

**MAKATI MEDICAL CENTER
SECTION OF PULMONARY MEDICINE**

PULMONARY MEDICINE AND PULMONARY CRITICAL CARE FELLOWSHIP PROGRAM

1. Objectives of the Pulmonary Medicine Fellowship Training Program

- 1.1. To develop professional, competent and skilled pulmonologists and pulmonary critical care specialists.
- 1.2. To develop and foster an aptitude for scientific investigation and research in the field of pulmonary medicine and pulmonary critical care.
- 1.3. To promote moral and ethical practice of pulmonary medicine and pulmonary critical care
- 1.4. To encourage social consciousness and civic-mindedness in the practice of pulmonary medicine and pulmonary critical care.

2. Makati Medical Center Section of Pulmonary Medicine Standards and Requirements for Training Institutions:

- 2.1. Makati Medical Center, Section of Pulmonary Medicine will be having at least two (2) training fellows per year level.
- 2.2. The hospital has a sufficient number of in-patient and outpatient populations that will provide the fellow-in-training with adequate supervised exposure to gain expertise in the evaluation and management of pulmonary problems.
- 2.3. MMC has 21 Medical Intensive Care Unit (MICU), 4 Surgical Intensive Care Unit (SICU), 2 Neurological Intensive Care Unit (NICU), 2 Neurosurgical Intensive Care Unit (NSICU) beds with standard ICU monitoring equipment.
- 2.4. Basic Equipment :
 - 2.4.1. Pulmonary diagnostic equipment/devices :
 - 2.4.1.1. Pulmonary function testing equipment capable of spirometric measurement, measurement of lung volumes and diffusing capacity
 - 2.4.1.2. Arterial blood gas machine
 - 2.4.1.3. Pulse oximeter
 - 2.4.1.4. Peak flow meter
 - 2.4.1.5. Access to the following:
 1. Body plethysmograph
 2. Cardio-pulmonary exercise testing machine
 3. Polysomnograph
 4. Impedance plethysmograph (IPG)
 - 2.4.2. Non-invasive diagnostic equipment/ facilities:
 - 2.4.2.1. Chest x-ray
 - 2.4.2.2. Chest ultrasound
 - 2.4.2.3. Chest computed tomography (CT) scan
 - 2.4.2.4. Access to the following :
 1. V/Q scan
 2. Chest MR
 3. Gallium scan
 4. PET scan (outside rotation)
 5. Duplex scan
 - 2.4.3. Available invasive diagnostic devices/equipment/facilities:
 - 2.4.3.1. Fiberoptic bronchoscope/videoendoscope
 - 2.4.3.2. Devices for performance of thoracentesis
 - 2.4.3.3. Devices for performance of pleural biopsy
 - 2.4.3.4. Equipment for performance of percutaneous/fine needle aspiration lung biopsy
 - 2.4.3.5. Access to :
 1. Video-assisted thoracoscope
 2. Rigid bronchoscope

- 2.4.4. Pulmonary therapeutic equipment/devices:
 - 2.4.4.1. Nebulization and humidification equipment
 - 2.4.4.2. Incentive spirometers
- 2.4.5. Cardio-pulmonary resuscitation and intubation equipment available in the emergency room, intensive care unit and other critical areas of the institution
- 2.4.6. Invasive mechanical ventilators with the following features:
 - 2.4.6.1. Volume, pressure or timed limited with basic monitoring displays for pressure and flow or volume measurements;
 - 2.4.6.2. Built-in features for PEEP and minimum modern capabilities for pressure support and SIMV/IMV.
 - 2.4.6.3. CPAP capabilities
 - 2.4.6.4. Basic mechanical ventilator testing equipments: respirometer, oxygen meter, pressure monitor
- 2.4.7. Non-invasive mechanical ventilators - BIPAP machine
- 2.4.8. Access to other diagnostic and therapeutic equipment/facilities as follows:
 - 1. Ventilators with newer forms of mechanical ventilator modes such as Pressure control, Airway pressure release ventilation and Proportional assist ventilation.
 - 2. Pulmonary catheterization and hemodynamic studies
 - 3. Heart-lung machine
- 2.5. Other diagnostic /laboratory facilities as:
 - 2.5.1. Facility for PPD testing
 - 2.5.2. Facility for Gram staining and AFB staining
 - 2.5.3. Cytologic and histologic facilities
 - 2.5.4. Basic microbial isolation and drug sensitivity tests
 - 2.5.5. Access to:
 - 1. TB culture and sensitivity testing
- 2.6. Library facilities:
 - 2.6.1. Basic Pulmonary Medicine textbooks (latest edition) :
 - 2.6.1.1. Textbook of Respiratory Medicine by Murray and Nadel
 - 2.6.1.2. Pulmonary Diseases and Disorders by Alfred Fishman
 - 2.6.1.3. Textbook of Pulmonary and Critical Care Medicine by Roger Bone
 - 2.6.1.4. Textbook of Pulmonary Medicine by Fraser and Parefor chapter/s on chest radiology only
 - 2.6.2. Journals with up-to-date subscription and/or internet access to:
 - 2.6.2.1. American Journal of Respiratory and Critical Care Medicine
 - 2.6.2.2. Chest
 - 2.6.2.3. Philippine Journal of Chest Diseases
 - 2.6.3. Updated PCCP Consensus publications
- 2.7. Consultant Staff:
 - 2.7.1. The Section Head, Dr. Alipio S. Abad, Jr. is an active Fellow of the PCP and PCCP
 - 2.7.2. The Training Officer, Dr. Gregorio P. Ocampo, will oversee and supervise the training of pulmonary fellows.
 - 2.7.3. Dr. Nazario Macalintal, Jr., Dr. Emmanuel Kasilag, Dr. Norman Maghuyop, Dr. Manuel Ko are also active PCP and PCCP fellows.

3. Entry and Terminal Competencies of Pulmonary Fellows-in-Training:

3.1. Entry Competency for First year Fellow:

- 3.1.1. Must have completed residency training in Internal Medicine in a PCP-accredited institution and be either PCP-qualified or PCP diplomates at the time of entry to the training program. Those training fellows who are only PCP-qualified are required to take the PCP certifying examinations every year of their training until they pass the examination.
- 3.1.2. Must have a basic knowledge of the anatomy and physiology of the respiratory system.
- 3.1.3. Must be able to demonstrate an ability to obtain a comprehensive and accurate history of present illness for a variety of pulmonary disease presentations and physical examination skills specific to the respiratory system.
- 3.1.4. Must be able to identify salient features of common pulmonary conditions or diseases and arrive at a corresponding diagnosis.
- 3.1.5. Must be able to identify normal chest radiographs and common pulmonary radiographic abnormalities.
- 3.1.6. Must have a basic knowledge of arterial blood gas and spirometry.
- 3.1.7. Must have performed at least one thoracentesis and one endotracheal intubation during his/her residency training in internal medicine.
- 3.1.8. Must have adequate knowledge of mechanical ventilatory support and care.
- 3.1.9. Must have basic and advanced knowledge of cardio-pulmonary resuscitation.

3.2. Terminal Competency for First Year Fellow/ Entry Competency for Second Year Fellow:

Aside from fulfilling the entry competency of a first year fellow, at the end of his/her first year, the pulmonary fellow in training:

- 3.2.1. Must have a comprehensive knowledge of the anatomy and physiology of the respiratory system.
- 3.2.2. Must be able to fully explain the pathophysiology behind common pulmonary disorders.
- 3.2.3. Must be able to identify, interpret common chest radiographic abnormalities and provide clinical correlation.
- 3.2.4. Must be able to identify and distinguish normal from abnormal structures on chest CT scan.
- 3.2.5. Must have an ability to integrate an interpretation of chest x-rays, chest CT scans and other radiographic tests related to pulmonary diseases like ventilation/perfusion scans, chest ultrasounds, pulmonary angiograms to provide a therapeutic plan for patients with pulmonary conditions.
- 3.2.6. Must be able to correctly interpret arterial blood gas and spirometric examination results. He/she must have adequate knowledge of the performance of the tests, evaluate acceptability and reproducibility of tests, and identify the errors attendant therein.
- 3.2.7. Must have exposure to V/Q scan, Duplex scan and/or IPG.
- 3.2.8. Must have exposure to Swan Ganz pulmonary artery catheterization.
- 3.2.9. Must be able to perform and adequately interpret PPD tests, basic sputum examinations such as gram stain, AFB smear, and KOH smear.
- 3.2.10. Must be able to identify inflammatory and carcinomatous cells on histopathological specimens.
- 3.2.11. Must have demonstrated competency in the performance of the following procedural skills:
 - 3.2.11.1. diagnostic or therapeutic thoracentesis (at least 10)
 - 3.2.11.2. pleural biopsy (at least 3)
 - 3.2.11.3. fiberoptic bronchoscopy with biopsy (at least 10)
 - 3.2.11.4. chemical pleurodesis (at least 5)
 - 3.2.11.5. arterial puncture
 - 3.2.11.6. tuberculin testing
 - 3.2.11.7. endotracheal intubation

- 3.2.12. Must have exposure to transbronchial biopsy, rigid bronchoscopy, percutaneous lung biopsy (fluoroscopic, ultrasound and/or CT guided), chest tube thoracostomy, thoracoscopy (VATs), and thoracotomy.
- 3.2.13. Must have the competency to provide a preoperative pulmonary evaluation and post-operative pulmonary care plan for patients undergoing thoracic surgical procedures.
- 3.2.14. Must know the basics of mechanical ventilatory support i.e., operating principles, mechanics, indications, monitoring, complications, and weaning.
- 3.2.15. Must have completed at least one (1) retrospective/descriptive research paper or case report which should be submitted to the PCCP at the end of the first year.
- 3.2.16. Must have satisfactorily passed the evaluation given by consultants (see Evaluation).

Either supervised or assisting: supervised means the Fellow-in-training is the one actually performing the procedure supervised by a consultant; assisting means the Fellow-in-training simply assists the consultant in performing the procedure.

3.3. Terminal Competency of the Second Year Fellow:

Aside from fulfilling the aforementioned competencies, at the end of his/her second year, the pulmonary fellow in training:

- 3.3.1. Must be able to provide a good clinico-pathological correlation of pulmonary diseases and disorders, particularly the more common ones.
- 3.3.2. Must have the skill in interpreting abnormalities on chest radiographs and chest CT scan and provide clinical correlation.
- 3.3.3. Must demonstrate the ability to interpret arterial blood gas results and spirometric examinations including lung volume determinations, airway resistance, DLCO, and bronchoprovocation tests and have a good knowledge of actual performance of these procedures.
- 3.3.4. Must demonstrate the competency in performing all the procedural skills :
 - 3.3.4.1. fiberoptic bronchoscopy w/ lavage, endobronchial biopsy(at least 20)
 - 3.3.4.2. thoracentesis (at least 20)
 - 3.3.4.3. pleural biopsy (at least 3)
 - 3.3.4.4. chemical pleurodesis (at least 5)
 - 3.3.4.5. arterial puncture
 - 3.3.4.6. tuberculin testing
 - 3.3.4.7. endotracheal intubation
- 3.3.5. Must be able to distinguish a normal V/Q scan, IPG and/or Duplex scan from an abnormal tracing and identify the abnormalities noted therein.
- 3.3.6. Must have exposure to cardiopulmonary exercise tests and polysomnography.
- 3.3.7. Must be able to interpret Swan Ganz pulmonary catheterization results.
- 3.3.8. Must be adept in performing and interpreting simple microbiological laboratory tests as gram stain, AFB smear, and KOH smear.
- 3.3.9. Must have the knowledge and skills for ventilator management of critically ill patients.
- 3.3.10. Must be able to make sound judgment on the approach to the diagnosis and management of pulmonary diseases.
- 3.3.11. Must have completed at least one prospective research paper as a requirement for taking the PCCP Diplomate Certifying Examinations.
- 3.3.12. Must have satisfactorily passed the evaluation given by the consultants (see Evaluation).

Either supervised or assisting: supervised means the Fellow is the one actually performing the procedure supervised by a consultant.; assisting means the Fellow simply assists the consultant in performing the procedure.

- Fellows will be going on duty at the ICU and wards during their rotation.
- Morning endorsements will start at 7am and afternoon endorsements at 4pm
- They are expected to make rounds everyday including Sundays and holidays.
- They will see all patients admitted and referred to the Section of Pulmonology during their tour of duty.

4. Learning Activities/ Instructional Methods:

4.1. Training Program:

- 4.1.1. Makati Medical Center will have a training program that will enable a fellow-in-training to meet the criteria for entry and terminal competencies so stated in this document.

4.2. Conferences:

Pulmonary Didactic Conference:

- **Head: Dr. Norman Maghuyop**
- **2nd and 4th Monday of the Month**

- Goal: To provide the trainees the opportunity to critically review literature and interact with the consultant staff in the discussion of various topics in the fields of pulmonary and critical care
- Objectives :
 1. To provide instruction on the basics and physiology of pulmonary medicine and critical care.
 2. To provide specific and detailed knowledge of diagnosis, treatment, prevention of pulmonary diseases.

- Educational experience : This conference is to be held at least twice a month and lectures or interactive discussions may be conducted by a member of the consultant staff or by a senior fellow with a consultant staff on-hand to act as resource person.

- Evaluation and feedback : Written quizzes may be given at the beginning or end of the didactic conference or the topics discussed may be included in the scope of the in-house periodic evaluation examinations.

Pulmonary Case Conference:

Head: Dr. Emmanuel Kasilag

- **2nd, 3rd, 4th Friday of the month**

- Goal:
 1. To provide the trainees the opportunity to present pulmonary and critical care consultations for peer review.
 2. To provide the trainees the opportunity to learn presentation skills

- Objectives :
 1. To learn the pathophysiology, diagnosis and management of patients hospitalized with pulmonary and critical illnesses
 2. To review historic and current literature relevant to the case(s) presented for discussion.

- Educational experience: This conference is to be held at least three times in a month. The educational objectives will be obtained by the following procedure :
 1. The inpatient service will select the case(s) for presentation.
 2. The selected case(s) will be presented including relevant laboratory data and radiographic material.
 3. A discussion of relevant literature will follow the case presentation.
 4. A reference list or copies of relevant articles should be available for all the conference participants.

- Evaluation and Feedback: Fellow presenters will be critiqued by the consultant staff and will include feedback on content and manner of presentation.

Pulmonary Grand Rounds

- ***Head: Dr. Manuel Antonio Ko***
 - ***1st Thursday of the month***
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- Goal: To provide trainees the opportunity to discuss an interesting or problematic case from a multidisciplinary perspective.
 - Objectives :
 1. To present clinical problems in pulmonary medicine and critical care by focusing on interesting and problematic cases and discuss the appropriate diagnostic and treatment approaches from a multi- disciplinary perspective
 2. To provide new information on these cases and enhance clinical reasoning skills in the management of such cases.
 - Educational experience :
 1. This conference is held at least once a month and should be attended by representatives from the different departments in addition to the pulmonologists, namely, the radiologist, pathologists, thoracic surgeons, medical oncologists, etc. As such, the fellow-in-training will be the presenter and the consultant specialists will be the reactors or resource speakers.
 2. As an alternative to above, the Grand Rounds may also feature renowned practitioners or researchers presenting topics of interest or an invited visiting faculty or consultant delivering a didactic lecture.
 3. The PCCP inter-hospital symposium held in the respective institutions may be credited as a Pulmonary Grand Rounds for that particular month.

Pulmonary Journal Club

- ***Dr. Alipio S. Abad Jr.***
 - ***2nd and 4th Thursday of the month***
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- Goal: To provide the trainee the educational experience and skills to critically evaluate the medical literature relevant to pulmonary medicine and critical care.
 - Objectives :
 1. To provide a review of current literature in pulmonary medicine and critical care.
 2. To provide an understanding of statistical methodology used in research articles : emphasis to be placed on hypothesis, experimental design, methods, data analysis, appropriateness of conclusions and clinical relevance of journal articles.
 3. To develop skills in evaluating the quality and critical appraisal of published pulmonary and critical care literature.
 - Educational experience: This conference is to be held at least twice a month.
 - The educational objectives will be obtained by the following procedure:
 1. Each trainee is expected to present 1 or 2 articles for detailed review. These articles are those recently published in leading medical journals.
 2. The assigned trainee will select the article and a consultant will review the article with the trainee prior to the conference presentation.
 3. The trainee should submit the articles to the Department/Section secretary for distribution one week prior to the conference.
 4. The trainee will present the journal article(s) and lead the discussion.
 - Evaluation and feedback: Fellow presentations will be critiqued by the Consultant staff present at the time of presentation and will include feedback on content and manner of presentation.

Morbidity and Mortality Conference

- ***Dr. Nazario A. Macalintal Jr.***
 - ***3rd Thursday of the month***
- Goal: To provide the trainees the opportunity to discuss and learn about problems in patient management that contributed to morbidity and mortality.
 - Objectives :
 1. To identify problems, limitations in the diagnostic process, institution of treatment that contributed to morbidity and mortality in pulmonary patients.
 2. To recognize and analyze adverse outcomes of medical care and formulate appropriate solutions.
 3. To correlate clinical and pathologic aspects of disease.
 - Educational experience: This conference is to be held at least once a month. All M & M cases will be briefly reviewed and a few will be selected for a more detailed presentation and analysis.

Radiology Conference

- ***Head: Dr. Gregorio P. Ocampo***
 - ***3rd Monday of the month***
- Goal: To provide the trainees didactic training in chest radiography and appropriate clinical correlates.
 - Objectives :
 1. To review basic principles in radiography and learn skills in the interpretation of chest x-rays, chest CT scans, and other relevant modalities.
 2. To provide clinico-radiographic correlates.
 - Educational experience: This conference is to be held at least once a month.

Pulmonary Pathology-TCVS Conference (Surgico-Patho Conference)

- ***Head: Dr. Alipio S. Abad Jr.***
 - ***2nd Saturday of the month***
- Goal : To provide the trainees the opportunity to discuss the pathophysiologic and surgical correlates of interesting or problematic pulmonary or critical care cases.
 - Objectives:
 1. To increase understanding of the pathologic mechanisms that are involved in specific cases that underwent surgical intervention.
 2. To provide clinico-radio-pathologic correlates. Educational experience : This conference is to be held once a month. The thoracic surgical and pathology consultant staff should be leading the discussion.
 3. Proper documentation (including date of conference, diagnosis/es of discussed case/s and attendance of consultant staff) of each conference should be made.

4. Performance of Procedures:

Each fellow-in-training must accomplish the required number of procedures so stipulated in the document of entry and terminal competencies.

5. Evaluation:

- 6.1. Each fellow-in-training must undergo evaluation of his/her performance through the following: (with corresponding percentages)
 - 6.1.1. Written examinations held at least every 6 months (25 %)
 - 6.1.2. Performance in the clinical areas of rotation (wards, ICU, etc.) (25 %)
 - 6.1.3. Skills assessment in performance of required procedures (20 %)
 - 6.1.4. Assessment as presentors during required conferences (20 %)
 - 6.1.5. Peer-based assessment of work attitude (10 %)
 - 6.1.6. Oral/Practical examinations may be conducted at least once a year but only a passed or failed a grade will be given. Failure in these may result in the fellow- in-training incurring additional assignments or rotations as deemed necessary plus another oral/practical exam until the fellow can earn a passing grade
- 6.2 Evaluation/assessment tools or instruments used in the evaluation Copies of the template tools or instruments utilized in the program should be submitted to the Board every year as part of the review requirement.
- 6.3. All fellows-in-training should take the PCCP in-service examinations as required.

7. Research:

Each fellow-in-training should complete at least one (1) descriptive research paper or case report and one (1) prospective study within his/her two years of training.

8. Community Service

Each fellow-in-training must participate in PCCP-initiated community service program. He/she may use these patients to fulfill the requirements

9. Inter-hospital Symposium:

Attendance in the PCCP-initiated Inter-hospital Symposia is required, a minimum of 80 % of all symposia held in a year. A logbook to document each fellow's attendance will be kept by the PCCP Secretariat.

10. Post-Graduate Course on Bioethics and Professional Ethics Attendance in the PCCP-initiated post-graduate session on Bioethics and Professional Ethics is required. Certification of attendance to these sessions will be required for fellows-in-training.

11. Eligibility for Transfer of Training Venue:

- 11.1. A trainee is eligible for transfer only when he/she has completed a year of training in a duly accredited hospital or institution. He/she must present to the receiving institution a certificate stating (1) the completion of the first year of fellowship training, (2) the latest comprehensive evaluation by the training officer, (3) the reason for transfer, and (4) a statement that he/she has no pending or unfulfilled requirements prior to transfer. Said certificate should be duly signed by both the training officer and the head/chair of section/department where the trainee spent his/her first year of pulmonary fellowship training.

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