Clinical Fellowship in Nutrition – Division of Gastroenterology, RAH

Introduction
The goal of this fellowship is to provide training and experience at a sufficient level for the fellow to acquire competency as a specialist in the field of Nutrition. To be eligible for training in the subspecialty of clinical nutrition, a physician must have completed categorical residency training. This training may be in Internal Medicine, Surgery, Pediatrics, Family Medicine or subspecialty training such as adult or pediatric gastroenterology, endocrinology, or critical care.

Program Overview
The nutrition support program of Northern Alberta is based primarily at the Royal Alexandra Hospital (RAH). Fellows will be expected to participate in scholarly and clinical activities at other sites, specifically at the University of Alberta (UAH), and within the region as they arise.

Programs, facilities and resources that will support the fellowship include:
- Interdisciplinary Inpatient Nutrition Support Services – RAH, UAH
- Northern Alberta Nome Nutrition Support Programs
  - Home Enteral Nutrition – RAH
  - Home Parenteral Nutrition – UAH
- Intestinal failure and Transplant Program – UAH
- Malnutrition clinic – RAH
- Agriculture Life and Environmental Sciences lecture series, University of Alberta

Fellowship Overview
To acquire competency as a specialist in the field, training will comprise of a minimum of 6 months and up to 12 months of mentored clinical experience and formal instruction. One research project during the fellowship is required. Clinical experience and exposure will include work in both inpatient and outpatient settings. An individual embarking upon fellowship training in Nutrition will work with their designated supervisor to detail specifics of their training relative to their future career and practice goals.

Clinical training will focus on assessment and management of nutrition related issues in patients, ranging from critically ill inpatients to ambulatory outpatients of all ages, including children and older adults, with a wide variety of common and uncommon nutrition related disorders. Training is supervised by physicians (Dr. Leah Gramlich, Dr. Jennifer Jin) and will be supported by an interdisciplinary team inclusive of dietitians, pharmacist, nurses and other physicians. The program includes opportunities to function in the role of Nutrition consultant for other physicians and services in both inpatient and outpatient settings. Instruction will include formal, didactic and informal modes of instruction.

CanMeds Roles and Objectives

Medical Expert:
Be able to function at the level of a medical specialist in clinical nutrition in the topics outlined in the fellowship curriculum and learning objectives (see below).

**Communicator:**
Use basic science and clinical knowledge to discuss a nutrition assessment and treatment plan with an interdisciplinary nutrition support team. Effectively discuss a nutrition plan, which can be complex, with patients and families.

**Collaborator**
Participate in interdisciplinary nutrition rounds, and discussion and management of patient cases with dietitians, nutrition support nurses, pharmacists, and other attending physicians.

**Manager**
Be able to allocate healthcare resources wisely and apply quality improvement principles effectively.

**Health Advocate**
Be able to identify socioeconomic determinants of health in patients and communities, and understand when and how to advocate appropriately on behalf of patients and communities. Be able to discuss the ethical and legal issues surrounding nutrition support.

**Scholar**
Develop a plan for reading and continuing education. Participate in critical appraisal and prepare biweekly rounds or journal club both for personal learning projects and also contribute to teaching transmission of knowledge.

**Professional**
Be able to demonstrate integrity, honesty, compassion and respect for diversity. Apply ethical principles appropriately, seek and accept advice and have awareness of personal limitations. Meet deadlines and be punctual.

**Clinics**
The fellow will attend clinics where he/she will evaluate, manage, and develop a treatment plan for patients with gastrointestinal issues. As the core clinical training environment, the fellow is expected to attend:
- Home Enteral Nutrition Support clinic
- Home Parenteral Nutrition Support clinic
- Malnutrition clinic

**Inpatient Service**
The fellow, under the guidance of the attending gastroenterologist, will provide inpatient consultation service pertaining to nutrition on inpatient wards, including critical care units. It is expected that the fellow will round on these patients as necessary, and that he/she will present cases at the weekly nutrition support rounds at both the UAH and RAH sites.

**Procedures**
Procedural expectations of the fellow are established prior to the commencement of training and will be dependent upon their background and career interests. Access to procedures will be tailored to the fellow’s needs and preferences and the availability of opportunities within the program. The fellow will participate in the performance of endoscopy procedures, including:

- Endoscopic and bedside feeding tube insertion, replacement, and removal
- Indirect calorimetry

**Call**

There is no formal call for this fellowship. During weekdays, fellows will carry a pager and perform initial assessments of patients requiring a GI nutrition consultation or assessments for patient for candidacy for home parenteral nutrition. Depending upon funding and agreement with the division of gastroenterology fellows may be able to undertake GI call in support of their fellowship.

**Core Curriculum/Rounds**

The program will provide the fellow with formal teaching and supervision as follows:

- Weekly Nutrition Support Rounds – RAH, UAH
- Small Bowel Transplant Rounds, UAH
- Weekly GI rounds RAH

The following is required curriculum or knowledge base for trainees who complete this fellowship training program:

1. **Nutrients**
   - Describe the physiology of the absorption and digestion of macronutrients and micronutrients
   - Understand the different requirements of macronutrients, micronutrients, and fluids
   - Describe and recognize deficiency states and toxicities of micronutrients

2. **Nutritional Assessment**
   - Describe evidence based methods for malnutrition screening and assessment of nutrition status
   - Perform a physical examination to assess nutritional status and assessment for micronutrient deficiencies
   - Understand anthropometry and methods for body composition
   - Order and interpret indirect calorimetry

3. **Nutritional Therapy:**
   - Prescription and administration of enteral nutrition
     i. Identify patients appropriate for short and long term enteral nutrition
     ii. Be able to recommend the most ideal route and device for administration of enteral nutrition
     iii. Understand the composition of different formulas available and indications for their use
     iv. Be able to recognize and manage the complications of enteral nutrition
   - Parenteral nutrition
     i. Identify patients appropriate for short and long term parenteral nutrition
ii. Be proficient in writing an appropriate parenteral nutrition prescription
iii. Describe and interpret acid-base problems
iv. Understand the different components of parenteral nutrition and the changing research and knowledge around macro and micronutrients
v. Be able to recognize and manage the complications of parenteral nutrition
   - Be able to describe the physiology of refeeding syndrome and how to prevent, recognize, and treat refeeding
   - Home nutrition support
     i. Understand and manage various complications around long term use of feeding tubes
     ii. Interpret and manage abnormalities in bloodwork in home parenteral nutrition patients
     iii. Apply current guidelines for management of complex home parenteral nutrition patients

4. Intestinal Failure
   - Be able to describe the physiology of intestinal failure and short bowel syndrome
   - Manage diarrhea and high output ostomies in short bowel syndrome
   - Be familiar with new hormonal based medications for intestinal failure

5. Diet and Activity
   - Be familiar with common diets including vegetarianism, fad diets
   - Be able to discuss principle and indications of different therapeutic diets (e.g., gluten free, ketogenic, low FODMAP, six food elimination diets)
   - Be familiar with the Canada Food Guide for Healthy Living, activity guidelines

6. Nutrition and Disease States
   - Discuss the physiology and manage nutrition related issues of common diseases such as: inflammatory bowel disease, chronic liver disease, celiac disease, acute and chronic pancreatitis, intestinal failure/short bowel syndrome, gastrointestinal fistulas, small bowel bacterial overgrowth, cystic fibrosis, connective tissues diseases.
   - Identify and manage specific nutrition issues specific to critical care patients

7. Nutrition and the lifecycle
   - Be able to describe growth and development and identify nutritional issues in pregnancy
   - Be aware of the growing research in nutrition and aging
   - Discuss ethical considerations in nutrition and end of life care

8. Bariatric Medicine
   - Describe the epidemiology and the obesity epidemic
   - Discuss the physiology in obesity including gut hormones involved in appetite and satiety
   - Understand dietary, medical, and surgical therapy including different types of bariatric surgery
   - Management of complications of bariatric surgery
   - Understand the physiology of NAFLD/NASH and novel therapies and new research in diet and exercise interventions
Meetings
The fellow may be expected to attend:

- One conference to present an accepted abstract
- Selected external meetings: eg. American Society of Enteral and Parenteral Nutrition

Research
Development and/or participation in at least one research project will be undertaken during the course of training. It is expected that the research findings be presented at relevant local, national and international meetings. The research project will be supervised with goals related to creating competency in clinical research and enhancing research capacity.

Specific research objectives:

1. To develop an appreciation for the breadth and scope of gastrointestinal/endoscopic research.
2. To appreciate the importance of asking relevant questions and framing them in a way that can be addressed by the scientific method.
3. To develop an appreciation for the scientific method including hypothesis generation, hypothesis testing and statistical evaluation of results.
4. To develop the skills of critical appraisal in reviewing new pieces of information published in the medical literature.
5. To develop the foundation and framework for further training if a career in research is planned

One half-day per week of protected time will be provided to the fellow for this purpose.

Participation of Educational Events
The fellow will participate in the educational activities of the Division of Gastroenterology both at the UAH and at the RAH Sites. The program will provide the fellow with formal teaching and supervision as follows:

- Nutrition Journal Club and Rounds: Second and last Friday of each month - 0730 to 0830
  - Preparation of a learning topic that is chosen by the fellow or attending. The presentation will be informal.
  - If there is a postgraduate gastroenterology core trainee on a Nutrition rotation, they will be asked to participate as well
  - The topic may be taken from the learning objectives in the curriculum, or may arise from a clinical question that has been encountered during a patient case
  - On alternating Fridays there should be a journal article selected for discussion
  - The Journal article should be critically appraised (eg PICO method for therapeutic intervention trials)

- RAH Division of Gastroenterology Grand Rounds – every Monday from 1200-1300
  - The fellow will present up to 2 rounds per year
• Gastroenterology subspecialty Academic Half Day – Tuesday afternoons
  o The fellow may be requested to participate in teaching as appropriate

**Evaluation**

The fellow will meet with the program director every 3 months for a formal evaluation. It is also expected that the fellows will provide feedback and evaluation of the training experience at least every 6 months.

The fellow will be encouraged to study for and sit certification examinations where applicable (e.g., American Board of Physician Nutrition Specialists)

**Benefits/Funding**

Funding will be determined on an individual basis

**Recommended Texts/Papers**

Modern Nutrition in Health and Disease, Shils, Olson, Shike

**For further inquiries, please contact:**

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