

Surgical services – children’s

CSCF v3.2

Module overview

Please note: This module must be read in conjunction with the Fundamentals of the Framework (including glossary and acronym list), Children’s Services Preamble, Anaesthetic Services - Children’s and Perioperative Services modules.

Children’s surgical services encompass both elective and emergency surgery. This module focuses on elective surgical services for children, and is based on the principle of ensuring elective surgery is provided by facilities with the relevant capacity and capability (i.e. appropriate staff, equipment and resources). The capacity of children’s surgical services to conduct surgery and discharge children in a timely and safe manner depends on the:

- age of the child
- child’s health status
- presence of comorbidities
- type of surgery required
- family resources.

Where a child presents to a service and it is determined their condition requires emergency surgery, surgery should not be delayed until transfer to a higher level service where a potential detrimental outcome for the child may occur. Examples of such situations include:

- drainage of superficial abscess
- removal of foreign bodies
- suture of lacerations
- torsion testis
- malrotation with volvulus
- a child over 10 years with uncomplicated appendicitis.

In the event of a child presenting to a children’s or adult emergency service following trauma, timely consultation must occur with relevant specialty services and in accordance with The Trauma Plan for Queensland (2006).

A close interface exists between surgical services, operating theatres and other areas of the hospital such as inpatient wards, emergency department and diagnostic services. Services external to the hospital, including community rehabilitation, sub-acute and community

support services, are important in enabling an appropriate flow of surgical patients from hospital to different types and levels of service, community services and home.

The CSCF recognises five service levels, from Level 2 to 6, for children’s surgical services. For the purposes of this module, the assessment of risk is a process of identifying factors increasing the likelihood of averting an adverse outcome for the child. Factors such as age, pre-term birth and comorbidities (e.g. diabetes, obesity) heighten the surgical complexity and anaesthetic risk for the child. Children presenting with complex care needs require a multidisciplinary team approach including combined children’s medical specialist team care prior to surgical / procedural intervention. Table 1 describes, in general terms, the characteristics of a certain level of surgical complexity (SC) and the requirements needed to undertake that complexity of surgery in children.

Table 1: Children’s surgical complexity characteristics

Complexity	Complexity characteristics
Surgical complexity I (SCI)	<p>This level of surgical complexity:</p> <ul style="list-style-type: none"> • is an ambulatory / office surgery procedure • requires local anaesthetic, but does not require sedation • requires no operating theatre, but does require a procedure room, aseptic technique and sterile instruments • has access to resuscitation equipment • does not require recovery room; however, requires an area in which patients can sit • has no planned post-operative stay or treatment • requires no support services other than removal of sutures or post-operative check.
Surgical complexity II (SCII)	<p>This level of surgical complexity:</p> <ul style="list-style-type: none"> • requires local anaesthesia or peripheral nerve block and may require some level of sedation • has at least one operating room or procedure room and requires a separate area for recovery • most procedures can be undertaken in an ambulatory, day-stay or emergency department setting.
Surgical complexity III (SCIII)	<p>This level of surgical complexity:</p> <ul style="list-style-type: none"> • must have at least one operating room or procedure room • must have access to overnight beds, if required • usually requires general anaesthesia and/or regional anaesthesia • requires separate area for recovery • can be performed as a day stay • intensive care admission would be an unexpected event.

Complexity	Complexity characteristics
Surgical complexity IV (SCIV)	This level of surgical complexity: <ul style="list-style-type: none"> • usually requires general anaesthesia • surgical procedures with potential for perioperative complications may be performed as an overnight case or an extended day case • has on-site close observation care area/s.
Surgical complexity V (SCV)	This level of surgical complexity: <ul style="list-style-type: none"> • provides the most complex surgical services • must have specialist clinical staff, equipment and infrastructure • extensive supporting services available • surgery and anaesthetic risk that has the highest potential for intra-and post-operative complications • must have on-site intensive care services relevant to the surgery being performed.

Developed by CSCF Surgical, Perioperative and Anaesthetic Services Advisory Groups 2009 and adjusted to be specific for children's services by CSCF Children's Surgical and Anaesthetic Services Advisory Groups 2009.

* Selected Specialist Services Direction Statement 2001–2010 (Queensland Health 2001).

Providing safe surgical services for children requires effective integration with anaesthetic, intensive care and perioperative services. For more information please refer to the Anaesthetic Services - Children's and Perioperative Services modules.

Pre-anaesthetic consultation is mandatory for all children undergoing surgery. A medical assessment prior to anaesthesia ensures:

- the child's state of health is optimised
- anaesthetic management is planned (in light of the child's age and medical history)
- there is discussion with the parent / guardian and/or child about the anaesthesia to be given.

Further information regarding the American Society of Anesthesiologists' (ASA1) scale¹ for anaesthetic risk and physical status profile can be found in Appendix 1.

A facility providing children's surgical services must provide or have access to age-appropriate intensive care services capable of managing, and prepared to admit the child, if necessary. This may include Level 6 neonatal services or children's subspecialty close observation care area. Table 2 below illustrates a matrix combining anaesthetic risk, surgical complexity and intensive care access requirements for children undergoing elective surgery. The matrix identifies minimum combinations and service requirements applicable to a level of service for predictable outcomes in most children. This tool assists in determining levels of service but does not negate clinical judgment. For further information regarding access to intensive care services, refer to the Intensive Care Services - Children's module and Appendix 2

Table 2: Children’s elective surgical service provision matrix

	Anaesthetic type	Anaesthetic risk and physical status								
		LOW (ASA ¹ 1 – 2)			MEDIUM (ASA ¹ 3)			HIGH (ASA ¹ ≥4)		
		Modifiers	Minimum surgical service level	Minimum children’s intensive care service level	Modifiers	Minimum surgical service level	Minimum children’s intensive care service level	Modifiers	Minimum surgical service level	Minimum children’s intensive care service level
I	Local anaesthetic	e.g. sutures, dental, eye/ENT exam.	Level 2	Access to Level 4		Level 2	Access to Level 4		Level 4	Access to Level 4
II	Local anaesthetic with sedation	e.g. fractures, dental, radiology, interventions.	Level 3	Access to Level 4		Level 4	Access to Level 4	>T44 ^c and ex-premature infants (≥52 weeks PCA) with credentialed anaesthetist working in their scope of practice.	Level 5	Level 5 on-site
II	Local anaesthetic with sedation	Neonate with credentialed anaesthetist	Level 5	Level 5 on-site and access to L5	Neonate with credentialed anaesthetist	Level 5	Level 5 on-site and access to L5			

		Anaesthetic risk and physical status								
Anaesthetic type	LOW (ASA ¹ 1 – 2)			MEDIUM (ASA ¹ 3)			HIGH (ASA ¹ ≥4)			
	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	
		working in their scope of practice.		Neonatal Service	working in their scope of practice.		Neonatal Service			
IIIV	General anaesthetic	Neonate with credentialed anaesthetist working in their scope of practice.	Level 6	Level 6 on-site and/or Level 6 Neonatal Service on-site	Neonate with credentialed anaesthetist working in their scope of practice.	Level 6	Level 6 on-site and/or Level 6 Neonatal Service on-site	Neonate with credentialed anaesthetist working in their scope of practice.	Level 6	Level 6 on-site and/or Level 6 Neonatal Service on-site
III	Local anaesthetic with sedation and general anaesthetic	>1 year of age with credentialed anaesthetist working in their scope of practice. >2 years of age with credentialed anaesthetist	Level 3	Access to Level 4	>1 year of age with credentialed anaesthetist working in their scope of practice. >6 months of aged and no comorbidities with	Level 4	Access to Level 4	>T44 ^c and ex-premature infants (≥52 weeks PCA) with credentialed anaesthetist working in their scope of practice.	Level 5	Level 5 on-site

		Anaesthetic risk and physical status							
Anaesthetic type	LOW (ASA ¹ 1 – 2)			MEDIUM (ASA ¹ 3)			HIGH (ASA ¹ ≥4)		
	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level
	<p>working in their scope of practice or facility credentialed non-specialist anaesthetist.^a</p> <p>>4 years of age with non-specialist anaesthetist.^a</p>			<p>credentialed anaesthetist working in their scope of practice and allocated children's area for post-surgical nursing management.</p> <p>T44c or well ex-premature and no comorbidities (≥52 weeks PCA) with credentialed anaesthetist working in their scope of practice and allocated children's</p>					

		Anaesthetic risk and physical status								
Anaesthetic type	LOW (ASA ¹ 1 – 2)			MEDIUM (ASA ¹ 3)			HIGH (ASA ¹ ≥4)			
	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	
				area for post-surgical nursing management.						
IV	General anaesthetic and regional anaesthetic	>1 year of age with credentialed anaesthetist working in their scope of practice. >6 months of aged and no comorbidities with credentialed anaesthetist working in their scope of practice. T44c or well ex-premature	Level 4	Access to Level 4	Medium risk children (ASA ¹ 1-2) due to age or history of prematurity, including ex-premature infants ≥T44 ^c PCA, with credentialed anaesthetist working in their scope of practice, designated children's close observation	Level 4	Access to Level 4	>T44 ^c and ex-premature infants (≥52 weeks PCA) with credentialed anaesthetist working in their scope of practice.	Level 5	Level 5 on-site

		Anaesthetic risk and physical status								
Anaesthetic type	LOW (ASA ¹ 1 – 2)			MEDIUM (ASA ¹ 3)			HIGH (ASA ¹ ≥4)			
	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	
	and no comorbidities (≥52 weeks PCA) with credentialed anaesthetist working in their scope of practice.			care beds and children's ward. >T44 ^c or ex-premature infants ≥52 weeks PCA (ASA ¹ 3) with credentialed anaesthetist working in their scope of practice and designated children's close observation care beds and children's ward.						

Anaesthetic type		Anaesthetic risk and physical status							
		LOW (ASA ¹ 1 – 2)			MEDIUM (ASA ¹ 3)			HIGH (ASA ¹ ≥4)	
		Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level
V	General anaesthetic	<p>>1 year of age with credentialed specialist anaesthetist working in their scope of practice.</p> <p>>6 months of aged with credentialed anaesthetist working in their scope of practice.</p> <p>>T44^c and ex-premature infants (≥52 weeks PCA) with credentialed anaesthetist</p>	Level 5	Level 5 on-site	<p>>1 year of age with credentialed specialist anaesthetist working in their scope of practice.</p> <p>>6 months of aged with credentialed anaesthetist working in their scope of practice.</p> <p>T44^c or well ex-premature and no comorbidities (≥52 weeks PCA) with credentialed anaesthetist</p>	Level 5	Level 5 on-site		

Anaesthetic type		Anaesthetic risk and physical status								
		LOW (ASA ¹ 1 – 2)			MEDIUM (ASA ¹ 3)			HIGH (ASA ¹ ≥4)		
		Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level	Modifiers	Minimum surgical service level	Minimum children's intensive care service level
		working in their scope of practice.			working in their scope of practice.					

For key, please refer to footnotes below.

Adapted from the physical classification system of the American Society of Anesthesiologists' Manual for Anesthesia Department Organisation and Management 20011, in consultation with CSCF Children's Surgical, Anaesthetic and Intensive Care Advisory Groups 2009.

Key:

- a non-specialist anaesthetist refers to a registered medical practitioner (GP) with credentials in anaesthesia. In accordance with the JCCA, endorsement for elective paediatric anaesthesia down to age 2 years may be granted on an individual practitioner basis after demonstration of assessment/accreditation and competency by regional representatives of the JCCA. Such endorsement is to be related to the individual's documented training in paediatric anaesthesia in this age group.
- b T refers to a term infant (that is greater than or equal to 37 weeks gestation at birth).^{2, 3,4}
- c T44 refers to a term infant who is greater than or equal to 44 weeks PCA.
- d refers to children with medium to high post-anaesthetic care requirements due to age only, but no associated severe systemic disease, having particular procedures with low perioperative risks, such as nasal cautery, removal of foreign body from nose and ear, insertion of grommets, examination of ears or eyes under general anaesthetic, tear duct probing, circumcision and other similar procedures, performed by registered surgical specialists with appropriate subspecialty credentialing and defined scope of practice.
- e PS refers to specific procedures such as inguinal hernia and pyloromyotomy performed only by registered medical specialists with credentials in children's surgery.
- f PCA refers to post-conceptual age

The following definitions are used in the Surgical Services - Children's module:

- a premature infant is less than 37 weeks gestation at birth.^{2,3,4}
- a premature infant with comorbidities is an infant less than 37 weeks gestation at birth with additional conditions (e.g. less than 37 weeks gestation at birth with anaemia).⁴
- a neonate is an infant in the first 28 days of life.
- post-conceptual age (PCA) is the gestational age plus postnatal age (in weeks).
- credentialed specialist anaesthetist is a registered medical specialist with credentials in anaesthesia as credentialed by the facility. Credentialed specialist anaesthetists working in a children's surgical service are typically registered medical specialist with credentials in anaesthesia who spends the majority of their workload providing children's anaesthesia.

Service networks

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

- services provided in the context of an established service network across all service levels to facilitate referral and transfer of patients to or from higher level services, where necessary
- documented processes between interrelated and interdependent services
- may encompass both public and private services.

Service requirements

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

- documented processes with emergency services
- involvement in the planning of anaesthetic services and development of emergency anaesthetic services, where relevant
- provide relevant clinical indicator data to satisfy accreditation and other statutory reporting obligations.

Workforce requirements

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

- surgery can only be performed by suitably qualified and experienced health professionals authorised under legislation and credentialed by the health service Credentialing and Clinical Privileging Committee or equivalent
- surgeon trainees must be supervised according to RACS' professional documents and guidelines⁵ or documents and guidelines of other relevant professional bodies

- all registered medical practitioners (registrars) in training must be supervised by a registered medical specialist with credentials in surgery or surgical subspecialty as per RACS' guidelines⁵
- conscious sedation can only be performed by a person authorised under legislation with appropriate training in administration of conscious sedation and approved to do so by the health service Credentialing and Clinical Privileging Committee or equivalent
- staff directly providing anaesthetic services must be assigned responsibilities commensurate with their level of training and education, competence, experience, required level of supervision, credentials and scope of practice in accordance with particular statutory legislation
- registered medical practitioners (general practitioners) trained in surgery who have successfully completed RACS training for general practitioner surgical proceduralists, and have approval to practise by the Joint Consultative Committee on Surgery, and other suitably qualified and experienced health professionals approved by national registering bodies, may provide specific surgical services, consequent to credentialing and defining scope of clinical practice by the health service Credentialing and Clinical Privileging Committee or equivalent
- other healthcare workers caring for children in the surgical environment include oral health practitioners (i.e. dentists, oral health therapists, dental hygienists, and dental prosthetists).

Surgical services – Children’s

	Level 2	Level 3	Level 4	Level 5	Level 6
Service description	<ul style="list-style-type: none"> provided in setting without anaesthetic or perioperative service. operates on demand and manages low-risk patients who fall into the category of surgical complexity (SC) I. minor diagnostic and therapeutic surgical procedures undertaken (such procedures usually on the body surface and only require local anaesthetic, including removal of small skin lesions, excision of small neuromas, minor sutures, drainage of abscesses, and excision of subcutaneous tumours). procedures do not involve penetration 	<ul style="list-style-type: none"> provided predominantly in hospital setting with limited, but designated, anaesthetic, perioperative and sterilising services. may be undertaken in a day hospital or inpatient facility. inpatient service may be temporarily upgraded with provision of outreach services by formally approved higher level service. may be staffed by registered medical practitioners (general practitioners) with credentials and defined scope of practice to provide surgical and anaesthetic services. 	<ul style="list-style-type: none"> provides routine elective surgery performed by surgical specialists. services undertaken across broad range of facilities supported by differing levels of clinical perioperative expertise on-site. dedicated children’s ward or recovery area exists. may have dedicated children’s close observation care areas, but does not have on-site neonatal intensive care services. complexity of surgery provided depends on standard of children’s-specific post-surgical facilities and accessibility of specialised children’s medical staff and 	<ul style="list-style-type: none"> provided in designated children’s hospital or general hospital for adults and children. provides surgery for neonates and children whose condition does not require on-site Level 6 superspecialties. must have on-site Level 5 children’s intensive care services. manages (refer to Table 1): <ul style="list-style-type: none"> Neonates: <ul style="list-style-type: none"> surgical complexity I and II with low to medium anaesthetic risk. Children (over T44 and ex-premature infants greater than or equal to 52 weeks PCA): 	<ul style="list-style-type: none"> specialist, statewide and, where applicable, interstate service. manages children with highest level of risk and surgical complexity in specified areas of expertise. cares for children of all ages and provides surgical care for complex surgical patients requiring input of multiple children’s subspecialists and/or prolonged intensive care support not available in Level 5 service. there is critical mass of staff expertise providing statewide leadership and education in clinical management to

	Level 2	Level 3	Level 4	Level 5	Level 6
	<p>of internal body cavities via the epithelium other than with a needle.</p> <ul style="list-style-type: none"> most procedures requiring local anaesthesia will be performed in ambulatory, day-stay or emergency-room settings. Anaesthetic Services - Children's are not accessible 24 hours a day and no elective surgical services are provided. services may be provided by suitably qualified and experienced registered medical practitioners, dentists or health practitioners authorised under legislation (but service not available 24 hour/s). where there is an emergency, it may be 	<ul style="list-style-type: none"> may be supported by visiting registered medical specialists with credentials in surgery and/or surgical subspecialties. registered medical specialists with credentials in anaesthesia may provide anaesthesia for elective surgery lists. manages (refer to Table 1): <ul style="list-style-type: none"> surgical complexity II procedures with low anaesthetic risk surgical complexity III procedures with low anaesthetic risk to a child <ul style="list-style-type: none"> greater than 2 years of age where there is registered 	<p>includes (refer to Table 1):</p> <ul style="list-style-type: none"> surgical complexity I with high anaesthetic risk surgical complexity II with medium anaesthetic risk surgical complexity III with low and medium anaesthetic risk and surgical complexity IV with low anaesthetic risk for a child: <ul style="list-style-type: none"> greater than 1 year of age with anaesthesia performed by registered medical specialist with credentials in anaesthesia greater than 6 months of age with no comorbidities for specific 	<ul style="list-style-type: none"> surgical complexity I to IV with high anaesthetic risk surgical complexity V with low and medium anaesthetic risk. manages increased levels of risk until transfer to highest level of service arranged. children with oncological diseases can be cared for under direction of Level 6 children's oncology medical service (e.g. central venous line management). 	<p>other levels of children's services.</p> <ul style="list-style-type: none"> major provider of telehealth and statewide consultation-liaison services. supported by wide range of medical and surgical subspecialties and support services within large health facility. all elective surgery for children with oncological disease coordinated via Level 6 service including timely consultation with children's oncology specialist occurring following presentation and, where possible, prior to any surgical intervention (documented processes and clear referral pathways must be evident)

	Level 2	Level 3	Level 4	Level 5	Level 6
	necessary for general practitioners to provide services akin to anaesthesia as part of resuscitation at this level.	<p>medical specialist with credentials in anaesthesia or facility-credentialed registered medical practitioner</p> <ul style="list-style-type: none"> – greater than 4 years of age where there is registered medical practitioner (general practitioner) with credentials in anaesthesia – surgical complexity III with low anaesthetic risk (day surgery facilities – Specialist Paediatric 	<p>surgical and diagnostic procedures in facility with an allocated children’s area for postsurgical nursing management (this service has registered medical specialist with credentials in providing children’s anaesthesia and specialised children’s nursing staff during time of service; particular procedures have low perioperative risks and medium to high post-anaesthetic care requirements</p>		between lower and higher levels).

	Level 2	Level 3	Level 4	Level 5	Level 6
		<p>Surgery) for child greater than 1 year of age where anaesthetic is delivered by registered medical specialist with credentials in anaesthesia and paediatrics.</p> <ul style="list-style-type: none"> • must have access to Level 4 children's intensive care service and be capable of providing immediate resuscitation and short-term cardiorespiratory support until patient transfer to an intensive care service (this access must include documented processes for transfer and acceptance of patients between public and licensed private services and 	<p>due to age; and procedures include nasal cautery, removal of foreign body from nose and ear, insertion of grommets, insertion of cochlear implant and examination of ears or eyes under general anaesthetic, tear duct probing, circumcision and similar procedures</p> <ul style="list-style-type: none"> – for term infants greater than or equal to 44 weeks PCA (T44) and for well, ex-premature infants with no other comorbidities greater than or 		

	Level 2	Level 3	Level 4	Level 5	Level 6
		<p>Queensland Ambulance Service).</p> <ul style="list-style-type: none"> • selection of patients and surgical procedures should ensure intensive care admission would be unexpected and rare event. 	<p>equal to 52 weeks PCA in facility with allocated children's area for post-surgical nursing management and specialised children's nursing staff during time of service (these particular procedures have low perioperative risks and medium to high post-anaesthetic care requirements due to age; and procedures are performed by registered surgical and anaesthetic specialists with recognised</p>		

	Level 2	Level 3	Level 4	Level 5	Level 6
			<p>training and credentials in children's sub-specialisation.</p> <ul style="list-style-type: none"> - surgical complexity IV with medium anaesthetic risk due to age or history of prematurity with ASA 1-2: <ul style="list-style-type: none"> - only in facilities with designated children's close observation care beds and children's ward, and only when performed by registered medical specialist with credentials in children's surgery, and registered medical specialist with credentials in anaesthesia with 		

	Level 2	Level 3	Level 4	Level 5	Level 6
			<p>competency and defined scope of practice in children's anaesthesia</p> <ul style="list-style-type: none"> - only for specific children's surgical procedures such as inguinal hernia repair and pyloromyotomy - must be registered medical specialist with credentials in paediatrics accessible 24 hours for on-site consultation, and registered nurse trained in advanced paediatric life support for term infants and for well, 		

	Level 2	Level 3	Level 4	Level 5	Level 6
			<p>ex-premature infants with no other comorbidities greater than or equal to 44 weeks PCA.</p> <ul style="list-style-type: none"> - surgical complexity IV with ASA 3: <ul style="list-style-type: none"> - only in facilities with designated children's close observation care beds and children's ward and only when performed by registered surgical and anaesthetic specialists with recognised training and credentialing in children's sub-specialisation - must be registered medical specialist with 		

	Level 2	Level 3	Level 4	Level 5	Level 6
			<p>credentials in paediatrics accessible 24 hours for on-site consultation and registered nurse trained in advanced paediatric life support</p> <ul style="list-style-type: none"> - for T44 and ex-premature infants greater than or equal to 52 weeks PCA. <ul style="list-style-type: none"> • must have access to Level 4 children's intensive care service and be capable of providing immediate resuscitation and short-term cardiorespiratory support until patient transfer to intensive care service. • must have documented processes with higher level services ensuring access to information 		

	Level 2	Level 3	Level 4	Level 5	Level 6
			<p>related to latest evidence-based care and treatment.</p> <ul style="list-style-type: none"> registered medical practitioners must have credentials and defined scope of practice enabling them to provide surgery to children. service is supported by specialist anaesthetists and fully functioning perioperative services. 		
Service requirements	<p>As per module overview, plus:</p> <ul style="list-style-type: none"> medical, nursing or oral health practitioner services provided on-site or in close enough proximity for rapid response. at least one procedure room. 	<p>As per Level 2, plus:</p> <ul style="list-style-type: none"> access to monitored bed for emergencies with children's surgical close observation care area/s staffed by children's nurses. where day surgery is offered, all relevant children's-specific staff must be available while patients are on-site. 	<p>As per Level 3, plus:</p> <ul style="list-style-type: none"> availability of surgical and/or subspecialty (children's) area. facilities providing surgical complexity IV procedures for medium-risk patients must have designated paediatric surgical close observation care beds available to relevant specialty, with associated workforce either accessible in 	<p>As per Level 4, plus:</p> <ul style="list-style-type: none"> clinical services provided on-site 24 hours with combinations of medical, nursing, allied health, and other staff on-site 24 hours. medical services accessible on-site in public services, or in close enough proximity for rapid 	<p>As per Level 5, plus:</p> <ul style="list-style-type: none"> accessible on-site specialist nursing, medical and surgical services with many staff with subspecialty qualifications and experience. collaboration and coordination with maternal-foetal health diagnostics, interventions and case management

	Level 2	Level 3	Level 4	Level 5	Level 6
		<ul style="list-style-type: none"> planned services generally provided during the day for regularly scheduled lists. services after hours or at weekends provided by prearrangement. services in day surgery facilities provided during hours of operation. may provide emergency services at any time, as required. access to rostered on-call staff. may provide specialist services / functions on a visiting basis. <p>Note: Level 3 day surgery services have same support service requirements.</p>	<p>intensive care unit or in designated area of surgical / subspecialty ward.</p> <ul style="list-style-type: none"> must have full facilities for providing extended apnoea monitoring. where facilities provide surgical services for term infants and well, ex-premature infants (>52 weeks PCA), registered medical specialists providing anaesthesia or surgery must have recognised training, currency of practice and credentials in children's subspecialisation noted on their privileging document. any child under age of 3 months admitted overnight for surgical procedure that is not general paediatric surgery must have medical consultation by registered medical specialist with 	<p>response at all times in private services.</p> <ul style="list-style-type: none"> capacity to provide close observation nursing care on-site. registered medical specialists with credentials in relevant children's subspecialty. dedicated on-site operating theatre staff where emergency surgery provided. specialist ambulatory services in public sector. guidelines in place for coordination and prioritisation of all surgical patients. access to at least one operating room for dental surgery or procedures. provision of intensive care services for children and adolescents 	<p>planning on local and statewide basis.</p> <ul style="list-style-type: none"> medical and surgical contact on daily basis. procedures performed on patients with high-risk potential for intra- and post-operative complications (e.g. advanced chronic disease which may not be well controlled). access—24 hours—to teleconferencing and videoconferencing facilities on-site. children's-specific staff lead and manage children's day surgery. on-site specialist endoscopy services. on-site access to areas of close observation care and

	Level 2	Level 3	Level 4	Level 5	Level 6
			credentials in paediatrics. <ul style="list-style-type: none"> • 24 hour clinical services. • medical services provided on-site or in close enough proximity for rapid response at all times. • Access-24 hours- to dedicated operating theatre staff. • may provide outreach services. 	requiring postoperative ventilation is planned. <ul style="list-style-type: none"> • may have dedicated endoscopy operating / procedure room/s, and day surgery facilities. • may have provision for case management for patients requiring complex care. 	children's specialist ward areas. <ul style="list-style-type: none"> • formal involvement with emergency services for coordination of services across the state. • statewide provider of outreach services. • provider of education for many subspecialty areas. • provides appropriate on-site service where neonatal intensive care patient is too unstable to transfer to children's surgical service.
Workforce requirements	As per module overview, plus: Medical <ul style="list-style-type: none"> • registered medical practitioners (general practitioners) with demonstrated competency in 	As per Level 2, plus: Medical <ul style="list-style-type: none"> • access to registered medical specialist with credentials in children's surgical specialties to provide 	As per Level 3, plus: Medical <ul style="list-style-type: none"> • access to registered medical specialist with credentials in paediatrics. 	As per Level 4, plus: Medical <ul style="list-style-type: none"> • access to appropriately credentialed registered medical specialists (children's specialist surgeons) who assist and guide 	As per Level 5, plus: <ul style="list-style-type: none"> • demonstrated knowledge, competency and experience in surgical subspecialties (e.g. advanced neurosurgery, cardiac

	Level 2	Level 3	Level 4	Level 5	Level 6
	<p>dosage and application of local anaesthesia for children.</p> <p>Nursing</p> <ul style="list-style-type: none"> may have nurse practitioners. <p>Allied health</p> <ul style="list-style-type: none"> access to oral health practitioners. 	<p>advice on children's surgical patients.</p> <ul style="list-style-type: none"> registered medical practitioner with credentials to perform required procedures. medical staff with credentials and demonstrated competency in provision of children's surgery and defined scope of practice noted on their privileging document. registered medical practitioner to remain on-site until patient recovered from anaesthesia and meets post-anaesthetic care service discharge criteria, as per facility guidelines and ANZCA PS46. registered medical practitioner available during hours of 	<ul style="list-style-type: none"> access to range of registered medical specialists. access to registered medical specialists with defined scope of practice for range of procedures being performed. immediate access to registered medical practitioner with credentials in anaesthetics while patients are recovering. <p>Nursing</p> <ul style="list-style-type: none"> access to staff trained in paediatric life support. <p>Allied health</p> <ul style="list-style-type: none"> recognised allied health professionals (including social workers, occupational therapists, clinical psychologists and physiotherapists) and appropriately trained support staff within surgical services 	<p>assessment, treatment, case management and case review.</p> <ul style="list-style-type: none"> registered medical specialists with credentials in anaesthesia and surgery of multiple specialties. access—24 hours—to registered medical specialist with credentials in surgery. access- 24 hours- to registered medical practitioner. access to registered medical specialists with subspecialty training (e.g. orthopaedics). registered medical specialist with credentials in anaesthetics with subspecialties including paediatrics. 	<p>surgery and superspecialty procedures).</p> <ul style="list-style-type: none"> may have provision for registered medical practitioners and nursing staff to voluntarily relieve in Level 4, 5 and 6 services and rotations between regional and remote areas as needed. <p>Medical</p> <ul style="list-style-type: none"> access—24 hours—to one or more registered medical practitioners to support patients in post-operative stage. access—24 hours—to registered medical specialist with credentials in surgery / anaesthetics, with subspecialty in paediatrics. registered medical specialists from range of children's

	Level 2	Level 3	Level 4	Level 5	Level 6
		<p>operation for day hospitals.</p> <p>Nursing</p> <ul style="list-style-type: none"> • suitably qualified and experienced nurse manager (however titled) in charge of surgical services. • suitably qualified and experienced registered nurse in charge of each shift. • suitably qualified and experienced registered nurses. <p>Allied health</p> <ul style="list-style-type: none"> • may have access to allied health professionals (including occupational therapists, psychologists, physiotherapists; social workers, speech pathologists and other relevant disciplines). 	<p>of inpatient hospital facilities.</p> <ul style="list-style-type: none"> • may have access to paediatric-specific allied health professionals. <p>Other</p> <ul style="list-style-type: none"> • staff trained to assist with transfer of patients and positioning of equipment. 	<ul style="list-style-type: none"> • trained assistant to surgeon must be provided where required by type of procedure being performed. <p>Nursing</p> <ul style="list-style-type: none"> • suitably qualified and experienced registered nurses with defined children's surgical post-operative experience. • desirable to have lead clinicians responsible for surgical nursing clinical governance. <p>Other</p> <ul style="list-style-type: none"> • elective surgery coordinators and bookings staff (however titled). 	<p>subspecialties with responsibility for training and upskilling of medical, nursing and technician staff.</p> <ul style="list-style-type: none"> • registered medical specialist with credentials in surgery and subspecialty in paediatrics as lead clinician responsible for clinical governance of children's surgical services. • may have lead clinicians responsible for clinical governance of children's surgical subspecialties. <p>Nursing</p> <ul style="list-style-type: none"> • may have lead clinician responsible for surgical nursing clinical governance with portfolio inclusive of perioperative, post-

	Level 2	Level 3	Level 4	Level 5	Level 6
		<ul style="list-style-type: none"> may have access to appropriately trained support staff with relevant qualifications and experience in provision of healthcare services within surgical services. <p>Other</p> <ul style="list-style-type: none"> access to registered dental practitioner. access to trained technical assistants. 			<p>anaesthetic care and/or day surgery.</p> <ul style="list-style-type: none"> may have provision for nurse practitioner's role within subspecialties. registered nurses with surgical subspecialty knowledge used for staff education. <p>Allied health</p> <ul style="list-style-type: none"> recognised children's allied health professionals (including clinical psychologists, occupational therapists, physiotherapists, social workers and other disciplines) with experience in surgical healthcare services. <p>Other</p> <ul style="list-style-type: none"> extensive range of specialist services /

	Level 2	Level 3	Level 4	Level 5	Level 6
					functions provided on visiting basis.
Specific risk considerations	Nil	Nil	Nil	Nil	Nil

Support service requirements for children's surgical services

	Level 2		Level 3		Level 4		Level 5		Level 6	
	On-site	Accessible								
Children's anaesthetic			3		4		5		5	
Children's intensive care		4		4		4	5		6	
Children's medical						4	4		5	
Medical imaging		2		3		3	5		5	
Medication		2	3		4		5		5	
Neonatal								5	6	
Nuclear medicine							4		5	

	Level 2		Level 3		Level 4		Level 5		Level 6	
Palliative care				3		4		4		5
Pathology		2		3		4	5		5	
Perioperative (relevant section/s)			3		3		5		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 and Children's 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 and Children's Service Preamble, the following are relevant to Surgical Services - Children's:

- Australian and New Zealand College of Anaesthetists, The Royal Australian College of General Practitioners, and Australian College of Rural and Remote Medicine (Joint Consultative Committee on Anaesthesia). Advanced Rural Skills: Curriculum Statement in Anaesthesia. ANZCA, RACGP, ACRRM; 2003. www.racgp.org.au/
- Australian and New Zealand College of Anaesthetists. Professional Standard PS1: Recommendations on Essential Training for Rural General Practitioners in Australia Proposing to Administer Anaesthesia. ANZCA; 2002. www.anzca.edu.au/resources/professional-documents/
- Australian and New Zealand College of Anaesthetists. Professional Standard PS26: Guidelines on Consent for Anaesthesia or Sedation. ANZCA; 2005. www.anzca.edu.au/resources/professional-documents/
- Australian and New Zealand College of Anaesthetists. Professional Standard PS29: Statement on Anaesthesia Care of Children in Healthcare Facilities without Dedicated Paediatric Facilities. ANZCA; 2008. www.anzca.edu.au/resources/professionaldocuments/
- Australian and New Zealand College of Anaesthetists. Professional, Technical, Training and Educational Standards, Guidelines and Professional Documents. www.anzca.edu.au/resources/professional-documents/
- Australian College of Operating Room Nurses. Standards, nursing roles, guidelines and position statements. ACORN; 2008. Available to order at: www.acorn.org.au/
- Australian College of Operating Room Nurses. ACORN Standards for Perioperative Nurses: Position Statement PS6 Ensuring Correct Patient, Correct Site, Correct Procedure. ACORN; 2008. www.acorn.org.au/
- Australian Day Surgery Nurses Association. Best practice guidelines for ambulatory surgery and procedures. Perth: Cambridge Publishing; 2009.
- Australian Society of Anaesthetic and Paramedical Officers. Standards and guidelines. www.asapo.org.au/
- Royal Australasian College of Physicians. Standards for the Care of Children and Adolescents in Health Services. Sydney: RACP; 2008. www.awch.org.au/pdfs/Standards_Care_Of_Children_And_Adolescents.pdf

- Royal Australasian College of Surgeons. Implementation Guidelines for Ensuring Correct Patient, Correct Side and Correct Site Surgery. RACS; 2006. www.surgeons.org/
- Royal Australasian College of Surgeons. RACS professional documents and guidelines: Trainee supervision. www.surgeons.org/

Appendix 1

American Society of Anesthesiologists Scale

In children there are higher risks in perioperative care related to age and a history of prematurity. The specialist anaesthetist providing anaesthetic services in younger age groups requires specialisation of training and experience. Anaesthetic risk has been defined as low, medium and high based on ASA1 levels (Table A). Refer to ANZCA PS29 Statement on Anaesthesia Care of Children in Healthcare Facilities without Dedicated Paediatric Facilities 2008.

Table A: American Society of Anesthesiologists (ASA1) scale for anaesthetic risk and physical status – children’s¹

ASA score	Anaesthetic risk	Physical status
ASA1 (P1) ASA2 (P2)	LOW	Healthy child Child with mild systemic disease – no functional limitation
ASA3 (P3)	MEDIUM	Child with severe systemic disease – definite functional limitation
ASA4 (P4) ASA5 (P5) ASA6 (P6)	HIGH	Child with severe systemic disease – a constant threat to life Moribund child not expected to survive 24 hours with or without surgery Declared brain-dead child whose organs are being removed for donor purposes
E		Completely healthy emergency patient (ASA I) who has just received a severe trauma. The addition of E to the classification means the risk to the patient is no longer determined by their previous ASA ¹ status

Adapted from the American Society of Anesthesiologists Manual for Anesthesia Department Organisation and Management 2001. ASA1, 520N Northwest Highway, Park Ridge, Illinois 60068-2573—physical classification system. Physical status levels adapted in consultation with CSCF Children’s Anaesthetic Advisory Group 2009.

Appendix 2

Access to intensive care

Intensive care service provision

Consideration for access to intensive care services and support services is important in determining levels of surgical and anaesthetic service. A mechanism for support in the event of requiring an intensive care service must exist at each facility. This will include written policies and guidelines for the care of the critically ill child. Table B defines intensive care access and supports the information found in Table 2 in the module overview. Table B and C below consider the age of the child/infant, surgical complexity, anaesthetic risk and requirements for intensive care services.

Table B: Access to intensive care services for infants, children and adolescents

Service level and type of service	Descriptor
Access to children's intensive care services	Surgical service is capable of providing immediate resuscitation and short-term cardiorespiratory support until transfer of the patient to an off-site intensive care service. This access must include documented processes for transfer and acceptance of patients between public and licensed private services and Queensland Ambulance Service. Selection of patients and surgical procedures in these facilities should ensure that intensive care admission would be an unexpected and rare event.
On-site Level 4 children's intensive care service	On-site and able to manage patients requiring ventilation for up to 24 hours.
On-site Level 5 children's intensive care service	On-site and able to manage patients requiring ventilation for up to 7 days; however, in regional and remote areas, ventilation may be able to continue longer with daily consultation with a higher level of service.
On-site Level 6 paediatric intensive care service (PICU)	On-site and able to manage up to the most complex of surgery and anaesthetic risk.

Developed in collaboration with CSCF Advisory Groups for Surgical, Perioperative and Anaesthetic Services Review 2009, using Queensland Health Integrated Risk Management Matrix. Adapted in consultation with CSCF Children's Surgical, Anaesthetic and Intensive Care Advisory Groups 2009.

Children's intensive care services can be provided in a paediatric intensive care, general intensive care or neonatal intensive care service. Provision of age-appropriate equipment, resources and minimum standards as per the Intensive Care Services - Children's module is mandatory.

Table C: Significant information for children’s elective surgical service provision matrix

Service level and type of service	Descriptor
Level 4 children’s/paediatric intensive care	<ul style="list-style-type: none"> • supports children greater than 12 years of age for an indefinite period • supports children 12 years of age and below in consultation and collaboration with a Level 6 paediatric intensive care service and early transfer to a higher level service where required.
Level 5 children’s/paediatric intensive care	<ul style="list-style-type: none"> • capable of supporting all children (apart from infants <52 weeks PCA) and providing mechanical ventilation for a period of up to 7 days • care of more complex cases provided in consultation with a Level 6 paediatric intensive care service • planned elective surgical admissions for infants <52 weeks PCA who can be admitted for no longer than 24 hours. After 24 hours, consultation with a Level 6 paediatric intensive care service must occur.
Level 6 children’s/paediatric intensive care	<ul style="list-style-type: none"> • is the only designated paediatric intensive care service and provides the highest level of intensive care support to infants, children and adolescents.
Level 6 neonatal service	<ul style="list-style-type: none"> • provides continuous life support to premature and ex-premature infants (neonatal surgery performed at this level).

Reference list

1. American Society of Anesthesiologists. Standards, Guidelines and Statements. Park Ridge, IL: ASA; 2008.
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3. Walther-Larsen S, Rasmussen LS. The former preterm infant and risk of post-operative apnoea: recommendations for management. Acta Anaesthesiol Scand. 2006 50(7):888–93.
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5. Royal Australasian College of Surgeons Guidelines. www.surgeons.org/
6. Siedman L. Anesthesia for the expremature patient. Semin Anesth Periop Med Pain 2006 Sep; 25(3):117–23.
7. Australian and New Zealand College of Anaesthetists. Professional Standard PS4: Recommendations for the Post-Anaesthesia Recovery Room. ANZCA; 2006. www.anzca.edu.au/resources/professional-documents/