TIERS IN BRIEF

CHILDREN'S EMERGENCY DEPARTMENT SERVICES

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Children's Emergency Department Services: Tiers in Brief to Support System Planning

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<u>HOW TO CITE THE CHILDREN'S EMERGENCY DEPARTMENT SERVICES:</u>

We encourage you to share these documents with others and we welcome their use as a reference. Please cite each document in the module in keeping with the citation on the table of contents of each of the three documents. If referencing the full module, please cite as:

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1.0 Tiers of Service

1.1 Tiers of Service Framework and Approach

Planning and coordinating children's health services is a major area of focus for Child Health BC and its collaborators (health authorities, ministries, non-profit organizations, school boards, etc). The Tiers of Service framework provides a tool to define and plan such services.

Utilizing a common language and methodology, the Tiers of Service framework:

- Recognizes that health services, while important, are one of several factors that contribute to child and youth well-being overall.
- Is informed by a review of frameworks/tools in other jurisdictions around the world.
- Facilitates system planning for clinical services, knowledge sharing/training and quality improvement/research. The responsibilities and requirements for each of these three areas are defined within the Tiers framework.

Child Health BC is leading the use of the Tiers of Service approach to system planning. This is being done through:

Creation of a series of modules: For each of the major areas of health services - such as children's emergency care, children's medicine, children's surgery, children's intensive care - a Tiers of Service module has been or is being created. Each module has 3 parts:

- Setting the Stage for Tiers Development: Summarizes the data and literature used to create the module.
- Tiers in Brief to Support System Planning: Provides a high-level overview of key aspects of the module.
- Tiers in Full to Support Operational Planning: Provides significant detail of key aspects of the module according to: (1) clinical service; (2) knowledge sharing/training; and (3) quality improvement/research.

Self-assessment based on the modules: Once a module is finalized and accepted by the key partners in the province, a self-assessment is completed. Child Health BC works with health authority partners as necessary to get this work completed.

System planning and service planning based on self-assessment results: Using the self-assessment analysis, provincial, regional and local planning is undertaken through collaboration of CHBC and its partners.

1.2 BC's Child Health Tiers of Service Modules

Below are the Tiers of Service modules. Some have been completed, some are in active development and some are being contemplated for future development.

Clinical Services modules:

- Children's General Medicine
- Children's Surgery
- Children's Emergency Department
- Children's Critical Care
- Child Development, Habilitation & Rehabilitation
- Children's Home-based Services
- Children's Mental Health & Substance Use

Clinical Diagnostic & Therapeutic Service modules:

- Children's Laboratory Medicine, Pathology & Transfusion Medicine
- Children's Medical Imaging
- Children's Pharmacy Services

Collectively, the modules and their components provide the foundation for provincial and health authority (HA) planning of children's health services.

2.0 ED Tiers of Service

2.1 Module Development

The Children's Emergency Department (ED) module is made up three components:

1. Setting the Stage for Tiers Development (data and literature used to create the module)
2. Tiers in Brief to Support System Planning (high-level description of the tiers, including responsibilities and requirements) ***(this document)***
3. Tiers in Full to Support Operational Planning (detailed description of the responsibilities and requirements at each tier)

This document, **Children's ED: Tiers in Brief to Support System Planning,** provides a high-level description of the tiers and the services provided to children that present to an ED with acute and often undifferentiated medical problem(s) and/or injury(ies). Services include the triage, initial assessment, stabilization, diagnosis, treatment and appropriate follow-up and/or transfer of children upon discharge from the ED.

The ED module was developed by an interdisciplinary working group comprised of representatives from each of the Health Authorities (various combinations of ED physicians, nurses and directors/managers), the Ministry of Health, Child Health BC and a meeting facilitator. In addition to the working group, representatives from associated health authorities (HAs) and other constituent groups were invited to provide feedback on the draft document. The final version was submitted to the Child Health BC Steering Committee for acceptance.

The document was informed by work done in other jurisdictions reported in the literature, mostly notably Australia/New Zealand,[1-3] Queensland,[4] New South Wales[5,6] and the United Kingdom.[7-9] B.C.

data was used, where it was available, as were relevant standards and guidelines (e.g., Accreditation Canada[10] Canadian Association of Emergency Physicians,[11] Royal College of Physicians and Surgeons,[12] Trauma Association of Canada[13] and the American Academy of Pediatrics[14-16]).

2.2 Module Scope

The ED Tiers module focuses on care provided in EDs[i] to children up to their 17th birthday (16 years + 364 days) in:

- HA-funded health centre.
- Hospital emergency departments (EDs).

While emergency care is provided to children in other settings (e.g., private physician offices, schools) and by other care providers (e.g., primary care physicians, Critical Care Transport and Infant Transfer Teams, ground and air ambulance attendants and first responders), these circumstances/settings are outside the scope of this document.

2.3 Recognition of the Tiers

The Child Health Tiers of Service Framework includes six tiers of service. The ED module recognizes each of the six tiers.

Tier	Child Health Framework Tiers of Service	ED Tiers of Service
T1	Prevention, Primary & Emergent Health Service	Primary & Emergent Health Services
T2	General Health Service	General ED Services
T3	Child-Focused Health Service	Child-Focused ED Services
T4	Children's Comprehensive Health Service	Children's Comprehensive ED Services
T5	Children's Regional Enhanced & Subspecialty Health Service	Children's Regional Enhanced & Subspecialty ED Services
T6	Children's Provincial Subspecialty Health Service	Children's Provincial Subspecialty ED Services

Table 1 (Tiers at a Glance) provides a description of the tiers for all children's clinical services, including ED services. Sections 3.0 and onward focus on the details of the ED Tiers of Service.

[i] For the purposes of this document, EDs include HA-funded health centres unless otherwise stated.

Table 1: Tiers at a Glance (All Tiers, All Services)

Module		Prevention, Primary & Emergent Health Service T1	General Health Service T2	Child-Focused Health Service T3	Children's Comprehensive Health Service T4	Children's Regional Enhanced & Subspecialty Health Service T5	Children's Provincial Subspecialty Health Service T6
Service reach		Local community.	Local community/local health area.	Multiple local health areas/ health service delivery area.	Health service delivery area/health authority.	Health authority.	Province.
Service focus		Supports the health & well-being of infants, children, youth & their families. Local services for emergent care. Stabilizes & refers/transfers as necessary.	Diagnoses & provides definitive treatment for children with low acuity/complexity conditions & minor, uncomplicated single system injuries. Stabilizes & refers/transfers as necessary.	Diagnoses & provides definitive treatment for children with relatively common, medium acuity/complexity conditions & uncomplicated single system injuries. Stabilizes & refers/transfers as necessary.	Diagnoses & provides definitive treatment for children with a broad range of medium acuity/complexity conditions (including complex psychosocial issues) & non-life-threatening single & two-system injuries. Stabilizes & refers/transfers as necessary.	Diagnoses & provides definitive treatment for children with high acuity &/or relatively common high complexity conditions (including complex psychosocial issues) & single & two-system injuries. The range of conditions is dependent upon the types of subspecialists available. Stabilizes & refers/transfers as necessary.	Diagnoses & provides definitive treatment for children with all types of high acuity/complexity conditions (including complex psychosocial issues) & multiple-system injuries, many of whom require care from multiple subspecialty teams. Provincial pediatric trauma centre.
Children's Emergency Department Services		Health Centre (<24 hrs/day).	24/7 ED	24/7 ED	24/7 ED	24/7 ED with dedicated space/focus on children	24/7 pediatric ED
Children's Medical Services *(General & Sub-specialty Medicine)*	In-patients		Limited capacity for short-term inpatient stays (in the ED or a general inpatient bed). No designated pediatric inpatient beds. If child in hospital, FP/NP on-call 24/7.	Dedicated pediatric inpatient beds. Pediatrician on-call 24/7.	Dedicated pediatric inpatient unit. Pediatrician on-call 24/7.	Dedicated pediatric inpatient unit. Pediatrician (or resident) on-site 24/7. Pediatric subspecialists are available for on-site consultation in higher volume subspecialties which includes but is not limited to neurology and cardiology. Availability is typically days, M-F.	Dedicated pediatric inpatient units, grouped by specialties/subspecialties. Pediatrician (or resident) on-site 24/7. Full range of pediatric subspecialists available for on-site patient management and consultation 24/7.
	Out-patients		Clinic space & infrastructure available for visiting specialists & telehealth consultations (in the ED, hospital outpatient or community-based clinic).	Clearly describable process in place to manage children discharged from hospital or ED requiring short-term follow-up by a pediatrician. Child-friendly treatment/procedure space & infrastructure. May be shared with adults.	Outpatient clinics: • General pediatrics • Child maltreatment (non-acute) Child-friendly clinic(s) & outpatient treatment/ procedure space & infrastructure. May be shared with adults.	Same as T4 plus: Regularly occurring pediatric subspecialty clinics available on-site for higher volume subspecialties which include but are not limited to: • Cardiology • Diabetes • GI medicine • Neurology	Broad range of pediatric specialty/subspecialty clinics on-site. Coordinates and provides pediatric subspecialty outreach clinics (on-site or telehealth) throughout the province.

Module		Prevention, Primary & Emergent Health Service	General Health Service	Child-Focused Health Service	Children's Comprehensive Health Service	Children's Regional Enhanced & Subspecialty Health Service	Children's Provincial Subspecialty Health Service
		T1	T2	T3	T4	T5	T6
	Out-patients cont'd					Pediatric subspecialty clinics may be staffed by local pediatric subspecialty providers or via outreach from T6. Pediatric outpatient clinic and treatment/procedure space is used exclusively by children.	
	Comm-unity-based	Supports healthy child development, injury prevention & parenting. Screens & refers children for developmental delays or other health issues to appropriate resource(s) for assessment. Provides immunizations.		Assessment & follow-up of referred children. Youth-specific drop-in health care services.	Advanced assessment & follow-up of referred children.	Same as T4.	
Children's Surgical Services *(Adult & Pediatric Surgical Specialties)*	Procedures		On-site surgical capacity exists (locally or via outreach) for: • Low complexity procedures on a planned, day care basis on healthy children ages 2 & over (ASA 1-2). • Life & limb procedures.[ii]	On-site surgical capacity exists for: • Low complexity procedures on a planned & unplanned, inpatient & day care basis on healthy children ages 2 & over (ASA 1-2) • Life & limb procedures.	On-site surgical capacity exists for: • Low complexity procedures on a planned & unplanned, inpatient & day care basis on healthy children ages 6 months & over[iii] (ASA 1 - 2). • Life & limb procedures.	On-site surgical capacity exists for: • Medium & selected high complexity procedures (when relevant pediatric surgery specialist is available) on a planned & unplanned, inpatient & day care basis on children of any age, including those with modest medical complexities (ASA 3).[iv] • Life & limb procedures.	On-site surgical capacity exists for: • High complexity procedures on a planned & unplanned, inpatient & day care basis on children of any age, including those with high medical complexities (ASA 4-5).

[ii] Risk of transporting the child is greater than the risk of performing the procedure locally. Assumes availability of resources (trained personnel, equipment, etc).
[iii] Assumes availability of appropriately credentialled anesthesiologist(s) as per provincial privileging document (anesthesiologist who has recent experience providing anesthesia to children in the 6 mos - 2 year age group + 10 CPD credits/year in pediatric anesthesiology).

Module		Prevention, Primary & Emergent Health Service	General Health Service	Child-Focused Health Service	Children's Comprehensive Health Service	Children's Regional Enhanced & Subspecialty Health Service	Children's Provincial Subspecialty Health Service
		T1	T2	T3	T4	T5	T6
	Surgical Specialties		*Surgical specialties:* Variable, depending on local surgeon availability. General surgeon or family practice physician with enhanced surgical skills available in rural & remote sites (not 24/7). *Anesthesia:* Anesthesia provider (specialist or family practice physician) available during times surgical procedures are performed. Clearly describable process in place when surgical or anesthesia provider is not available.	*Surgical specialties:* General surgeon on-call 24/7. Strive to have dental surgery, ophthalmology, orthopedics, ENT, plastics and urology on-call 24/7. Clearly describable process in place at times appropriate surgical specialty is not available (e.g., vacations). *Anesthesia:* Anesthesia provider (specialist or family practice physician) on-call 24/7.	*Surgical specialties:* Specialists on-call 24/7 & available to assess & manage children with all types of surgical conditions except cardiac or neurosurgery-related. Managing a surgical condition may include performing a surgical procedure, developing an alternative management plan or transferring the child to a T5/T6 service. *Anesthesiology:* Anesthesiologist who meets the age-specific credentialling requirements available on-call 24/7 to provide anesthesia to children ages 6 mos - 2 yrs.	*Surgical specialties:* Specialists available on-call 24/7 & available to assess & manage children with all types of surgical conditions except cardiac or neurosurgery-related. Managing a surgical condition may include performing a surgical procedure, developing an alternative management plan or transferring the child to a T6 service. Pediatric surgical specialists available for some specialties (not 24/7). *Anesthesiology:* Pediatric anesthesiologist on-call 24/7. *Outpatients:* Some specialty-specific outpatient clinics available for children with complex needs.	*Surgical specialties:* Pediatric surgical specialists on-call 24/7 & available to assess & definitively manage children with all types of surgical conditions, including multi-system trauma. *Anesthesiology:* Pediatric anesthesiologist(s) available 24/7. *Outpatients:* Broad range of specialty-specific outpatient clinics available for children with complex needs.
Children's Critical Care (CC) Services					On-site T2 NICU. Pediatric CC services TBD.	On-site T3 NICU. Pediatric CC services TBD.	On-site T4 NICU. Pediatric CC services TBD.
Child Development, Habilitation & Rehabilitation Services		In progress (with MCFD)	In progress (with MCFD)	In progress (with MCFD)	In progress (with MCFD)	In progress (with MCFD)	In progress (with MCFD)
Children's Home-based Services		TBD (with MCFD)	TBD (with MCFD)	TBD (with MCFD)	TBD (with MCFD)	TBD (with MCFD)	TBD (with MCFD)
Children' s Mental Health & Substance Use Services		In progress (with MCFD)	In progress (with MCFD)	In progress (with MCFD)	In progress (with MCFD)	In progress (with MCFD)	In progress (with MCFD)

[iv]Assumes availability of appropriately credentialled anesthesiologist(s) as per provincial privileging document (anesthesiologist who has completed a 12-month fellowship in pediatric anesthesia and has recent experience working with children in the 0 - 6 mos age group + 80 CPD credits/yr with at least 20 CPD credits in pediatric anesthesiology). For children ages 6 mos - 2 yrs, see footnote 2.

3.0 Children's ED Tiers in Brief

3.1 Network of ED Services in BC

ED services are provided through a "network of care" model. Children may present at any ED in the province. The majority of health problems are managed at the location where they first present. Some, however, will require a higher level of care and, after stabilization, will be transferred to a centre that can provide the necessary level of care. Transfers to other centres may be via the "receiving" ED (for unstable patients) or as a direct transfer to an inpatient bed.

British Columbia Children's Hospital (BCCH) is designated as the provincial *pediatric* trauma centre. Children from all over BC that experience major trauma are stabilized and transferred via ground or air ambulance to BCCH for definitive treatment.[v]

Many of the designated adult trauma centres in BC also receive children. In addition to stabilizing children that experience major trauma, these centres may provide definitive treatment for children with complex but non-life-threatening single and two-system injuries. These centres are referred to as *pediatric* trauma receiving centres and include: Royal Inland Hospital, Kelowna General Hospital, Royal Columbian Hospital, Abbotsford Regional Hospital, Lions Gate Hospital, Victoria General Hospital, Nanaimo Regional and the University Hospital of Northern BC.

Regional/zoned BC Ambulance Service protocols guide the decision as to whether a severely injured child is transported to the nearest ED, the ED of the nearest pediatric receiving trauma centre or the BCCH ED. The protocols depend on the age and condition of the child and the availability of a pediatric receiving trauma centre within 30 minutes[vi] by ground ambulance. Injured children may be taken to the nearest ED or to the ED of the nearest pediatric receiving trauma centre for initial stabilization and, if intensive care and/or complex, sub-specialty care is required, the child will be transferred to BCCH. If intensive care is required and the child is from Vancouver Island, the child may be transported to Victoria General Hospital instead of BCCH after a telephone consultation with the BCCH Intensivist and/or Trauma Surgeon.

"Autolaunch" is a BC Ambulance Service (BCAS) term that refers to the simultaneous dispatching of ground and helicopter ambulances when patients experience life or limb-threatening injuries and the driving time is greater than 20 minutes by ground ambulance to a regional trauma centre. Autolaunch is available in all health authorities except in the Northern HA where a Northern HA-specific program, the Early Fixed Wing Activation Program, is in place.

An "autolaunch" decision is made by the Emergency Medical Call Taker based on information about a patient's condition provided from the scene by the 911 caller. If the paramedics that arrive on the

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[v] Children living in the northeast and southeast areas of the province may be transported to Alberta (Calgary or Edmonton) because of geographic proximity.
[vi] 30 minutes is used as the guideline for the Lower Mainland. Other BC Ambulance zones may have varying times due to geography and/or hospital capabilities.

scene via ground ambulance determine the patient meets the major trauma criteria, they will determine the fastest way of transport (ground or helicopter) to the most appropriate trauma centre. If the trauma event occurs in the Lower Mainland, the child is transported to BCCH. If the event occurs on Vancouver Island, the child is transported to Victoria General Hospital or BCCH, depending on flight times and injuries sustained. If the event occurs in the interior of the province, the child is transported to either Kelowna General Hospital or Royal Inland Hospital.[vii] If intensive care and/or complex, sub-specialty care is required, the child will be transferred from Kelowna General Hospital or Royal Inland Hospital to BCCH.

Life or limb-threatening injuries in the NHA are coordinated through the Early Fixed Wing Activation Program. With this program, on-scene paramedics immediately alert BCAS dispatch if the patient might require transport to a hospital providing specialized care. BCAS dispatch “reserves” the plane and notifies the closest available critical care transport paramedic team to be prepared for a flight. The pilot is to complete a weather check and the paramedics are to load the aircraft. Ground paramedics transport the patient to nearest hospital and the ED physician decides within 30 minutes whether to transport the patient to the University Hospital of Northern BC, Vancouver General Hospital or BCCH. If an air evacuation is required, both the plane and critical care paramedic team are available and ready to go immediately.

3.2 Differentiation of the Tiers

The responsibility for *triage* and *initial stabilization* of ill and injured children is the same across all tiers of ED services. The tiers differ, however, in their capacity to manage varying levels of acuity and medical complexity beyond the initial stabilization period.

Capacity is influenced by several factors including the availability of:

- Pediatricians for consultation.
- Specialty/subspecialty physicians that care for children.
- Interdisciplinary team members (e.g., physiotherapists, occupational therapists, pharmacists, social workers, dietitians).
- Surgical services with pediatric expertise.
- Diagnostic support with pediatric expertise (e.g., radiology).
- Pediatric inpatient resources and expertise.

For the purposes of this document, "acuity" and "medical complexity" are terms used to help differentiate the tiers from each other. Refer to Tables 2 (acuity) and 3 (medical complexity) for definitions.

[vii] Children living in the northeast and southeast areas of BC may be transported to Alberta (Calgary or Edmonton) because of geographic proximity.

Table 2: Levels of Acuity[viii]

	Acuity of Presenting Complaint
Low	• Presenting problem(s) is non-urgent. May be part of a chronic problem. No history suggestive of potential for immediate deterioration. • Investigations and interventions could be delayed or referred to other health care providers. • Typically managed in a non-inpatient setting (emergency department, hospital-based clinic/day care, community-based clinic &/or home setting). e.g., Acute otitis media, vomiting, constipation, hematuria, sore throat, closed head injury in the absence of vomiting.
Medium	• Presenting problem(s) could potentially progress to a serious problem requiring extensive intervention. May be associated with significant discomfort or inability to function. • Typically managed in a non-inpatient setting (emergency department, hospital-based clinic/day care, community-based clinic &/or home setting) but may require an inpatient stay. • The need for intensive care would be an unexpected event. e.g., Persistent vomiting, exacerbation of asthma, mild to moderate dehydration, afebrile or febrile seizures.
High	• Presenting problem(s) is a potential or real threat to life, limb or function and requires immediate and potentially aggressive intervention(s). • Typically requires an inpatient stay. e.g., Meningitis, diabetic ketoacidosis.

Table 3: Levels of Medical Complexity

	Medical Complexity of Underlying Condition
Low	• If chronic condition present, condition is stable. Systemic impact of disease is mild - minimal or no functional limitations. • Chronic condition can be managed using standard lab and diagnostic investigations and treatment protocols. • Typically managed in non-inpatient settings (emergency department, hospital-based clinic/day care, community-based clinic, home &/or school setting). e.g., Child with well controlled asthma or diabetes.
Medium	• Chronic condition is present (diagnosed or suspected), often with signs of mild exacerbation, progression or side effects from treatment. Systematic impact of disease is severe – definite functional limitations. • Chronic condition can be managed using standard lab and diagnostic investigations and treatment protocols. • Typically managed in non-inpatient settings (emergency department, hospital-based clinic/day care, community-based clinic, home &/or school setting) with periodic

[viii] Modified Canadian Triage & Acuity Scale (CTAS) guidelines (2008).

	Medical Complexity of Underlying Condition
	inpatient stays. e.g., Child with congenital heart disease or early stage muscular dystrophy.
High	• Chronic condition(s) present (diagnosed or suspected), often with signs of significant exacerbation, progression or side effects from treatment. Systematic impact of disease is severe (multiple organs affected) – a constant threat to life. Significant functional limitations present, often requiring dependence on technology. • Chronic condition requires an extended and innovative range of interventions to manage. • Typically managed in non-inpatient settings (hospital-based clinic/day care, community-based clinic, home &/or school setting) with frequent inpatient stays. e.g., Child with late stage muscular dystrophy, pulmonary hypertension or cardiac myopathy.

3.3 Responsibilities and Requirements at each Tier

This section describes the responsibilities and requirements at each tier to provide a **safe, sustainable** and **appropriate** level of ED service.

The expectation is that the requirements at each tier will align with the responsibilities. Occasional exceptions may occur, usually due to geography and transportation, in which treatments/ procedures are done on an **unplanned/emergency** basis by services that would not normally do such treatments/procedures. These exceptions are appropriate in situations in which the resources (trained personnel, equipment, etc) are available to perform the treatment/procedure and deferring the treatment/procedure would be detrimental to the outcome for the child.

Tier 1: Primary and Emergent Health Service

T1: Service description & responsibilities

Service reach:	Serves children & their families that live in the local community, typically in rural & remote locations.
Service description:	• Health centres. • Usually open 8 - 15 hours/day. • Pediatric ED volume is typically low (<1,500 visits per year).
Service responsibilities:	• Triages & provides initial stabilization for all children that present. • Definitive treatment for children with low acuity/low complexity presentations &/or minor, uncomplicated single system injuries. • Stabilizes and refers/transfers children with higher acuity presentations, more complex injuries &/or more complex underlying medical conditions to T2-T6 service.
Knowledge sharing & transfer/training:	• Facilitates access to learning activities that support the maintenance of ED competencies, including pediatric ED competencies (e.g., pediatric reference values, weight-based dose adjustment of medications, safe use of pediatric medical equipment, etc).
Quality improvement & research:	• Regularly reviews the quality of ED care provided to patients of all ages, including case reviews. If child involved, physicians & staff with pediatric expertise participate in the review. Implements recommendations. • Concepts of child & family centred care are incorporated into child health programming (see glossary). • Obtains child/family feedback on the services provided. Incorporates feedback, as appropriate. • Participates in regional & provincial pediatric ED quality improvement initiatives.

T1: Service requirements

ED:	• MD/NP available (a) on-site; or (b) on-call when centre open. PALS certification recommended. • RN(s) available when centre open. Pediatric Advanced Life Support (PALS) and Emergency Nursing Pediatric Course (ENPC) strongly recommended. • Access to nurse educator within the HA to support ED RNs. • Triage, assessment, treatment & resuscitation areas are safe, appropriate & equipped for children. Not applicable.
Support to the ED:	• No capacity to observe/monitor children outside clinic hours.

Tier 2: General ED Service

T2: Service description & responsibilities

Service reach:	Serves children & their families that live in the local community/local health area.
Service description:	• ED in a small community hospital. ED open 24/7. • Pediatric ED volume is typically low (<3,000 per year).
Service responsibilities:	• Triages & provides initial stabilization for all children that present. • Definitive treatment for children with low acuity/low complexity presentations &/or minor, uncomplicated single system injuries. • If inpatient admission required, organizes within local hospital &/or arranges transfer. • Stabilizes and refers/transfers children with higher acuity presentations, more complex injuries &/or more complex underlying medical conditions to T3-T6 service.
Knowledge sharing & transfer/training:	• Facilitates access to learning activities that support the maintenance of ED competencies, including pediatric ED competencies (e.g., pediatric reference values, weight-based dose adjustment of medications, safe use of pediatric medical equipment, etc).
Quality improvement & research:	• Regularly reviews the quality of ED care provided to patients of all ages, including case reviews. If child involved, physicians & staff with pediatric expertise participate in the review. Implements recommendations. • Concepts of child & family centred care are incorporated into child health programming (see glossary). • Obtains child/family feedback on the services provided. Incorporates feedback, as appropriate. • Participates in regional & provincial pediatric ED quality improvement initiatives.

T2: Service requirements

ED:	• MD in ED 24/7 (on-site or on-call & available on-site as needed). PALS certification recommended. • RNs on-site 24/7. PALS certification & ENPC strongly recommended. • Access to nurse educator within the HA to support ED RNs. • In-hospital Social Worker (SW) available on request for individual cases. General psychiatrist from within HA available for telephone consultation for urgent cases 24/7. • Triage, assessment, treatment & resuscitation areas are safe, appropriate & equipped for children. Capacity for isolation available in the ED.
Support to the ED:	• Capacity for short-term inpatient stays for children with low acuity/complexity presentations (in the ED or a general inpatient bed). • Limited on-site surgical capacity may be available (usually general surgery & anesthesia providers).

Tier 3: Child-Focused ED Service

T3: Service description & responsibilities

Service reach:	Serves children & their families that live in the local health area (LHA), in surrounding LHAs &/or the health service delivery area.
Service description:	• ED in a medium-sized community hospital. • Pediatric ED volume is typically at least 3,000 visits/year.
Service responsibilities:	• Triages & provides initial stabilization for all children that present. • Definitive treatment is provided to children with relatively frequent medium acuity/complexity presentations and uncomplicated single system injuries. • Stabilizes and refers/transfers children with higher acuity presentations, more complex injuries &/or more complex underlying medical conditions to T5/T6 service. • Capacity in ED for continuous cardiac monitoring and time-limited constant visual observation (i.e., 1:1 RN/child ratio). • Receives referrals / transfers from T1 services.
Knowledge sharing & transfer/training:	• Provides ED placements/experiences for nursing, allied health and other health care providers as per agreements between the site and applicable learning organization. • If designated by UBC, provides non-pediatric specific ED placements/experiences for medical students, family medicine residents &/or emergency medicine residents. • Creates or facilitates access to learning activities that support the maintenance of pediatric ED competencies, including the practice of critical clinical skills (e.g., simulation, clinical experience with T4-T6 service).
Quality improvement & research:	• Regularly reviews the quality of ED care provided to all age groups, including case reviews. If child involved, physicians & staff with pediatric expertise participate in the review. Provides pediatric expertise for T1 case reviews, if requested. Implements recommendations. • Concepts of child & family centred care are incorporated into child health programming (see glossary). • Obtains child/family feedback on the services provided. Incorporates feedback, as appropriate. • Participates in regional & provincial pediatric ED quality improvement initiatives.

T3: Service requirements	
ED:	• MD on-site in ED 24/7. PALS certification recommended. • RNs on-site in ED 24/7. PALS certification & ENPC course strongly recommended. • Access to nurse educator within the HA to support ED RNs. • Pediatrician on-call 24/7 & available on-site as needed. • Respiratory therapist (RT) on-call 24/7 & available on-site as needed. • Access to in-hospital SW & to Physiotherapist (PT) and Occupational Therapist (OT) days, M-F. • Spiritual care practitioner available on request. • In-hospital MH crisis response team available 24/7. General psychiatrist available on-call 24/7 & available on-site as needed. • Waiting space in ED specifically dedicated for children (may be within the larger ED waiting room).
Support to the ED:	• Dedicated pediatric inpatient resources/beds (on a mixed adult/child unit). • Limited on-site surgical capacity available (general surgery and anesthesia provider on-call 24/7; strive to have other surgical specialists available as staffing allows).

Tier 4: Comprehensive Children's ED Service

T4: Service description & responsibilities

Service reach:	Serves children & their families that live in the local health area (LHA), health service delivery area and throughout the HA.
Service description:	• ED in a large-sized community hospital. • Pediatric ED visit volume is typically more than 10,000 visits per year. This creates the critical mass necessary to support a significant degree of pediatric specialization and create a child-friendly physical environment.
Service responsibilities:	• Triages & provides initial stabilization for all children that present. • Pediatric trauma receiving centre. • Definitive treatment is provided to children with a broad range of medium acuity/complexity presentations. Pediatric sub-specialty &/or ICU services are not required. • Capacity in ED for continuous cardiac monitoring and extended periods of constant visual observation (i.e., 1:1 RN/child ratio). • Refers/transfers children with high acuity presentations, multiple, complex &/or life-threatening injuries (including major trauma) &/or highly complex underlying medical conditions to a T6 centre.
Knowledge sharing & transfer/training:	• Provides non-pediatric-specific ED placements/experiences for nursing, allied health and other health care providers as per agreements between the site and applicable learning organization. • Provides non-pediatric specific ED placements/experiences for medical students, family medicine residents &/or emergency medicine residents. • In collaboration with T5, organizes regional learning activities that support the maintenance of pediatric ED competencies, including the practice of critical clinical skills (e.g., simulation & on-site experiences).
Quality improvement & research:	• Regularly reviews the quality of ED care provided to children, including case reviews. Provides pediatric expertise for T1 & T3 case reviews, if requested. Implements recommendations. • Concepts of child & family centred care are incorporated into child health programming (see glossary). • Obtains child/family feedback on the services provided. Incorporates feedback, as appropriate. • In collaboration with T5, tracks regional pediatric-specific ED quality indicators. Leads regional pediatric ED quality improvement initiatives & participates in provincial initiatives.

T4: Service requirements

ED:	• MDs with ED specialty training (CCFP (EM) or RPSC) in ED 24/7. Current PALS certification recommended. • RNs with ED education/experience & enhanced pediatric ED expertise on-site 24/7. PALS certification & ENPC strongly recommended. • ED Nurse Educator available days, M-F. • Pediatrician on-call 24/7 & available for on-site consultation as needed. • Respiratory therapist (RT) with significant pediatric exposure/ experience on-site 24/7. • Social Worker, PT, OT and child life specialist available to ED during the day or a portion of each day, 5 - 7 days/week. Spiritual care practitioner available on request. • Pharmacist with pediatric expertise available on-site days, M-F. General pharmacist is on-call for consultation outside these hours. • Child & youth MH worker/psychiatry liaison RN in ED days, M-F. In-hospital mental health crisis response team available 24/7. General psychiatrist on-call 24/7 & available on-site as needed. • Trained sexual assault examiner on-call 24/7 & available on-site as needed. • Where possible, physical sound and sight barriers are in place within the waiting & treatment areas that separate children from adult patients. Secure room and negative-pressure rooms available in ED.
Support to the ED:	• Dedicated pediatric inpatient resources/unit. • Youth MH inpatient beds available within the HA. • Surgical specialists available on-call 24/7 & available on-site as needed to assess & manage children with all types of surgical conditions except cardiac or neurosurgery related. Managing a surgical condition may include performing a surgical procedure, developing an alternative management plan or transferring the child to a T5/T6 service. • Anesthesiologist who meets the credentialling requirements available to provide anesthesia to children ages 6 mos - 2 yrs 24/7 on-call 24/7 & available on-site as needed.

Tier 5: Children's Regional Enhanced & Subspecialty ED Service

T5: Service description & responsibilities

Service reach:	Serves children & their families that live in the local health area (LHA), health service delivery area and throughout the HA.
Service description:	• ED in a large-sized regional hospital. • Pediatric ED visit volume is typically more than 20,000 visits per year. This creates the critical mass necessary to offer separate and distinct pediatric and adult ED services and environments (services may be co-located).
Service responsibilities:	• Triages & provides initial stabilization for all children that present. • Pediatric trauma receiving centre. • Definitive treatment is provided to children with high acuity (but not life-threatening)/medium complexity presentations. Consultation with selected pediatric subspecialists may be required. Multiple pediatric subspecialty &/or ICU services are not required. • Capacity in ED for continuous cardiac monitoring and extended periods of constant visual observation (i.e., 1:1 RN/child ratio). • Refers/transfers children with complex &/or life-threatening injuries (including major trauma) &/or highly complex underlying medical conditions to a T6 centre.
Knowledge sharing & transfer/training:	• Provides pediatric-specific ED placements/experiences for nursing, allied health and other health care providers as per agreements between the site and applicable learning organization. • Provides pediatric-specific ED placements/experiences for medical students, family medicine residents &/or emergency medicine residents. • In collaboration with T4, organizes regional learning activities that support the maintenance of pediatric ED competencies, including the practice of critical clinical skills (e.g., simulation & on-site clinical experiences).
Quality improvement & research:	• Regularly reviews the quality of ED care provided to children, including case reviews. Provides pediatric expertise for T1 & T3 case reviews, if requested. Implements recommendations. • Concepts of child & family centred care are incorporated into child health programming (see glossary). • Obtains child/family feedback on the services provided. Incorporates feedback, as appropriate. • In collaboration with T4, tracks regional pediatric-specific ED quality indicators. Leads regional pediatric ED quality improvement initiatives & participates in provincial initiatives. • Participates in research related to pediatric ED care.

T5: Service requirements

ED:	• Pediatric emergency medicine physician leadership provided by (1) pediatric emergency medicine sub-specialist with RCPSC subspecialty or equivalent training; or (2) ED specialist with RCPSC or CCFP (EM) designation & demonstrated special interest, knowledge & skills in the emergency care of children. Formal membership in UBC academic pediatric emergency division. • Physician staffing includes a combination of MDs with (1) pediatric emergency medicine subspecialty training (RCPSC); and (2) ED specialty education (CCFP (EM) or RCPSC) with enhanced education/experience in pediatric emergency medicine. PALS certification recommended. • RNs with pediatric-specific ED education/experience on site 24/7. PALS & ENPC certification strongly recommended. • Pediatric ED Nurse Educator available days, M-F. • Pediatrician on-site 24/7. • Respiratory therapist (RT) with significant pediatric exposure/ experience on-site 24/7. • Social Worker, PT, OT and child life specialist available to ED during the day or a portion of each day, 5 - 7 days/week. Spiritual care practitioner available on request. • Pharmacist with pediatric expertise available on-site days, M-F & in ED at least a portion of the day. General pharmacist is on-call for consultation outside these hours. • Child & youth MH worker/psychiatry liaison RN in ED days, M-F. In-hospital mental health crisis response team available 24/7. General psychiatrist on-call 24/7 & available on-site as needed. • Trained sexual assault examiner on-call 24/7 & available on-site as needed. • ED designed for children & appropriately decorated, furnished & equipped. Secure room and negative-pressure rooms available in ED.
Support to the ED:	• Dedicated pediatric inpatient resources/unit. • On-site T3 Neonatal Intensive Care Unit (NICU). • Youth MH inpatient beds available within the HA. • Surgical specialists available on-call 24/7 & available on-site as needed to assess & manage children with all types of surgical conditions except cardiac or neurosurgery related. Managing a surgical condition may include performing a surgical procedure, developing an alternative management plan or transferring the child to a T6 service. • Pediatric anesthesiologist available on-call 24/7 & on-site as needed.

Tier 6: Children's Provincial Subspecialty ED Service

T6: Service description & responsibilities	
Service reach:	Serves children & their families that live in the local health area (LHA) and throughout the province.
Service description:	• Provincial[9] and regional referral service located in a dedicated children's hospital. • Pediatric visit volume is typically more than 40,000 per year. This creates the critical mass necessary to support pediatric specialization & sub specialization and a child-specific physical environment in the ED.
Service responsibilities:	• Triages & provides initial stabilization for all children that present. • Provincial pediatric trauma receiving centre. • Definitive treatment is provided to all children that present regardless of the level of acuity of the child, the complexity of the injury or the underlying medical complexity of the child. Many will require pediatric subspecialty consultation &/or PICU. • Capacity in ED for continuous cardiac monitoring and extended periods of constant visual observation (i.e., 1:1 RN/child ratio). • Provides telephone advice 24/7on pediatric ED-related topics to health care providers throughout the province (MDs & RNs).
Knowledge sharing & transfer/training:	• Provides pediatric-specific ED placements/experiences for nursing, allied health and other health care providers as per agreements between the site and applicable learning organization. • Provides pediatric specific ED placements/experiences for medical students, family medicine residents, emergency medicine residents & pediatric emergency medicine fellows. • Organizes provincial learning activities that support the maintenance of pediatric ED competencies, including the practice of critical clinical skills (e.g., simulation & on-site clinical experiences). Partners with HAs & provincial & national organizations as appropriate. • Develops and shares educational resources with HAs.
Quality improvement & research:	• Regularly reviews the quality of ED care provided to children, including case reviews. Provides child health expertise for T1-T3 case reviews, if requested. Consults with pediatric experts within or outside BC for T6 case reviews, as appropriate. Implements recommendations. • Concepts of child & family centred care are incorporated into child health programming (see glossary). • Obtains child/family feedback on the services provided. Incorporates feedback, as appropriate.

[9] Children living in the northeast and southeast areas of BC may be transported to Alberta (Calgary or Edmonton) because of geographic proximity.

	• In collaboration with CHBC & HAs, establishes, collects & tracks provincial pediatric-specific ED quality indicators & leads provincial quality improvement initiatives. • In collaboration with CHBC & HAs, develops & disseminates guidelines on relevant pediatric ED topics. Supports the provision of guideline-based care. • Conducts & supports others to conduct research in pediatric ED care.

T6: Service requirements

ED:	• Pediatric emergency medicine physician leadership provided by pediatric emergency medicine subspecialist (RCPSC or equivalent training). Formal membership in the UBC academic division of pediatric medicine. • Physician staffing includes at least one MD 24/7 with pediatric emergency medicine subspecialty training (RCPSC). PALS certification recommended. • RNs with pediatric-specific ED education/experience on site 24/7. PALS & ENPC certification strongly recommended. • Pediatric ED physicians & RNs available 24/7 to provide telephone advice to health care providers throughout the province on pediatric ED-related topics. • Pediatric ED Nurse Educator available days, M-F. • Pediatric RTs on-site 24/7. Pediatric Social Worker, OT & PT available to ED extended days. Child life specialist available in ED for at least a portion of each day. Pharmacist with pediatric ED expertise available in ED days, M-F. Pharmacist with pediatric expertise on-call outside these hours. Spiritual care practitioner on-call 24/7 & available on-site as needed. • Child & youth MH worker/psychiatry liaison nurse available in ED 7 days/week. In-hospital mental health crisis response team available to ED 24/7. Child & youth psychiatrist on-call 24/7 & available on-site as needed. • Child protection team available on-call 24/7 & available on-site as needed. • ED dedicated for children & appropriately decorated, furnished & equipment. Secure room and negative pressure room in ED.
Support to the ED:	• Dedicated pediatric inpatient teaching units, grouped by specialty. Child & youth MH beds available on-site. • Full range of pediatric specialist and subspecialist physicians on-call 24/7 (as appropriate) & available on-site as needed. Pediatric subspecialty teams & specialized outpatient teaching clinics available days, M-F. • On-site T6 NICU and T6 Pediatric Intensive Care Unit (PICU).

4.0 References

1. Royal Australasian College of Physicians (PACP) Paediatric and Child Health Division, the Association for the Wellbeing of Children in Health Care and Children's Hospitals Australasia. Standards for the care of children and adolescents in health services; http://www.awch.org.au/pdfs/Standards_Care_Of_Children_And_Adolescents.pdf. 2008. Accessed 12/10, 2016.

2. Australasian College for Emergency Medicine. Statement on the delineation of emergency departments. 2012. Accessed 12/10, 2016.

3. Australasian College for Emergency Medicine. Emergency department design guidelines; www.acem.org.au. 2014. Accessed 12/10, 2016.

4. Queensland Health. Clinical services capability framework. http://www.health.qld.gov.au/clinical-practice/guidelines-procedures/service-delivery/cscf/default.asp. 2014 (Version 3.2). Accessed 12/10, 2016.

5. NSW Department of Health. NSW health guide to the role delineation of clinical health services (first edition). www.health.nsw.gov.au. 2016. Accessed 12/10, 2016.

6. NSW Department of Health. Guidelines for care in acute care settings. http://www0.health.nsw.gov.au/policies/pd/2010/pdf/PD2010_034.pdf. 2010;PD2010_034. Accessed 12/10, 2016.

7. UK Department of Health. Getting the right start: National service framework for children - standard for hospital services; https://www.gov.uk/government. 2003;31352. Accessed 12/10, 2016.

8. UK Department of Health. Commissioning safe and sustainable specialised paediatric services: A framework of critical inter-dependencies. webarchive.nationalarchives.gov.uk. 2008;288254. Accessed 12/10, 2016.

9. Healthier Scotland Scottish Executive. Emergency care framework for children and young people in Scotland; http://www.gov.scot/Publications/2006/09/19153348/0. 2006. Accessed 12/10, 2016.

10. Accreditation Canada. Emergency department standards. 2013.

11. Canadian Association of Emergency Physicians. The management of rural, remote and isolated emergency health care facilities in Canada, recommendations and discussion. http://caep.ca/resources/position-statements-and-guidelines/management-rural-remote-and-isolated-emergency-health-c. Accessed 12/10, 2016.

12. Royal College of Physicians and Surgeons of Canada. Objectives of training in the subspecialty of pediatric emergency medicine; http://www.royalcollege.ca/cs/groups/public/documents/document/y2vk/mdaw/~edisp/tztest3rcpsced000930.pdf. Updated 2013. Accessed 12/10, 2016.

13. Trauma Association of Canada. Trauma system accreditation guidelines; www.traumaCanada.org/resources/documents/accreditation/Accreditation_Guidelines_2011.pdf. 2011 (4th edition). Accessed 12/10, 2016.

14. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine, American College of Emergency Physicians, Pediatric Committee, Emergency Nurses Association Pediatric Committee. Joint policy statement--guidelines for care of children in the emergency department. *Pediatrics*. 2009;124(4).http://pediatrics.aappublications.org/content/124/4/1233. Accessed 12/10, 2016.

15. American Academy of Pediatrics Section on Orthopaedics, American Academy of Pediatrics Committee on Pediatric Emergency Medicine, American Academy of Pediatrics Section on Critical Care, et al. Management of pediatric trauma. *Pediatrics*. 2008;121(4):849-854. Accessed 12/10, 2016.

16. National Association of Children's Hospitals & Related Institutions. Defining the children's hospital role in child maltreatment; http://Cacnc.org/wp-content/uploads/2016/06/childrens-hospitals-role-in-child-maltreatment.pdf. Accessed 12/10, 2016.

17. BC Children's Hospital. Pediatric foundational competency E-learning course. Provincial Health Services Authority Web site. https://learninghub.phsa.ca. Updated 2012. Accessed 12/10, 2016.

18. BC Children's Hospital Learning & Development. CAPE tools for BC children's - child and youth health nursing. BC Children's Hospital Intranet Web site. http://infosource.cw.bc.ca/ld/cape.html. Updated 2008 - 2010. Accessed 07/11, 2015.

19. Institute for Healthcare Improvement, the National Initiative of Children's Healthcare Quality & the Institute for Patient- and Family-Centered Care. Patient- and family-centered care organizational self-assessment tool; http://www.ihi.org/resources/pages/tools/PatientFamilyCenteredCareOrganizationalSelfAssessmentTool.aspx. 2013. Accessed 12/10, 2016.

20. Welsh Assembly Government. All Wales universal standards for children and young people's specialised healthcare services. http://www.wales.nhs.uk. 2008:1-28. Accessed 12/10, 2016.

21. Maurer M et al (Agency for Healthcare Research and Quality). Guide to patient and family engagement: Environmental scan report; http://www.ahrq.gov/research/findings/final-reports/ptfamilyscan/ptfamily3b.html#Strategies. 2012;12-0042-EF:1-100. Accessed 12/10, 2016.

Appendix 1: Glossary

Registered Nurse with "pediatric skills"

- Demonstrates a broad understanding of growth and development. Distinguishes between normal and abnormal growth and development of infants, toddlers, children and youth.
- Understands the psychological impacts of care provision (including hospitalization) at different developmental stages (infant, toddler, preschooler, school aged and youth).
- Understands how to provide a physically and psychologically safe environment appropriate to the age and condition of the child.
- Demonstrates understanding of the physiological differences between infants, children and adults and their implications for assessment and care.
- Assesses a child's normal parameters, recognizes the deviations from the normal and acts appropriately on the findings.
- Demonstrates knowledge of common pediatric conditions and their management.
- Demonstrates understanding of fluid management in an infant and child.
- Calculates and administers medications and other preparations based on weight based dosages.
- Assesses child and family's knowledge and provides teaching specific to the plan of care and condition or procedure.
- Communicates effectively and works in partnership with children and families (children and family-centred care).
- Aware of and accesses pediatric-specific clinical guidelines and protocols.
- Responds to patient deterioration/acute urgent situations in an appropriate and timely manner.
- Commences and maintains effective basic pediatric life support, including 1- and 2-rescuer infant and child CPR, AED use and management of airway obstructions.
- Provides referrals to public health nursing, nutrition and utilizes contact with the child and family to promote child health. e.g., immunization, child safety.
- Assesses pain and intervenes as appropriate.*
- Initiates and manages peripheral IV infusions on children;* consults expert clinicians as necessary. Identifies and manages complications of IV therapy.

*Refer to body of document for examples of interventions appropriate at each tier.

References: NSW's Guidelines for Care in Acute Care Settings,[6] BC Children's Pediatric Foundational Competencies on-line course[17] and BC Children's CAPE tools (2008-2010).[18]

"Enhanced pediatric skills" (refers to RNs and others on the interdisciplinary team)

- Demonstrates in-depth knowledge in a specific area of clinical care (e.g., respiratory diseases, sexual assault, diabetes, wound management, etc).
- Performs comprehensive assessments and plans, provides and evaluates care in children with suspected or known issues in specific areas of clinical care.

Reference: BC Children's CAPE tools.[18]

"Safe pediatric bed"

All hospitals that admit children must take steps to ensure the environment is as safe as possible for children. For a T2 service, this includes:

- Physical safety:
  - Area is physically safe for children with any potentially dangerous equipment, medications, chemicals or fluids out of reach or in locked cupboards.
  - Physical separation of children from adult patients is recommended. If physical separation is not possible, children are not in the same area/unit as adults who are under the influence of, or withdrawing from alcohol or chemical substances, known sex offenders, a danger to themselves or others and/or are confused and/or wandering.
  - Furniture meets appropriate safety standards for children. e.g., cribs with safe side rails and crib domes (if needed) for children 2 years of age or less.
- Psychological comfort:
  - Parents/primary caregivers are able to stay with their children 24/7 during hospitalization.
  - Self-served food and drink is in close proximity.
- Knowledgeable staff:
  - Sufficient “RNs with pediatric skills” are allocated each shift to ensure adequate supervision and care relevant to the age and nursing needs of child.
  - Criminal record checks are required as part of the credentialing and/or hiring process for all staff and physicians (as per legislation).
- Equipment and supplies:
  - Pediatric emergency equipment and supplies are in close proximity (refer to Appendix 1 in the Medical Tiers in Full document for a non-exhaustive list of equipment and supplies).

Additional requirements for a T3 service:

- Psychological comfort:
  - Access to child-friendly bathrooms and space for changing diapers.
  - Facilities for breastfeeding and breast milk storage.
  - Safe space(s) and age-appropriate facilities/equipment for children and youth to play/be entertained. e.g., age appropriate media, books or board games.

"Safe pediatric unit"

T3 to T6 services are required to have a "safe pediatric unit*(s)"* to provide inpatient care to children. In addition to the requirements for a safe bed, a "safe pediatric unit" includes:

- Physical safety:
  - Children are cared for on a dedicated pediatric inpatient unit(s).
  - Pediatric unit is functionally separate from adult patients, preferably with a door that can be closed and not opened by young children.
  - Regulated hot water temperature and secure electrical outlets are present on the unit.
- Psychological comfort:
  - Bedside sleeping facilities and ideally a kitchenette with fridge and microwave are available for parents/primary care givers.
  - Youth-friendly facilities/activities are available.

Child and family-centred care

Child & family-centred is one of the tenants of pediatric care. For a all tiers, this means:

- Services are delivered in line with the principles of the UN Convention on the Rights of the Child (version in child friendly language is at: http://www.unicef.org/rightsite/files/uncrcchilldfriendlylanguage.pdf).
- Children and their families are actively involved in health care planning and transitions.
- Children and their families are provided information about care options available to them in a way they can understand. This allows them to make informed choices.
- The chronological and developmental age of the child is considered in the provision of information and care.
- Families are actively encouraged to participate in the care of their child.
- Education is provided to children and their families who wish to be involved in providing elements of their own/their child's care.
- When families stay in hospital to help care for a child:
    - The environment supports family presence and participation (e.g., overnight accommodation, sitting room, quiet room/area for private conversation and facilities for making refreshments).
    - Consideration is given to their practical needs, including regular breaks for personal needs, to obtain food/drink, make telephone calls, etc.
- Information and support is given to families on how to access funds for travel to and from specialist centres.
- Information is available for children and their families in several formats including leaflets and videos. Information is culturally and age-appropriate and is provided in a variety of commonly used languages.
- Child and their families have access to professional interpreter services.
- Children and their families are provided with contact details for available support groups, as appropriate.
- Transition pathways are in place to allow for seamless transition to adult services.
- Children and families are actively encouraged to assist in identifying safety risks (e.g., ask questions about medications, question providers re hand washing etc).
- Opportunities are available for children and their families to provide input on the quality and safety of care provided (e.g., surveys, committees, rounds, parent advisory council, etc).

    Adapted from:

    - Institute for Healthcare Improvement, the National Initiative of Children's Healthcare Quality and the Institute for Patient- and Family-Centered Care, Patient- and Family-Centered Organizational Self-Assessment Tool, 2013.[19]
    - Welsh Assembly Government, All Wales Universal Standards for Children and Young People's Specialised Healthcare Services, 2008.[20]
    - Maurer, M et al, Guide to Patient and Family Engagement: Environmental Scan Report (Agency for Healthcare Research and Quality), 2012.[21]