

Cancer services-children's

CSCF v3.2

Module overview

Please note: This module should be read in conjunction with the Fundamentals of the Framework (including glossary and acronym list), Children's Services Preamble and Cancer Services Preamble.

The Cancer Services - Children's module focuses on the overall care and management of children with cancer and specifically incorporates systemic therapies used in treatment of childhood cancers, including leukaemia and haematopoietic stem cell transplant services. The management of patients with non-malignant haematological disorders (such as haemophilia, bleeding and thrombotic disorders, and non-aplastic anaemia, and patients requiring transfusions) are not covered in the Cancer Services - Children's module.

Radiation oncology services are an integral but specialised component of children's cancer services and are addressed in the Radiation Oncology Services - Children's module. Similarly, surgical services for children with cancer are addressed in the Surgical Services - Children's module.

Children with cancer need to be treated by staff with particular skills and expertise. Children's cancer services are best provided under the care of an appropriately trained and qualified children's service at a specialist children's cancer centre.

Diagnosis and initiation of treatment for a child with cancer is generally undertaken in consultation with a registered medical specialist with credentials in children's oncology. Best practice is based on the concept of integrated multidisciplinary care.¹ Multidisciplinary teams of specialist children's medical, nursing and allied health professionals provide care and services to meet the clinical, physical, social and psychological needs of children with cancer and their families. This multidisciplinary approach is directed towards maximising quality-of-life outcomes associated with cancer treatments and long-term survival. The clinical service is supported by a range of subspecialty children's services.

A service operates a 'shared-care model', with a comprehensive cancer centre providing a specialist referral centre for children with cancer.^{2,3} After initial assessment and treatment, children return home (where possible) and care is provided locally, according to agreed protocols, under the supervision of the local registered medical specialist with credentials in paediatrics, with input from a specialist at the comprehensive children's cancer centre. The intention of the shared-care model is to provide high-quality, safe and effective clinical and supportive care in appropriate environments as close to the child's home as possible.

Children's cancer services involve the close interaction between radiation oncology services and surgical services. In Queensland, children's radiation services are provided within the adult radiotherapy facility by registered medical specialists with credentials in radiation oncology. Surgical oncology services for children involve the initial biopsy of a tumour, tumour resection and insertion of venous access devices. Surgical services for children are provided by paediatric surgeons, orthopaedic surgeons and specialist neurosurgeons. Further reference to services for children may be found in the CSCF Children's Services modules.

The main type of treatment for childhood cancer is systemic chemotherapy; however, other modalities, such as haematopoietic stem cell transplantation, surgery, radiation, biological therapies and immunotherapy, may also be used, either alone or in conjunction with chemotherapy. The management and administration of systemic therapy is complex. Systemic therapy is best prescribed, dispensed and administered in line with published guidelines or regimens from recognised paediatric professional bodies or organisations (where available). 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 used.

Children's cancer service activities may include:

- diagnosis and assessment
- psychosocial evaluation and support
- management of newly diagnosed or recurrent cancer
- prescription, preparation and administration of systemic and oral therapy
- management of side effects of treatment
- planning and delivery of radiation therapy in conjunction with a radiotherapy service
- planning of surgical treatments in conjunction with surgical services
- transfusion of blood and blood products, and apheresis
- allogeneic and autologous haematopoietic stem cell transplantation
- ongoing assessment and follow-up of patients during and after completion of therapy
- rehabilitation planning in conjunction with appropriate services
- provision of palliative care.

Chemotherapy should be administered in line with published guidelines and standards on the safe handling and disposal of chemotherapeutic drugs and related waste. The prescribing and dispensing of oral chemotherapy must be carried out to the same service standards as for parenteral chemotherapy. Chemotherapy may be prescribed only by registered medical practitioners and/or other persons authorised under legislation with an understanding of the common and unusual toxicities associated with cytotoxic therapy.

The CSCF recognises three levels of complexity for children's cancer service provision: Levels 4 to 6. The different service levels address the complexity and risk associated with delivery of treatments, such as administration of systemic chemotherapy protocols, which have a major impact on service complexity. Systemic therapies may be delivered through various routes (e.g. oral or parenteral), and each protocol has different requirements for safe delivery, follow-up and supportive care.

The factors contributing to levels of risk in administration of systemic chemotherapy include:

- education and experience of medical staff, nurses and pharmacists
- the service's capacity to protectively isolate immunocompromised patients

- access to pathology services for processing of blood counts and microbiology
- the nature of systemic therapy
- patient risk factors
- access to supportive care (e.g. blood products and antibiotics)
- patient / carer understanding of treatment goals and side effects.

Initial or first cycle therapy refers to the first administration of a new systemic therapy protocol within neo-adjuvant, adjuvant and palliative treatment care plans.

Service networks

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

- delivery of services in accordance with the Queensland Paediatric Haematology / Oncology Network model, where relevant
- consultative cancer services provided by a Level 6 oncology service on-site, or off-site at a Level 4 and/or 5 cancer service.

Table.1: Levels of complexity for children’s cancer services

Children’s cancer service			
Service complexity	Level 4	Level 5	Level 6
			Primary provider of diagnostic and treatment services. Provides consultative / outreach services to a lower level service.
	Consults with specialist service (Level 6) for delivery of services for children with cancer.		

Service requirements

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

- provide relevant clinical indicator data to satisfy accreditation and other statutory reporting obligations.

Workforce requirements

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

- all chemotherapy is initially prescribed in a Level 6 centre and subsequently supervised by a registered medical specialist with credentials in children's oncology
- all staff involved in administration, handling and disposal of chemotherapy drugs and related waste must have an understanding of the common and unusual toxicities associated with chemotherapy, and must complete relevant, competency-based education including safe handling and disposal of chemotherapy agents and related waste
- all staff with the potential to have contact with patients undergoing chemotherapy must be educated in safe handling practices
- all healthcare workers caring for children in health facilities are competent in paediatric life support.

Cancer services – Children’s

	Level 4	Level 5	Level 6
Service description	<ul style="list-style-type: none"> provides ambulatory care under supervision of registered medical specialist with credentials in children’s oncology from a Level 6 children’s cancer service. also provides shared-role, inpatient care by registered medical specialists with credentials in paediatrics accessible 24 hour/s (all children younger than 15 years of age in Level 4 cancer service should be admitted to designated children’s unit, whilst flexibility with children aged 15 to 18 years should be exercised). routinely provides supportive care for children with low to moderate risk factors in collaboration with a Level 6 children’s cancer service. may administer relatively low-risk chemotherapy as defined by Level 6 service (e.g. vincristine and cytarabine), which may be coordinated by children’s oncology case manager. may provide children’s support to an on-site emergency department for children with cancer-related diseases. 	<ul style="list-style-type: none"> provides shared care for all common childhood cancers in conjunction with multidisciplinary care. provides inpatient care under registered medical specialist with credentials in paediatrics. medical staffing may include junior medical staff. provides combination of ambulatory, inpatient and multidisciplinary care, and has access to Level 6 subspecialty services. in consultation with Level 6 service, is able to deliver: <ul style="list-style-type: none"> courses of systemic chemotherapy, subsequent to initial course/s only relatively low- and medium risk cytotoxic systemic therapy protocols. maintenance courses of oral therapy. 	<ul style="list-style-type: none"> provides most complex clinical services to children on statewide and interstate basis. provides well-defined outreach services and oncology consultative services at lower service levels under shared-care model. is referral centre providing diagnostics and treatment for all types of childhood cancer, including haematological malignancies. manages all high-risk and/or complex chemotherapy protocols, and includes acute leukaemic induction therapy, autologous transplantation and allogeneic transplantation. develops treatment plans, including shared-care plans, for treatment that may take place at a lower level service. also provides on-site multidisciplinary children’s subspecialties, including radiation oncology, leads and coordinates well-defined children’s oncology telehealth service and offers follow-up services in specialised ‘after cancer treatment’ service.
Service requirements	<p>As per module overview, plus:</p> <ul style="list-style-type: none"> process to ensure checking of chemotherapy prescriptions is performed 	<p>As per Level 4, plus:</p> <ul style="list-style-type: none"> allocated high-acuity beds managed by registered medical specialist/s with 	<p>As per Level 5, plus:</p> <ul style="list-style-type: none"> inpatient care by registered medical specialists with credentials in children’s

	Level 4	Level 5	Level 6
	<p>by two nursing staff competent in administration of chemotherapy to children, or one nurse competent in administration of chemotherapy to children and registered medical practitioner with an understanding of common and unusual toxicities associated with cytotoxic therapy.</p> <ul style="list-style-type: none"> • access to staff with knowledge of management of central venous access devices. • documented processes with Level 6 service for palliative care and pain management services. • documented processes with ambulatory and inpatient children’s medical service teams. • use of multidisciplinary teams in care / treatment of children, which may include community-based multidisciplinary teams. • access to child and youth mental health team. • documented processes with community child developmental health services, as required. • quarterly mortality and morbidity meetings. • may have access to telehealth services. • may care for children with complex social issues or significant comorbidities in collaboration with children’s medical team. 	<p>credentials in paediatrics, who may be in either designated children’s ward or general intensive care where children’s intensive care services available.</p> <ul style="list-style-type: none"> • multidisciplinary team composed of health professionals with interest / expertise in childhood cancer, radiation oncology, pathology, palliative care and supportive care, or access to staff with expertise in same. • access to day-stay children’s beds and day treatment area (desirable) for ambulatory procedures, such as venepuncture, central venous access device management, and administration of cytotoxic therapy, biological agents, blood product transfusions and parenteral antibiotics. • on-site, or documented processes for ready access to, renal dialysis, respiratory, cardiology and infectious diseases services. • access—during business hours—to consultation-liaison service provided by child and youth mental health service, and general mental health services after hours. 	<p>oncology with additional aligned junior medical staff.</p> <ul style="list-style-type: none"> • dedicated standard isolation rooms—at least four single rooms with ensuite and clinical hand-washing facilities—in consultation with infection control team (with ratio of number of beds required being one isolation room to five inpatient beds).⁴ • acute children’s pain management services on-site. • collocated radiation oncology service with expertise in care of children. • documented processes with all lower level services for coordination of care, ensuring care provided locally in coordinated manner. • accreditation for performance of: <ul style="list-style-type: none"> – allogeneic transplants—with relevant national (matched-family donor transplants) and international (unrelated donor transplants) accreditation bodies – autologous bone marrow transplants—with relevant national accreditation bodies – bone marrow transplants—with Australian Bone Marrow Donor Registry. • access to cell separator for both collection of peripheral blood progenitor cells (for units performing bone marrow

	Level 4	Level 5	Level 6
	<ul style="list-style-type: none"> may admit children to a children's intensive care service situated within a general intensive care service. 		<p>transplants) and therapeutic apheresis (all Level 6 units).</p> <ul style="list-style-type: none"> access to appropriately trained nursing staff for operation of cell separators. on-site renal dialysis, respiratory, cardiology and infectious diseases services. access to bereavement support services.
Workforce requirements	<p>As per module overview, plus:</p> <p>Medical</p> <ul style="list-style-type: none"> designated registered medical specialist with credentials in paediatrics as lead clinician with responsibility for clinical governance of the service. access—24 hours—to registered medical specialist with credentials in paediatrics, with access—24 hours—to Level 6 services for emergency advice. registered medical practitioner dedicated to paediatrics on-site during business hours, and accessible after hours (public); however, if this medical practitioner is not accessible, specialist caring for patient must be immediately accessible by telephone or have locum covering at all times. chemotherapy to be prescribed by registered medical specialist with credentials in paediatrics, in collaboration with registered medical 	<p>As per Level 4, plus:</p> <p>Medical</p> <ul style="list-style-type: none"> dedicated registered medical practitioners on-site 24 hour/s who are not responsible for special care nursery or neonatal services. access to a registered medical specialist with credentials in infectious diseases for advice and guidance <p>Nursing</p> <ul style="list-style-type: none"> suitably qualified and experienced registered nurse in charge on each shift. Children's oncology regional case manager who has: <ul style="list-style-type: none"> completed paediatric oncology chemotherapy education program and chemotherapy competency assessment recognised by Level 6 service education in care and management of children with cancer 	<p>As per Level 5, plus:</p> <ul style="list-style-type: none"> multidisciplinary team, which should include designated registered medical specialist with credentials in children's oncology, experienced children's oncology registered nurses, dedicated children's oncology pharmacist and other allied health professionals with expertise in children's oncology. transplant coordination undertaken by suitably qualified health practitioner. <p>Medical</p> <ul style="list-style-type: none"> lead clinician with responsibility for clinical governance of cancer services has credentials in children's oncology. access—24 hours—to registered medical specialists with credentials in children's oncology. registered medical practitioners (junior medical staff) involved in administration of intrathecal chemotherapy to complete competency-based education.

	Level 4	Level 5	Level 6
	<p>specialist with credentials in children's oncology.</p> <p>Nursing</p> <ul style="list-style-type: none"> • suitably qualified and experienced nurse manager (however titled). • registered nurses on all shifts competent in care and management of children with cancer, or with access to nursing expertise at Level 6 service. • registered nurses on all shifts competent in management of central venous access devices. • access to additional nursing staff with children's experience, as required when activity levels change. • established children's education program for all nursing staff. • other nursing staff responsible for checking and administration of chemotherapy to children completed paediatric chemotherapy education program and recognised chemotherapy competency assessment recognised by Level 6 service. • minimum three staff competent in administration of chemotherapy to children. • documented processes with Level 6 children's specialty liaison nurses. • may have children's oncology regional case manager. 	<ul style="list-style-type: none"> – competency in management of central venous access devices and administration of chemotherapy to children. <p>Allied health</p> <ul style="list-style-type: none"> • access—24 hours—to pharmacist, with access to Level 6 oncology pharmacist. • access—during business hours—to children's allied health professionals, as required. • access to allied health professionals with expertise or interest in childhood cancer, and documented processes with specialty allied health professionals within Level 6 service. 	<ul style="list-style-type: none"> • registered medical practitioners (specialist trainees, senior registrars and Fellows) involved in prescribing chemotherapy to complete competency-based education. • 24-hour service to be provided for all specialties, where clinically relevant. • centres performing matched unrelated donor transplants must have accessible registered medical specialist with credentials in children's haematopoietic stem cell transplantation with at least 5 years' experience in allogeneic bone marrow transplants. <p>Nursing</p> <ul style="list-style-type: none"> • registered nurses (children's oncology) on-site. • registered nurses (Cancer Care Coordinators) responsible for communication with staff at Level 4 and 5 services. • registered nurses trained and experienced in collection of peripheral blood progenitor cells. • adequate nursing staff with demonstrated evidence of knowledge and skills to support patients following high-dose systemic therapy during and following transplantation. • registered nurse (children's oncology) or health professional to support

	Level 4	Level 5	Level 6
	<p>Allied health</p> <ul style="list-style-type: none"> • access—during business hours—to physiotherapist, speech pathologist, occupational therapist, psychologist, dietician and social work services, as required. • access—7 days a week— to general physiotherapist. • access—during business hours—to biomedical support for equipment maintenance. • may have developed multidisciplinary teams to manage care, with some allied health professionals being children’s-specific. 		<p>coordination of transplant / haematology (highly desirable).</p> <p>Allied health</p> <ul style="list-style-type: none"> • lead allied health professionals with responsibility for clinical governance of each clinical stream have children’s experience. • skilled children’s psycho-oncology professionals including social workers and psychologists. • access to neuropsychology services. • children’s occupational therapist, physiotherapist and speech pathologist. • nutrition team. • dental service. • clinical scientists.

Support services requirements for children’s cancer services

	Level 4		Level 5		Level 6	
	On-site	Accessible	On-site	Accessible	On-site	Accessible
Children’s anaesthetic	3		4		6	
Children’s intensive care		4	5		6	
Children’s medical	4		5		6	

	Level 4		Level 5		Level 6	
Children's radiation oncology		5		5		6
Children's surgical	3		4		6	
Medical imaging	4		5		5	
Medication	3	5	5		6	
Mental health (child and youth)		4		4		5
Nuclear medicine					5	
Palliative care	4		4		5	
Pathology		3		3	4	6
Rehabilitation		4		4	5	
Renal			6		6	

Table note: On-site means staff, services and/or resources located within the health facility or adjacent campus including third party providers.

Accessible means ability to utilise a service (either located on-site or off-site) or skills of a suitably qualified person (who may be either on-site or off-site)—without difficulty or delay—via various communication mediums including but not limited to face-to-face, telehealth, telepharmacy, and/or outreach.

Legislation, regulations and legislative standards

Refer to the Fundamentals of the Framework, Children's Services Preamble and Cancer Services Preamble for details.

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

(not exhaustive & hyperlinks current at date of release of CSCF v3.2)

In addition to what is outlined in the Fundamentals of the Framework, Children's Services Preamble and Cancer Services Preamble, the following are relevant to Cancer Services - Children's:

- Association of Pediatric Hematology/Oncology Nurses. Pediatric oncology nursing: Scope and standards of practice for pediatric oncology nursing. APHON; 2007.
- Australian Confederation of Paediatric and Child Health Nurses. Competencies for the specialist paediatric and child health nurse, 2nd ed. ACPCHN; 2006.
www.accypn.org.au/downloads/competencies.pdf
- Cancer Australia. The National Cancer Nursing Education Project (EdCaN): A National Professional Development Framework for Cancer Nursing. Canberra: Cancer Australia; 2008.
- Cancer Nurses Society of Australia. Central venous access devices: Principles for nursing practice and education. CNSA; 2007. www.cnsa.org.au
- Queensland Government. Centre for Healthcare Related Infection Surveillance and Prevention (CHRISP): Central venous access devices recommendations. Queensland Health; 2009. www.health.qld.gov.au/chrisp/icare/about.asp
- National Collaborating Centre for Cancer. Improving Outcomes in Children and Young People with Cancer: The Manual. London: National Institute for Health and Clinical Excellence; 2005. www.nice.org.uk/guidance/CSGCYP
- National guidelines on medication safety (The Australian Commission on Safety and Quality in Health Care) Organ-specific treatment guidelines and standards published by the National Health and Medical Research Council.

Reference list

1. Cancer Institute NSW. Multidisciplinary teams.
www.cancerinstitute.org.au/cancer_inst/profes/mdt.html
2. Higby H, Pye K. Improving discharge from the paediatric oncology unit. Paediatric Nurse 2009 May;21(4):30-2.

3. National Collaborating Centre for Cancer. Improving Outcomes in Children and Young People with Cancer: The Manual. London: National Institute for Health and Clinical Excellence; 2005. www.nice.org.uk/guidance/CSGCYP
4. Australasian Health Infrastructure Alliance. Australasian Health Facility Guidelines: Revision V3.0. AHIA; 2009. www.healthfacilityguidelines.com.au/guidelines.htm