Fertility**
- **Cognitive impairment**
- **Chronic illness**
- **Body image**
15.2 SURVIVORSHIP AND PATIENT NEEDS

An increase in the number of people surviving cancer has led to an increase in the number of people requiring cancer follow-up care.\textsuperscript{89}

It has become apparent that follow-up services are not meeting the needs of patients. In particular, traditional routine medical follow-up frequently fails to meet the supportive care needs of people following completion of treatment for cancer, often resulting in feelings of abandonment during the transition from cancer ‘patient’ to cancer ‘survivor’.\textsuperscript{79}

Survivorship support plans

It is important to ensure that survivor’s needs are identified and plans made to meet them from an early stage. The benefits of a survivorship support plan are detailed in Box 15.1.

**Box 15.1 Benefits of a survivorship support plan**

- A vehicle for communication between treating physicians and local health providers.
- Help specialists and primary care physicians address questions that patients raise, perhaps years after treatment.
- Allows the patient to make informed health choices and promote healthy lifestyles in an attempt to reduce other co-morbid conditions.
- Allows the patient to take some responsibility for their care. It may also ensure adherence to follow-up recommendations.
- Can support and facilitate moving the focus of care back to the community.
- Early detection of health complications that can be ameliorated

Due to the complexity of survivorship needs, it is important that survivorship support plans are implemented and coordinated addressing both medical and psychosocial aspects of care.

The planning process is not limited to doctors, and should be seen as a quality-related multidisciplinary team activity. Specialist nurses are in a unique position to assist with survivorship planning and provide the coordination of survivorship care. Through nurse led clinics, advanced nursing practice roles such as the nurse practitioner, advanced nurse clinical practice consultant and nurse clinical practice consultant can work alongside medical practitioners, benefiting both clinicians and patients.\textsuperscript{150} Survivorship plans should be dynamic and working documents, updated as patient circumstance changes and additional research becomes available.

The key elements of a survivorship support plan are detailed in Box 15.2.
Box 15.2 Key elements of a survivorship support plan

- Patient diagnosis, age at diagnosis/treatment and stage.
- Treatment protocol/plan and exposures – including dates of therapy.
- Toxicities/morbidities experienced during therapy and potential long term toxicities.
- Guidelines for required screening for both recurrence and toxicities.
- Assessment of psychosocial/vocational/educational/financial needs.
- Recommended preventative behaviours/ interventions e.g. weight control, diet/nutrition, exercise, alcohol use, smoking, sun care, complementary medicine use, osteoporosis prevention, and immunisations.
- Information on the availability of community based psychosocial services e.g. an online searchable database of local resources according to postcode and/or links to national/international websites providing survivorship information and services.
- Contact information of the treating hospital and individual providers.
- Identification of a key contact and coordinator of continuing care.

Establishing partnerships with primary health providers, such as GP’s, local community health services, is required to achieve quality survivorship care in the health care issues for this growing population.

Other requirements for the implementation of survivorship planning include:

- Coordination of plans to ensure cohesive and efficient care, including an identified survivorship coordinator, i.e. specialist nurses such as nurse practitioners, nurse clinical practice consultants and advanced nurse clinical practice consultants
- Time to create and deliver plans
- Training of health professionals (inclusive of specialists) in needs of survivors and how to act on care plan recommendations.
- Research to expand the evidence base.
- Recognition of cancer as a chronic condition.
15.3 FURTHER INFORMATION

> **Peter MacCallum Cancer Centre Cancer**, Australian Cancer Survivorship Centre providing information for those who have successfully completed cancer treatment provides an example of a survivorship care plan template.

> **Cancer Council Victoria**. Currently developing a ‘comprehensive survivorship package’ including: DVD, booklet and a question prompt list, SCP for patient and for GP, Nurse-led ‘end of treatment’ session, and telephone-based follow up.

> **The Warwick Foundation**. Provides support to young adults with cancer aged 18-40, with a particular emphasis on their social and emotional wellbeing.

> **Oncolife**: Information about potential late effects of cancer treatment and survivorship care plans. All information is based on published, evidence-based guidelines whenever possible, and lacking those, consensus-based guidelines.

> **Cancer Survivor Toolbox**: [www.canceradvocacy.org/toolbox](http://www.canceradvocacy.org/toolbox)

> **Macmillan Cancer Support**, [The National Cancer Survivorship Initiative Vision](http://www.ncsi.org.uk/)

> **Flinders Cancer Centre and the ACRF Cancer Prevention Unit**: [http://www.fcic.org.au](http://www.fcic.org.au)

> **Journey Forward**, for information on survivorship research and care plan: [http://www.asco.org](http://www.asco.org)

### RECOMMENDATIONS

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

> Establishment of partnerships between cancer specialists and primary health care providers such as the GP can help to facilitate improvements in achieving quality survivorship care for lung cancer patients.

> An identified survivorship coordinator is required for cohesive and efficient care

> Development of survivorship plans is required for lung cancer patients.
APPENDIX A: LUNG CANCER PATHWAY RECOMMENDATIONS

Lung cancer in South Australia

> Service providers should promote the use of culturally appropriate health preventative information (e.g. smoking cessation) available from Aboriginal Health Council of South Australia, and Aboriginal and Torres Strait Islander Liaison Unit at specific local hospitals.

> Collection of defined national minimum dataset on all lung cancer patients should be mandated through a national model.

Multidisciplinary and coordinated team care

> All patients with a lung cancer diagnosis should have access to a specialist lung cancer physician and nurse or cancer care coordinator along the cancer journey. These roles should be incorporated on sites with a lung cancer MDT.

> Cancer Council resources should be used as standard practice, and include the brochure ‘A multidisciplinary team approach to cancer care’.

Supportive care (General recommendations)

> Health professionals should be trained in supportive care screening to encourage inclusion of supportive care issues as part of multidisciplinary care.

> Patient diaries should be implemented as standard care as a means of providing practical information about lung cancer treatment. Use of patient diaries requires continual qualitative evaluation that includes consumer involvement.

> The use of health-related quality of life (HRQOL) measures in clinical practice, such as the University of Washington Quality of Life version 4 (UWQOLv4), is recommended.

> The NCCN Distress Thermometer in automated electronic (touch-screen) format may be used to screen patients with results scored and transcribed so that information is readily available to guide the consultation. QUICATOUCH has been found to be effective in monitoring patients and increasing the number of new patients receiving timely and appropriate psychological treatment.

Supportive care (Specific to the needs of patients affected by lung cancer)

> A review and endorsement of validated assessment tools used in cancer patients should be undertaken to facilitate uploading of information to the EPAS system to be used in conjunction with clinical history and assessment.

> A standard approach to early assessment for supportive care needs and functional status using validated screening tools should be adopted across community settings to flag required interventions.

> People with lung cancer should have access to appropriate interpretative services or a culturally appropriate support health worker during consultations with cancer specialists and health professionals.

> All patients with lung cancer should be screened for anxiety or depression regularly throughout the care continuum and have access to supportive care as required.

> Patients with lung cancer should have access to allied health services in the inpatient, outpatient, rehabilitation and community settings of both public and private sectors. These services should
have a focus on optimising physical and psychosocial function.

> Non-drug interventions for breathlessness should be delivered in a multidisciplinary manner and coordinated by a professional with an interest in breathlessness and expertise in the techniques (e.g. a nurse, physiotherapist or occupational therapist). Although this support may be provided in a multidisciplinary clinic, patients should have access to it in all care settings.

> Education should be provided to lung cancer patients regarding sexuality issues with referral to identified counsellors, who have expertise in the area if required

Prevention and minimising risk

> Aboriginal health services, Aboriginal Health Workers and health professionals working with culturally and linguistically diverse communities should be supported to promote interventions to encourage smoking cessation.

Screening and early detection

> A time of 1 week from GP practitioner identification of clinically suspicious symptoms to GP referral to a respiratory physician is optimal.

> State-wide referral documentation and related processes should be standardised.

> All individuals with suspected lung cancer should be referred to a respiratory physician with expertise in the management of lung cancer.

Diagnosis and staging

> Lung cancer diagnosis and staging needs to occur in the context of holistic patient care, including referral to relevant allied health professionals as appropriate.

> A lung cancer coordinator should be available to: (i) coordinate the approach to diagnostic and staging investigations (particularly for rural and remote patients); (ii) support the patient when they are given the diagnosis; and (iii) ensure communication with the patient’s GP.

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

> Access to diagnostic and staging investigations should be local where possible, rapid and coordinated, especially for people at high risk (with routine audit):
  
  - adequate tissue samples for diagnosis (histology, cytology, molecular markers) should be obtained within 1 week of consultation with the specialist to ensure treatment is not delayed for those with a potentially curable cancer
  
  - staging investigations (note exceptions) should be done within 1 week of tissue confirmation of lung cancer (with routine audit to assess whether this is occurring).

> Optimal patient management requires accuracy and consistency in histopathological diagnosis. It is recommended that anatomical pathologists adopt synoptic reporting of lung cancer as a standard for uniform diagnosis and auditing.

> Following staging early referral to treating specialist is recommended to reduce risk of upstaging disease.

> PET-FDG (used with clear guidelines) should be a routine tool for patients with locally advanced disease, where treatment intent is curative.

> All patients with a confirmed diagnosis of lung cancer should be referred to a multidisciplinary team that includes a lung cancer care coordinator.
> All patients with a confirmed diagnosis should receive a minimum of standardised information that includes:

> Radiology and Pathology departments require referrals for patients to be discussed at the MDT meeting at least 2 days before the meeting to enable collation and photography of slides, and ordering of additional tests if needed. If slides need to be sourced from another local laboratory, 5 working days is recommended. This can be modified for urgent requests.

> Resources should be provided to evaluate the lung cancer pathway and to evaluate clinical investigations that currently lack an evidence base.

**Presentation at the lung cancer multidisciplinary team meeting**

> All lung cancer MDTs in SA endorse the State-wide Clinical Networks MDT Meeting Terms of Reference to guide meeting processes.

> All patients with lung cancer should be discussed at a lung cancer MDT meeting within 2 weeks of confirmed diagnosis.

> MDT meetings must be appropriately resourced. This includes administrative support and an MDT meeting coordinator and / or administrative support (administrative A03 level). Administrative processes should be standardised with clear protocols.

> TNM staging of lung cancer cases discussed at the MDT meeting should be recorded for all cases.

> A copy of the treatment plan, including any revisions made following patient discussion, should be sent to the referring GP within 3 working days of the MDT meeting. A copy should also be placed in the patient's case file and sent to the specialist responsible until care is formally referred and passed on to another health professional.

> Where possible, patients should be offered clinical trial enrolment.

> Improvements to telehealth facilities will facilitate initial patient assessment and post-treatment follow-up (where clinically appropriate) with GPs.

> The lung cancer MDT should contribute to a complete dataset of lung cancers diagnosed in South Australia.

> Resources should be provided for clinical data collection at the MDT meeting (particularly stage, treatment plan and course), and its subsequent analysis, interpretation and reporting (particularly in conjunction with SA cancer registry data).

> MDT meeting processes should be monitored, including:
  > attendance of core team members at each meeting
  > number of lung cancer cases presented as a ratio of total new diagnoses
  > time from initial patient presentation to diagnosis and time to treatment number of MDT meeting summaries distributed to GPs within 3 working days of presentation at the MDT.
Treatment

> Where possible, patient treatment should proceed according to the algorithms included in the treatment chapter.

> Clinicians providing treatment to lung cancer patients should have appropriate specialist experience, and ideally be credentialed for this purpose.

> Lung cancer treatments should be provided within an accredited institution and have access to supporting facilities as indicated by the level and intensity of therapy required.

> Patients, families and caregivers should be provided with the opportunity to discuss the benefits and side effects for a particular chemotherapy regime in consultation with a medical oncologist.

> Supportive care principles are considered throughout the treatment pathway with referral to allied health services as identified.

Complementary therapy

> A clear documented surveillance plan should be completed with an identified specialist for all patients following completion of treatment for lung cancer. The surveillance plan should be provided to the patient and their GP.

> All patients with recurrent lung cancers should be referred to the lung MDT meeting for discussion and consideration of interventions, including chemotherapy and/or radiotherapy, and to review the plan for ongoing best supportive care.

Follow-up care

> It should be clear to the patient as to who is in charge of their follow-up care

> Follow-up (surveillance) policies for lung cancer should be developed within cancer units to meet local needs and resources

> Written information on follow up should be shared between primary, secondary and tertiary care

> Hospital follow-up should be continued where hospital treatment or specialist advice is still required, or whilst clinical trials are ongoing.

Cancer recurrence

> All patients with recurrent lung cancers should be referred to the lung cancer MDM meeting for discussion and consideration of interventions including chemotherapy and/or radiotherapy and to review the plan for ongoing best supportive care.

Palliative care

> A palliative approach should be a core principle of care for all treating clinicians

> Palliative care referral should be made early in the course of disease for people with complex and unmet needs

> All patients and their families and/or caregiver should have access to specialist palliative care services if required

> All patients and their families and/or caregivers would benefit from having a clinician who provides case coordination to ensure that they can navigate the health system

> All patients and their families and/or care giver(s) require information regarding bereavement support services, while some will require specific assessment and support.
Survivorship

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

> Establishment of partnerships between cancer specialists and primary health care providers such as the GP can help to facilitate improvements in achieving quality survivorship care for lung cancer patients.

> An identified survivorship coordinator is required for cohesive and efficient care.

> Development of survivorship plans is required for lung cancer patients.
APPENDIX B: KEY PRINCIPLES OF CANCER CARE

Underpinning the cancer pathway are key principles that support each stage of the pathway.

Patient centred care
> Patients and their families/care givers are encouraged to be involved as active participants in care planning and decision making. Ultimately treatment decisions rest with the patient or designated person. This requires information and discussion to be provided in their preferred language and in a manner that is sensitive to their culture.

Safe and high quality care
> Cancer care is complex, involving a range of specialist providers and health professionals with varied clinical expertise. To ensure safe and high quality cancer care it is essential for health professionals to possess the technical skills and experience to undertake the relevant aspects of cancer care and have access to appropriate infrastructure to support such care.

Multidisciplinary care
> Best practice in cancer care involves multidisciplinary treatment planning and multidisciplinary care delivery.

> Effective multidisciplinary approaches in the management of patients with cancer have demonstrated positive outcomes, including increased survival, a greater understanding that a comprehensive team is providing care, a greater likelihood of receiving care that is 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.

> Supportive care includes the acknowledgement of all domains of patient needs – physical, psychological, social, informational and spiritual – that may be required to support the patient and their families/caregivers.

Care co-ordination
> Patients require co-ordination of their health care. A variety of strategies have been shown to improve co-ordination of care and these include multidisciplinary team meetings, clinical protocols, access to cancer nurse specialists and utilisation of appropriate performance indicators.
### APPENDIX C: SAFETY AND QUALITY KPIs

Below are the key quality indicators representing all the stages of lung cancer care: including referral, diagnosis, treatment, supportive care, post treatment follow-up and survivorship. (Based on Performance Indicator Framework for SA Cancer services, Commuinio 2010)

<table>
<thead>
<tr>
<th>Referrals</th>
<th>Diagnosis</th>
<th>Treatment</th>
<th>Supportive care</th>
<th>Survivorship</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>• GP referral form, referral process, is the GP providing, enough detail on referral form, completeness of information.</td>
<td>• Patient discussed at MDT meetings within 14 days of confirmed molecular diagnosis</td>
<td>• 100% of lung cancer cases presenting to the health service are presented at the MDT meeting with treatment recommendations documented</td>
<td>• 100% of all newly diagnosed patients screened for supportive care needs</td>
<td>• 100% of patients have a documented survivorship plan on completion of treatment</td>
<td>• 100% of relapsed/progressive disease patients have a documented multidisciplinary care plan resulting from a multidisciplinary team meeting</td>
</tr>
<tr>
<td>• 100% of patients with an urgent new lung cancer referral from their GP see the specialist within 2 weeks</td>
<td>• 100% of pathology reports in synoptic format</td>
<td>• 100% patients are offered enrolment in clinical trials where appropriate</td>
<td>• Evidence of screening in patient record for 100% of patients</td>
<td>• 100% of patients have a documented survivorship plan on completion of treatment</td>
<td>• Quality of life surveys completed following treatment</td>
</tr>
<tr>
<td>• 100% of patients received coordinated cancer care</td>
<td>• 100% of patients diagnosed with cancer have documented clinical staging</td>
<td>• 100% of patients have documentation of use of any complementary therapies</td>
<td>• Appropriate referrals made in response to needs identified via supportive care screening</td>
<td>• 100% of patients who are admitted to hospital have an advance care directive</td>
<td>• Follow up from all relevant health professionals including surgical, radiotherapy and oncology health professionals.</td>
</tr>
<tr>
<td></td>
<td>• 100% of patients with radiology staging reports have reports that are compliant with structured radiology reporting guidelines</td>
<td>• 100% of newly diagnosed patients have a documented multidisciplinary care plan resulting from the MDT meeting</td>
<td>• Increase in the number of supportive care needs being addressed via referral to appropriate service/resource</td>
<td></td>
<td>• Increase in staff confidence in identifying supportive care needs measured by satisfaction surveys</td>
</tr>
<tr>
<td></td>
<td>• 100% of patients are referred to the multidisciplinary team (MDT) with documented clinical staging</td>
<td>• 100% of patients completing a treatment episode, have a comprehensive treatment summary (or discharge summary) sent to their nominated GP within 2 days of completion of treatment</td>
<td></td>
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</tbody>
</table>
APPENDIX D: BENEFITS AND PRINCIPLES OF MULTIDISCIPLINARY CARE

BENEFITS OF MULTIDISCIPLINARY CARE

- 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
- Decreased variation in care
- Increased referrals for psychosocial support
- Increased discussion of patient eligibility for clinical trials
- Enhanced clinical education opportunities
- Opportunity for health professionals to interact.

Positive outcomes identified for patients include:

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

MULTIDISCIPLINARY CARE PRINCIPLES

1. A team approach

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

2. Communication among team members

- All the core team members regularly attend multidisciplinary team meetings (MDM) to provide input into diagnostic, treatment, supportive and palliative care planning.
- Processes are in place for communication for treatment recommendations and care plans
- The OACIS or EPAS clinical summary (or alternative summary) letter enables electronic communication of treatment recommendations and care plan between core MDM members and members of the treating team. Summaries and letters need to be communicated in a timely manner with the patient’s GP and private practitioners who do not have access to EPAS.

3. Access to the full range of therapeutic modalities for all patients, regardless of geographical remoteness or size of institution

- All patients regardless of where they live will 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.
4. Provision of care in accord with agreed standards/pathway²
   > Informed decision making is guided by current best practice principles.
   > All relevant diagnostic results, reports and pathology and radiology images are available for MDM.
   > Professional development activities for all MDM members are offered and supported.

5. Involvement of patients in decisions about their care³
   > Informed consent is obtained prior to a MDM.
   > Patients are informed of the MDM care and billing processes through Medicare for their treatment planning.
   > Patients are informed of the MDM; recommendations and provided with information about all aspects of their treatment.
   > Patients are routinely provided with suitable information about and access to supportive care services.
APPENDIX E: INFORMATION FOR GENERAL PRACTITIONERS

GPs play an important role in the early detection, treatment and follow-up care of patients with cancer and in communication of prevention messages.

THE ROLE OF THE GP

GPs provide both clinical and supportive care to patients with cancer.

<table>
<thead>
<tr>
<th>Clinical care</th>
<th>Supportive care</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Recognition of signs/symptoms</td>
<td>&gt; Provision of appropriate information on diagnosis and treatment to patients and carers</td>
</tr>
<tr>
<td>&gt; Documentation of history and clinical findings</td>
<td>&gt; ensuring rural/remote patient receive appropriate information regarding services</td>
</tr>
<tr>
<td>&gt; Initiating and review of results of initial investigations</td>
<td>&gt; referral to psychosocial and practical support when required for patients and care givers</td>
</tr>
<tr>
<td>&gt; Prompt referral to appropriate specialist</td>
<td>&gt; support during palliative and end of life care</td>
</tr>
<tr>
<td>&gt; Patient assessment and surveillance throughout treatment</td>
<td></td>
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<tr>
<td>&gt; Monitoring of long-term treatment side effects</td>
<td></td>
</tr>
<tr>
<td>&gt; Monitoring of signs/symptoms of recurrence post-treatment</td>
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</tbody>
</table>

A full description of the role of a GP in the management of patients with cancer is detailed on page 9 of the South Australian Lung Cancer Pathway.

RECOGNISING SIGNS AND SYMPTOMS

Early detection of cancer through recognition of symptoms and appropriate and timely referral to specialist care plays a critical role in the quality care, treatment and survivorship for cancer patients.

The signs and symptoms of lung cancer can include:

- cough (> 1 month)
- haemoptysis
- persistent hoarse voice
- non-resolving pneumonia
- unexplained weight loss
- unexplained bone pain or chest wall discomfort
- suspicious radiological lesion
- dyspnoea
- finger clubbing
- features suggestive of metastases from lung cancer
- persistent cervical / supraclavicular lymphadenopathy
- signs of pleural effusion.

A patient presenting with any of the signs and symptoms listed above, should receive urgent referral to a respiratory physician.
ASSESSMENT AND INVESTIGATION

The role of the general practitioner in early detection and investigation of lung cancer and referral includes:

- liaising with the specialist to determine the initial investigations to be undertaken, and who takes responsibility for each
- conducting and/or referring patient for initial investigations that have been flagged as the GP
- addressing the patient and family needs for continuing support while waiting for the specialist appointment.

Results of initial investigations should be reported to the patient within 1 week of the GP identifying symptoms suggestive of lung cancer.

A full description of the initial tests and assessments required to investigate a suspicion of lung cancer is detailed on page 27 of the South Australian Lung Cancer Pathway.

APPROPRIATE AND TIMELY REFERRAL

If cancer is suspected, referral to a respiratory physician should be made as soon as possible.

A GP referral letter can be faxed, emailed or submitted via a web based referral technology. The most rapid form of referral technology is the Enterprise Patient Administration System (EPAS). A phone discussion is also strongly recommended to facilitate an urgent appointment.

The referral letter to a respiratory physician should include:

- history of presenting signs (clinical history)
- recordings of current and previous weight
- past medical history, including current medications and allergies
- relevant psychosocial history
- all relevant investigations and imaging
- most appropriate contact details for patient, e.g. mobile phone number or the phone number of a relative or carer if the patient speaks limited or no English.

The patient should be see a specialist within 2 weeks of initial presentation

A full description of the process for referral of a patient with suspected lung cancer is detailed on page 28 of the South Australian Lung Cancer Pathway.

A NOTE ON THE MULTIDISCIPLINARY TEAM

The GP is welcome to attend the multidisciplinary team (MDT) meeting if desired.

During the MDT meeting, an individualised treatment plan is developed for each patient, taking into account the patient’s preferences. This plan should be documented and communicated to the patient, their family and all treating clinicians, including the GP.

South Australia Lung Cancer Pathway
MANAGEMENT OF SUSPECTED LUNG CANCER: ADVICE FOR GPS

Clinical suspicion of lung cancer → Referral to Respiratory Physician → Coordination of care → Seen by Respiratory Physician within 14 days → Completion of diagnostic & staging investigations → Referral to Lung Cancer MDT meeting → Lung Cancer MDT meeting

Patient presentation to GP or Emergency Department
- One or more of these signs/symptoms without an evident cause:
  - new onset cough > 1 month
  - haemoptysis
  - persistent hoarse voice
  - non resolving pneumonia
  - unexplained weight loss
  - unexplained bone pain or chest wall discomfort
  - suspicious radiological lesion
- Consider following risk factors:
  - current or ex smoker
  - previous history of lung or head and neck cancer
  - asbestos exposure, particularly with tobacco exposure

Within 7-14 days of initial assessment and diagnosis clinical assessment (history & physical examination) baseline FBE, MBA 20, coags, CXR or CT chest & upper abdomen

High clinical suspicion Working diagnosis of lung cancer → Urgent referral to Respiratory Physician detailing:
- history & physical examination
- investigations & results

Respiratory physician:
- tissue diagnosis
- staging investigations
- cardiorespiratory assessment
- confirmed diagnosis lung cancer

Treatment Recommendation:
- surgery
- radiotherapy
- chemotherapy
- interventional pulmonology
- clinical trial
- active monitoring
- palliative care

Follow-up care GP

Disease recurrence and/or end of life care survivorship

GP informed → Treatment decision with patient/family → Referrals to relevant treating Clinicians

Within 42 days of presentation commence definitive RX

South Australia Lung Cancer Pathway
APPENDIX F: PRINCIPLES OF SUPPORTIVE CARE

Supportive care is an ‘umbrella’ term used for all health services (generalist and specialist) that may be required to support people with cancer and their families and/or care givers.

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. The type and degree of interventions to meet the supportive care needs for patients and their caregivers will vary throughout the cancer journey; many patients’ needs will be met adequately through the provision of general information, while some patients will require specialised intervention.93

The spectrum of supportive care includes:

> management of physical symptoms and side effects across the cancer continuum from diagnosis through treatment to post treatment care
> management of psychosocial issues
> enhancing rehabilitation
> secondary cancer prevention
> promoting healthy lifestyles with health risk reductions strategies
> monitoring functional status
> survivorship support and care
> end of life care

PROVIDERS OF SUPPORTIVE CARE

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

ACHIEVING BEST PRACTICE IN SUPPORTIVE CARE94

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 patient and their care givers. Regular reassessment is essential, as needs frequently change 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 Clinical practice guidelines for the psychosocial care of adults with cancer 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.95,96

ESTABLISHING A SUPPORTIVE CARE MODEL

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

> Patient’s and carers have their supportive care needs systematically identified as part of a multidisciplinary best-practice approach to cancer care
> A detailed assessment of supportive care needs will help identify those patients who require more
specific one-one intervention and follow-up

> A clear referral pathway to specialised supportive care services

> A skilled workforce with the ability to assess patient needs, deliver support and/or enable referral onto specialist supportive care providers at suitable points in the patient’s cancer journey

> Promotions of supportive care as integral components of cancer service delivery, including information about the range of professional services available so that patients can self-refer of self-identify a need.

> Adequate communication between health services, to enhance referral and linkage of supportive care services.

Other specific information needs may include:

> assistance with smoking cessation may be required; this is particularly relevant prior to surgery to reduce the likelihood of post-operative complications (information is available from the lung cancer care co-ordinator and the 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 (Aboriginal Cancer Care Co-ordinators/ local Aboriginal Health Service may be able to assist patients and caregiver(s) in their region).

COMMUNICATION WITH PATIENT AND CARE GIVERS

Patients require verbal and written information that is culturally appropriate and may require access to a qualified interpreter (accredited by the National Accreditation Authority for Translators and Interpreters (NAATI). Information required includes details about the disease, preventative actions, the reasons for and likely effects of diagnostic procedures, treatment options (including known risks and potential adverse effects), and information about effective coping strategies. Patients and carers should receive both individual support and guidance and well-produced, culturally appropriate information leaflets, or quality web–based information.

It is recommended that health care providers ask patients if they want additional information and discuss how much they wish to be involved in decisions about treatment. Determine the patient’s needs and preferences regarding information about treatment, and encourage family members, care givers and/or others who may provide support to the patient during consultations. Specific instructions for self-care may enable patients and family members to maintain their desired level of independence throughout the cancer care journey.

All health professionals involved should know what information has been given to each patient. A record of this, along with the patient’s preferences for information and involvement in decision-making, should be included in the notes and given to the patient’s general practitioner, together with a comprehensive summary of the management plan. Communication needs to be effective, with fast and efficient links.
### APPENDIX G: CANCER RESOURCES AND SERVICES IN SOUTH AUSTRALIA

#### CANCER RESOURCES

<table>
<thead>
<tr>
<th>Organisation</th>
<th>About</th>
<th>Resources</th>
<th>Website</th>
</tr>
</thead>
</table>
| **Cancer Australia**              | Cancer Australia works to reduce the impact of cancer and improve the well-being of those diagnosed by ensuring that evidence informs cancer prevention, screening, diagnosis, treatment and supportive care. | > Factsheets and statistics sheets on different cancer types  
| **Cancer Council South Australia**| An independent, non-profit organisation driving research into cancer and supporting South Australians affected by cancer.                                                                               | > Services include information resources on cancer, its treatment, side effects, and medical terminology, support services such as counselling, self-care programs, accommodation and research.  
> CCSA also provides links to other reliable cancer information websites, along with an online library. | [www.cancersa.org.au](http://www.cancersa.org.au)                                                      |
| **Cancer Council Helpline**        | Nurses and health counsellors available via a telephone support service.                                                                                                                                | > Telephone help line : 13 11 20  
> Email: chl@cancersa.org.au |                                                                                                          |
| **Cancer Council Australia**       | The leading independent funders of cancer research in Australia (through National and state-based organisations). Provide evidence-based, up to date information for consumers.                           | > Fact sheets on a variety of cancer issues including early detection, diagnosis and treatment, living with cancer and lifestyle advice. | [www.cancer.org.au](http://www.cancer.org.au) |

South Australia Lung Cancer Pathway
<table>
<thead>
<tr>
<th>Organisation</th>
<th>About</th>
<th>Resources</th>
<th>Website</th>
</tr>
</thead>
</table>
| Health insight              | *healthinsite* is a non-commercial, government-funded health information service, operated by Healthdirect Australia. It aims to improve the wellbeing of all Australians by providing easy access to quality health information and services. | > **Fact sheets** on a variety of health conditions  
| **Resources for Aboriginal and Torres Strait Islander population** |                                                                                                                                                                                                       |                                                                           |                                              |
| Australian Indigenous Health Info Net | A national website with information for both the public and health professionals. It promotes knowledge and information sharing on all health issues relevant to ATSI people. | > **Fact sheets** on a variety of health conditions  
> **Information on prevention and risk factors** | [www.healthinfonet.ecu.edu.au](http://www.healthinfonet.ecu.edu.au)          |
## CANCER SERVICES

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Location</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Services for Aboriginal and Torres Strait Islanders</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Queen Elizabeth Hospital Aboriginal Liaison Officers Woodville Road Woodville, SA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lyell McEwin Hospital, Muna Paidendi Aboriginal Health Team Haydown Road, Elizabeth Vale</td>
<td></td>
</tr>
<tr>
<td><strong>A list of Community Health services in SA is available at the following web sites:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><a href="http://www.caesa.org/commhealth.html">http://www.caesa.org/commhealth.html</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td><a href="http://www.caesa.org/acsd.htm">http://www.caesa.org/acsd.htm</a></td>
<td></td>
</tr>
<tr>
<td><strong>Services for culturally and linguistically diverse populations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Migrant Health Service</td>
<td>21 Market Street, Adelaide 5000</td>
<td><a href="#">&gt;</a></td>
</tr>
<tr>
<td>Provides information and health services that are culturally appropriate. For example access to bilingual nurse, doctors and counsellors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation</td>
<td>Location</td>
<td>Website</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Multicultural Communities Council of SA (MCC)</td>
<td>113 Gilbert Street, Adelaide 5000</td>
<td><a href="http://www.multiwebsa.org.au">www.multiwebsa.org.au</a></td>
</tr>
<tr>
<td>Multicultural SA</td>
<td>Interpreting and Translation Centre 24 Flinders Street, Adelaide 5000</td>
<td><a href="http://www.multicultural.sa.gov.au">www.multicultural.sa.gov.au</a></td>
</tr>
<tr>
<td>Translating and Interpreting Service (TIS)</td>
<td>Casseldon Place, 2 Lonsdale Street, Melbourne VIC 3000</td>
<td></td>
</tr>
<tr>
<td>Services for Women</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women’s Health Statewide Information Service</td>
<td>64 Pennington Terrace, North Adelaide 5006</td>
<td><a href="http://www.whs.sa.gov.au">www.whs.sa.gov.au</a></td>
</tr>
</tbody>
</table>

*Services include women’s health line and counselling*
PALLIATIVE CARE SERVICES

Palliative care services are available throughout South Australia. Up to date contact information can be found on the Palliative Care Council of SA website (link below).

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palliative Care Council of SA Inc</td>
<td><a href="http://www.pallcare.asn.au">www.pallcare.asn.au</a></td>
</tr>
<tr>
<td>Statewide Services</td>
<td></td>
</tr>
</tbody>
</table>

Metropolitan services

> Northern Adelaide Palliative Care
> Central Adelaide Palliative Care
> Southern Adelaide Palliative Care

Country services

For country referrals to palliative care, please direct to your local community health service. The exception is for referrals to the Inner North, Lower North and Yorke Peninsula areas. These are to be directed to Health Link. Phone: 1800 003 307; Fax: 8561 2142.

> Adelaide Hills Palliative Care (Mt Barker)
> Inner North Palliative Care (Barossa/Gawler)
> Ceduna Palliative Care
> Kangaroo Island Palliative Care
> Lower North Palliative Care (Clare)
> Murray Mallee Palliative Care (Murray Bridge)
> Naracoorte Palliative Care
> Port Augusta Palliative Care
> Port Lincoln Palliative Care
> Port Pirie Palliative Care
> Riverland Palliative Care (Barmera)
> South Coast Palliative Care (Victor Harbor)
> South East Palliative Care (Mt Gambier)
> Whyalla Hospital Palliative Care
> Yorke Peninsula Palliative Care (Wallaroo)
APPENDIX H: REFERRAL FOR PSYCHOSOCIAL CARE

It is important to screen patients for elevated distress and emotional concerns at every medical appointment, but particularly at times of increased vulnerability e.g. at time of diagnosis, prior to commencement of treatment or at the end of treatment, discharge from hospital, surveillance appointments and recurrence / progression of disease. It is common for people who are experiencing increased distress to have difficulty recalling and remembering information. To assist in reducing anticipatory anxiety, be sure the patient understands their disease and treatment options. Refer the patient to education materials and advise patients and their families that times of transition may bring increased vulnerability to distress.

Before referring for psychosocial care please consider the following:

- Is the person and/or family member experiencing an acute exacerbation in distress following a period of increased vulnerability? (as listed above)
- Is the person’s distress directly related to:
  - Sadness associated with loss of usual good health
  - Preoccupation with thoughts about illness and treatment
  - worry about future
  - worry about the impact the illness is having on their family
  - relationship or family issues
- Are there significant practical concerns for person? (e.g. financial stress, transport issues, power of attorney, end of life decisions, etc)
- Is the person experiencing chronic elevated distress that is impacting on pain or symptom control or on their normal functioning or ability to complete cancer treatment
- Has a past history of mental health concerns
- Has trauma history or symptoms (i.e. PTSD)
- Is experiencing severe anxiety related to their medical condition
- Is hyper vigilant, experiencing panic attacks or highly irritable
- Appears to be depressed or reporting suicidal ideation
- Is describing illness specific fears and phobias (i.e. needle phobia, hypochondriasis)
- Is exhibiting behaviours that are challenging to manage (i.e. aggression)
- Is reporting issues with body image or sexuality concerns
- Is concerned by chronic disruption to sleep, appetite and/or concentration
- Is the person’s primary presentation psychiatric in nature?
- Are there imminent risk issues? (e.g. suicidal plan/intent or aggression)
- Does the person have a previous psychiatric history or do they have current psychiatric input?
- Is there evidence of a thought disorder or psychosis?
- Is the person non-compliant?
- Are there signs or symptoms of suspected delirium?
- Does the person appear to have borderline cognitive status?
- Is there uncertainty about the nature and extent of cognitive issues?
- Is there difficulty identifying or distinguishing possible diagnoses/aetiologies?
- Has the person experienced any particular event that may impact on their cognitive function? e.g. brain injury, cancer metastases to brain).
- If the person is over the age of 65, has the person been triaged to Geriatric Medicine for formal assessment?

Consider consulting or referring to these Disciplines:

**Social Work**
- Supportive counselling for patient and family
- Linking with external psycho-social supports
- Support groups and/or individual counselling
- Family meetings
- Grief counselling

**Clinical Psychology**
- Dependent on the presenting complaint, psychological intervention may include a combination of formal assessment, cognitive behavioural therapy, hypnotherapy, management suggestions, and other relevant therapeutic interventions.

**Psychiatric Referral**
- Formal Psychiatric Assessment and Review (e.g. history/medications)

**Clinical Neuropsychological**
- Formal Neuropsychological Assessment
## APPENDIX I: FUNCTIONAL ASSESSMENT TOOLS

### Eastern Cooperative Oncology Group (ECOG) performance status

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Fully active, able to carry on all pre-disease performance without restriction</td>
</tr>
<tr>
<td>1</td>
<td>Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g. light house work, office work</td>
</tr>
<tr>
<td>2</td>
<td>Ambulatory and capable of all self care but unable to carry out any work activities. Up and about more than 50% of waking hours</td>
</tr>
<tr>
<td>3</td>
<td>Capable of only limited self care, confined to bed or chair more than 50% of waking hours</td>
</tr>
<tr>
<td>4</td>
<td>Completely disabled, cannot carry on any self care, totally confined to bed or chair</td>
</tr>
<tr>
<td>5</td>
<td>Dead</td>
</tr>
</tbody>
</table>

Reference:

The Karnofsky Performance Scale

The Karnofsky Performance Scale Index allows patients to be classified as to their functional impairment. This can be used to compare effectiveness of different therapies and to assess the prognosis in individual patients. The lower the Karnofsky score, the worse the survival for most serious illnesses.

Karnofsky Performance Status Scale Definitions Rating (%) Criteria

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Normal no complaints; no evidence of disease.</td>
</tr>
<tr>
<td>90</td>
<td>Able to carry on normal activity; minor signs or symptoms of disease.</td>
</tr>
<tr>
<td>80</td>
<td>Normal activity with effort; some signs or symptoms of disease.</td>
</tr>
<tr>
<td></td>
<td>Able to carry on normal activity and to work; no special care needed.</td>
</tr>
<tr>
<td>70</td>
<td>Cares for self; unable to carry on normal activity or to do active work.</td>
</tr>
<tr>
<td>60</td>
<td>Requires occasional assistance, but is able to care for most of his personal needs.</td>
</tr>
<tr>
<td>50</td>
<td>Requires considerable assistance and frequent medical care.</td>
</tr>
<tr>
<td></td>
<td>Unable to work; able to live at home and care for most personal needs; varying amount of assistance needed.</td>
</tr>
<tr>
<td>40</td>
<td>Disabled; requires special care and assistance.</td>
</tr>
<tr>
<td>30</td>
<td>Severely disabled; hospital admission is indicated although death not imminent.</td>
</tr>
<tr>
<td>20</td>
<td>Very sick; hospital admission necessary; active supportive treatment necessary.</td>
</tr>
<tr>
<td>10</td>
<td>Moribund; fatal processes progressing rapidly.</td>
</tr>
<tr>
<td>0</td>
<td>Dead</td>
</tr>
</tbody>
</table>

Unable to care for self; requires equivalent of institutional or hospital care; disease may be progressing rapidly.
APPENDIX J: LUNG CANCER MULTIDISCIPLINARY TEAM TERMS OF REFERENCE

Statewide Clinical Networks Lung Cancer MDT Terms of Reference

1. Definition of Multidisciplinary Care
Multidisciplinary care (MDC) is an integrated team approach to health care in which medical, nursing, and allied health care professionals consider all relevant treatment options and develop collaboratively an individual treatment plan for each patient.

2. Aim
The overall aim of the multidisciplinary cancer meeting is to enable a formal mechanism for multidisciplinary input into treatment planning and ongoing management and care of patients with cancer.

The multidisciplinary team provides advice to the referring clinician. Treatment decisions are the responsibility of the primary clinician responsible for the patient.

3. Objectives of the MDT meeting are:
- To ensure evidence-based treatment recommendations are being made with respect to patient management as clinical circumstances dictate.
- To facilitate the referral, presentation and discussion of all new or recurrent lung cancer patients diagnosed in South Australia at the Multidisciplinary Team meeting.
- To maintain documentation of treatment recommendations for each patient, and communicate these to relevant team members including the referring physician, primary physician, and patient's medical chart.
- To provide an opportunity to discuss: enrolment of particular patients in clinical trials and research activities (including clinical audit).
- To obtain data documenting time from initial patient presentation to diagnosis to treatment for each patient.
- To provide an educational environment for multidisciplinary team members, fellows, registrars and interns and visiting clinicians.
- To contribute to a complete database of lung cancers diagnosed in South Australia.

4. Operational Guidelines

Membership
Membership of the multidisciplinary cancer meeting comprises medical staff, nursing, allied health, pharmacy, psychosocial professionals, other supportive care services providing clinical services in relation to lung cancer throughout South Australia.

MDT Attendees:
The following categories of attendee have been ratified by the Cancer Clinical Network Steering Committee:

Core clinical members:
Medical consultants, medical registrars, RMOs, nurses and allied health clinicians for whom involvement/attendance at the MDT is a core part of their duties.

**Support staff:**
Staff members who may be required to assist with meeting implementation, for example administrative assistants.

**Invitees**

- **Visitors:** clinicians such as GPs who are invited to attend the discussion of a particular patient.
- **Observers:** such persons are included under the general patient agreement to be in attendance but are non-contributory to the final decision.

**These include:**

- relevant health care profession students
- a clinician who is not a usual attendee and/or without direct connections with the hospital/service/MDT whose attendance is approved by the MDT Chair

**NB:** All MDT attendees are required to sign the attendance register and ensure the Chair is aware who is attending at remote sites.

Refer to Appendix C for a sample MDT meeting register.

**Credentialing Requirements:**

All core medical MDT members are required to be credentialed and scope of practice recognised in the health service where the MDT is located or centrally located in the instance where multiple sites are involved. This includes public and private medical staff. Core members who are primarily private practitioners, must, like public employees, be credentialed by a public hospital and have relevant scope of practice to attend the site at which the meeting is held.

It is the prospective/current MDT medical member’s responsibility to obtain health service credentials/mutual recognition of scope of practice to provide evidence to the MDT Chair for noting.

The Chair is responsible for ensuring core medical attendees are credentialed. The Chair may use discretion to allow that medical attendee to remain for the meeting.

Other non medical health professionals currently do not require credentialing for attendance at cancer MDT’s. Non-medical health professionals from the private sector are required to provide the Chair with evidence of professional registration for noting.
Example of MDT Membership:

Disciplines required for a Lung cancer MDT include:
- Respiratory Physician
- Cardiothoracic Surgeon
- Medical Oncologist
- Radiation Oncologist
- Palliative Medicine Physician
- Radiologist
- Pathologist
- Nuclear Medicine
- Nurse specialist(s)
- Allied Health staff according to tumour type and patient need: eg
  - Dietitian
  - Physiotherapist
  - Social Work
  - Occupational Therapist
  - Speech pathologist
  - Psychologist
  - Aboriginal Health Worker
  - Pastoral Care
  - Other Supportive Care staff as required

Additional disciplines recommended for contributory involvement include:
- Relevant medical fellows / registrars / RMOs attached to a specialty will be members of the MDT team for the duration of their attachment.

Those team members who are presenting a patient at the MDT are to arrange a proxy in the event that they are unable to attend the meeting.

When specific clinical needs have been identified by the referrers which require specific skills and targeted input the chairperson will invite the appropriate staff member(s) to attend that particular meeting.

Patients to be discussed
- All newly diagnosed patients
- Review patients either at relapse or with newly identified symptoms
- As requested by referring clinician in consultation with Chair

The referring clinician must send all referral details to the Chair/MDT Co-ordinator or Administrative Assistant (as agreed) no later than 2 days prior to the meeting. This is to facilitate prioritisation of presentations and to ensure adequate time for investigation results to be prepared for the meeting.

The referring clinician must ensure radiology is made available for the meeting, particularly private films.

The administrative MDT support may be able to facilitate this when provided with relevant information to source radiology images/pathology.

Consent

All patients must be made aware that their case will be presented at the multidisciplinary team meeting for discussion and consent to this process. Consent may be either verbal or written and it must be noted in the patient’s clinical health record and/or on the multidisciplinary meeting referral form.

(Patient information brochure on multidisciplinary team meetings is available)
Chair
Good leadership and facilitation are key factors in the success of multidisciplinary team meetings.

*Role of the Chair*

- Keeping meetings to the agenda
- Ensuring all visiting members are appropriate to the meeting and where required exclude attendees
- Ensuring there is appropriate representation in the meeting to enable a comprehensive recommendation to be made
- Commencing and facilitating discussions
- Prompting the full range of input into discussions if it is not forthcoming
- Summarising the discussion and inviting further input before moving to the next case
- Negotiating resolution of conflict
- Promoting mutual professional respect among all team members.

The Chair and Deputy Chair positions will be appointed annually. If the Chair or Deputy Chair is unable to attend, the Chair will arrange a proxy to chair the meeting.

**Meeting Time & Venue**

Meetings should be held at the same time and place. The duration and frequency of meetings will be determined by each MDT meeting based upon size of site/number of cases requiring discussion.

The day and time of meetings should be convenient for core members who should also be asked to submit best times to ensure a mutually beneficial time for all attendees and due consideration for off site members including rural.

It is appropriate to limit the meetings to 45 – 90 minutes. Any time not used for case discussion may be used for educational purposes or discussion of other relevant issues.

Meeting room facility must meet the requirements of the MDT (i.e. access and display of radiology images, pathology slides, videoconferencing etc).

**Meeting Agenda**

Case presentation will be determined and prioritised by the Chair upon review of referrals and/or discussion with referee.

The Chair will determine closing day/time to receive referrals. All late referrals must be discussed with the Chair. (It is suggested at least 2 days prior to the meeting to be the closing day of referrals to enable MDT coordinator/administrative support to ensure required patient information is available at the meeting)

The Agenda will include:

- Meeting Particulars
- Information required for patient presentation:
  - Patient's name, DOB, UR no.
  - referring Clinician
  - comprehensive clinical summary including psychosocial factors.
- test results
- Education topic
Other business

The referring clinician must provide the MDT Chair with the appropriate clinical summary and investigation/diagnostic test results prior to the MDT Meeting.

Late inclusions to the agenda are acceptable. In this instance it is the responsibility of the presenting clinician to ensure all appropriate clinical results are available to the meeting.

The Agenda will be circulated 2 days prior to the meeting. Hard copies may be provided at the meeting.

The MDT Chair will provide the team with a summary of outcomes from the previous meeting.

In the absence of adequate numbers of patients to discuss the MDT Chair or delegate will arrange an education session for the team.

Case Discussion

Only patients whose referring clinician (or their delegate) is present at the meeting will be discussed.

The referring clinician is responsible to ensure that all necessary patient clinical information is available for the meeting.

Case presentation and discussion will include the patient’s clinical condition and any relevant psychosocial aspects impacting on clinical management.

The Chair will summarise the recommendations made from the discussion before moving to the next case.

The Chair will provide a summary for all cases discussed during the MDT. A copy of the summary and treatment recommendation will be distributed to the referring clinician who will subsequently notify the patient and patient’s GP, other relevant MDT members, and the original copy will be filed into the patient’s medical record.

Confidentiality

All patient information presented remains confidential and only to be used for the purpose of clinical management.

All health care professionals are subject to confidentiality agreements through their regular employment.

Education

Multidisciplinary team meetings provide opportunities for sharing of expertise, enhancing understanding of the diversity of provider roles and dissemination of information to enhance best practice in provision of cancer care.

This can be achieved by:

- Multidisciplinary case presentations and care planning
- Participation by all providers
- Scheduling of regular presentations by team participants as a forum for providing feedback from conferences,
- disseminating current information relevant to specific tumour cancer care
- education specific to provider specialities.
**Meeting Documentation**

Referral documentation records will be kept by the Chair/MDT coordinator/MDT administrative support. A record of the referral is required to be filed into the patient clinical health record. Treatment and management recommendations from the meeting discussion will be documented on the MDT recommendation proforma which must be made available to the referring clinician and inserted in the patients’ clinical health record. The Chair signature is required.

The referring clinician or delegate is responsible for discussing the meeting recommendations with the patient/family/carer within 3 days and developing the treatment plan which takes into account the patient preferences. This plan is to be made available to relevant team members, the GP and noted in the patient's clinical health record.

The MDT Chair will maintain one copy of the agenda and all attendance records.

**Performance monitoring**

MDT Key performance indicators should be regularly reviewed. These may include:

- Number of patients discussed
- Number of patients with psychosocial input and plan
- Number of patients reviewed
- Service origin of patients discussed
- Number of attendees
- Differentiation of providers attending
- Number of education sessions

It is recommended that the MDT database is used to aid standardised data collection and to aid running of reports for review by the team.

An ongoing review of satisfaction and effectiveness will be conducted informally 6 monthly. Formal evaluation will be conducted annually and results communicated to the MDT members for action as required.

**Adoption of Terms of Reference**

All members of the MDT will be provided with the terms of reference.

The MDT Chair is responsible for ensuring members adhere to the MDT terms of reference.

MDT members are responsible for adhering to the terms of reference.

The terms of reference require annual review and when/if core member’s change.

**Subsequent revision dates:**

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Nature of Change(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Endorsed by Cancer Clinical Network Steering Committee</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Reviewed</td>
</tr>
</tbody>
</table>
## APPENDIX K: EXAMPLE MDT MEETING TEMPLATE

### Directory of Lung Cancer MDT Team Members**

<table>
<thead>
<tr>
<th>MDT Membership</th>
<th>Identified team members</th>
<th>Contact details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deputy Chair</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory Physician</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Oncologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiation Oncologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiothoracic Surgeon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pathologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuclear Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Practitioner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palliative Medicine Physician</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialist Nurse(s):</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Allied Health:</strong>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>According to patient need:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dietitian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiotherapist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Worker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational Therapist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech Pathologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal Health Workers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pastoral Care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other supportive care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Trial Coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MDT Coordinator</td>
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<td>Administrative Officer</td>
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**Remove those disciplines which will never be required for this Team**
## APPENDIX L: EXAMPLE MDT MEETING ATTENDANCE REGISTER

Multidisciplinary Team Meeting Attendance Register for Lung Cancer

**Location:** local site/regional/statewide  
**Chair:** ____________________________  
**Meeting Date:** ____________________  
**Time:** ____________________

SA Health and Region Health Service are committed to safeguarding the privacy of patient information and have implemented measures to comply with its obligations under the SA Government’s Information Privacy Principles Instruction.  

All staff are bound by law and ethical practice to keep patient information confidential. Patient information will only be disclosed for purposes directly related to patient treatment and in ways the patient would reasonably expect for their current and future care. Patient health information will be shared with staff involved in their care in order to determine best treatment for them and to assist in the management of the health services provided to them.

**Team Members:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Discipline</th>
<th>Title / position (consultant, registrar, RMO, student)</th>
<th>Participation method (in-person, tele/video conf)</th>
<th>Signature</th>
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**Visitors:**

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<th>Discipline</th>
<th>Organisation</th>
<th>Signature</th>
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APPENDIX M: INFORMATION ON COMPREHENSIVE GUIDELINES FOR LUNG CANCER TREATMENT

Two online services provide current and comprehensive web-based content about lung cancer treatments. Ultimately, it is intended that these online services be linked to each other.


> A complete evidence-based set of clinical practice guidelines for all stages of lung cancer is currently being developed through a wiki online process that is sponsored by Cancer Council Australia. It will be open for public consultation in May 2012.


> Wiki-based clinical practice guidelines will ultimately improve the standard and consistency of clinical practice according to the best and most recent scientific evidence available.

eviQ is a cancer treatments online service of Cancer Institute New South Wales (CINSW): [https://www.eviq.org.au/AboutUs.aspx](https://www.eviq.org.au/AboutUs.aspx)

> eviQ Cancer Treatments Online is a point of care clinical information resource that provides health professionals with current evidence-based, peer-maintained, best practice cancer treatment protocols and information.

> eviQ is relevant to the Australian clinical environment and can be accessed free 24 hours a day. eviQ is designed to support a busy work flow in all clinical and geographical settings, allowing rural, remote and metropolitan health professionals, patients, carers and their families' access to the same standard evidence-based information.

> In addition, eviQ Primary Health Care information on this website provides filtered versions of full chemotherapy protocols (including dosage, timing, combinations etc) for melanoma and breast, colorectal, lung, gynaecological, neurological, respiratory, and urogenital cancers for cancer clinicians.

The pathway working group recommends that treating clinicians access the specific information regarding treatment protocols from these databases and through electronic enterprise patient administration system (EPAS) when it is fully developed. Online protocols are updated regularly and prescribing clinicians have the option of amending protocols to suit individual needs.
APPENDIX N: INFORMATION ON TREATMENT MODALITIES

RADIOThERAPY

Radiotherapy is the use of ionising radiation, predominantly high energy x-rays, to cause cancer cell death. Radiotherapy is a local treatment modality. The therapeutic ratio of radiotherapy is dependent on normal tissue cells having a greater capacity to repair radiation-induced damage compared with cancer cells. Radiotherapy can be delivered using external beam radiotherapy or brachytherapy:

External Beam Radiotherapy (EBRT) is the most common form of radiotherapy and uses a machine called a linear accelerator (Linac) to produce the high energy x-ray beams which are then directed at the target volume. External beam radiotherapy is usually given as an outpatient with daily treatments (Mon-Fri).

Brachytherapy is essentially internal radiation utilising a radioactive source inserted into a body cavity (e.g. bronchus for lung cancer). Brachytherapy requires bronchoscopy (under anaesthesia) in order to be performed.

After the initial consultation and before radiotherapy treatment can actually commence, there is preparatory work that needs to be undertaken including:

Simulation: During simulation patients are placed in the position that patients will be treated in each day during treatment. A planning CT scan is then performed of the area/region that will be irradiated (e.g. chest for lung cancer) to allow 3-D reconstruction of the patient's external and internal structures. During simulation, measurements will be recorded of the patient's position and permanent marks (tattoos the size of small freckles) will be made on the skin to allow patients to be set-up in the correct position daily during treatment.

Planning: Using the 3-D information/images from the planning CT and staging investigations, a radiotherapy treatment plan is created. A treatment plan aims to deliver the prescribed radiation to the tumour/target volume while minimising radiation dose to surrounding normal tissues/organs.

Baseline Patient Requirements for Radical Radiotherapy:

Factors considered when assessing patient suitability for radical radiotherapy include:

- ECOG Performance Status 0-2
- No previous radiotherapy to the treatment region.
- Adequate respiratory function:
  - FEV1 > 1L (or >50% predicted)
  - Corr DLCO > 50% predicted
  - O2 > 60% mmHg
  - pC02 <45mmHg.
  - Loss of weight (LOW) < 10% body weight (BW) over the last six months.

Tumour encompassable by tolerable radiotherapy volume. This can sometimes not be established until a radiotherapy plan has been generated and doses to normal tissues are calculated.

Extensive stage SCLC: mainstay of treatment is chemotherapy in both limited and extensive stage disease.
Baseline requirements for PCI in SCLC:

- ECOG 0-2
- No previous cranial irradiation
- Restaging with CT Head/Chest/Abdomen a minimum of four weeks post-chemoradiotherapy
- CT head must confirm no intracranial metastases.

SYSTEMIC THERAPIES

Systemic therapies for lung cancer are generally given or coordinated by a Medical Oncologist who is a specialist physician trained in the administration of anti-cancer drugs. Systemic therapies are those that can enter the blood stream and go to wherever the cancer is situated in the body. Systemic therapies can be delivered into the blood stream either directly through the vein or indirectly by mouth.

Adjuvant chemotherapy for resected stage 2 or stage 3A non-small cell lung cancer (NSCLC)

Once a cancer has been removed surgically, there is often a substantial risk of recurrence, which increases with stage of disease. Several randomised controlled trials have shown that chemotherapy given after surgery helps to reduce this risk of recurrence, and it is therefore called adjuvant chemotherapy.

Adjuvant chemotherapy is recommended in fit patients with good performance status (ECOG 0-1) and without major organ impairment who have had completely resected stage 2 or 3 disease. The treatment comprises four 28-day cycles of cisplatin-based doublet chemotherapy with vinorelbine being the best supported and most widely used drug as the partner in the doublet. The evidence does not favour substituting carboplatin for cisplatin in adjuvant chemotherapy.

Not all patients will benefit however from adjuvant chemotherapy. Indeed, the benefit only applies to a small subgroup of patients and those who will benefit cannot be identified before the chemotherapy is given. Consequently, in order to have one patient cured by the addition of chemotherapy to surgery, as many as 20-25 patients with the same stage of disease will need to be treated.

As with cisplatin-based chemotherapy for metastatic NSCLC, any chance of benefit must be weighed against the risk of dying from the chemotherapy. In the published data from the randomised controlled trials, the risk of drug-related death was approximately 1%. This risk is mainly related to low blood counts with the potential consequence of life threatening infection. Education about the drugs and their side effects together with prompt attention to feelings of being very unwell and/or fevers of 38°C or higher can avoid this complication in most patients. If concerned, patients should attend their local doctor during office hours. After hours, patients should attend their hospital emergency department where they should state they are receiving chemotherapy in order to receive an expedited consultation.

Although there is evidence to indicate that elderly (> 70 years of age) patients stand to benefit from adjuvant chemotherapy as much as younger patients, elderly patients tolerated the treatment less well and had more complications.78-81

Chemotherapy for locally advanced (unresectable stage 3A or stage 3B) non-small cell lung cancer (NSCLC)

Chemoradiotherapy is the standard of care for this stage of disease in fit patients with good performance status (ECOG 0-1), less than 10% loss of body weight, and no major organ impairment. A platinum drug, usually cisplatin which is the most effective radiosensitising drug, is given intravenously at the same time as a course of radiotherapy is given to the chest over 4-6 weeks. Together, these treatments can produce a remission in approximately 1 of 6 patients that may be considered curative if it lasts 5 years or more.82
Systemic therapies for metastatic non-small cell lung cancer (unresectable stage 4) NSCLC

Metastatic NSCLC is virtually incurable and less than 5-10% of patients survive 5 years. Consequently, all anti-cancer treatments are given with palliative rather than curative intent.

**General approach to the use of systemic therapies**

While systemic therapies may initially be effective in some patients, these treatments inevitably fail because drug resistant cancer cells grow preferentially once the sensitive cells have been eliminated by the first treatment. Although it may then be possible to use a further line of systemic therapy to treat these drug-resistant cells, the chances that this will happen tend to be less with each succeeding line of therapy. Now, however, it is not infrequently the case that NSCLC patients will receive at least three different lines of therapy and thus be able to survive more than 2 years with their disease.

Given the palliative nature of systemic therapy for metastatic NSCLC, quality of life is a very important factor to consider when weighing the use of chemotherapy. Balanced against any potential benefits of first-line chemotherapy are treatment-related side effects, which occur to a significant extent in about one third of treated patients. There is no particular relationship between effectiveness of treatment and incidence of side effects. Moreover, there are no validated tests that can be used before treatment commences to predict either the effectiveness or toxicity of chemotherapy. Any permutation of treatment effectiveness or toxicity is possible and range from patients who receive all of the benefit and no side effects to patients who receive no benefit at all but have many of the side effects. Therefore, for each patient, first-line chemotherapy represents a trial of treatment. It is important that the patient consults with his or her Medical Oncologist to discuss the balance of benefit and side effects for a particular chemotherapy.

A reasonable approach that may be adopted is to see if the first cycle of treatment is tolerated. A cycle of treatment typically lasts 3-4 weeks. If it is tolerated well then it is likely that treatment can be continued for another 1-2 cycles without any major problems developing. After another 1-2 cycles of treatment, the scans are repeated to see if the treatment is working, i.e. to see if the disease is either stable or shrinking. Usually no more than 4 cycles of chemotherapy will be given, although if the disease continues to shrink, chemotherapy may be continued to no more than 6 cycles of treatment in total.

**First-line treatment**

For fit metastatic NSCLC patients with good performance status (ECOG 0-1) and no major organ impairment, first-line therapy is a platinum-based combination chemotherapy regimen. The platinum agent may be either cisplatin or carboplatin. Although cisplatin produces higher response rates and slightly prolongs survival compared to carboplatin, carboplatin tends to be used more often in first-line regimens for NSCLC as it is a better tolerated drug. While there is generally no particular advantage to any other drug (such as gemcitabine, vinorelbine, paclitaxel, or docetaxel) that can be combined with the platinum agent, gemcitabine produces a significant but small (approximately one month) average survival advantage. Non-platinum-based combination chemotherapy can be considered if platinum therapy is contraindicated.

First-line platinum based chemotherapy benefits only a minority of treated patients (approximately 30-40%) who through obtaining better control of their disease, may have some symptom relief as well as improved survival although to a modest degree. Compared to no treatment, patients who receive first-line platinum-based chemotherapy have an average extension of survival of 6-8 weeks. Although this difference may perhaps not be considered clinically meaningful, palliative first-line platinum-based chemotherapy results in a progression-free interval of 3-5 months and has significant and proven benefits of symptom control and improved quality of life.

On the other hand, potential benefits of survival and improved quality of life from chemotherapy for metastatic NSCLC must be balanced against the associated risk of treatment-related death, which has
been observed previously in less than 1% of treated patients.

In less fit patients with poorer performance status (ECOG 2) and/or in elderly patients, single agent chemotherapy using an agent such as vinorelbine may be appropriate as first-line treatment. However, recent randomised controlled clinical trial data now indicate that elderly patients (> 70 years of age) may obtain a survival benefit from platinum-based doublet chemotherapy as do younger patients. The regimen comprises carboplatin and paclitaxel with a modified schedule of paclitaxel compared to the regimen used in younger patients. Compared to vinorelbine or gemcitabine monotherapy, elderly NSCLC patients, who had performance status up to ECOG 2, derived an average extension of survival of about 4 months with carboplatin/paclitaxel doublet chemotherapy although with increased risk of neutropenia and fatigue.

**Second-line treatment**

Most metastatic NSCLC patients (approximately 85%) have non-squamous or adenocarcinoma histology (or tissue type). Once first-line chemotherapy fails, second-line drugs are available that have also been shown to improve symptoms and extend survival of treated patients with manageable drug-related toxicity. For metastatic NSCLC patients with non-squamous histology, pemetrexed is the preferred drug. Pemetrexed is given intravenously in 3-weekly cycles until either the disease progresses or the treatment is not tolerated. For metastatic NSCLC patients treated with maintenance pemetrexed in particular, more than 50% of patients will now survive more than one year whereas more than 50% of untreated patients survived less than one year after first-line chemotherapy. Docetaxel is the other drug that can be used second line for any histology of NSCLC. However, for the minor proportion (approximately 15%) of metastatic NSCLC patients with squamous histology, second line pemetrexed will not be effective and the drug of choice is docetaxel. If these drugs are contraindicated or not tolerated, then the oral epidermal growth factor receptor tyrosine kinase inhibitor (EGFR-TKI) drug, erlotinib, can be used.

These second-line drugs can be used straight after first-line platinum-based chemotherapy as ‘switch-maintenance’ chemotherapy if the lung cancer has not progressed. In this setting, the immediate use of these drugs has improved symptoms and significantly extended progression-free and sometimes overall survival of metastatic NSCLC patients. Immediate use of pemetrexed was associated with an average extension of survival of almost 5 months but it should be noted that only pemetrexed is PBS-listed for this ‘switch-maintenance’ indication.

Nevertheless, the absence of quality of life studies in the maintenance setting makes it difficult to know if this extension of survival would be considered worthwhile by patients. Consequently, because of limitations in the data, delayed treatment with a second-line agent after disease progression is also acceptable. In which case, close follow up with regular CT scans at 6-8 week intervals is recommended to anticipate disease progression.

**Third-line treatment**

Erlotinib can be used also as a third-line agent where it can extend the survival of even poor performance status patients (ECOG up to 3) by an average of 2 months. Erlotinib also delayed time to deterioration of symptoms such as cough, dyspnoea and pain by about 1-2 months. Use of erlotinib can be associated with rash and diarrhoea, which are manageable in most cases with close observation of the patient. It is important to note that in this end-stage setting (in contrast to the first-line setting); benefit from erlotinib does not depend on a particular EGFR gene profile.

**Targeted systemic therapy for metastatic (unresectable stage 4) NSCLC**

Routine testing for activating mutations of EGFR in NSCLC patients is not yet funded in Australia. However, it has not been possible to demonstrate that there is an overall survival advantage for use of EGFR-TKI in these patients but rather only a progression free survival advantage. Nonetheless,
response rates as high as 70% or greater ensure that disease control is rapid and often sustained. Patients whose tumours have EGFR activating mutations should be exposed to an EGFR-TKI at some time during the course of their disease. Moreover, recent randomised controlled data showing the superior response rate, longer progression-free survival, and better toxicity profile of first-line gefitinib versus chemotherapy in these patients now establishes an EGFR-TKI as the treatment of choice in patients whose tumours harbour activating EGFR mutations.

Interestingly, patients whose tumours have activating EGFR mutations also have a higher response rate to chemotherapy (approximately 50%) compared to the usual figure of 20-25% for patients whose tumours do not have activating mutations of EGFR. While patients whose tumours do not have activating EGFR mutations do not derive any benefit from gefitinib, they may nonetheless derive benefit from erlotinib irrespective of gender, smoking status and NSCLC histology. In the general Australian population, the incidence of activating mutations of EGFR in NSCLC patients is ~10%. However, the incidence is greater (around 30-40%) in tumours of patients who are East Asian, female, never smokers or who have adenocarcinoma histology.83-88

Systemic therapies for small cell lung cancer (SCLC)

For patients with limited stage SCLC, the standard treatment is cisplatin/etoposide chemotherapy. This chemotherapy is given in 4 three-weekly cycles at the same time as a 4-6 week course of radiotherapy to the chest. Patients with limited stage SCLC are potentially curable with up to 20% of patients surviving five years. Similarly for patients with extensive stage SCLC, the standard treatment is 4-6 cycles of etoposide in combination with cisplatin or carboplatin chemotherapy. Survival is poorer for patients with extensive stage SCLC and approximately 10% of patients survive two years.

Given the significant risk of recurrent disease in the brain of patients with limited or extensive stage SCLC, prophylactic cranial irradiation (PCI) after the completion of first-line chemotherapy is recommended in patients who have achieved any response to first-line chemotherapy. In both limited and extensive stage SCLC, PCI prolonged survival of patients.89
APPENDIX O: TREATMENT ALGORITHMS BY STAGE

NSCLC Clinical Stage I (T1b-2aN0)

MDM discussion - confirm Stage I

Patient fit for surgery?

Yes

No (or patient declines surgery)

Surgery

Patient’s ECOG score?

ECOG 0-2

ECOG 3-4

Patient suitable for radical RT?

Yes

Radical RT

No

Patient symptomatic?

Yes

Palliative RT or other local treatment (eg. stenting, radiofrequency ablation)

No

Supportive care with symptom monitoring

This guideline is a general recommendation for management of Stage I NSCLC. Individual treatment recommendations may vary based on factors determined by the multidisciplinary team. Supportive care, including assessment of functional and psychosocial needs and rehabilitation, should be considered at time of diagnosis and throughout the management pathway (see section 7). Adapted from Guidelines for Clinicians, eviQ Cancer Treatments Online, Cancer Institute NSW, viewed Feb 2102, https://eviq.org.au/Category/tabid/65/categoryid/31/Default.aspx
NSCLC Clinical Stage II (T2b-3N0, T1-2N1)

MDM discussion - confirm Stage II

Patient fit for surgery?

Yes

No (or patient declines surgery)

Patient's ECOG score?

ECOG 0-2

Patient suitable for radical RT?

Yes

Radical RT + concurrent chemo (if fit for chemo)

No

Palliative RT

ECOG 3-4

Patient symptomatic?

Yes

Palliative RT or Supportive care

No

Supportive care with symptom monitoring

This guideline is a general recommendation for management of Stage II NSCLC. Individual treatment recommendations may vary based on factors determined by the multidisciplinary team. Supportive care, including assessment of functional and psychosocial needs and rehabilitation, should be considered at time of diagnosis and throughout the management pathway (see section 7). Adapted from Guidelines for Clinicians, eviQ Cancer Treatments Online, Cancer Institute NSW, viewed Feb 2102, https://eviq.org.au/Category/tabid/65/categoryid/31/Default.aspx
NSCLC Clinical Stage III (T4N0, T3-4N1, T1-4N2, T1-4N3)

12.5.4 NSCLC Superior Sulcus Tumour (Non-metastatic)

ECOG 0-2

Patient suitable for radical RT?

Yes

Radical RT + concurrent chemo (if fit for chemo)

No

Local chest symptoms?

Yes

Palliative RT or Supportive care

No

Supportive care with symptom monitoring

ECOG 3-4

Patient symptomatic?

Yes

Palliative RT + sequential palliative chemo

No

Palliative chemo

A small subset of stage IIIA patients may be considered for surgery as selected by the MDT

MDM discussion - confirm Stage III

Patient’s ECOG score?

ECOG 0-2

Yes

Supportive care with symptom monitoring

No

Palliative RT or Supportive care

MDM discussion - confirm Stage III

Patient’s ECOG score?

ECOG 3-4

Yes

Supportive care with symptom monitoring

No

Palliative RT or Supportive care

This guideline is a general recommendation for management of Stage III NSCLC. Individual treatment recommendations may vary based on factors determined by the multidisciplinary team. Supportive care, including assessment of functional and psychosocial needs and rehabilitation, should be considered at time of diagnosis and throughout the management pathway (see section 7). Adapted from Guidelines for Clinicians, eviQ Cancer Treatments Online, Cancer Institute NSW, viewed Feb 2102, https://eviq.org.au/Category/tabid/65/categoryid/31/Default.aspx
MDM discussion - confirm Superior Sulcus Tumour

Tumour potentially operable?

Yes

Patient’s ECOG score?

ECOG 0-2

Yes

Neoadjuvant RT + concurrent chemo (if fit for chemo)
followed by surgery ± adjuvant chemo

No

Neoadjuvant chemo followed by surgery ± adjuvant chemo

ECOG 3-4

No (or declines surgery)

Patient suitable for radical RT?

Yes

See flow chart for clinical stage III NSCLC

No

See flow chart for clinical stage III NSCLC

This guideline is a general recommendation for management of superior sulcus tumours. Individual treatment recommendations may vary based on factors determined by the multidisciplinary team. Supportive care, including assessment of functional and psychosocial needs and rehabilitation, should be considered at time of diagnosis and throughout the management pathway (see section 7).
NSCLC Clinical Stage IV (M1)

The majority of newly diagnosed patients present at this stage

Active treatment should begin with appropriate supportive care

Symptom type

Local

Systemic

Palliative RT, drainage of pleural effusion ± pleurodesis, stent, laser therapy

Palliative chemotherapy

Targeted therapies

Palliative RT to symptomatic distant mets

Consider surgery or stereotactic RT plus whole brain RT for solitary brain mets

Patient’s ECOG score?

ECOG 0-2

ECOG 3-4

Activating EGFR mutation status

negative

positive

gefitinib

Supportive care with symptom monitoring

This guideline is a general recommendation for management of Stage IV NSCLC. Individual treatment recommendations may vary based on factors determined by the multidisciplinary team. Supportive care, including assessment of functional and psychosocial needs and rehabilitation, should be considered at time of diagnosis and throughout the management pathway (see section 7). Adapted from Guidelines for Clinicians, eviQ Cancer Treatments Online, Cancer Institute NSW, viewed Feb 2102, https://eviq.org.au/Category/tabid/65/categoryid/31/Default.aspx
SCLC Limited Stage (Stage I-II, Some Stage III*)

MDM discussion - confirm Limited Stage

Patient's ECOG score?

- ECOG 0-2
  - Patient suitable for radical RT?
    - Yes
      - Chemo with concurrent radical RT (ideally commencing with cycle 1 or 2)
    - No
      - Chemo ± palliative RT

- ECOG 3-4
  - Consider chemo ± RT (if improved performance status after chemo)
    - OR
    - Supportive care with symptom monitoring

Prophylactic cranial irradiation (if response)

This guideline is a general recommendation for management of Limited Stage SCLC. Individual treatment recommendations may vary based on factors determined by the multidisciplinary team.

*see definition of Limited Stage SCLC, section 12.2.6. Supportive care including assessment of functional and psychosocial needs and rehabilitation, should be considered at the time of diagnosis and throughout the management pathway (see section 7). Adapted from Guidelines for Clinicians, eviQ Cancer Treatments Online, Cancer Institute NSW, viewed Feb 2012, https://eviq.org.au/Category/tabid/65/categoryid/31/Default.aspx
SCLC Extensive Stage (some Stage III*, Stage IV)

MDM discussion - confirm Extensive Stage

Patient’s ECOG score?

ECOG 0-2

Palliative chemo ± local consolidative or other palliative RT

ECOG 3-4

Consider palliative chemo ± palliative RT OR Supportive care with symptom monitoring

Consider prophylactic cranial irradiation** (if response)

This guideline is a general recommendation for management of Extensive Stage SCLC. Individual treatment recommendations may vary based on factors determined by the multidisciplinary team.

*see definition of Extensive Stage SCLC, section 12.2.6

**see baseline requirements for PCI, section 12.2.6.2 Supportive care Supportive care, including assessment of functional and psychosocial needs and rehabilitation, should be considered at time of diagnosis and throughout the management pathway (see section 7). Adapted from Guidelines for Clinicians, evIQ Cancer Treatments Online, Cancer Institute NSW, viewed Feb 2012 https://eviq.org.au/Category/tabid/65/categoryid/31/Default.aspx
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