

## Entrustable Professional Activity

1. EPA Title: Care of infants, children and adolescents requiring liver transplantation.

### 2. Description of Activity

The pediatric gastroenterology trainee should participate in the care of children and adolescents who have undergone a liver transplantation. Trainees should have a complete understanding of a variety of acute and chronic liver conditions requiring transplantation. The trainee is expected to be familiar with the indications for liver transplantation and participate in the pre-transplant work-up and preparation as well as post-transplant care.

The functions required of this activity include:

1. Understand the epidemiology, pathogenesis and natural history of diseases leading to liver transplantation.
2. Understand short- and long-term consequences of liver transplantation and immunosuppression.
3. Understand basic/translational research in liver transplantation.
4. Diagnose and recognize children in need of liver transplantation.
5. Manage children and adolescents before, during and after liver transplantation.
6. Educate parents and children on liver transplantation, therapeutic interventions and clinical course.
7. Participate in a multidisciplinary team in the care of post liver transplant patients.

### 3. Domains of Competence (Judicious Mapping)

- Patient Care
- Medical Knowledge and Diagnostic Skills Required
- Practice Based Learning
- Interpersonal Skills
- Professionalism
- System-based Practice
- Personal and Professional Development

### 4. Competencies within each domain critical to entrustment decision (From Pediatric Milestones Document)

- PC 5, 9
- MK 1, 2
- PBLI 2, 8, 10
- ICS 2
- PPD 5, 8

### 5. List Specific Knowledge, skills and attitudes needed to execute EPA

#### **Knowledge:**

The fellow must have a basic, broad understanding of the wide variety of indications for liver transplantation and post liver transplant care.

**Skills:**

The fellow must be able to care for all ages and lead a multidisciplinary team in liver transplantation.

**Attitudes:**

The fellow must demonstrate a caring and empathetic attitude towards patients and families.

**Medical Knowledge**

1. Understand the clinical science of liver transplantation including indications, epidemiology, natural history, nutritional, gastrointestinal and surgical management and complications.
2. Understand the basic science of liver transplantation including immunology, genetics, post-transplant physiology and common disease processes after transplantation.
3. Understand the mechanism of action, side effects, and other complications of medications and treatments used before and after liver transplantation including steroids, immunomodulators, biologics, antivirals and other medications.
4. Understand the acute and chronic immunological consequences of liver transplantation including acute and chronic rejection, autoimmune post-transplant processes and other processes in relation to graft vs. host reactions.

**Patient Care**

1. Perform an appropriate initial workup for a child with liver or metabolic disease who may be a suitable candidate for liver transplantation, including laboratory tests, appropriate endoscopic evaluation, liver biopsy and pathology review, imaging, psychological and socio-economical evaluations (?transplant center?).
2. Obtain a comprehensive history and physical exam focused on the appropriate systems for post-transplant children and adolescents.
3. Accurately assess nature, acuity and severity of the clinical post-transplant problems.
4. Utilize laboratory test, imaging studies and pathologic data to monitor patient post-transplant
5. Understand the short- and long-term consequences of immunosuppressive therapy including steroids, immunomodulators and biologic/antibody therapy.
6. Recognize acute and chronic post-transplant complications: nutritional, metabolic, infectious, and surgical

**Practice Based Learning**

1. Demonstrate use of available biomedical evidence to investigate, evaluate and improve the care of patients after liver transplantation.
2. Apply quality measures to improve care of children post-liver transplantation.
3. Understand principles of evidence-based medicine.
4. Understand concept of cost-benefit analysis.
5. Utilize clinical practice guidelines in the care for post-transplant children
6. Educate parents and children on medical management of post-transplant patients including maintenance health check and cancer surveillance.
7. Explain clinical decisions in the context of evidence based medicine.
8. Demonstrate knowledge of research that has been performed in the area of pediatric liver transplantation.

9. Develop proficiency in the use of on-line information and resources pertaining to pediatric liver transplantation.
10. Understand the multidisciplinary care of patients post liver transplantation and interact and collaborate with the surgeons, radiologists, pathologists, dietitians, psychologists and social workers.

#### Interpersonal and Communication Skills

1. Involve patient and their families in creating treatment plans.
2. Ensure that the patient and their family understand the rationale for the plan of care.
3. Encourage patient to freely discuss their care and concerns about medications and current management by exhibiting empathetic listening skills.
4. Ensure that patients understand the correct way to administer their medications.
5. Enable patient and parents to communicate to the care team and participate in the multidisciplinary team discussion.
6. Communicate management plans, in a timely fashion, to the patient, family, primary physician, resident physicians, nursing staff, nutrition team and other ancillary health service providers

#### Professionalism

1. Demonstrate compassion, integrity, respect and sensitivity to diversity in managing children and adolescents after liver transplantation.
2. Demonstrate a commitment to carrying out professional responsibilities with adherence to ethical principles
3. Demonstrate good practices related to patient confidentiality.
4. Provide emotional, social and culturally sensitive support to patients and families who underwent liver transplantation.
5. Demonstrate compassion, integrity and respect for both patients and other health care professionals.
6. Complete all consults, medical records and patient care activities in a timely manner.
7. Respect patient's privacy and autonomy

#### System-based Practice

1. Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.
2. Practice high-quality fiscally responsible and cost-effective health care by demonstrating consideration of costs to the patients' families and the system in recommending diagnostic tests, treatments, and follow-up management
3. Advocate for patients within the health care system.
4. Coordinate care of post-transplant children with primary care physicians, surgeons, psychologists, social workers, dietitians, radiologists, and other medical professionals.
5. Transition care of post-transplant children to adult gastroenterologists.

#### Personal and Professional Development (shouldn't we remove this part?)

1. Thoughtfully analyze practice style and seek advice in understanding the management of post-transplant children and adolescents.
2. Develop bedside manner and maturity through interactions with post-transplant patients and their families.

## 6. Assessment Procedure

**Quick Summary of EPA**

End-of-Training EPA	Step 1 Description and Tasks	Step 2 Domains of Competence and Competencies within each Domain Critical to Entrustment Decisions		Step 3 Assessment Methods/Tools
Care of children and adolescents after liver transplantation.	Summary:  The tasks required: 1. Understand the pathogenesis, natural history, and basic/translational research on liver transplantation  2. Recognize the indications for liver transplantation in children and adolescents.  3. Participate in the management of children and adolescents pre and post-liver transplantation.  4. Educate patients and their families on liver transplantation: Indications, surgical management, clinical course and long-term issues.  5. Participate in a multidisciplinary team in the care for post-transplant children and adolescents.	Patient Care (PC)	1 – 10	Checklist Chart stimulated recall Chart audits Direct observations Standardized patient In-training examination 360 Global Rating (multisource?) Procedure Log Patient Survey Simulation Portfolios
		Medical Knowledge (MK)	1 - 2	
		Practice-Based Learning & Improvement (PBLI)	1, 6, 9	
		Interpersonal & Communication Skills (ICS)	1, 3, 4, 6	
		Professionalism (P)	1, 3, 5	
		Systems-Based Practice (SBP)	4, 5	
		Personal and Professional Development (PPD)		

EPA Title: Care of children and adolescents before and after liver transplantation.				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Understand the disease processes that could lead to liver transplantation in children and adolescents.</p> <p>Recognize potential candidates for liver transplantation based on history, physical examination and laboratory/ancillary data.</p> <p>Complete an essential history and physical examination on post-transplant children and adolescents.</p>	<p>Understand the natural history, epidemiology, pathogenesis, and indications/timing of liver transplantation in children.</p> <p>Understand the appropriate initial management plan pre-transplant, including laboratory, endoscopy, liver biopsy, imaging and other tests</p> <p>Understand medication classes and side effects including use of steroids, immunomodulators, biologics, antiviral, antibiotics and other medications post-transplant.</p> <p>Participate in the development of an appropriate initial management plan for recently transplanted patients.</p> <p>Understand the nutritional needs of post-transplant children and adolescents.</p> <p>Observe or participate in the education of patients and their families regarding medication indications, treatment side effects, natural history and post-operative complications of liver transplantation.</p>	<p>Develop an appropriate plan for long-term therapy post-transplant and manage co-morbidities and complications.</p> <p>Understand indications for surgical interventions and collaborate with surgeons to develop an appropriate post-transplant care.</p> <p>Understand disease activity measures such as, laboratory tests, imaging, liver biopsy, endoscopy and other tests.</p> <p>Recognize and treat biliary and vascular complications as well as other post-operative complications such as intra-abdominal abscess, acute rejection, electrolyte imbalance,, hypertension, macro and micronutrient deficiencies.</p> <p>Participate in patient and family education on short- and long-term complications, treatment side effects and prevention of complications.</p> <p>Perform health care maintenance (flu shot, bone health, vaccinations, skin exam)</p>	<p>Manage complex advanced issues associated with liver transplantation including chronic rejection, autoimmune diseases, PTLD, renal disease, risk of cancer and other issues.</p> <p>Recognize and consult specialists for conditions associated with liver tx including depression, renal dysfunction, development of skin lesions/malignancies, etc.</p> <p>Lead multidisciplinary teams including dietitians, surgeons, nurses, psychologists, social workers and other support staff (?composition of team)</p> <p>Apply quality improvement, best practices, and scientific evidence in caring for post-transplant patients.</p> <p>Understand disease monitoring modalities including laboratory, imaging, liver biopsy, endoscopy and other ancillary tests.</p> <p>Participate in the transition of care of post-transplant patients from pediatric to adult practitioners.</p>	<p>Independent interpretation of tests such as liver biopsy and imaging in post-transplant children and adolescents.</p> <p>Participate in scholarly activity related to liver transplantation.</p> <p>Present research findings at a national meeting.</p> <p>Participate in regional/national meetings specific to liver disease and transplantation.</p> <p>Speak at regional meetings/grand rounds on liver transplantation.</p>
<b>Training / Expertise Level</b>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Entrustment Level</b>				
Execution with <u>direct</u> proactive supervision <input type="checkbox"/>	Execution with <u>reactive</u> supervision (on request) <input type="checkbox"/>	Supervision at <u>distance</u> post hoc supervision <input type="checkbox"/>	Entrustment, ready for <u>unsupervised</u> practice <input type="checkbox"/>	<u>Supervision of others</u> junior colleagues <input type="checkbox"/>