

# WHO-PGSSC-GICS CHILDREN'S SURGICAL ASSESSMENT TOOL (CSAT)

## FACILITY CHARACTERISTICS (for patients <15 years old)

Total number of children's surgical admissions in a year	#
Total number of children's surgical outpatients (visits) seen in a year	#
Total number of hospital beds dedicated to children's surgery	#
Total number children's operating rooms	#
Total number of neonatal unit/special baby care unit beds	#
Total number of paediatric ICU/advanced care beds	#
Total number of neonatal ICU beds	#
Total number of functional paediatric ventilators in the ICU	#
Total number of functional neonatal ventilators in ICU	#
Total number of functional incubators	#
Total number of patient monitors in paediatric and neonatal ICU	#
Access and referral systems:	
How many patients per year do you refer to higher-level facilities for surgical interventions?	#
What is the most common reason for referral of paediatric surgical patients to higher levels of care?	

## INFRASTRUCTURE

General Infrastructure - How often is this item available and functional? Choose (tick)	Unavailable (0)	Inadequate (1)	Limited (2)	Adequate (3)
0- Unavailable ( <b>NOT AVAILABLE</b> under any circumstances);				
1- Inadequate (available to <b>LESS THAN HALF</b> of the time);				
2- Limited (available to <b>MORE THAN HALF</b> , of the time but not all of the time); or				
3- Adequate ( <b>AVAILABLE</b> all of the time without restrictions).				
24-hour Emergency Unit able to receive paediatric patients	0	1	2	3
Pharmacy – product availability				
Parenteral nutrition	0	1	2	3
Intravenous antibiotics				
Radiology & Pathology – service availability				
Enteral contrast material for bowel evaluation (barium or gastrografin)	0	1	2	3
Intravenous contrast material				
Echocardiogram	0	1	2	3
Anatomic Pathology services	0	1	2	3
Blood Supply - availability				
Blood component transfusion	0	1	2	3

## SERVICE DELIVERY

Rate adequacy as below:

- 0- Unavailable (**NOT AVAILABLE** under any circumstances);
- 1- Inadequate (available to **LESS THAN HALF** of the time);
- 2- Limited (available to **MORE THAN HALF**, of the time but not all of the time)
- 3- Adequate (**AVAILABLE** all of the time without restrictions).

If Unavailable, Inadequate or Limited, please identify the barriers to access (check all that apply)

**Infrastructure** - physical space, equipment or materials; **Absent** - has never has been present; **Broken** –resources present, but broken;  
**Personnel** - resource, service or function available, and staff trained, but limited availability at times (eg, night, weekend or holiday);  
**Training** - No staff trained in using resource or performing function; **Stock out** - cannot be procured, or required equipment or supplies out of stock often due to poor stock management practices or procurement failures; **User fees** - available, but out-of-pocket payment requirement prevents delivery for some; **Other** - Other factors

	Total # performed / year	Rate (0-3)	Infrastructure	Absent	Broken	Personnel	Training	Stock out	User fees	Other
<b>Procedures- Minor in patients &lt;15 years old</b>										
Suturing laceration	#									
Drainage of superficial abscess	#									
Wound debridement	#									
Biopsy (tumour)	#									
Male circumcision	#									
Management of non-displaced fractures	#									
Removal of foreign body from ear/nose	#									
Removal of foreign body from throat	#									
Eyelid surgery for trachoma	#									

<b>Procedures – Major in patients &lt; 15 years old</b>										
<b>Children's surgery</b>										
Appendectomy	#									
Hernia/ hydrocele repair	#									
Reduction of intussusception	#									
Bowel resection	#									
Gastroschisis & omphalocele	#									
Rectal biopsy	#									
Resection of solid abdominal masses	#									
Creation of Intestinal stomas	#									
Closure of intestinal stomas	#									
Pyloromyotomy	#									
Catheterization/ suprapubic cystostomy	#									
Orchiopexy	#									
Repair of testicular or ovarian torsion	#									
Thyroidectomy (total or partial)	#									
Drainage of septic arthritis/osteomyelitis	#									
Repair of cleft lip and/or palate	#									
<b>Paediatric Resuscitation &amp; Injury</b>										
Central lines	#									
Surgical airway (cricothyroidotomy, tracheostomy)	#									
Tube thoracostomy	#									
Trauma laparotomy	#									
Open reduction & internal fixation	#									
Placement of paediatric external fixator	#									
Escharotomy/fasciotomy/ contracture release	#									
Amputations	#									
Skin grafting	#									
Burr hole	#									
Craniotomy	#									

<b>Procedures - Advanced (&lt;15 years old)</b>										
Repair of esophageal atresia	#									
Repair of intestinal atresia	#									
Myelomeningocele repair	#									
Repair of club foot	#									
Atrial / Ventricular Septal Defect repair	#									
VP Shunt/ETV for hydrocephalus	#									

Repair of anorectal malformation or Hirschsprung's Disease	#									
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**Surgical Volume**

Number of paediatric laparotomies (<15 y/o) performed last year	#
Number of neonatal (< 1 month age) stomas performed last year	#
Number of surgical repairs of paediatric fractures performed last year	#
Total number of procedures performed in pediatric patients (<15 years) last year	#
Percent of children's surgery cases that were emergent or urgent (non-elective) cases	%

**Quality and Safety**

Is your institution involved in a formal training program for surgical trainees?	<input type="checkbox"/> Yes	<input type="checkbox"/> No				
Does your institution have a method of monitoring surgical outcomes over time?	<input type="checkbox"/> Yes	<input type="checkbox"/> No				
Does your institution use electronic medical records?	<input type="checkbox"/> Yes	<input type="checkbox"/> No				
Does your institution have a trauma registry that includes paediatric trauma?	<input type="checkbox"/> Yes	<input type="checkbox"/> No				
Number of post-operative paediatric (<15 y/o) in-hospital deaths last year	#					
Number of surgical site infections(SSIs) in paediatric patients (< 15 y/o) in the last year	#					
What is the highest ASA class of children operated at your institution?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4		
Is the WHO Surgical Safety Checklist used in the operating rooms for paediatric patients?	<input type="checkbox"/> Never	<input type="checkbox"/> Less than half the time	<input type="checkbox"/> More than half the time	<input type="checkbox"/> All the time		
Is pulse oximetry used in the operating rooms for paediatric patients?	<input type="checkbox"/> Never	<input type="checkbox"/> Less than half the time	<input type="checkbox"/> More than half the time	<input type="checkbox"/> All the time		
How often does the hospital hold a surgical audit (Mortality and Morbidity conference) related to children's surgical patients?	<input type="checkbox"/> Never	<input type="checkbox"/> Every week	<input type="checkbox"/> Every month	<input type="checkbox"/> Every quarter	<input type="checkbox"/> As needed	<input type="checkbox"/> Other

**Operating Room Equipment and Supplies – How often is the following equipment available and functional for surgery?**

	Rating (0-3)	Infra-structure	Absent	Broken	Person-nel	Training	Stock out	User fees	Other
Functional paediatric anaesthesia machines									
Paediatric oropharyngeal airway (000-4)									
Paediatric endotracheal tubes (2.5 - 6 mm)									
Paediatric laryngoscope (Miller ≤ 2 or Macintosh ≤ 3)									
Paediatric facemask bag valve (< 550ml bag with < size 3 mask)									
Paediatric difficult airway kit (LMA)									
Paediatric Magill forceps									
Paediatric blood pressure monitor or cuff									
Paediatric pulse oximetry									
Paediatric nasogastric Tube (<12 Fr)									
Paediatric chest tubes (< 20 Fr)									
Paediatric surgical instruments									
Paediatric urinary catheters (<12 Fr)									
Paediatric central lines (< 7 Fr or 12 cm)									
Sutures (4.0, 5.0, 6.0)									
Minimally invasive surgical instruments (ie. laparoscopy, thoracoscopy, arthroscopy)									
Capnography (exp. CO <sub>2</sub> measurement)									
Pre-formed intestinal silos									

## WORKFORCE

### Children's Surgery Provider Density

Providers	Full-time	Part-time		
Number of qualified general surgeons with paediatric exposure ( <i>trained surgeons with expertise in pediatric or neonatal surgery, but without formal subspecialty pediatric surgical training</i> )	#	#		
Number of qualified general paediatric surgeons ( <i>trained surgeons with formal specialized training in children's surgery of ≥ 1 year</i> )	#	#		
Number of general doctors providing paediatric surgery ( <i>general practitioners without formal surgical training</i> )	#	#		
Number of non-physicians providing paediatric surgery ( <i>non-physicians health care professional who performs surgery independently without formal training in surgery</i> )	#	#		
Number of qualified paediatric anaesthesiologists ( <i>trained anaesthesiologists with formal specialization in pediatric anesthesia of ≥1 year</i> )	#	#		
Number of qualified anaesthesiologists with paediatric exposure ( <i>trained anaesthesiologists with experience in pediatric anesthesia without formal subspecialty pediatric anaesthesiology training.</i> )	#	#		
Number of general doctors providing paediatric anaesthesia ( <i>general practitioners without formal anaesthesiology training</i> )	#	#		
Number of non-physicians providing paediatric anaesthesia ( <i>non-physicians health care professionals who perform paediatric anaesthesia independently without formal training in anaesthesia</i> )	#	#		
Number of nurses treating only children	#	#		
Please identify paediatric specialists that are available at your hospital ( <i>indicate number in brackets</i> )				
<input type="checkbox"/> cardiac surgeon ( ) <input type="checkbox"/> plastic surgeon ( ) <input type="checkbox"/> haematologist ( ) <input type="checkbox"/> dental surgeon ( ) <input type="checkbox"/> urologist ( ) <input type="checkbox"/> nephrologist ( ) <input type="checkbox"/> neurosurgeon ( ) <input type="checkbox"/> general paediatrician ( ) <input type="checkbox"/> neurologist ( ) <input type="checkbox"/> ophthalmologist ( ) <input type="checkbox"/> neonatologist ( ) <input type="checkbox"/> respiratory physician ( ) <input type="checkbox"/> orthopedic surgeon ( ) <input type="checkbox"/> cardiologist ( ) <input type="checkbox"/> otorhinolaryngologist (ENT) ( ) <input type="checkbox"/> endocrinologist ( )				
Please identify staff members that are present in your hospital ( <i>indicate number in brackets</i> )				
<input type="checkbox"/> paediatric intensive care nurse ( ) <input type="checkbox"/> radiographer ( ) <input type="checkbox"/> radiologist ( ) <input type="checkbox"/> neonatal nurse ( ) <input type="checkbox"/> speech therapist ( ) <input type="checkbox"/> pathologist ( ) <input type="checkbox"/> operating room nurse ( ) <input type="checkbox"/> audiometrist ( ) <input type="checkbox"/> oncologist treating children ( ) <input type="checkbox"/> qualified nutritionist ( )				
<b>Work Force Availability</b> ( <i>How often are these available 24 hours a day?</i> )	Unavailable (0)	Inadequate (1)	Limite d (2)	Adequate (3)
General children's surgical provider availability				
Paediatric anaesthesia provider availability				

## FINANCING

### Health financing and accounting

What percentage of children coming to this hospital have health insurance?	<input type="checkbox"/> None	<input type="checkbox"/> Less than half
Nationally, is there government-sponsored health insurance/financing for children?	<input type="checkbox"/> More than half	<input type="checkbox"/> All the time
	<input type="checkbox"/> Yes	<input type="checkbox"/> No

### Budget Allocation

Annual hospital budget allotted to children's surgery and anaesthesia	<input type="checkbox"/> N/A	Actual amount:	% of total budget:
<b>Cost:</b> average total inpatient cost for a patient for...		<b>Cost</b>	<b>% out of pocket</b>
paediatric hernia repair			
paediatric open fracture repair			
paediatric laparotomy			
repair of Hirschsprung's disease/anorectal malformation			

## TRAINING AND RESEARCH

How many ongoing research projects involve children's surgery?	#
How many ongoing research projects involve paediatric anaesthesia?	#
How many ongoing research projects involve paediatric nursing?	#
How many workshops, trainings, and lectures are in an average month?	#