Entrustable Professional Activities (EPAs)

List of EPAs for Renal Medicine

EPA Title	EPA Entrustment Level to be Attained by Exit
EPA 1: Providing care for patients with Acute Kidney Injury (AKI) and with complex fluid/electrolyte and acid/base disorders	Level 4
EPA 2: Providing care for patients with Chronic Kidney Disease (CKD)	Level 4
EPA 3 : Providing care for patients with End Stage Renal Disease (ESRD)	Level 4
EPA 4 : Providing care for kidney transplant recipients and donors	Level 4
EPA 5 : Performing Renal-Related Procedures	Level 4

Entrustment Scale

Entrustment Level	Description
Level 1	Be present and observe, but no permission to enact EPA
Level 2	Practice EPA with direct (pro-active) supervision
Level 3	Practice EPA with indirect (re-active) supervision
Level 4	Unsupervised practice allowed (distant oversight)
Level 5	May provide supervision to junior learners

Renal Medicine EPA 1

<table>
<tr><td>Title</td><td colspan="12">Providing care for patients with Acute Kidney Injury (AKI) and with complex fluid/electrolyte and acid/base disorders</td></tr>
<tr><td rowspan="2">Specification and limitations</td><td colspan="12">Specifications:
1. Applying clinical, epidemiologic and environmental knowledge to the care of patients with acute electrolyte and kidney disorders
2. Directing appropriate evaluation
3. Initiating an effective treatment plan
4. Initiating, supervising and managing all modalities of extra-corporeal therapies (including CRRT, plasma exchange)
5. Identifying and applying evidence-based guidelines
6. Anticipating and, when possible, mitigating chronic or long-term issues
7. Communicating and coordinating with families and other members of the health care team</td></tr>
<tr><td colspan="12">Limitations:

To consult before initiating the following procedures:
• Extra-corporeal therapies other than CRRT and plasma exchange</td></tr>
<tr><td>Potential risks in case of failure</td><td colspan="12">• Incorrect diagnosis and patient mismanagement with resultant harm
• Omission/missing out patient’s medical issues
• Miscommunication with patients and families with resultant poor doctor-patient interactions/ relationships
• Miscommunication/ misinformation among healthcare team
• Poor and inaccurate documentations with miscommunication and medico-legal implications</td></tr>
<tr><td rowspan="6">Sub-competencies relevant for this EPA</td><td>PC1</td><td>X</td><td></td><td>MK1</td><td>X</td><td></td><td>PBL1</td><td>X</td><td></td><td>ICS1</td><td>X</td></tr>
<tr><td>PC2</td><td>X</td><td></td><td>MK2</td><td>X</td><td></td><td>PBL2</td><td></td><td></td><td>ICS2</td><td>X</td></tr>
<tr><td>PC3</td><td></td><td></td><td>MK3</td><td></td><td></td><td>PBL3</td><td></td><td></td><td>ICS3</td><td></td></tr>
<tr><td>PC4</td><td></td><td></td><td>SBP1</td><td></td><td></td><td>P1</td><td>X</td><td></td><td></td><td></td></tr>
<tr><td>PC5</td><td>X</td><td></td><td>SBP2</td><td>X</td><td></td><td>P2</td><td>X</td><td></td><td></td><td></td></tr>
<tr><td>PC6</td><td>X</td><td></td><td>SBP3</td><td></td><td></td><td>P3</td><td>X</td><td></td><td></td><td></td></tr>
<tr><td>Required Knowledge, Skills, Attitudes and Experience, to enable summative entrustment</td><td>K:</td><td colspan="11">• Fluid, electrolyte and acid-base disorders with or without acute kidney injury due to a variety of causes. These conditions may include but are not limited to: sepsis-associated, cardiorenal/hepatorenal syndrome, peri-/post-operative complications, acute glomerulonephritides, interstitial nephritis, vasculitides, radiographic contrast media, rhabdomyolysis.)
• Indications for the provision of extra-corporeal therapy.
• Potential risk as well as complication associated with extra-corporeal therapies</td></tr>
</table>

	S:	• History-taking and physical examination • Clinical reasoning • Interpretation of investigations and formulation of sound management plans, including when to initiate/withdraw/withhold extra-corporeal therapy. • Recognition and management of complications of AKI and its therapy • Effective communication about treatment plans • Function as part of a multi-disciplinary team to manage patients with AKI (team may include, but not limited to with intensivist, surgeon, nurse, pharmacist.)		
	A:	• Demonstrating care, compassion, empathy, effective communication and principled professional behaviour with patients, families and the health care team in the care of such patient: o Clearly states plans of care and documents appropriately for patients, families, and other members of the health care team o Encourages and responds effectively to questions about diagnosis, work-up and plan. o Maintains and displays compassion toward patients and families o Interacts professionally with patients, families and other members of the health care team at all times, in an atmosphere of mutual respect and collaboration o Provides empathetic care to patients and families o Maintains the highest levels of professionalism in interactions with patients, families and members of the healthcare team		
	E:	12 months of Renal Medicine Senior Residency Programme		
Sources of information to support summative entrustment decisions	Tools		Number to be completed satisfactorily	Additional specifications if needed (Who can be raters - staff, nursing, peers? In which context?)
	Short practice observations (e.g. Mini-CEX)		Minimum 1 per year	Faculty
	Entrustment-based discussions		Minimum 1 per year	Faculty
	Longitudinal observations (MSF)		1 per year	Faculty, Nurses, Peers, Patients
	Products to be evaluated		Logbook	Supervisor, Faculty
Which supervision level when?	Level 4 by exit (Mandatory)			
Expiry	If not practiced, after how many months or years will more close supervision be required again?			1.5 years

Renal Medicine EPA 2

<table>
<tr><td>Title</td><td colspan="12">Providing care for patients with Chronic Kidney Disease (CKD)</td></tr>
<tr><td rowspan="2">Specification and limitations</td><td colspan="12">Specifications:
1. Applying important clinical, epidemiologic, and environmental knowledge to the care of patients with chronic electrolyte and kidney diseases
2. Directing appropriate evaluation methods
3. Initiating an effective treatment plan
4. Recognizing the impact of chronic electrolyte and kidney disease on the physical, mental and emotional well-being of the patient in the context of the family unit, and engaging allied health professionals to address such issues
5. Providing effective care of such patients through participation and/or direction of an effective inter-professional health care team
6. Constructing and communicating appropriate follow-up plans and providing follow-up care as necessary</td></tr>
<tr><td colspan="12">Limitations:

This EPA does not include:
• Pregnancy in a patient with chronic kidney disease</td></tr>
<tr><td>Potential risks in case of failure</td><td colspan="12">• Incorrect diagnosis and patient mismanagement with resultant harm
• Omission/missing out patient’s medical issues
• Miscommunication with patients and families with resultant poor doctor-patient interactions/ relationships
• Miscommunication/ misinformation among healthcare team
• Poor and inaccurate documentations with miscommunication and medico-legal implications</td></tr>
<tr><td rowspan="6">Sub-competencies relevant for this EPA</td><td>PC1</td><td>X</td><td>MK1</td><td>X</td><td>PBL1</td><td>X</td><td>ICS1</td><td>X</td></tr>
<tr><td>PC2</td><td>X</td><td>MK2</td><td>X</td><td>PBL2</td><td></td><td>ICS2</td><td>X</td></tr>
<tr><td>PC3</td><td>X</td><td>MK3</td><td></td><td>PBL3</td><td></td><td>ICS3</td><td>X</td></tr>
<tr><td>PC4</td><td></td><td>SBP1</td><td></td><td>P1</td><td></td><td></td><td></td></tr>
<tr><td>PC5</td><td></td><td>SBP2</td><td>X</td><td>P2</td><td></td><td></td><td></td></tr>
<tr><td>PC6</td><td>X</td><td>SBP3</td><td></td><td>P3</td><td></td><td></td><td></td></tr>
<tr><td>Required Knowledge, Skills, Attitudes and Experiences, to enable summative entrustment</td><td>K:</td><td colspan="10">Diseases/disorders evaluated and managed by nephrologists include:
(List is not exhaustive) Refer to STR for training requirements.
• Stages 1-5 of CKD
• Chronic Kidney disease-mineral bone disorder/Anaemia
• Electrolyte and acid-base abnormalities associated with CKD
• Salt and Fluid balance in CKD, including resistant hypertension.
• Metabolic diseases in relation to CKD, including diabetes mellitus and hypertension
• Nutritional management at various stages of CKD</td></tr>
</table>

<table>
<tr><td></td><td>S:</td><td colspan="3">History-taking and physical examination
Clinical reasoning
Interpretation of investigations and formulation of sound, patient-centred management plans
Recognition and management of complications of CKD
Effective communication about renal replacement therapy for patients approaching End Stage Renal Disease (see EPA 3)
Function as part of a multi-disciplinary team to manage patients with CKD (eg. with nurse, dietitian, social worker, pharmacist, renal coordinator)</td></tr>
<tr><td></td><td>A:</td><td colspan="3">Demonstrating care, compassion, empathy, effective communication and principled professional behaviour with patients, family, and the health care team in care of such patients:
Clearly states appropriate care plans and documents for patients, families, and other members of the health care team
Encourages and responds effectively to questions about diagnosis, work-up and plan
Maintains and displays compassion toward patients and families
Interacts professionally with patients, families, and other members of the health care team at all times, in an atmosphere of mutual respect and collaboration
Provides empathetic care to patients and families
Maintains the highest levels of professionalism in all interactions with patients, families, and members of the healthcare team.</td></tr>
<tr><td></td><td>E:</td><td colspan="3">18 months of Renal Medicine Senior Residency Programme</td></tr>
<tr><td rowspan="6">Sources of information to support summative entrustment decisions</td><td colspan="2">Tools</td><td>Number to be completed satisfactorily</td><td>Additional specifications if needed (Who can be raters - staff, nursing, peers? In which context?)</td></tr>
<tr><td colspan="2">Short practice observations (Mini-CEX)</td><td>Minimum 1 per year</td><td>Faculty</td></tr>
<tr><td colspan="2">Entrustment-based discussions</td><td>Minimum 1 per year</td><td>Faculty</td></tr>
<tr><td colspan="2">Longitudinal observations (MSF)</td><td>1</td><td>Faculty, Nurses, Peers, Patients</td></tr>
<tr><td colspan="2">Products to be evaluated</td><td>Logbook</td><td>Supervisor, Faculty</td></tr>
<tr><td></td></tr>
<tr><td>Which supervision level when?</td><td colspan="4">Level 3 by 6th month of training (Expected but not mandatory for progression)
Level 4 by 12th month of training (Expected but not mandatory for progression)
Level 4 by exit (Mandatory)</td></tr>
</table>

Expiry	If not practiced, after how many months or years will more close supervision be required again?	1.5 years

Renal Medicine EPA 3

Title	**Providing care for patients with End Stage Renal Disease (ESRD)**
Specification and limitations	This EPA includes providing care for patients with End Stage Renal Disease (ESRD) on Renal Replacement Therapy (RRT) and non-dialysis therapy (supportive care) Specifications: 1. Applying clinical, epidemiologic, environmental, and regulatory knowledge in the care of patients with ESRD on dialysis (Haemodialysis, Peritoneal Dialysis) 2. Identifying and providing appropriate management plans including selection of dialysis modality for patients, management of patients before undergoing chronic dialysis, management of all perioperative and access-related issues, and implementation and supervision of dialysis treatments and other extracorporeal filtration and dialysis-related therapies (all renal replacement therapies) 3. Applying clinical, epidemiologic, and regulatory knowledge in the operations of a Haemodialysis centre, including satisfactory water treatment and quality, infection control and appropriate dialyzer and dialysis prescription 4. Recognizing the impact of electrolyte disorders, and end stage renal disease on the physical, mental and emotional well-being of the patient in the context of the family unit and engaging Allied Health Professionals (AHP) to address such issues 5. Identifying patients suitable for living or deceased donor kidney transplantation and providing the necessary management plans to ensure suitability for transplantation 6. Identifying and providing holistic care of ESRD patients on non-dialysis therapy and addressing patients' and their families' physical, psychosocial, religious and cultural needs 7. Demonstrating effective communication and principled professional behaviour with patients, families and the inter-professional health care team including surgeons, interventional radiologists, and allied health professionals. These include appropriate follow-up plans and providing follow-up care when necessary 8. Care coordination for stage 5 CKD patients with various stakeholders including regulatory bodies, community peritoneal dialysis support, dialysis providers (including private dialysis centres and voluntary welfare organizations), National transplant centres and the National Organ Transplant Unit (NOTU). These include appropriate follow-up plans and providing follow-up care when necessary 9. Prioritization of initiation of renal replacement therapy or kidney transplant based on level and changes of renal function
	10. Pre-initiation evaluation and counselling of patients on dialysis modalities, transplant, outcomes and conservative careEvaluation and developing appropriate management plans of renal replacement therapy 11. Evaluation and developing appropriate management plans of kidney conservative care 12. Evaluation of dialysis access related issues and subsequent management

<table>
<tr><td></td><td colspan="12">Limitations:

This EPA does not include the administrative work involved in the setting up, monitoring and daily running of the haemodialysis centre.

This EPA does not include:
o Pregnant women on dialysis
o Changing of dialysis modality in specific situations including withdrawal of dialysis (e.g. patient with dementia requiring psychiatric assessment)</td></tr>
<tr><td>Potential risks in case of failure</td><td colspan="12">• Incorrect diagnosis and patient mismanagement with resultant harm
• Omission/missing out patient's medical issues
• Miscommunication with patients and families with resultant poor doctor-patient interactions/ relationships
• Miscommunication/ misinformation among healthcare team
• Poor and inaccurate documentations with miscommunication and medico-legal implications</td></tr>
<tr><td rowspan="6">Sub-competencies relevant for this EPA</td><td>PC1</td><td></td><td></td><td>MK1</td><td>X</td><td></td><td>PBL1</td><td>X</td><td></td><td>ICS1</td><td>X</td><td></td></tr>
<tr><td>PC2</td><td>X</td><td></td><td>MK2</td><td>X</td><td></td><td>PBL2</td><td></td><td></td><td>ICS2</td><td>X</td><td></td></tr>
<tr><td>PC3</td><td></td><td></td><td>MK3</td><td></td><td></td><td>PBL3</td><td></td><td></td><td>ICS3</td><td>X</td><td></td></tr>
<tr><td>PC4</td><td></td><td></td><td>SBP1</td><td>X</td><td></td><td>P1</td><td>X</td><td></td><td></td><td></td><td></td></tr>
<tr><td>PC5</td><td></td><td></td><td>SBP2</td><td>X</td><td></td><td>P2</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>PC6</td><td>X</td><td></td><td>SBP3</td><td>X</td><td></td><td>P3</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Required Knowledge, Skills, Attitudes and Experiences, to enable summative entrustment</td><td>K:</td><td colspan="11">• Clinical, epidemiologic, and regulatory knowledge in the care of patients with ESRD on dialysis
• Pre-dialysis management of patients with CKD 5
• Management of perioperative and access-related issues, and implementation and supervision of dialysis treatments and other extracorporeal filtration and dialysis-related therapies (all renal replacement therapies)
• Clinical, epidemiologic, and regulatory knowledge in management, monitoring and daily running of a Haemodialysis outpatient centre
• Identification and management of patients suitable for transplantation
• Identification and management of patients for non-dialysis therapy and provide appropriate supportive care.
Diseases/disorders evaluated and managed by nephrologists include:
(List is not exhaustive)
• Primary and secondary glomerulonephritides
• Hereditary glomerular disease
• Hypertension and renovascular disease
• Electrolyte disorders/Acid-base disorders
• Congenital anomalies of the kidney and urinary tract
• Pregnancy-related renal disease
• Transplant
• ESKD
• AKI and CKD</td></tr>
</table>

	S:	• History-taking and physical examination • Clinical reasoning • Interpretation of investigations and formulation of sound management plans • Recognition and management of complications of CKD • Identification of conditions that may require co-management with other specialties • Effective communication about renal replacement therapy for patients approaching End Stage Renal Disease • Function as part of a multi-disciplinary team to manage patients with CKD/ESRD (e.g., with nurse, dietitian, social worker, pharmacist, renal coordinator, palliative care physician etc)
	A:	• Demonstrating effective communication and principled professional behaviour with patients, families and the inter-professional health care team including surgeons, interventional radiologists, and allied health professionals • Effectively communicates with patients and families in a compassionate, empathetic and professional manner • Clearly states plans of care and documents appropriately for patients, families, and other members of the health care team • Encourages and responds effectively to questions about diagnosis, work-up and plan • Interacts professionally with patients, families and other members of the health care team at all times, in an atmosphere of mutual respect and collaboration • Acknowledges and appreciates the role of multidisciplinary team members and utilizes their input and skills to optimize patient care • Leads the multidisciplinary team within the boundaries of the transplant/dialysis nephrologist's role in perioperative and postoperative care • Maintains the highest levels of professionalism in interactions with patients, families and members of the healthcare team • Demonstrating sensitivity to the complexity and difficulty of chronic CKD 5 care and anticipates and helps to provide the support required by families to affect the level of medical adherence necessary to successful long-term outcomes
	E:	18 months of Renal Medicine Senior Residency Program

Sources of information to support summative entrustment decisions	Tools	Number to be completed satisfactorily	Additional specifications if needed (Who can be raters - staff, nursing, peers? In which context?)
	Short practice observations (Mini-CEX)	Minimum 1 per year	Faculty
	Entrustment-based discussions	Minimum 1 per year	Faculty

	Longitudinal observations (MSF)	1 per year	Faculty, Nurses, Peers, Patients
	Products to be evaluated	Logbook	Supervisor, Faculty
Which supervision level when?	• Level 3 by 12th month of training (Expected but not necessary for progression) • Level 4 by 36th month of training (Expected but not necessary for progression) • Level 4 by exit (Mandatory)		
Expiry	If not practiced, after how many months or years will more close supervision be required again?		1.5 years

Renal Medicine EPA 4

Title	**Providing care for kidney transplant recipients and donors**
Specification and limitations	Specifications: 1. Applying clinical, epidemiological, and regulatory knowledge in the care of both the donor and the recipient of kidney transplantation; including interactions with regulatory bodies, organ procurement organizations, transplant teams and national organizations 2. Evaluation of patients with or approaching ESRD and identify suitable candidates for transplantation. Consider the impact of the underlying renal diagnosis, comorbidities, and psychosocial, economical, issues of the patient in regards to kidney transplantation 3. Identifying and administering appropriate management plans for patients with Stage 5 CKD considering renal transplant. This includes addressing care issues for patients undergoing kidney transplantation, identification and management of perioperative issues, and implementation and supervision of immunosuppression and adjunctive therapies 4. Management of both deceased as well as living donor kidney transplant – including assessment of both donor and recipient for suitability, optimising both donor and recipient for optimal outcome as well as applying the latest knowledge to ensure the best outcome following kidney transplantation surgery in the pre-operative, peri-operative and post-operative periods 5. Long term monitoring and management of patients post-transplantation and donation, including but not limited to, renal function, recurrent glomerulonephritis, complications associated with kidney transplant, as well as bio-psycho-social aspect of patients following kidney transplant. Recognising the importance of donor safety, implications of donor nephrectomy and need for long term follow-up 6. Recognising and initiating appropriate management for rejection
	Limitations: This EPA does not include: Management of acute rejection that require the use of biologics and extra-corporeal support Management of pregnancy in kidney transplant recipient
Potential risks in case of failure	• Missed opportunity for kidney transplant • Mismanagement leading to allograft dysfunction or failure • Missed diagnosis of infection/cancer/IHD as complication of kidney transplant • Incorrect diagnosis and patient mismanagement with resultant harm • Omission/missing out patient's medical issues • Miscommunication with patients and families with resultant poor doctor-patient interactions/ relationships • Miscommunication/ misinformation among healthcare team • Poor and inaccurate documentations with miscommunication and medico-legal implications

<table>
<tr><td rowspan="7">Sub-competencies</td><td>PC1</td><td></td><td></td><td>MK1</td><td>X</td><td></td><td>PBL1</td><td>X</td><td></td><td>ICS1</td><td>X</td><td></td></tr>
<tr><td>PC2</td><td>X</td><td></td><td>MK2</td><td>X</td><td></td><td>PBL2</td><td></td><td></td><td>ICS2</td><td>X</td><td></td></tr>
<tr><td>PC3</td><td></td><td></td><td>MK3</td><td></td><td></td><td>PBL3</td><td></td><td></td><td>ICS3</td><td>X</td><td></td></tr>
<tr><td>PC4</td><td></td><td></td><td>SBP1</td><td>X</td><td></td><td>P1</td><td>X</td><td></td><td></td><td></td><td></td></tr>
<tr><td>PC5</td><td></td><td></td><td>SBP2</td><td>X</td><td></td><td>P2</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>PC6</td><td>X</td><td></td><td>SBP3</td><td>X</td><td></td><td>P3</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="4">Required Knowledge, Skills, Attitudes and Experiences, to enable summative entrustment</td><td>K:</td><td colspan="11">Clinical, epidemiological and regulatory knowledge in the care of both the donor and the recipient of kidney transplantation
Identification and management of suitable candidates for transplantation
Management of perioperative issues, implementation and supervision of immunosuppression and other kidney transplantation therapies
Management of patients post-transplantation based on latest recommendation as well as evidence based practiced</td></tr>
<tr><td>S:</td><td colspan="11">History-taking and physical examination
Clinical reasoning
Interpretation of investigations and formulation of sound management plans, including the need for plasmapheresis or dialysis pre- and post-transplantation
Recognition and management of complications of kidney transplantation
Effective communication about treatment plans
Function as part of a multi-disciplinary team to manage patients with kidney transplants (e.g. with transplant physician, surgeon, nurse, pharmacist, dietician, social worker etc)</td></tr>
<tr><td>A:</td><td colspan="11">Demonstrating effective communication and principled professional behaviour with patients, families, and the inter-professional health care team, which consists of surgeons, interventional radiologists and AHP:
Effectively communicates with patients and families in a compassionate and professional manner
Acknowledges and appreciates the role of multidisciplinary team members, while utilizing their inputs and skills to optimize patient care
Demonstrating sensitivity to the complexity and difficulty of chronic CKD Stage 5 care; Anticipates and helps to provide the support required by families to enhance the level of medical adherence necessary to successful long-term outcomes
Demonstrating high ethical standards in providing kidney transplantation such as donor advocacy, upholding the principles of justice in organ allocation and safeguarding against commercial transplantation</td></tr>
<tr><td>E:</td><td colspan="11">Completion of transplant posting</td></tr>
</table>

Sources of information to support summative entrustment decisions	Tools	Number to be completed satisfactorily	Additional specifications if needed (Who can be raters - staff, nursing, peers? In which context?)
	Short practice observations (Mini-CEX)	Minimum 2 by end of training	Transplant Faculty
	Entrustment-based discussions	Minimum 2 by end of training	Transplant Faculty
	Longitudinal observations (MSF)	Minimum 2 by end of training	Faculty, Nurses, Peers, Patients
	Products to be evaluated	Logbook (10 newly transplanted kidney transplant recipients, including living donor or deceased donor transplants)	Supervisor, Faculty
Which supervision level when?	• Level 3 by 24th month of training (Expected but not mandatory for progression) • Level 4 by 39th month of training (Expected but not mandatory for progression) • Level 4 by exit (Mandatory)		
Expiry	If not practiced, after how many months or years will more close supervision be required again?		1.5 years

Renal Medicine EPA 5

Title	**Performing Renal-Related Procedures**
Specification and limitations	Specifications: 1. Knowing the indications for kidney biopsies and for establishing dialysis access for renal replacement therapy, as well as the equipment required to perform these procedures 2. Obtaining informed consent for renal-related procedures after providing readily understandable explanations of risks, benefits, alternatives, and potential complications associated with each procedure 3. Developing, through deliberate practice, the skills necessary to perform renal-related procedures, including native and transplant kidney biopsy, and non-tunnelled HD catheter insertion 4. Monitoring the status of patients during, and after renal-related procedures, including timely treatment of potential complications associated with each procedure 5. Providing appropriate and timely follow-up care as well as short-term and long-term post-procedure management to ensure patient safety after renal-related procedures 6. Perform and interpret ultrasound findings for the purposes of renal-related procedures, and to recognize abnormal findings and assess feasibility of proceeding with procedure 7. Providing effective care of such patients through participation and/or direction of an effective inter-professional health care team 8. Constructing and communicating appropriate follow-up plans and providing follow-up care when necessary
	Limitations: This EPA does not include: • Kidney biopsy in pregnant women • Kidney biopsy in single native kidney or congenital abnormality • Insertion of tunnelled dialysis catheters and peritoneal dialysis catheters • Arteriovenous fistula/graft angiogram and angioplasty
Potential risks in case of failure	• Incorrect diagnosis and patient mismanagement with resultant harm • Omission/missing out patient's medical issues • Miscommunication with patients and families with resultant poor doctor-patient interactions / relationships • Miscommunication / misinformation among healthcare team • Poor and inaccurate documentations with miscommunication and medico-legal implications

<table>
<tr><td rowspan="6">Sub-competencies relevant for this EPA</td><td>PC1</td><td></td><td>MK1</td><td>X</td><td>PBL1</td><td></td><td>ICS1</td><td></td></tr>
<tr><td>PC2</td><td></td><td>MK2</td><td>X</td><td>PBL2</td><td></td><td>ICS2</td><td></td></tr>
<tr><td>PC3</td><td></td><td>MK3</td><td></td><td>PBL3</td><td></td><td>ICS3</td><td>X</td></tr>
<tr><td>PC4</td><td>X</td><td>SBP1</td><td></td><td>P1</td><td>X</td><td></td><td></td></tr>
<tr><td>PC5</td><td></td><td>SBP2</td><td></td><td>P2</td><td></td><td></td><td></td></tr>
<tr><td>PC6</td><td></td><td>SBP3</td><td></td><td>P3</td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Required Knowledge, Skills, Attitudes and Experiences, to enable summative entrustment</td><td>K:</td><td colspan="6">• Recognition of anatomy related to renal- related procedures
• Indications for kidney biopsies and for establishing dialysis access for RRT, as well as the equipment required to perform these procedures
• Risks, benefits, alternatives and potential complications associated with each procedure
• Management of patients during and after the procedures, including complications

Diseases/disorders evaluated and managed by nephrologists include:
(List is not exhaustive)
• Primary and secondary glomerulonephritides
• Hereditary glomerular disease
• Hypertension and renovascular disease
• Electrolyte disorders/Acid-base disorders
• Congenital anomalies of the kidney and urinary tract
• Pregnancy-related renal disease
• Transplant
• ESKD
• AKI and CKD</td></tr>
<tr><td>S:</td><td colspan="6">• Pre-procedure preparation and evaluation including informed consent taking, laboratory investigations/ultrasound, referral to appropriate specialties e.g. haematology, urology, vascular
• Procedure management including equipment (ultrasound machine, kidney biopsy gun, non-tunnelled dialysis catheter)
• Post-procedure after care and Procedure-related complications management including assessment of patient post-procedure, recognize differentials of potential complications post-procedure and forming a management plan for post-procedure after care or complications
• History-taking and physical examination
• Clinical reasoning
• Interpretation of investigations and formulation of sound management plans
• Identification of conditions that may require co-management with other specialties
• Effective communication about further investigations and management plan to patients, family and treatment team</td></tr>
</table>

<table>
<tr><td rowspan="2"></td><td>A:</td><td colspan="3">• Demonstrating care, compassion, empathy, effective communication and principled professional behavior with patients, family and the health care team in care of such patients:
○ Clearly states plans of care and documents appropriately for patients, families and other members of the health care team
○ Encourages and responds effectively to questions about the procedure and potential complications
○ Maintains and displays compassion toward patients and families
○ Interacts professionally with patients, families and other members of the health care team at all times, in an atmosphere of mutual respect and collaboration
○ Provides empathetic care to patients and families

• Maintains the highest levels of professionalism in interactions with patients, families and members of the healthcare team
• Confidence and decisiveness: Being able to make critical decisions related to procedures and execute them (e.g. when to abort procedure)
• Humility: Recognises own limitations and asking for help if needed</td></tr>
<tr><td>E:</td><td colspan="3">Simulation training for kidney biopsy and non-tunnelled catheter insertions</td></tr>
<tr><td rowspan="4">Sources of information to support summative entrustment decisions</td><td>Tools</td><td>Number to be completed satisfactorily</td><td>Additional specifications if needed (Who can be raters - staff, nursing, peers? In which context?)</td></tr>
<tr><td rowspan="3">Short practice obser-vations (DOPS)</td><td><u>15 for Native kidney biopsies by final year of training</u>
• Level 4: 10 DOPS (of which 3 are deemed competent without assistance), and a further 5 performed without assistance based on procedure logs</td><td rowspan="3">Faculty</td></tr>
<tr><td><u>5 for Transplant kidney biopsies by final year of training</u>
• Level 4: 5 DOPS (of which 3 are deemed competent without assistance)</td></tr>
<tr><td><u>20 for non- tunneled dialysis catheter insertions by final year of training</u>
• Level 4: 10 DOPS (of which minimum 5 at competent without assistance), and a further 10 performed without assistance based on procedure logs</td></tr>
</table>

	Entrustment-based discussions	3 (Total) • 1 for native kidney biopsy (to entrust at Level 4) • 1 for transplant kidney biopsy (to entrust at Level 4) • 1 for non-tunnelled dialysis catheter insertion (to entrust at level 4)	Faculty
	Products to be evaluated	<u>Procedure Logbook</u> • Native kidney biopsies: 15 in total by end of training • Transplant kidney biopsies: 5 in total by end of training • Non-tunnelled dialysis catheter insertions: 20 in total by end of training	Supervisor, Faculty
Which supervision level when?	**Native Renal biopsy:** • Level 3 by the 36th month of training (Expected but not mandatory for progression) • Level 4 by the 42nd month of training (Mandatory for exit)		
	Transplant Renal biopsy: • Level 4 by 42nd month of training (Mandatory for exit)		
	Non-tunnelled dialysis catheter insertions: • Level 3 by 12th month of training (Expected but not mandatory for progression) • Level 4 by the 42nd month of training (Mandatory for exit)		
Expiry	If not practiced, after how many months or years will more close supervision be required again?	1.5 years	