COLLEGE OF CLINICAL MEDICINE

CLINICAL NUTRITION FELLOWSHIP ATTACHMENT PROGRAMME IN SGH

Components	Information
1. Division/ Department	Medicine/ Department of Gastroenterology and Hepatology
2. Title of Programme	Fellowship Training Programme in Clinical Nutrition
3. Relevant Registrations	• Temporary Registration with Singapore Medical Council (SMC) • Training employment pass application with Ministry of Manpower, Singapore (MOM) (upon successful Temporary Registration with Singapore Medical Council)
4. Overview 4.1 Background information	To provide training and experience that is sufficient for the fellow to acquire competency as a specialist in the field of Clinical 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, critical care, nephrology or cardiology. To acquire competency as a specialist in the field, training will comprise a minimum of 6 months and up to 12 months of mentored clinical experience and formal instruction. Clinical experience and exposure will include work in both inpatient and outpatient settings. An individual embarking upon fellowship training in Clinical Nutrition will work with their designated supervisor to detail specifics of their training relative to their career and practice goals. It is also expected to complete one clinical research project.
4.2 Goal/ aim(s)	1. To become medical expert in managing macro- and micronutrient imbalances which affect gastrointestinal disease and non-gastrointestinal disease (details in learning objective). 2. To apply medical knowledge in clinical practice in both inpatient and outpatient pertinent to clinical nutrition (details in learning objective) 3. To become an effective communicator to facilitate doctor-patient relationship and the dynamic exchanges that occur before, during and after medical encounter. 4. A good collaborator in multi-disciplinary nutrition rounds and discuss patient cases with other health professionals (nurse, dietitian, pharmacist, consultant and primary team managing patients) involved in the case 5. To involve administrative structure of nutrition support teams, including the Home PN clinic
4.3 Duration	6 to 12 months
4.4 Hyperlinks/URL Sites	https://infopedia.shs.com.sg/SGH/groups/DocOrientationGastroenterologyHepatology/Pages/AboutUs.aspx
5. Target Audience	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, Paediatrics, Family Medicine or subspecialty training such as adult or paediatric gastroenterology, endocrinology, critical care, nephrology or cardiology.

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5.1 Pre-requisite /eligibility requirement(s)	General requirements for Temporary Registration for training (required by SMC): • A basic medical degree from an accredited medical university or medical school • Passed the relevant national licensing examination in the country of conferment of conferment of basic degree, where applicable • Evidence of at least 12 months houseman-ship / internship with a certificate of satisfactory completion of houseman-ship or equivalent • Been registered as a medical practitioner in the country where he is currently practising • Been certified to be of good standing by the Medical Council or the relevant national authority **Note**: The doctor should be in active clinical practice (and been registered as a medical practitioner in the countries of practice) for the 3 years preceding the application for medical registration in Singapore. In addition to the above criteria, **Clinical Fellows** must: a) Have a minimum of 3 years working experience as a medical officer (or equivalent) b) Fulfil English Language requirements of SMC if the medium of instruction for the basic medical qualification is not in English c) Preferably have obtained a postgraduate diploma or medical degree in his country or overseas d) Be sponsored by (i) the government, or (ii) regional health authority or (iii) an appropriate institution in the home country. For (d)(iii), the doctor must be on current full-time employment (40 hours or more per week) with the sponsoring institution. As a Clinical Fellow, the doctor will be allowed to be involved in patient care and make entries in patients' case note, communicate care plans to patients and fellow healthcare professionals, and perform procedures under direct supervision or Level 1 supervision under SMC's Supervisory Framework. **Department's requirement, if any (only for Clinical Fellow in this subspecialty):** 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, critical care, nephrology or cardiology.
6. Learning Objectives	1. Medical Expert As Medical Experts, physicians integrate all of the physician roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centered care. Medical Expert is the central physician Role in the framework which include: Macro- and micronutrients 1. Recommended daily allowances for macronutrients (carbohydrates, fat and protein) in healthy populations and diseases 2. Caloric values of the macronutrients (carbohydrate, protein and lipid)

Components	Information
	3. types of dietary fats, including saturated, unsaturated, and trans-fats, and health associations with each of these fats 4. Distinction between omega-3 and omega-6 based fats, and health associations with intake of these fats 5. Physiology of digestion and absorption of the macronutrients (lipids, carbohydrates and protein) and micronutrients (vitamins, minerals and trace elements) 6. Risk factors and clinical presentations for patients with the following micronutrient deficiencies: a. B12. b. Iron c. Folate d. Fat Soluble vitamins e. Thiamine f. Niacin g. Riboflavin h. Zinc i. Copper j. Chromium 7. Clinical indications for: i. absorption of medium chain triglycerides ii. oral rehydration solutions Nutritional requirements and metabolism: 8. In stress and starvation 9. A. In common GI disease states: celiac disease and other mucosal diseases associated with malabsorption, Crohn's disease, ulcerative colitis, chronic liver disease, pancreatic insufficiency, gastrointestinal fistulas, ileal resection, bacterial overgrowth, short-bowel syndrome, dysmotility and IBS B. In non-GI disease states that may affect the provision of nutrition support: critical illness, COPD, renal failure Clinical practice 10. Tools to assess nutrient intake and how to take a diet and activity history 11. Tools to assess macronutrient and calorie requirements 12. Completion of a nutrition focused consultation including: i. Description of weight and weight trends ii. Documentation of diet history and barriers to intake where appropriate iii. Compare dietary intake to the recommendations of the Canada Food Guide iv. Interpret a 3-day food record v. Perform a nutrition -focused physical examination (including BMI, Waist circumference, recognize muscle and fat loss) vi. Subjective global assessment (SGA) 13. Nutritional assessment in following patients: i. Malnutrition ii. Home TPN iii. Home Enteral Nutrition iv. IBD v. Cirrhotic

Components	Information
	vi. Pancreatitis vii. Malabsorption syndrome (not captured above) 14. With regard to enteral nutrition (EN) i. indications and contraindications for EN therapy ii. access devices available, and the routes for therapy iii. benefits of enteral feeding (compared with TPN) iv. composition of enteral formulas and specific indications including differences between elemental and polymeric formulas. v. indications for Home EN vi. complications that may arise as a consequence of EN 15. With regard to parenteral nutrition (PN) i. indications and contraindications for PN therapy in hospital and at home ii. appropriate timing for starting PN (includes both short term and long term home TPN), and the appropriate timing for discontinuation of therapy iii. appropriate PN prescription iv. appropriate monitoring strategies prior to and post initiating PN v. short-term and long-term complications that may be associated with PN 16. Nutritional management of common disease states including: acute pancreatitis, inflammatory bowel disease, chronic liver disease, short bowel syndrome and IBS 17. Regarding Short Bowel Syndrome (SBS) a. Define SBS and describe the common etiologies predisposing toward SBS b. Describe the pathophysiology of SBS c. Discuss the 3 stages of intestinal adaptation in the setting of SBS d. Discuss the nutritional implications of SBS e. Describe the management of SBS including dietary, pharmacological and nutritional support f. Discuss the indications for intestinal transplant 18. Identify the patient at high risk for refeeding syndrome, and nutritional strategies to reduce the risk for refeeding syndrome 19. Knowledge about Canada Food Guide to Health Eating (CFGHE) servings and common diets (mediteranean, DASH, Weight Watcher's) and fad diets (South Beach, Atkins) and potential risks associated with each 20. Types of dietary fiber (soluble, insoluble, prebiotic) and health benefits associated with fiber 21. With regard to Malnutrition i. Definition of malnutrition and description of the prevalence of malnutrition in the community and in acute care ii. How to determine nutrition risk (screening tools) iii. Impact of malnutrition on disease outcomes (Hospital length of stay, infections, Wound healing, Hospital readmission rates) iv. Develop a multi-disciplinary strategy to address malnutrition 22. With regard to obesity i. epidemiology and risk factors for obesity ii. category of obesity iii. hormones involved in appetite and satiety iv. metabolic risks associated with obesity (including NAFLD)

Components	Information
	v. management of an obese patient vi. types of bariatric surgery, mechanisms of weight loss and the anatomy of each vii. complications that may be associated with bariatric surgery 2. Communicator As Communicators, physicians effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter. Discuss the nutrition management plan with a patient that has been assessed by the nutrition support team. Communicate effectively the complexities of the nutritional plan, especially when recommending nutrition support, to patients and families 3. Collaborator As Collaborators, physicians effectively work within a healthcare team to achieve optimal patient care. Participate in multi-disciplinary nutrition rounds and discuss patient cases with other health professionals (nurse, dietitian, pharmacist, consultant and primary team managing patients) involved in the case 4. Manager As Managers, physicians are integral participants in healthcare organizations, organizing sustainable practices, making decisions about allocating resources, and contributing to the effectiveness of the healthcare system. Describe the administrative structure of nutrition support teams, including the Home PN clinic 5. Health Advocate As Health Advocates, physicians responsibly use their expertise and influence to advance the health and well- being of individual patients, communities, and populations. Discuss the ethical and legal issues regarding in nutrition therapy including a. Terminally ill patients b. End-stage dementia c. Patients unable to give consent d. Patients who refuse nutritional therapy but are unable to maintain adequate nutritional status independently. 6. Scholar As Scholars, physicians demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application and translation of medical knowledge. Develop a reading program to keep apprised of rapidly changing areas of nutrition practice.

Components	Information
	Complete at least one research project 7. Professional As Professionals, physicians are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behaviour. Discuss the ethical and legal issues regarding in nutrition therapy including a. Terminally ill patients b. End-stage dementia c. Patients unable to give consent d. Patients who refuse nutritional therapy but are unable to maintain adequate nutritional status independently.
7. Course/Training Syllabus	Clinical activities: Weekly: Nutrition support Clinic: Monday 2 to 5pm Nutrition journal club / presentation: Third Wednesdays 4 to 5 pm Nutrition rounds for in-patients TPN: Wednesdays 9am to 12 pm In-Patients TPN consults and discussion with TPN Team: Monday to Friday Optional: follow dietitians in ICU and other sub-specialties

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<tr><td>8. Training Method</td><td>
Method of Supervision:
Direct observation and feedback. Clinical Fellow will be supervised by an assigned supervisor at all times.

Observed Only:
Fellows will have opportunities to observe the following procedures:
• Changing of PEG tube in clinic
• Inserting Naso-enteral tube in clinic

Hands-On Experience:
Fellows will assist in the following procedures under supervision:
• Changing of PEG tube in clinic
• Inserting Naso-enteral tube in clinic

No job rotation within SGH and to other institutions is required
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<tr><th colspan="3">TRAINING ACTIVITIES & METHODOLOGY</th></tr>
<tr><th>Name of activity</th><th>Frequency / No. of sessions / Length of session</th><th>Teaching methodology</th></tr>
<tr><td>Inpatient ward round</td><td>Once a week , over 3 hours</td><td>Direct observation</td></tr>
<tr><td>Inpatient consult/review</td><td>Every day, over 3-4 hours</td><td>Direct observation</td></tr>
<tr><td>Journal club</td><td>Once a month, over 2 hours</td><td>Presentation</td></tr>
<tr><td>Outpatient clinic</td><td>Once a week, over 3 hours</td><td>Direct observation</td></tr>
<tr><td>Other subspecialities

(ICU, nephrology,cardiology, obesity weight management)</td><td>Once a week , over 3 hours</td><td>Direct observation</td></tr>
<tr><td>Research</td><td>2-3 times/week , over 3 hours each time</td><td>Direct observation</td></tr>
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Components	Information
8.1 Night Duties Requirement	No night duties required
8.2 Running of Clinics Requirement	One outpatient clinic a week Adhoc patient review in outpatient when required
9. Assessment and Evaluation	Clinical Fellow will need to demonstrate their proficiency level based on the following competencies: **1) Patient Care** As stated in learning objectives **2) Medical Knowledge** As stated in learning objectives **3) Practice-Based Learning and Improvement** As stated in learning objectives **4) Interpersonal and Communication Skills** As stated in learning objectives **5) Professionalism** As stated in learning objectives **6) Systems-Based Practice** As stated in learning objectives
9.1 Assessment approaches	**Formative assessment:** • Regular evaluation between Clinical Fellow and Supervisor / Head of Department • Reflective journal- logbook recordings of training activities **Summative assessment:** Periodical assessment reports as required by Singapore Medical Council **Feedback:** • End-of-training feedback form as required by Singapore Medical Council • End-of-training feedback session with SGH-PGMI
9.2 Evaluation Process 9.2.1 General overall grading system	The general overall grading system evaluates the Clinical Fellow's performance upon completion of the fellowship programme. All Clinical Fellow will be given a general overall grading status at the end of the fellowship programme based on the grading criteria requirements incorporating the six competencies based knowledge, skills and performance that Clinical Fellow must demonstrate throughout the programme. **Grading Status** / **Description** / **Grading Criteria Requirements**

Components	Information
	CMP — Completes the programme — • Fulfils all training requirements **USP** — Unsatisfactory performance — • Fulfils only some training requirements **DCP** — Did not complete the programme — • Did not fulfil any training requirements **WDN** — Withdrawn from the programme — • Fellow withdraws from the programme or did not complete the fellowship training
9.3 Criteria for Early Termination	The attachment programme will be terminated early on the ground of the Clinical Fellow's poor performance, misdemeanour, misconduct, negligence or breach of any terms stipulated or referred to in the Fellowship Letter of Offer and Institution Terms and Conditions. The Clinical Fellow may also request to terminate the attachment programme for reasons such as serious illness or other personal obligations. The institution will review all requests for early termination with the Clinical Fellow and the Supervisor / Head of Department.
10. Course Administration	Type of Certification: Certificate of Training Training Fee: S$3,000 (before prevailing GST) per month Programme Funding source: Self-funded
11. Number of Clinical Fellow to be accepted at any one time	2 Fellows