

Medical Oncology Services

Module overview

Please note: This module must be read in conjunction with the Fundamentals of the Framework (including the glossary and acronym list) and the Preamble to Cancer Services.

Medical oncology is the branch of cancer medicine that assesses patients with cancer and manages their care, particularly through the use of systemic therapies, such as cytotoxic chemotherapy, biological therapies (i.e. targeted therapies), hormonal therapies and immunotherapy. Commonly treated cancers include breast, colorectal, lung, pancreas and prostate cancers.

The management and administration of systemic therapy is complex. Severe and sometimes life-threatening side effects, including multi-organ toxicity, immunosuppression and infection, can occur as a result of the highly toxic nature of the drugs. The prescribing and dispensing of oral chemotherapy must be carried out to the same service standards as parenteral chemotherapy.

Medical oncology service activities include:

- assessment of patients, including prognosis and likely treatment benefit and tolerance
- management of patients with progressive cancer
- prescription, preparation and administration of systemic therapy
- management of side effects and toxicity of treatment, including nausea and vomiting, and the risk of serious or life-threatening infection
- ongoing assessment and follow-up of patients during and following completion of systemic therapy
- rehabilitation and support.

This module outlines four levels of complexity for medical oncology service provision: Levels 3 to 6. In addition, consultative medical oncology services may be provided by a Level 4, 5 or 6 medical oncology service either on-site, or off-site at a Level 3, 4 and/or 5 medical oncology service. The levels of complexity for medical oncology services, including provision of multidisciplinary-focused consultative services, are illustrated in Table 1.

Table 1: Levels of complexity for medical oncology services

Service complexity	Level 3	Level 4	Level 5	Level 6
		May provide consultative/outreach services to a lower level of service		
	May host consultative/outreach service from a higher level service			

The different service levels address the complexity and risk associated with the delivery of medical oncology. In particular, the administration of systemic therapy has a major impact on service complexity. Despite the non-surgical nature of systemic therapy, it is nonetheless a procedure. Systemic therapies may be delivered by various routes (e.g. oral or parenteral), and each systemic therapy protocol has different requirements for safe delivery and follow-up. Safe delivery of different systemic therapy protocols requires different levels of support.

Factors that contribute to levels of risk in the administration of systemic therapy include:

- tumour group

- treatment intention (i.e. curative or palliative)
- regimen and proposed dosage of systemic anticancer drugs and elective/essential supportive drugs
- route of administration of vesicant drugs for systemic therapy (e.g. oral or parenteral)
- patient risk
- intensity of systemic therapy
- neutropaenia
- patient understanding of treatment goals and side effects.

The different levels also address the role of registered medical specialists with credentials in medical oncology and registered medical practitioners with an interest in medical oncology in treating malignancies and supervising the delivery of initial (first cycle) and maintenance courses of systemic therapy. Throughout this module, *initial* and *first cycle therapy* refer to the first administration of a new systemic therapy protocol within neoadjuvant, adjuvant and palliative treatment care plans.

Children have specific needs in health services—please refer to the relevant children’s services modules.

Service networks

In addition to the requirements outlined in the Fundamentals of the Framework, specific service network requirements include:

- documented processes with haematological malignancy services, radiation oncology services, diagnostic services (including high-quality imaging and pathology services), surgical and medical subspecialties, medication services, allied health services and palliative care services, with these interactions based on the principles of multidisciplinary care
- the utilisation of cancer care networks to enhance the seamless delivery of cancer services and manage/reduce risks of gaps in treatment
- consultancy (outreach) service provision, where applicable.

Service requirements

In addition to the requirements outlined in the Fundamentals of the Framework, specific service requirements include:

- information for patients and their carers about available cancer services, risks, available treatments and support services
- the use of service-based treatment protocols (where available) and organ-specific treatment guidelines and standards, published by the National Health and Medical Research Council, to standardise treatment and reduce the risk of clinical errors
- risk assessments for all procedures involving the handling of cytotoxic chemotherapeutic agents in order to determine that all appropriate risk-control measures are in place.¹

Workforce requirements

In addition to the requirements outlined in the Fundamentals of the Framework, specific workforce requirements include:

- all chemotherapy is prescribed by, or under direct supervision of, a registered medical practitioner with credentials in medical oncology or a registered medical specialist with credentials in medical oncology
- all registered medical practitioners involved in systemic therapy treatment have at least a broad understanding of both common and unusual toxicities associated with systemic therapy
- all health professionals involved in the patient's treatment are:
 - experienced and competent regarding the consequences of both systemic therapy and the underlying disease
 - educated in the psychosocial impact of cancer and the management of associated issues
- all health professionals involved in systemic therapy treatment must have evidence of ongoing competency in the safe administration, handling, preparation and disposal of cytotoxic and related waste, appropriate to their roles
- all nursing staff involved in systemic therapy treatment must have at least a broad understanding of both common and unusual toxicities associated with systemic therapy
- all nursing staff involved in clinically validating prescriptions and the supply of cytotoxic drugs to consult with a pharmacist at a higher level service who has appropriate competency in oncology/haematology.

Level 3 Medical Oncology Service

Service description

A Level 3 service provides a low-risk ambulatory and/or inpatient diagnostic, consultation and treatment service with access to limited support services. This level service provides chemotherapy under the supervision of a registered medical specialist with credentials in medical oncology who reviews the patient locally or at a higher level service. This service will be delivered predominantly by registered medical practitioners (general practitioners), although not necessarily on-site, registered nurses and visiting day-only/telehealth specialist medical services.

The service administers conventional doses of relatively low-risk systemic therapy under protocols that would not normally be expected to produce prolonged neutropaenia. The service provides maintenance courses of systemic therapy subsequent to initial courses (first cycle) that are commenced at, and supervised by, Levels 4, 5 or 6 medical oncology services. The service provides support before, during and after medical oncology treatment provision.

Service requirements

As per module overview, plus:

- local supervision by a registered medical practitioner responsible for overall continuity of care of the patient
- capacity to deal with medical oncology complications
- urgent telephone consultation with referring Level 5 or 6 medical oncology service, as required, for all complications of treatment requiring admission
- access to radiation oncology services within six hours transport for urgent treatment (e.g. spinal cord compression)
- reports all unexpected events or unanticipated problems within 24 hours, in normal circumstances, to the treating registered medical specialist with credentials in medical oncology
- adheres to protocols for emergency oncology care, intravenous administration of anti-cancer agents, cytotoxic handling and disposal, central line care, blood transfusions and infection control
- capacity to provide day treatment, with designated ambulatory day beds for treatment
- access to support services, particularly to Level 5 and above medication services, and a pathology turnaround time of within 24 hours to manage any complications of treatment, regardless of whether the patient is receiving palliative or curative treatment
- documented processes for overnight and emergency health admission of patients to a nearby health service, where systemic therapy is performed in a day-health service or other ambulatory setting
- documented processes with a multidisciplinary consultation group, including registered medical specialists with credentials in medical oncology, surgery, radiation oncology and pathology
- documented processes with registered medical practitioners (general practitioners), social work or equivalent, consultation-liaison psychiatry, pain management, palliative care, psychosocial support, supportive care and community services, as required and appropriate for the service being provided

- may manage appropriate cases locally after consultation with the registered medical specialist with credentials in medical oncology
- may have capacity to support outpatient/outreach (visiting or telehealth) medical oncology consultative services by a Level 4, 5 or 6 medical oncology service.

Workforce requirements

As per module overview, plus:

Medical

- a registered medical practitioner available 24 hours
- access—24 hours—to a registered medical specialist with credentials in medical oncology for advice
- access—24 hours—to a registered medical specialist with credentials in microbiology for advice
- access—within 24 hours—to ambulatory/consultative services by a registered medical specialist with credentials in medical oncology or clinical haematology, with provision for telephone consultation for complications of treatment and admissions for complications

Nursing

- a senior registered nurse in charge on each shift
- access to a minimum of two registered nurses
- two registered nurses appropriately trained and competent for checking chemotherapy prescriptions before treatment is administered
- access to a registered nurse with specialised knowledge and experience in medical oncology, at a Level 5 or 6 medical oncology service, for advice, as required

Allied health

- access to allied health professionals, as required.

Support service requirements

A Level 3 service requires:

Service	On-site	Accessible
medical		3
medical imaging		3
medication	3	5
nuclear medicine		5
palliative care		3
pathology		3
radiation oncology		5
rehabilitation		1

Level 4 Medical Oncology Service

Service description

A Level 4 service administers conventional doses of systemic therapy and may operate as a 'cancer unit'. The service manages relatively moderate-risk systemic therapy protocols with a low risk of neutropaenic sepsis. The service provides ambulatory care under a visiting registered medical specialist with credentials in medical oncology and inpatient care under a registered medical specialist with credentials in internal medicine.

This service can administer initial (first cycle) courses for a *limited number* of protocols where ordered and directly supervised by a visiting registered medical specialist with credentials in medical oncology. The service also provides systemic therapy to patients diagnosed with breast, colorectal, lung, prostate and upper gastrointestinal malignancies, or palliative management. If higher level or more complex care is required, patients may need to be transferred to a Level 5 service.

A Level 4 service has the capacity to provide timely after-care to patients receiving autologous transplants elsewhere. The pathology turnaround time is usually within 2 hours and is particularly important in order to manage any complications of treatment, regardless of whether the patient is receiving palliative or curative care.

A Level 4 service is part of a service network with higher level services, ensuring access to information related to the latest evidence-based care and treatments.

Service requirements

As per Level 3, plus:

- on-site (or a documented process for) access—within 24 hours—to renal dialysis, respiratory, cardiology and infectious diseases services
- access to central venous access service
- access to clinical genetics/medical genetics service
- may have outpatient/outreach services (visiting or telehealth).

Workforce requirements

As per Level 3, plus:

Medical

- local supervision by a registered medical specialist with credentials in internal medicine with an interest and experience in medical oncology
- where inpatients are treated, a registered medical practitioner available 24 hours
- a registered medical specialist with credentials in internal medicine and with experience in medical oncology available 24 hours, with access—24 hours—to a Level 5 or 6 medical oncology service for emergency advice
- access—within 24 hours—to outpatient/consultative services by a registered medical specialist with credentials in medical oncology or clinical haematology, with provision for telephone consultation for complications of treatment and admissions for complications

Nursing

- as per Level 3 service

Allied health

- access to rehabilitation services
- access to social worker, occupational therapist, physiotherapist, speech pathologist, and psychological and emotional support services
- a nutrition team available, as required.

Support service requirements

A Level 4 service requires:

Service	On-site	Accessible
anaesthetic		3
cardiac (cardiac care unit)		4
cardiac (cardiac diagnostic and interventional)		3
cardiac (cardiac medicine)		3
medical		4
medical imaging		5
medication	3	5
nuclear medicine		5
palliative care		4
pathology		5
radiation oncology		5
rehabilitation		2
renal		4

Level 5 Medical Oncology Service

Service description

A Level 5 service provides treatment for all common malignancies, excluding haematological malignancies, and may operate as a cancer unit or cancer centre, depending on staffing and the level of support services. This level service manages relatively high-risk systemic therapy protocols that potentially result in periods of myelosuppression of less than one week. The service is able to administer initial (first cycle) courses of systemic therapy and supervise subsequent maintenance courses provided at Level 3 and 4 medical oncology services. The service can also treat low-incidence, highly specialised cancers after the initial assessment and development of a treatment plan at Level 6.

Service requirements

As per Level 4, plus:

- site-specific (breast, lung and colorectal) and general oncology consultative services available
- a designated unit for oncology patients, including those who require admission for systemic therapy, or for the treatment of toxicity or complications of therapy
- a day treatment area for ambulatory procedures, such as bone trephine biopsies, venepuncture, and the administration of chemotherapy, biological agents and blood transfusions
- transfer or referral of highly complex or high-risk patients to a Level 6 service
- on-site access to, or a documented process for, patient referral and transfer to/from a radiotherapy unit to ensure safe service provision and provide concurrent chemoradiation and inpatient treatment
- provides concurrent chemoradiation for protocols with low risk of inpatient care and non-inpatient radiation oncology services
- has multidisciplinary management of oncology patients, including case conferences and the development of treatment plans with the multidisciplinary team, which is composed of health professionals specialising in medical oncology, surgery, radiation oncology, medication services, pathology, palliative care and supportive care
- documented processes for access to palliative care, pain management and radiation oncology services
- provides active support for lower level services
- is part of a service network with a Level 6 service, ensuring access to information related to the latest evidence-based care and treatments
- may provide a consultative service by a registered medical specialist with credentials in medical oncology, either in person or via telehealth.

Workforce requirements

As per Level 4, plus:

Medical

- service provided by a registered medical specialist with credentials in medical oncology
- a registered medical specialist with credentials in medical oncology available 24 hours—responsibility may be shared with a registered medical specialist with credentials in clinical haematology at the service
- access to a registered medical specialist with credentials in infectious diseases for advice and guidance

Nursing

- a senior registered nurse in charge on each shift on-site 24 hours
- adequate nursing staff—a minimum of one registered nurse—to support the senior registered nurse in charge of each shift²

Allied health

- an oncology pharmacist available 24 hours.

Support service requirements

A Level 5 service requires:

Service	On-site	Accessible
anaesthetic	3	
cardiac (cardiac care unit)		4
cardiac (cardiac diagnostic and interventional)		3
cardiac (cardiac medicine)		3
intensive care		5
medical		4
medical imaging		5
medication	3	5
nuclear medicine		5
palliative care		5
pathology	5	
radiation oncology		5
rehabilitation		3
renal		4

Level 6 Medical Oncology Service

Service description

A Level 6 service is provided at a large metropolitan hospital and is usually delivered in a cancer centre. This level service provides initial assessment, management and treatment plans for common malignancies, in collaboration with disease-specific surgeons, radiation oncologists, pathologists and supportive care specialties. This service provides initial assessment and management of low-incidence and highly specialised cancers (e.g. germ cell tumours, gynaecologic malignancies and sarcomas), which includes a treatment plan. This service also serves as a reference centre for all medical oncology service levels.

There are other multidisciplinary cancer specialties on-site, including radiation oncology and surgical oncology, that are required to manage a low-incidence, specialised malignancy service.

This service may be a referral centre for a recognised cancer specialty, such as bone or thyroid cancer.

Service requirements

As per Level 5, plus:

- management of relatively high-risk complex protocols
- delivery of all systemic therapy protocols, including intensive chemotherapy protocols
- chemoradiation protocols for high risk of inpatient care (e.g. head and neck cancer)
- access to inpatient radiation treatment
- capacity to provide stem cell transplantation in conjunction with a superspecialist haematology malignancy service
- concurrent chemoradiation treatment for all tumour types, including head and neck cancer
- on-site renal dialysis, respiratory, infectious diseases and pain management services
- access to subspecialty surgeons, such as orthopaedics or surgical oncology management by stream (e.g. breast, colorectal, head and neck, upper gastrointestinal, lung or bladder)
- access to interventional radiology services, including (but not limited to) percutaneous transhepatic cholangiogram, stent insertions, hepatic artery embolisation, peripherally inserted central catheters and breast tumour localisation
- may provide medical oncology consultative services at lower service levels.

Workforce requirements

As per Level 5, plus:

Medical

- inpatient care under a registered medical specialist with credentials in medical oncology, possibly with aligned junior medical staff
- a registered medical specialist with credentials in medical oncology available 24 hours and access to at least two registered medical specialists with credentials in medical oncology
- a registered medical practitioner on-site 24 hours

Nursing

- registered nurses with specialist oncology training available on-site
- a nurse manager (however titled)

Allied health

- as per Level 5 service.

Support service requirements

A Level 6 service requires:

Service	On-site	Accessible
anaesthetic	3	
cardiac (cardiac care unit)		4
cardiac (cardiac diagnostic & interventional)		3
cardiac (cardiac medicine)		3
intensive care	6	
medical	5	
medical imaging	5	
medication	6	
nuclear medicine	5	
palliative care		5
pathology	6	
radiation oncology		5
rehabilitation		3
renal	5	

Legislation, regulations and legislative standards

Refer to the Fundamentals of the Framework for details.

Non-legislative standards, guidelines, benchmarks, policies and frameworks

Refer to the Fundamentals of the Framework and the Preamble to Cancer Services for details.

Reference list

1. Queensland Government. Queensland Workplace Health and Safety Strategy: Guide for Handling Cytotoxic Drugs and Related Waste. Department of Industrial Relations; 2005. www.deir.qld.gov.au/workplace/publications/guides/cytotoxic/index.htm
2. Cancer Australia. The National Cancer Nursing Education Project (EdCaN): A National Professional Development Framework for Cancer Nursing. Canberra: Cancer Australia; 2008. www.edcan.org/