



Entrustable Professional Activities

Curricular Components Supporting EPA 4 For Pediatric Nephrology

Curricular Components That Support the Functions of EPA 4: Provision and Supervision of Kidney-Related Procedures Including Native and Transplant Kidney Biopsy, Peritoneal Dialysis

1. Knowing the provisions including laboratory testing, establishing access, and preparing equipment required to perform kidney biopsies and renal replacement therapy
 - Orders and reviews pre-kidney biopsy laboratory testing to ensure the patient is safe to undergo kidney biopsy
 - Refers patients with evidence of potential coagulopathy for further evaluation based on the results of pre-kidney biopsy testing
 - Communicates to the appropriate provider the size and type of hemodialysis catheter required for either acute or chronic hemodialysis/CRRT
 - Orders the appropriate size filters, dialyzer, tubing and priming volumes for patients undergoing hemodialysis and/or CRRT
 - Verifies the proper positioning and placement of both tunneled chronic and nontunneled acute peritoneal dialysis catheters
 - Identifies components and basic operation of all CRRT, hemodialysis, and peritoneal dialysis machines and equipment
2. Obtaining informed consent for kidney related procedures from patients and legal guardians after readily understandable explanations of risks, benefits, and potential complications associated with each procedure
 - Explains, in a readily understandable fashion, the indications necessitating kidney biopsy and initiation of renal replacement therapy to legal guardians and patients when age appropriate
 - Reviews, to the sufficient understanding of the consenting parties, potential complications that may occur during and after a kidney biopsy
 - Reviews, to the sufficient understanding of the consenting parties, potential complications that may occur during and after hemodialysis and peritoneal dialysis catheter placement
 - Reviews, to the sufficient understanding of the consenting parties, potential complications that may occur during and after initiation of CRRT, hemodialysis, and peritoneal dialysis
3. Developing, through deliberate practice, the skills necessary to perform and supervise kidney related procedures, including native and transplant kidney biopsy, peritoneal dialysis, hemodialysis, and continuous renal replacement therapy
 - Successfully performs kidney biopsies of native and transplanted kidneys to obtain sufficient kidney tissue for evaluation
 - Identifies principles underlying and differences associated with providing renal replacement therapy in the acute versus chronic kidney disease setting



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- Prescribes a detailed CRRT order to comprehensively manage electrolyte and fluid balance in critically ill patients in the intensive care hospital-based setting
 - Prescribes a detailed acute and chronic hemodialysis order meant to effectively manage fluid and electrolyte balance and provide safe and adequate clearance
 - Prescribes a detailed acute and chronic peritoneal dialysis order meant to effectively manage fluid and electrolyte balance and provide adequate clearance
4. Monitoring the status of patients during kidney related procedures, including timely treatment of potential complications associated with each procedure
- Diagnoses and treats acute and remote complications associated with percutaneous kidney biopsy including renal hemorrhage, perinephric hematoma, gross hematuria, and AV fistula formation
 - Diagnoses potential complications in electrolytes, circuit anticoagulation, and fluid balance with CRRT and provides changes in the CRRT prescription to correct
 - Details clinical and laboratory features indicative of recirculation in hemodialysis and CRRT and addresses appropriately to resolve
 - Manages hemodialysis complications including catheter malfunctions, extrusions, and breaks in the circuit and dialyzer to ensure the provision of safe and effective hemodialysis/CRRT
 - Manages ineffective peritoneal dialysis cycling including catheter malfunction, mal-positioning, and exit site leakage
 - Responds to clinical and laboratory signs of excessive ultrafiltration
 - Diagnoses and appropriately manages hemodialysis catheter-line associated blood stream infections (CLABSI)
 - Evaluates and effectively treats infectious complications of peritoneal dialysis including exit site/tunnel infection and peritonitis
5. Providing appropriate and timely follow-up testing and post-procedure management as well as short and long-term post-procedure management to ensure patient safety after kidney-related procedures
- Safely monitors kidney biopsy patients for clinical and laboratory evidence of complications and manages appropriately
 - Orders and accurately interprets targeted follow-up testing to diagnose complications arising from kidney-related procedures
 - Engages in closed loop communication with patient and legal guardians about complications that arose during kidney-related procedures and how they were addressed
 - Provides timely information and guidelines for care and monitoring at home to patients and legal guardians after kidney-related procedures
6. Recognizes and, if desired and important to the trainee, develops the skills to perform ultrasound for diagnosis and treatment and pheresis therapies



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- Explains indications, operations, and methods to use ultrasound devices and techniques for urinary tract diagnoses and procedures (e.g., renal biopsy, line placement)
- Successfully performs ultrasound for diagnosis and as an adjunct to procedures and appropriately monitors for complications
- Orders the appropriate equipment and selects the necessary methods to provide effective pheresis treatments
- Successfully provides pheresis therapies and monitors appropriately for complications

Curricular Components Author

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References

1. The American Board of Pediatrics. Training Requirements for Subspecialty Certification. 2004. Available at <https://www.abp.org/sites/abp/files/trainingrequirements.pdf>.
2. Federation of Pediatric Organizations Policy Statement. Pediatric Fellowship Training. *Pediatrics* 2004;114:295-296.