

International Course for Fellowship Training
For Certification in Pediatric Neurogastroenterology and Motility,
Pediatric Gastroenterology and Hepatology Unit, Division of Pediatrics,
Faculty of Medicine, Prince of Songkla University

1. Course Title:

International Fellowship Training in Pediatric Neurogastroenterology and Motility

2. Certificate Title:

Certificated in Pediatric Neurogastroenterology and Motility

3. Course Owner:

Pediatric Gastroenterology and Hepatology Unit, Division of Pediatrics, Faculty of Medicine,
Prince of Songkla University (PSU)

4. Program director:

Dr Atchariya Chanpong, MD., MRes, Ph.D.

5. Corresponding staffs/instructors:

- Dr Hansa SripHongphankul, MD.
- Dr Sawangpong Jandee, MD.
- Dr Suriya Keeratichananont, MD.

6. Visiting professors (international interhospital conferences):

- Dr Nikhil Thapar, MD., Ph.D. (Queensland Children's Hospital, Australia)
- Dr Osvaldo Borrelli, MD., Ph.D. (Great Ormond Street Hospital, United Kingdom)

7. Mission of training:

Pediatric Neurogastroenterology and Motility is one of the important fields in pediatric gastroenterology since gastrointestinal motility and functional disorders (GIMD) are common health problems in children. The manifestations include upper and lower gastrointestinal (GI) symptoms such as vomiting, swallowing problems, abdominal pain, bloating, constipation, and bowel incontinence. This field involves basic and advanced knowledge in GI physiology and investigations to understand underlying pathophysiology of children's symptoms. The

investigative tools, which tend to have an increasing role in both current and future managements, include 24-hr pH-impedance, esophageal manometry, antroduodenal manometry, colonic manometry and anorectal manometry. The pH-impedance is a standard method to diagnose gastroesophageal reflux disease, while manometry is one of the diagnostic tools to assess neuromuscular function of different GI segments. It is critical to understand fundamental aspects and key concepts of each test as well as its indication, patient preparation, study protocol and potential complications so pediatric gastroenterologists can choose the right tool for the right patient. Importantly, patients can be treated precisely according to their underlying pathophysiology. Moreover, many countries, particularly in Asia, still lack pediatric gastroenterologists specialized in GI motility as well as systems to support patients with GIMD, which could be potentially treated with optimal therapeutic interventions (e.g. biofeedback, therapeutic devices, endoscopic intervention, surgical treatment).

Regarding Gastroenterology, PSU and Nanthana-Kriangkrai Choti wattanaphan (NKC) Institute of Gastroenterology and Hepatology have been recognized as one of the leading centers in Thailand and the Asia-Pacific region as having experience in gastrointestinal intervention including motility testing in adults for a decade. For pediatric neurogastroenterology and motility, the course director, Dr Chanpong, has been awarded Ph.D. in pediatric neurogastroenterology from Great Ormond Street Institute of Child Health, University College London in the UK and trained in GI motility at Great Ormond Street Hospital (UK) and Queensland Children's Hospital in Australia. Therefore, we aim to train rologists to specialize in GI motility and functional testing, expand the network in GI motility, and further our advancement in this field internationally.

8. Scope of training:

Pediatric neurogastroenterology and motility involve knowledge in basic GI physiology and the mechanisms of diseases as well as practical aspects of pH-impedance and manometry testing in GIMD.

Pediatric neurogastroenterology and motility comprise of clinical competencies in:

- Scientific knowledge of GI physiology and mechanisms of GIMD: basic sciences and clinical knowledge in the diagnosis and treatment coupled with evidence-based medicine
- Patient care: clinical skills, investigation, problem-solving skills, decision-making skills, and investigative and treatment procedures

9. Program contents:

This is a 12-month training course, for international trainees. The course is divided into two, 6-month levels to ensure that trainees are capable in performing motility testing, gaining appropriate experiences in their clinical skills and interpretation of different investigations together with expanding their knowledge.

- Level 1: 1st 6-month-period. This covers knowledge and practices involving basic issues and procedures in patients with GIMD which is conducted under supervision of the corresponding staff.
- Level 2: 2nd 6-month-period. This will cover knowledge and practices in more complex procedures under supervision of the corresponding staff. In addition, trainees will be trained to act as leaders of the team in procedure planning.

Additionally, international trainees will have an opportunity to discuss case studies and participate in an interhospital conference both nationally and internationally (online platform with Great Ormond Street Hospital, UK and Queensland Children's Hospital, Australia) at least once a month. Moreover, this course provides an option for international trainees to expand their knowledge and skills in pediatric neurogastroenterology and motility at other institutes as part of an elective period (1-3 months).

Activity schedule

Date	Time	
	9.00-12.00	13.00-16.00
Monday	pH-impedance or Manometry testing/interpretation	Motility testing interpretation
Tuesday	Pre-procedure briefing/manometry in adults	GI Grand round
Wednesday	Endoscopy	Endoscopy and post-op care
Thursday	Pre-clinic briefing	Outpatient clinic
Friday	1 st , 3 rd week: Testing interpretation 2 nd , 4 th week: Manometry testing	1 st , 3 rd week: Manometry/biofeedback 2 nd , 4 th week: Testing interpretation

Academic schedule

Date	Time	
	8.30-9.00	13.00-16.00
Monday	-	pH-impedance/manometry interpretation
Tuesday	Pre-procedure briefing	GI Grand round
Wednesday	-	-
Thursday	Pre-clinic briefing	-
Friday	-	1 st week: Topic review 2 nd week: Journal club 3 rd week: Lecture 4 th week: Interhospital conference

10. Common knowledge in pediatric neurogastroenterology and motility:

1. GI physiology: esophagus, stomach, small bowel, colon and rectum
2. Upper GI motility and functional disorders: gastroesophageal reflux disease, aerophagia, rumination, achalasia, gastroparesis, others (esophageal spasm, scleroderma)

3. Lower GI motility and functional disorders: slow transit constipation, Hirschsprung disease, anal achalasia, pediatric intestinal pseudo-obstruction
4. Manometry testing/intervention and interpretation:
 - 24-hr pH-impedance
 - Esophageal manometry
 - Anorectal manometry
 - Biofeedback
 - Other tests: hydrogen breath test, rectal ultrasound, colonic manometry, antroduodenal manometry

11. Common procedures in pediatric neurogastroenterology and motility

This is a list of procedures for trainees, which is aimed for them to perform or observe during the training period. The number of each procedure can be adjusted, depending on situations (e.g., COVID-19 pandemic)

Skill	Observer	Perform
1. 24hr-pH/impedance monitoring and interpretation		/ (80 cases)
2. Esophageal manometry and interpretation		/ (60 cases)
3. Anorectal manometry and interpretation		/ (60 cases)
4. Biofeedback		/ (30 sessions)
5. Colonic manometry/interpretation	/	
6. Antroduodenal manometry/interpretation	/	
7. Hydrogen breath test		/
8. Point of care rectal ultrasound		/

12. Number of international trainees and the application process

1. Number of international trainees: 1 trainee/year
2. Eligible applicant: An international doctor, certified in pediatric gastroenterology.
3. Application process:

- Send your curriculum vitae; including, academic degree and working experience in addition to an introduction letter to the program director: Dr Atchariya Chanpong at atchariya.c@psu.ac.th

- The trainee must declare any support funding from their country and enclose an official letter from any sponsor.

- After acceptance for training, the faculty will send a confirmation letter for the visa application; as the trainee will require a visa to enter Thailand. The faculty cannot influence any visa application, except for the issue of its letter of acceptance for training and working in our institute.

- The training fee and organization fee must be paid by the trainee. Currently, the training fee for all international fellows is 4000\$ per year. The faculty will provide accommodation during the training period. However, the cost of living and the accommodation fee must be paid by the trainee.

13. In-training trainee evaluation:

During the training period there are several in-training assessments to evaluate clinical competency including:

1. Direct observation procedural skills (DOPS) in clinical practice: assessed by attending staff every month
2. Logbook evaluation
3. Multisource feedback (360° evaluation) from attending staff, residents and nurses every 2 months
4. Long case examination every 3 months to assess competency of the trainee, as to whether they can apply their basic knowledge to patient care, discuss risks and benefits, plan, perform and interpret motility testing and plan for treatment.

After passing the final evaluation, the trainee will receive a certificate of completion from Pediatric Gastroenterology and Hepatology Unit, the Division of Pediatrics, Faculty of Medicine, Prince of Songkla University.

14. Research:

Although it is not compulsory for international trainees to conduct research or engage in research presentations, the trainees will have opportunities to take part in research projects including basic laboratory studies (if interested). If the trainee is required to carry out research during the training period, please declare this in the introduction letter. The division will also provide an opportunity to present the research in either a national or international conference in pediatric neurogastroenterology and motility.