

Entrustable Professional Activities (EPAs)

List of EPAs for Paediatric Intensive Care

EPA Title	EPA Entrustment Level to be Attained by Exit
EPA 1: Managing Critically Ill Patients in Paediatric ICU	Level 4
EPA 2: Managing and Coordinating Resources in the PICU	Level 4
EPA 3: Providing End-Of-Life Care (EOL) In PICU	Level 4
EPA 4: Coordinating and Providing Intra-Hospital Transport for Critically Ill Children	Level 4
EPA 5: Performing Procedures in Critically Ill Children & Adolescents	Level 4
EPA 6: Managing Paediatric Patients on Extracorporeal Membrane Oxygenation (ECMO)	Level 4
EPA 7: Managing Paediatric Patients on Acute Renal Replacement Therapy	Level 4

Entrustment Scale

Entrustment Level	Description
1	Not allowed to practise EPA, allowed to observe.
2	Allowed to practise EPA only under proactive, full supervision.
3	Allowed to practise EPA only under reactive/on-demand supervision.
4	Allowed to practise EPA unsupervised.
5	Allowed to supervise others in practice of EPA independently.

Paediatric Intensive Care EPA 1

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Title	Managing Critically Ill Patients in PICU
Specification and limitations	This EPA represents the essence of the clinical practice of paediatric intensive care. A comprehensive approach, based on a strong foundation of fundamental physiology and pathophysiology, is essential. The age span, ranging from newborn to young adults, also emphasises the need for applied knowledge of physiology and pathophysiology in caring for critically ill patients. The specific functions which define this EPA include: 1) Assessing patient through history taking and physical examination. 2) Identifying key issues in the care of the critically ill patient with a range of conditions and form differential diagnoses 3) Developing and implementing holistic management plans 4) Providing discharge planning for complex patients 5) Utilising invasive and non-invasive monitoring to guide management and therapy 6) Leading a multidisciplinary resuscitation team 7) Communicating with families and colleagues including disclosure of patient safety events 8) Handing over patients discharged from PICU 9) Demonstrating the ability to analyse patient safety events Limitations: • This EPA excludes persons aged 18 and above, and premature neonates and neonates < 2kg. • This EPA does not assess the performance of procedures in the management of these conditions as it is done in EPA 5. • The assessment of EPA 1 does not include managing paediatric patients on ECMO or acute renal replacement therapy as they are assessed in EPA 6 and 7 respectively.
EPA Entrustment Level to be Attained by Exit	Level 4

Paediatric Intensive Care EPA 2

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Title	Managing and Coordinating Resources in The PICU
Specification and limitations	This EPA includes: 1. Identifying and allocating resources (including bed management) within the PICU based on acuity and patient needs 2. Integrating inputs from other members of the healthcare team and reconcile disparate opinions regarding best course of action 3. Determining optimal staffing needs to ensure appropriate patient care 4. Recognising and managing social cues, emotional responses as well as personal and professional needs of the PICU team members, especially after major incidents (including conducting debriefs) 5. Identifying areas for process improvement and carrying out quality improvement projects in the PICU Limitations: This EPA excludes resource management outside the purview of the PICU
EPA Entrustment Level to be Attained by Exit	Level 4

Paediatric Intensive Care EPA 3

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Title	Providing End-of-Life Care (EOL) in PICU
Specification and limitations	The specific functions which define this EPA include: 1. Leading conversations on end-of-life care 2. Managing pain and suffering at end of life of critically ill children 3. Facilitating brain death testing 4. Co-ordinating care with palliative care services 5. Providing psycho-social, religious, and cultural support for patient and family at end-of-life 6. Facilitating death procedures and organ donation within the Singapore system Limitations: Excludes patients at end of life who are not admitted in the PICU
EPA Entrustment Level to be Attained by Exit	Level 4

Paediatric Intensive Care EPA 4

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Title	Coordinating and Providing Intra-Hospital Transport for Critically Ill Children		
Specification and limitations	This EPA includes: - Managing the transport of critically ill children– this may include being physically present during transfer, or providing consultation: - Assessing risks and benefits to the transport of a critically ill child - Anticipating and managing complications relating to transport of critically ill children - Identifying equipment, medications and monitoring necessary for the safe transport of critically ill children - Organising the appropriate team composition for the safe transport of a critically ill child - Communicating effectively with various stakeholders in the transport process - This EPA may be observed in a simulated activity.		
	Limitations: This EPA excludes - Persons aged 18 and above, and premature neonates and neonates < 2kg. - International transports - Managing discharge or facilitating the transfer of patients to chronic care facility - Inter-hospital transports		
	Mini-CEX with EBD	1 per year	Faculty
EPA Entrustment Level to be Attained by Exit	Level 4		

Paediatric Intensive Care EPA 5

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Title	Performing Procedures in Critically Ill Children & Adolescents		
Specification and limitations	Paediatric Intensivists should be able to perform the medical, diagnostic, and therapeutic procedures as listed in Annex A. The specific functions which define this EPA include: 1. Identifying appropriate procedures taking into consideration their clinical indications, contraindications, and potential complications 2. Communicating effectively in informed consent-taking 3. Performing procedures safely and effectively 4. Considering alternatives to specific procedures when facing challenges 5. Applying post-procedural monitoring and management		
	Limitations: This EPA does not include procedures performed in preterm infants.		
	DOPS	Refer to Annex A	Refer to Annex A
	Entrustment-based discussions	Refer to Annex A	Refer to Annex A (Specifically, for management of difficult airway, sedation in complex cases, and applying POCUS in the PICU)
EPA Entrustment Level to be Attained by Exit	Refer to Annex A for details “Good to Know” procedures are not exit requirements to graduate from training in paediatric intensive care. However, should the opportunity to perform these procedures arise, trainees should ideally progress to levels of supervision as stipulated in Annex A. Their progressions will be tracked as formative assessments but are not used for promotion decisions.		

ANNEX A– LIST OF REQUIRED PROCEDURES TO BE MASTERED BY PAEDIATRIC INTENSIVISTS

COMPULSORY PROCEDURES

	Procedure	Minimum number to be completed satisfactorily	Expected supervision level	Rater	To achieve competency by
1	Endotracheal tube exchange over a Bougie	DOPS x 2	Level 4	Teaching faculty	Year 2
2	Management of difficult airway and use of airway adjuncts such as laryngeal mask airway, bougie, video laryngoscopy	DOPS + EBD X 2	Level 4	Teaching faculty	Year 2
3	Tracheostomy tube change	DOPS x 2	Level 4	Teaching faculty	Year 2
4	Nasopharyngeal airway insertion	DOPS x 2	Level 4	Teaching faculty	Year 2
5	Femoral vein central venous catheter placement (including dialysis vascular catheters)	DOPS X 2	Level 4	Teaching faculty	Year 2
6	Internal jugular vein central venous catheter placement (including dialysis vascular catheters)	DOPS x 2	Level 4	Teaching faculty	Year 2
7	Peripheral intra-arterial line placement	DOPS X 2	Level 4	Teaching faculty	Year 2
8	Femoral intra-arterial line placement	DOPS x 2	Level 4	Teaching faculty	Year 2
9	Chest drain insertion (allow simulated procedure)	DOPS x 2	Level 4	Teaching faculty	Year 2
10	Planning and execution of procedural sedation for high-risk patients (e.g. patients with hemodynamic instability, raised ICP, known difficult airway, mediastinal mass, etc.)	DOPS + EBD x 2	Level 4	Teaching faculty	Year 2
11	Provision of non-invasive ventilatory support	DOPS x 2	Level 4	Teaching faculty	Year 1

12	Management of mechanical ventilation in the critically ill patient (e.g. ARDS, severe asthma, restrictive RV physiology/Fontan patient)	DOPS + EBD x 2	Level 4	Teaching faculty	Year 2
13	Temporary pacing (allow simulated procedure)	DOPS x 2	Level 4	Teaching faculty	Year 2

ADDITIONAL “GOOD TO KNOW” PROCEDURES

Procedure	Minimum number to be completed satisfactorily	Expected supervision level	Rater	To achieve competency by
POCUS in critically ill children, which specifically includes: (i) Cardiac (qualitative and/or quantitative assessment of cardiac contractility and function, presence of pericardial effusion, features of pulmonary hypertension); (ii) Intravascular fluid status and assessment of fluid responsiveness in shock states (IVC compressibility, ventricular filling); (iii) Cranial ultrasound in infants (presence of intraventricular haemorrhage); (iv) Respiratory (presence of pleural effusions, pneumothorax, pulmonary edema, lobar consolidation, atelectasis)	DOPS + EBD x 2 for each specific organ system	Level 4	Teaching faculty (specific PICU Faculty, and/or subspecialty faculty such as paediatric cardiology, respiratory, neonatology)	Year 2

Paediatric Intensive Care EPA 6

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Title	Managing Paediatric Patients on Extracorporeal Membrane Oxygenation (ECMO)
Specification and limitations	A comprehensive approach, based on a strong foundation of fundamental physiology and pathophysiology, is essential. The age span, ranging from newborn to young adults, also emphasises the need for applied knowledge of physiology and pathophysiology in caring for paediatric patients on ECMO. The specific functions which define this EPA include: 1. Assessing a potential ECMO candidate through history taking and physical examination. 2. Identifying indications and contraindications of ECMO. 3. Deciding whether patient requires veno-arterial (VA) or veno-venous (VV) ECMO. 4. Leading a multidisciplinary team in the activation of ECMO. 5. Identifying key issues in the care of the patient on ECMO. 6. Developing and implementing holistic management plans. 7. Anticipating and managing complications of ECMO. 8. Utilising invasive and non-invasive monitoring to guide management and therapy. 9. Managing decannulation off ECMO. This includes deciding on readiness for decannulation, providing anaesthesia for decannulation and post-decannulation management. 10. Communicating with families and interprofessional colleagues. Limitations: This EPA excludes persons aged 18 years and above, and premature neonates and neonates < 2kg.
EPA Entrustment Level to be Attained by Exit	Level 4

Paediatric Intensive Care EPA 7

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Title	Managing Paediatric Patients on Acute Renal Replacement Therapy (RRT)
Specification and limitations	A comprehensive approach, based on a strong foundation of fundamental physiology and pathophysiology, is essential. The age span, ranging from newborn to young adults, also emphasises the need for applied knowledge of physiology and pathophysiology in caring for paediatric patients with acute kidney injury on RRT. The specific functions which define this EPA include: 1. Assessing a potential RRT candidate through history taking, physical examination and investigations. 2. Identifying indications and contraindications of RRT. 3. Deciding which mode of RRT patient requires – acute peritoneal dialysis (PD), continuous veno-venous haemodialysis (CVVHD), continuous veno-venous haemofiltration (CVVHF) or continuous veno-venous haemodiafiltration (CVVHDF) 4. Planning access for RRT i.e. insertion of dialysis catheter. 5. Coordinating with paediatric nephrologist for RRT prescription. 6. Identifying key issues in the care of the patient on RRT. 7. Developing and implementing holistic management plans. 8. Anticipating and managing complications of RRT. 9. Utilising invasive and non-invasive monitoring to guide management and therapy. 10. Communicating with families and interprofessional colleagues. Limitations: This EPA excludes: • persons aged 18 years and above, and premature neonates and neonates < 2kg. • management of patients on chronic renal replacement therapy
EPA Entrustment Level to be Attained by Exit	Level 4