Entrustable Professional Activities (EPAs) – Paediatric Surgery

EPA Title	EPA Entrustment Level to be Attained by Exit
EPA 1 (Day Surgery): Managing day surgery list of minor operations in babies and children (3 months - 18y)	Level 4
EPA 1.1 (Day Surgery – Lower Complexity [Herniotomy]): Performing day surgery inguinal herniotomy in babies and young children (3 months to 7 years old)	Level 4
EPA 1.2 (Day Surgery – Higher Complexity [Orchidopexy]): Performing day surgery orchidopexy for palpable undescended testis in babies and children (6 months to 3 years old)	Level 4
EPA 2 (Clinic): Managing common elective conditions in babies and children (0-18y) in the surgical outpatient clinic setting	Level 4
EPA 3 (On Call): Managing patients admitted or referred to PS in acute inpatient setting	Level 4
EPA 4 (Neonatal): Managing neonates with surgical conditions	Level 4
EPA 4.1 (Neonatal): Pre-Operation	Level 4
EPA 4.2 (Neonatal): Managing neonates with surgical conditions (Operative)	Level 4
EPA 5 (Urology): Managing major urological conditions in babies and children (0-18y)	Level 4
EPA 6 (Oncology): Managing major surgical oncological conditions in babies and children (0-18y)	Level 4
EPA 7 (Thoracic): Managing major thoracic conditions in babies and children (0-18y)	Level 4
EPA 8 (HPB-GI): Managing major hepatobiliary-pancreatic (HPB) and gastrointestinal (GI) surgical conditions in babies and children (0-18y)	Level 4

Entrustment Scale

Entrustment Level	Description
Level 1	Be present and observe
Level 2	Act with direct, pro-active supervision. i.e., with a supervisor's continuous in-person observation and intervention as needed
Level 3	Act with indirect, re-active supervision, i.e., supervisor is readily available on request (e.g., arrive within 15 minutes)
Level 4	Act with supervision not readily available, but with distant supervision and oversight. i.e., supervisor is contactable but not necessarily available to return to hospital immediately. (e.g., consult over a telephone call).
Level 5	May provide supervision to junior trainees

PS EPA_1: Day Surgery

Click here for main list of EPA titles

Title	Managing day surgery list of minor operations in babies and children (3 months - 18y)			
	Peri and intra-operative management of minor operations listed as day surgery cases As there are multiple varied operations, two higher-volume case types are used as surrogate for assessment Lower complexity – Nested EPA 1.1 describes requirements for herniotomy (Other lower complexity operations include circumcisions, excision of benign skin			
Specifications and limitations	lesions and release of tongue tie) Higher complexity – Nested EPA 1.2 describes requirements for orchidopexy (Other higher complexity operations include glanular hypospadias, modified circumcision, and umbilical hernia)			
	Limitations: Excludes pre-operative outpatient assessment and decision for operation Excludes post-operative management after discharge from day surgery Excludes non-routine cases such as repeat operations Excludes neonates (PS EPA 4)			
EPA Entrustment Level to be Attained by Exit	Level 4			

PS EPA_1.1 Nested DS Lower complexity (Herniotomy) Click here for main list of EPA titles

Title	Performing day surgery inguinal herniotomy in babies and young children (3 months to 7 years old)			
Specifications and limitations	This nested EPA lists requirements for peri and intraoperative management of routine open herniotomy			
	It serves as surrogate for lower complexity PS minor operations such as circumcisions, excision of benign skin lesions and release of tongue tie			
	Herniotomy:			
	 Checks hernia/ hydrocele is present, mark site 			
	2. Takes informed consent or reconfirms prior consent; addresses patient/			
	caregiver concerns			
	3. Performs sign in, time out, team huddle and other OT safety processes			
	as per institutional protocol			
	4. Perform herniotomy (at correct site, complete proximal sac dissection			
	and ligation at the internal ring, protects other cord structures, replace			
	testis within scrotum, hemostasis and closure of inguinal canal and			
	superficial layers.)			
	5. Ensures complete and concise documentation with postoperative orders			
	6. Handover care plan, ensure patient review and advice to caregiver before			
	discharge from day surgery			
	Limitations:			
	Excludes pre-operative outpatient assessment and decision for operation			
	Excludes post-op management after discharge from day surgery Excludes non-routine cases such as repeat operations			
EPA Entrustment Level to be Attained by Exit	Level 4			

PS EPA_1.2 Nested DS Higher complexity (Orchidopexy) Click here for main list of EPA titles

Title	Performing day surgery orchidopexy for palpable undescended testis in babies and children (6 months to 3 years old)				
0 '(" ("	` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `				
Specifications and	This Nested EPA lists requirements for peri and intra-operative management of routine orchidopexy for palpable undescended testis.				
limitations	It serves as surrogate for higher difficulty PS operations such as glanular				
	meatoplasty, modified circumcisions and umbilical hernia				
	Orchidopexy				
	Checks testis position is undescended, mark site				
	Takes informed consent or reconfirms prior consent; addresses patient/				
	caregiver concerns				
	3. Performs sign in, time out, team huddle and other OT safety processes as				
	per institutional protocol				
	4. Perform orchidopexy (at correct site, opens external ring, disconnects				
	gubernaculum, adequate dissection for testis to reach scrotum without				
	tension, procesus vaginalis dissection with sac ligation at the internal ring,				
	protects other cord structures, tunnels testis to scrotum without twisting				
	spermatic cord, procedure to prevent torsion testis, hemostasis and				
	closure of inguinal canal and superficial layers)				
	5. Ensures complete and concise documentation with postoperative orders				
	6. Handover care plan, ensure patient review and advice to caregiver before				
	discharge from day surgery				
	Limitations:				
	Excludes pre-operative outpatient assessment and decision for operation				
	Excludes post-op management after discharge from day surgery				
	Excludes non-palpable undescended testis, staged and revision operations				
EPA Entrustment					
Level to be Attained by Exit	Level 4				

PS EPA_2: Clinic Click here for main list of EPA titles

Specifications and limitations	 Providing information and counselling to patient/caregivers on treatment options Listing patients for elective operations in a timely fashion Consulting colleagues as required, including making referrals to other clinical specialties Providing early postoperative care, including wound assessment, drain/ stent management Monitoring and managing progression of chronic cases at regular intervals 			
and limitations	 options Listing patients for elective operations in a timely fashion Consulting colleagues as required, including making referrals to other clinical specialties Providing early postoperative care, including wound assessment, drain/ stent management 			
	 Consulting colleagues as required, including making referrals to other clinical specialties Providing early postoperative care, including wound assessment, drain/ stent management 			
	specialties 4. Providing early postoperative care, including wound assessment, drain/ stent management			
	management			
	5. Monitoring and managing progression of chronic cases at regular intervals			
	5. Monitoring and managing progression of chronic cases at regular intervals			
	6. Accurate documentation of events during clinic consult			
	Common conditions that are included in this EPA			
	A. Lesions:			
	 Head and neck – dermoid cyst, branchial cyst, lymph nodes, thyroglossal cyst, piriform sinus 			
	Chest - Rib cage deformities, breast bud/gynaecomastia, breast lump, precocious puberty			
	3. Abdomen/pelvis – Umbilical discharge/hernia, anorectal malformation, perianal abscess, anal fissure, vulvovaginitis, labial adhesions			
	 Genitalia – phimosis, balanitis, hypospadias, hydroceles/ hernia, undescended testis) 			
	5. General - Lumps and bumps, lymphadenopathy, vascular anomalies B. Approach to:			
	Abdominal pain and/or vomiting			
	Constipation and/or change in bowel habits (developmental versus surgical cause)			
	Gastrointestinal bleeding			
	4. Lower urinary symptoms/ UTI (functional versus surgical cause)			
	5. Jaundice			
	C. Early postoperative reviews for common operations like appendicitis,			
	fistulotomy, DS minor operations (EPA1) and major operations for surgical conditions (EPA 5-8)			
	Limitations:			
	Does not cover atypical presentations of common clinic conditions			
	Excludes the surgical operative management of the conditions			
EPA Entrustment	Level 4			

PS EPA_3: On call Click here for main list of EPA titles

Title	Managing patients admitted or referred to PS in acute inpatient setting				
Specifications and limitations	 Recognising and resuscitating the acutely sick baby and child Diagnosing, assessing, and treating PS conditions in a timely fashion Prioritising clinical activities and delegating for efficient and safe patient care Recognising own limits then escalating and/ or referring in timely fashion Completing and handing over care of patients for continuity at the end of call shift Providing surgical consultation to trauma code team Managing consult requests from other specialities Managing junior members of the on call team Limitations: Excludes patients admitted from paediatric surgery outpatient clinic				
EPA Entrustment Level to be Attained by Exit	Level 4				

PS EPA_4: Neonatal Click here for main list of EPA titles

Title	Managing neonates with surgical conditions				
	[Refer to exact of syllabus below (Module 3: Neonatal Surgery) for list of conditions				
	included.]				
Specifications and limitations	This EPA assesses peri and operative management of neonatal surgical neonates. The focus is on pre and intra-operative management and immediate post-operative management. Late post-operative management is not included because the post-operative course is often prolonged, and the patient may not continue under the care of the resident.				
	Recognition of the special demands of neonatal physiology is important in operative optimisation and can be attained earlier in training. Technical compete in handling neonatal tissue is usually attained later, hence these two requirem are nested separately. In addition, as there are multiple varied neonatal operatit two higher volume case types are used as surrogate for assessment for elective emergency situations				
	Pre-operative management (for emergencies) is assessed by Nested EPA 4.1 Operative management is assessed by Nested EPA 4.2, with neonatal herniotomy as surrogate for assessment for elective; and neonatal laparotomy as surrogate for emergency surgery				
	Limitations: Excludes neonates beyond 44 weeks gestational age Excludes operative management (PS Nested EPA 4.1) Excludes non-emergencies (PS Nested EPA 4.1) Excludes re-operations (PS Nested EPA 4.2) Excludes late post-operative management				
EPA Entrustment Level to be Attained by Exit	Level 4				

PS Nested EPA_4.1: Neonatal Preop Click here for main list of EPA titles

Title	Managing Neonates with Emergency Surgical Conditions (Pre-operative)			
Specifications and limitations	 This nested EPA lists requirements for pre-operative management of a neonate requiring emergency surgery Higher volume example of neonatal laparotomy is used as a surrogate for other emergency neonatal surgical conditions. 1. Collaborating with obstetricians (where appropriate e.g., in antenatally diagnosed conditions) in perinatal management 2. Performing pre-operative assessment and engaging with neonatologists, anaesthetists, other specialists in pre-operative optimisation of the surgical neonate 3. Devising appropriate surgical plans 4. Organising surgical team preparation (E.g., Operating room staff, radiology staff for equipment, on-table imaging etc) 5. Counselling families about risk factors, surgical indications, treatment options, prognosis and expected post-operative course and needed care 6. Engaging in inter-disciplinary communications for appropriate post-operative disposition ad care 7. Organising safe transfer to the operating room 8. Ensuring accurate documentation of peri-operative decisions and events Limitations: 1. Excludes neonates beyond 44 weeks gestational age 			
EPA	Excludes intraoperative and immediate postoperative management (PS nested EPA 4.2)			
Entrustment Level to be Attained by Exit	Level 4			

PS Nested EPA_4.2 Neonatal Op Click here for main list of EPA titles

Title	Managing Neonates with Surgical Conditions (Operative)			
Specifications and	This nested EPA lists requirements for operative management of a neonate requiring surgery			
limitations	1. Elective cases : surrogate high volume example - elective neonatal herniotomy			
	2. Emergency cases: surrogate high volume example – neonatal laparotomy			
	1. Performing the following: Check condition, mark site, consent, perform sign-in, time-out, team huddle and other OT safety processes as per institutional protocol			
	2. Performing operation			
	Leading surgical team and facilitates inter-disciplinary communications, co- ordinates closely with anaesthetist throughout surgery			
	Ensuring appropriate post-operative disposition			
	5. Ensuring accurate documentation of procedure and intra-operative events			
	6. Communicating with family			
	7. Providing adequate handover post-operatively to the neonatology or intensive care team, as appropriate			
	8. Managing immediate post-operative issues			
	Limitations:			
	 Applies only to neonates up to 44 weeks gestational age Excludes patient assessment and pre op management (PS nested EPA 4.1) Excludes re-operations 			
EPA				
Entrustment				
Level to be Attained by	Level 4			
Exit				

Extract of Syllabus - Module 3: Neonatal Surgery Definition of Standards for Knowledge (K1-4), Clinical and Technical Skills (S1-4)

K1	K2	K3	K4
Knows of	knows basic concepts	knows generally	knows specifically and broadly

Skills standards	S1 Has observed	S2 Can do, occasionally needs	S3 Can do, usually without assistance	S4 Can do without assistance,
		assistance		including complications
Steps	Adequate knowledge of the steps, can handle relevant instruments appropriately and safely.	Knows all the steps and the reasons that lie behind the methodology.	Can adapt to well known variations in the procedure encountered	
Procedure	Does some parts of the procedure with reasonable fluency	Can carry out a straightforward procedure fluently from start to finish.	Recognises and makes correct assessment of common problems that are encountered.	Can deal with straightforward and difficult cases to a satisfactory level
Trainer input	Required throughout	Minimal guidance required. Knows and demonstrates when to ask for help	Requires advice rather than help that requires the trainer to scrub. Knows and demonstrates when to ask for help	No trainer input required. Is capable of supervising trainees

Module 3: Neonatal Surgery

Module 3: Neonatal Surgery	Standards at
	end
3a) Knowledge and clinical skills relevant to neonatal index conditions	
Embryology and developmental anatomy of all of conditions in this module	K4
Understanding specific requirements of neonates in relation to ventilation, nutrition and fluid and electrolyte management	K3
Peri-operative arrangements	
 Pre-and postoperative communication with multidisciplinary team: surgeon, neonatologist, radiologist, anaesthetist, NICU 	S3
 Pre-and postoperative communication with parents including informed consent 	S3
Postoperative surgical management in NICU / CICU	K4
Antenatal diagnosis and counselling	

•	Understand role of antenatal diagnosis in the following conditions and	K4, S3
	formulate a viable care-plan	
	 Congenital diaphragmatic hernia 	
	 Oesophageal atresia 	
	 Abdominal wall defects 	
	 Antenatal hydronephrosis 	
	 Congenital lung lesions 	
•	Antenatal counselling of parents for the above conditions	S3
•	Communicate care-plan with all relevant disciplines and implement plan	S3
Lo	ng term management and transfer of care	
•	Identify neonates/children with conditions requiring long term surgical	K4, S3
	management and develop appropriate long-term management	
•	Coordination of multi-disciplinary follow up	S4
•	Successful transition and integration of child's management into the adult	S3
	setting	
3b)	Assessment and management of neonates with acute abdominal patholo	gy
•	Assessment and management of a neonate presenting with symptoms and	K4, S4
	signs of acute abdomen including severity of condition, investigations	
	required, resuscitation, non-operative management, and potential need for	
	surgery	
•	Surgery	
	Exploratory laparotomy	S3
	Management of specific conditions (refer to section 3d)	
	Creation of stoma	S3
	Insertion of peritoneal drain	S3
•	Postoperative neonatal nutrition requirements, including establishing enteral	K4, S3
	feeds – rate of adjustment of type and volume of feeds	,
•	Management of Short bowel syndrome	K4, S3
•	Management of the neonatal stoma and its complications	K4, S3
	Assessment and management of neonates with abdominal wall defects	,
	stroschisis and Omphalocoele	K4
•	Antenatal counselling	K4, S3
•	Initial resuscitation and management, including differences between the 2	S4
	entities.	
	Operation – primary closure	S3
	Operation – silo/staged closure	S3
•	Post-operative and long-term management issues	K4
Ex	strophy	
•	Principles of initial management and rationale for staged repair. Long term follow-up plan	K3, S1
3d)	Assessment and management of neonates with major index conditions	
	ngenital diaphragmatic hernia	K4
•	Understand antenatal prognostic factors and determinants for timing of	
	o Operation – repair of diaphragmatic hernia (open/MIS)	S3
	Operation – Patch repair or muscle flap	S2
•	Post-operative management and follow up	K4
	ophageal atresia with or without tracheo-oesophageal fistula	1.51
•	Anatomy of tracheo-oesophageal malformations	K4
•	Evaluation and initial management	K4, S4
	Lyaivaiion and initial management	'\'¬, ∪¬

Operation rigid branches conv	Lea
Operation – rigid bronchoscopy Operation – Ligation of fixtule repair of accombanged etracia.	S3 S2
Operation - Ligation of fistula, repair of oesophageal atresia	
Management of long gap oesophageal atresia	K4
 Management of post-operative complications e.g., oesophageal stricture and long term follow up 	K4, S2
Duodenal atresia	
Evaluation of condition, pre- and postoperative management	K4, S4
 Operation – duodeno-duodenostomy/web excision 	S2
Intestinal atresias/stenosis	
Evaluation of condition, pre- and postoperative management	K4, S3
 Operation – intestinal resection and anastomosis 	S3
Malrotation with/without volvulus	
Evaluation of condition, pre- and postoperative management	K4, S4
 Operation – Ladd's procedure (with/without bowel resection) 	S3
Hirschsprung's disease	
 Evaluation and management of initial presentation of Hirschsprung's disease and Hirschsprung-related enterocolitis 	K4, S4
Procedure – rectal washout	S4
 Procedure - rectal suction biopsy, open rectal biopsy 	K4, S4
 Operation – siting stoma (lap-assisted/open) 	S3
Operation – lap assisted or open endorectal pullthrough	S3
Management of long segment Hirschsprung's disease	K4
Post-operative and long term follow up	K4
Anorectal malformation	
 Appreciation of the spectrum of anorectal malformations and associated malformations and management of individual forms 	K4
Evaluation, management, decision for primary or staged surgery	S3
Operation – divided colostomy	S4
 Operation – posterior sagital anorectoplasty (PSARP) / limited 	S2
 Operation – lap/open ligation of fistula and pullthrough 	S2/S3
Post-operative management and long term follow up	K4
Meconium disease of prematurity	
 Uncomplicated cases – indication, technique for rectal washouts, role of contrast enema 	K4, S4
Complicated cases (associated with perforation/ meconium peritonitis)	
o indication for surgery	K4
 intra-operative decision making 	S3
Post-operative management	K4
Necrotising enterocolitis (NEC)	
Understand factors involved in pathogenesis of NEC	K4
Evaluation and initial management. Indications for surgery	K4, S3
Pre-operative counselling and consent taking	S4
Operation – peritoneal drain	S3
Operation – laparotomy, bowel resection, stoma.	S3
Post-operative management	K4
·	I

PS EPA_5: Urology Click here for main list of EPA titles

Title	Managing major urological conditions in babies and children (0-18y)
Specifications and limitations	 Antenatal counselling for foetus with congenital urological condition Collaborating with obstetrician and neonatologist for perinatal care of babies with congenital urological conditions Counselling about natural history, risk factors, surgical indications, treatment options, treatment complications and prognosis for patients with urologic conditions Engaging in inter-disciplinary discussions with neonatologist, nephrologist, radiologist, and other specialists where appropriate Performing pre-operative assessment and optimisation Devising appropriate surgical plan and collaborating in inter-disciplinary post-operative management for patients born with urologic conditions Arranging appropriate follow-up plan for patients with urological conditions not requiring surgery
	Limitations: 1. Excludes operative surgical treatment 2. Excludes PS urologic oncology conditions (PS EPA 6)
EPA Entrustment Level to be Attained by Exit	Level 4

PS EPA_6: Oncology Click here for main list of EPA titles

Title	Managing major surgical oncological conditions in babies and children (0-18y)
Specifications and limitations	 Antenatal counselling for foetus with antenatally diagnosed oncologic condition Collaborating with obstetrician and neonatologist for perinatal care of babies with antenatally diagnosed oncologic condition Counselling about natural history, risk factors, surgical indications, treatment options, treatment complications and prognosis for patients with oncologic conditions Engaging in inter-disciplinary discussions with oncologist, radiotherapist, and other specialists where appropriate; presenting and participating in tumour board Performing pre-operative assessment and optimisation Devising appropriate surgical plan and collaborating in inter-disciplinary post-operative management for patients with oncologic conditions
	 Limitations: Includes major PS oncological conditions of the kidneys, ureter, bladder, GIT, liver, pancreas, spleen, ovaries, testes, sacro-coccygeal region, and retroperitoneum Excludes intra-operative surgical treatment Excludes paediatric malignant haematological conditions
EPA Entrustment Level to be Attained by Exit	Level 4

PS EPA_7: Thoracic Click here for main list of EPA titles

Title	Managing major thoracic conditions in babies and children (0-18y)
Specifications and limitations	 Antenatal counselling for foetus with congenital thoracic condition Collaborating with obstetrician and neonatologist for perinatal care of babies with congenital thoracic conditions Performing pre-operative assessment and devising pre-operative optimisation strategies (including HFOV or ECMO) with neonatal or paediatric medical specialists for babies born with thoracic conditions Devising appropriate surgical plan and collaborating in inter-disciplinary post-operative management for babies born with thoracic conditions Counselling about prognosis, risk factors, surgical indications and arranging for appropriate follow-up plan for patients with thoracic conditions not requiring surgery Counselling about indications of surgery and engaging in inter-disciplinary discussion for patients presenting with thoracic conditions such as empyema, pneumothorax, and congenital lung lesions Providing post-operative care including monitoring of lung function, advising on activity fitness and detection of possible complications for patients with thoracic conditions
	Limitations: 1. Excludes intra-operative surgical treatment 2. Excludes PS thoracic oncological (PS EPA 6) 3. Excludes paediatric cardiothoracic surgical conditions involving heart, great vessels, and trachea
EPA Entrustment Level to be Attained by Exit	Level 4

PS EPA_8: HPB-GI Click here for main list of EPA titles

Title	Managing major hepatobiliary-pancreatic (HPB) and gastrointestinal (GI) surgical conditions in babies and children (0-18y)
Specifications and limitations	 Antenatal counselling for foetus with intra-abdominal conditions such as intra-abdominal cyst Collaborating with obstetrician and neonatologist to provide perinatal care Performing surgical assessment and devising pre-operative optimisation plan Counselling about natural history, risk factors, treatment options, treatment complications, long term prognosis (including liver transplantation) and arranging pre-operative management for patients with biliary atresia Counselling about natural history, risk factors, treatment options, indications of surgery, treatment complications and devising pre-operative and post-operative management for patient with choledochal malformation and GI conditions Participating or leading the multi-disciplinary care for services such as bowel management or bowel rehabilitation programme Participating in transition care to appropriate adult disciplines for patients with HPB and GI conditions Excludes intraoperative surgical treatment Excludes PS oncological (PS EPA 6)
EPA Entrustment Level to be Attained by Exit	Level 4