

Haematological Malignancy 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.

Clinical haematology is the branch of medicine that assesses and manages patients with haematological malignancies and bone marrow failure, including acute and chronic leukaemias, lymphomas, myelodysplastic and myeloproliferative disorders, myeloma, and severe aplastic anaemia.

This module describes the capability of haematological malignancy services only (rather than clinical haematology services). Clinical haematologists provide a coordinating role in the treatment and management of haematological malignancies. The management of patients with non-malignant haematological disorders, such as haemophilia, bleeding and thrombotic disorders, non-aplastic anaemias, and disorders requiring transfusions are covered in the Medical Services module.

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

Haematological malignancy service activities include:

- diagnosis and treatment of haematological malignancies
- systemic therapy administration, transfusion of blood and blood products, and apheresis
- ongoing assessment and follow-up of patients during and following completion of systemic therapy
- stem cell and bone marrow transplantation (specialised services).

Systemic therapy is a significant method of treatment for patients with haematological malignancies. Systemic therapy should be administered in line with published guidelines and standards on the safe handling and disposal of cytotoxics and systemic therapy consumables. The prescribing and dispensing of oral chemotherapy must be carried out to the same service standards as for parenteral chemotherapy.

This module outlines four levels of complexity for haematological malignancy service provision: Levels 3 to 6. The service levels address the complexity and risk associated with the delivery of clinical haematology to treat malignancies. In particular, the administration of individual systemic therapy protocols has a major impact on service complexity. Despite the non-surgical aspect 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.

The factors that contribute to levels of risk in the administration of systemic therapy are discussed in detail in the Medical Oncology Services module. The different levels also address the role of clinical haematologists and registered medical practitioners with an interest in clinical haematology in treating malignancies and supervising the delivery of initial (or first cycle) and maintenance courses of systemic therapy. Throughout this module, reference to *initial* or *first cycle* therapy means the first administration of a new systemic therapy protocol within neoadjuvant, adjuvant and palliative treatment care plans.

Consultative haematological malignancy services may be provided by a Level 4, 5 or 6 haematological malignancy service either on-site, or off-site at a Level 3, 4 and/or 5

haematological malignancy service. The levels of complexity for haematological malignancy services, including provision of multidisciplinary-focused consultative services, are illustrated in Table 1.

Table 1: Levels of complexity for haematological malignancy 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			

Service networks

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

- strong links with medical oncology services, radiation oncology services, diagnostic services (including high-quality imaging and pathology services), surgical and medical subspecialties, medication services, and allied health and palliative care services, with these interactions based on the principles of multidisciplinary care
- 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
- risk assessments of all procedures involving handling of cytotoxic chemotherapeutic agents to determine that all appropriate risk-control measures are in place.

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 the direct supervision of, a registered medical practitioner with credentials in medical oncology or haematology, or a registered medical specialist with credentials in medical oncology or haematology
- all registered medical practitioners with credentials 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 impacts of cancer on the patient and the management of these impacts
- 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 have a broad understanding of common and unusual toxicities associated with systemic therapy
- all nursing staff involved in clinically validating prescriptions and supply of cytotoxic drugs must consult with a pharmacist at a higher level service with appropriate competency in oncology/haematology.

Level 3 Haematological Malignancy Service

Service description

A Level 3 haematological malignancy service provides relatively low-risk ambulatory and/or inpatient care with access to limited support services. This level service provides ambulatory care under the direct or indirect supervision of a registered medical specialist with credentials in haematology, or a registered medical specialist with credentials in internal medicine/oncology under the supervision of a registered medical specialist with credentials in haematology. Inpatient care is provided under the supervision of a registered medical practitioner who may or may not have credentials in haematology. This level of service is ineligible to apply for accreditation for training in haematological malignancy medicine.

A Level 3 service provides support before, during and after malignant haematology treatment. The service has the capacity to provide day treatment with designated ambulatory day beds for treatment and palliation (on-site or off-site). This service has links with general practitioners, social work services, psychosocial support, supportive care and community services, as required by and appropriate to the service being provided. This service does not provide initial courses of systemic therapy, as such therapies are initiated at, and supervised by a haematologist from, a higher level service with subsequent maintenance courses provided at this level.

This service may receive outpatient/outreach (visiting or telehealth) medical oncology consultative services by a Level 4, 5 or 6 medical oncology service.

Service requirements

As per module overview, plus:

- administration of conventional doses of systemic therapy under protocols that would not normally be expected to produce prolonged neutropaenia
- provision of only relatively low-risk systemic therapy limited to mild to moderate bone marrow suppressive protocols
- provision of chemotherapy under the supervision of a registered medical specialist with credentials in haematology/oncology who reviews the patient locally or at a higher level service
- access to support services, particularly to Level 5 and higher 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
- where systemic therapy is performed in a day-health service or other ambulatory setting, there must be documented processes with a nearby health service for overnight and emergency admission of patients
- haematological malignancy complications of treatment requiring admission must have urgent telephone consultation with the referring haematological malignancy service
- adherence to protocols for emergency oncology care, intravenous administration of anti-neoplastic agents, cytotoxic handling and disposal, central line care, blood transfusions and infection control
- access to radiation oncology services within 6 hours' transport for urgent treatment (e.g. spinal cord compression)

- access to a multidisciplinary consultation group, including registered medical specialists with credentials in medical oncology, radiation oncology and clinical haematology (haematological malignancy), who must be involved in the development of a management strategy
- may manage appropriate cases locally after consultation with the haematologist.

Workforce requirements

As per module overview, plus:

Medical

- a registered medical practitioner available 24 hours
- local supervision by a registered medical practitioner responsible for overall continuity of care of the patient
- access—24 hours—to a registered medical specialist with credentials in clinical haematology for advice
- access—24 hours—to a registered medical specialist with credentials in microbiology for advice
- access within 24 hours to outpatient and/or ambulatory consultative services by a registered medical specialist with credentials in medical oncology or clinical haematology for treatment complications and/or admission for complications

Nursing

- a senior registered nurse in charge of each shift (however titled)
- access to a minimum of two registered nurses
- two registered nurses appropriately trained and competent in checking chemotherapy prescriptions before treatment is administered
- access to a registered nurse with specialised knowledge and experience at a Level 5 or 6 haematological 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 Haematological Malignancy Service

Service description

A Level 4 service provides ambulatory care under a visiting registered medical specialist with credentials in haematology and inpatient care under a registered medical practitioner. This level service administers conventional doses of systemic therapy and may operate as a 'cancer unit'. The service is part of a network with higher level services, ensuring access to information relating to the latest evidence-based care and treatment.

Service requirements

As per Level 3, plus:

- administers initial courses of systemic therapy where ordered and is directly supervised by a registered medical specialist with credentials in haematology and oncology
- manages relatively moderate-risk systemic therapy protocols with a low risk of neutropaenic sepsis
- provides only relatively low- and medium-risk systemic therapy with moderate bone marrow suppressive protocols
- provides early after-care to patients receiving autologous transplants elsewhere
- provides maintenance systemic therapy to patients diagnosed with the same conditions described for a Level 3 haematological malignancy service
- has a pathology turnaround time of within 2 hours in order to manage any complications of treatment, regardless of whether the patient is receiving palliative or curative treatment
- access to a central venous access service
- access to palliative care, pain management and radiation oncology services
- access to a clinical genetics/medical genetics service
- outpatient/outreach (visiting/telehealth) services may be available.

Workforce requirements

As per Level 3, plus:

Medical

- all chemotherapy supervised by a registered medical specialist with credentials in oncology or haematology
- local supervision by a registered medical specialist with credentials in internal medicine, and interest and experience in clinical haematology
- a registered medical practitioner, where inpatients are treated—available 24 hours
- a registered medical specialist with credentials in internal medicine and experience in clinical haematology available 24 hours, with access—24 hours—to Level 5 or 6 haematological malignancy services for emergency advice
- access—24 hours—to ambulatory services by a registered medical specialist with credentials in clinical haematology or medical oncology for emergency advice about treatment complications and/or admission

Nursing

- as per Level 3 service

Allied health

- access to rehabilitation services
- access to social workers, occupational therapists, physiotherapists, speech pathologists, psychological and emotional support services, palliative care and a nutrition team, 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 Haematological Malignancy Service

Service description

A Level 5 service provides diagnostics and treatment for haematological malignancies where the treatment is associated with a period of severe myelosuppression of less than one week. This level service manages up to relatively high-risk systemic therapy protocols. In the public sector, the service provides inpatient care under a resident registered medical specialist with credentials in haematology and aligned junior medical staff (resident and registrar).

The service is able to provide initial courses of systemic therapy and supervise subsequent maintenance courses provided at Level 3 and 4 haematological malignancy services.

A Level 5 service coordinates all definitive diagnostics and development of a plan for treatment, which may take place at a lower level, this level or a higher level service. The service provides active support for lower level services and is part of a service network with a Level 6 service, ensuring access to the latest evidence-based care and treatment information.

The service provides multidisciplinary management of haematology patients, including case conferences and the development of treatment plans. The multidisciplinary team is composed of health professionals specialising in medical oncology, radiation oncology, pathology, palliative care and supportive care.

A medical specialist with credentials in clinical haematology may provide a consultative service in person or via telehealth, which may include initial assessment and long-term follow-up of patients of lower level services.

A Level 5 service may include autologous transplantation, but not allogeneic transplantation. The service may provide haematological malignancy consultative services to lower level services.

Service requirements

As per Level 4, plus:

- at least two single accommodation rooms with ensuite and clinical hand-washing facilities (with the number of rooms required based on health service needs)¹
- a day treatment area for procedures, such as venepuncture and the administration of systemic therapy, biological agents and blood transfusions
- on-site, or documented processes for, access to renal dialysis, respiratory, cardiology, infectious diseases and intensive care services
- on-site access to, or documented processes with, a radiotherapy unit for patient referral and transfer
- documented processes for accessing palliative care, pain management and radiation oncology services
- units providing autologous bone marrow transplants that have accreditation under relevant national accreditation bodies.

Workforce requirements

As per Level 4, plus:

Medical

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

Nursing

- a registered nurse in charge (however titled) on each shift on-site 24 hours
- minimum of one additional registered nurse to support the registered nurse in charge of the shift²

Allied health

- a pharmacist.

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 Haematological Malignancy Service

Service description

A Level 6 service is provided at a large metropolitan hospital and is most likely delivered in a cancer centre. This level service is a referral centre for low-volume haematological malignancies. Other cancer specialties are provided on-site, including radiation oncology and medical oncology, which are needed to manage this low-volume, specialised, multidisciplinary malignancy service. A Level 6 service has a critical mass of expertise and work volume.

This service provides inpatient care under registered medical specialists with credentials in clinical haematology, possibly with aligned junior medical staff. This service coordinates all definitive diagnostics and development of a plan for treatment, which may take place at either a lower level or this level service.

Service requirements

As per Level 5, plus:

- diagnostics and treatment for haematological malignancies where the treatment is associated with a prolonged period of severe myelosuppression (greater than one week), which, at this level service, may include acute leukaemic induction therapy, autologous transplantation and allogeneic transplantation
- allogeneic transplantation services are delivered by a small subset of superspecialist haematological malignancy services
- is a reference centre for all haematological malignancy service levels
- units performing allogeneic transplants have accreditation under relevant national (matched-family donor transplants) and international (unrelated donor transplants) accreditation bodies
- units performing autologous bone marrow transplants have accreditation under relevant national accreditation bodies
- units performing bone marrow transplants have accreditation with the Australian Bone Marrow Donor Registry
- dedicated standard isolation rooms—at least four single rooms with ensuite and clinical hand-washing facilities and where the ratio of the number of beds required is one isolation room to five inpatient beds²
- a cell separator available both for the collection of peripheral blood progenitor cells (for units performing bone marrow transplants) and therapeutic apheresis (all Level 6 units), with appropriately trained nursing staff available for the operation of cell separators
- access to cardiac, palliative care and radiation oncology services
- on-site renal dialysis, respiratory, pain management and infectious diseases services
- may manage all high-risk and/or complex protocols, and deliver intensive chemotherapy protocols
- may provide haematological malignancy consultative services to lower level services.

Workforce requirements

As per Level 5, plus:

Medical

- a registered medical specialist with credentials in clinical haematology available 24 hours and access to at least two registered medical specialists with credentials in clinical haematology
- a registered medical practitioner on-site 24 hours
- a registered medical practitioner with credentials in haematology to act as a designated transplant coordinator to liaise with patients, relatives, nursing and medical staff, and other professional groups (e.g. scientists)
- access to a medical specialist with credentials in clinical haematology and at least 5 years experience in allogeneic bone marrow transplants in centres performing matched unrelated donor transplants

Nursing

- a nurse manager (however titled)
- registered nurses trained, and with evidence of ongoing competency, in the collection of peripheral blood progenitor cells
- nursing staff with demonstrated evidence of knowledge and skills to support patients following high-dose systemic therapy during and following transplantation
- a registered nurse or health professional with demonstrated competence in haematology to support coordination of transplant/haematology (highly desirable)

Allied health

- social workers and skilled counsellors on-site
- an occupational therapist, physiotherapist and speech pathologist on-site
- a nutrition team on-site
- clinical scientists on-site.

Support service requirements

A Level 6 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	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. Australasian Health Infrastructure Alliance. Australasian Health Facility Guidelines v2.0. AHFG; 2007. <http://www.healthfacilityguidelines.com.au/guidelines.htm>
2. Cancer Australia. The National Cancer Nursing Education Project (EdCaN): A National Professional Development Framework for Cancer Nursing. Canberra: Cancer Australia; 2008.