



PULMONARY AND CRITICAL CARE MEDICINE FELLOWSHIP

DIVISION OF PULMONARY, CRITICAL CARE & SLEEP MEDICINE

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Introduction

The Division of Pulmonary, Critical Care and Sleep Medicine at Wayne State University School of Medicine offers formal fellowship training in Pulmonary and Critical Care Medicine. The Fellowship is a balanced and integrated program designed to develop excellence in both clinical sciences, quality improvement and research.

Full-time Pulmonary and Critical Care Medicine Faculty, as well as members of Nephrology, Cardiology, Infectious Disease, Allergy, and other Divisions within the Department of Internal Medicine and the Departments of Surgery, Neurology, Neurosurgery, Cardiothoracic Surgery, and Anesthesiology provide clinical supervision and teaching.

Five (5) Pulmonary/Critical Care Fellowship positions are available each year to physicians with Board Eligibility or Certification in Internal Medicine. These positions are filled through participation in the National Residency Matching Program.

Training rotations are located in the various hospitals which constitute the Detroit Medical Center, including Harper University Hospital, Detroit Receiving Hospital, and Sinai-Grace Hospital. In addition, several rotations are located in the affiliated John D. Dingell VAMC and the Karmanos Cancer Institute.

Components of The Program

Pulmonary Medicine

The purpose of this component of the training program is to provide the Fellow with comprehensive training in various aspects of Pulmonary Medicine. The Fellow will undertake pulmonary rotations at each of the four major affiliated medical centers, Detroit Receiving Hospital, Harper University Hospital, Sinai-Grace Hospital and John D. Dingell Veterans Affairs Medical Center (VAMC). These rotations will provide experience in the practice of both primary care of pulmonary patients and consultative care. These rotations occur throughout the fellowship. In addition, fellows have rotations in the division sub-specialty clinics designed to offer fellows exposure to several specialized components of Pulmonary Medicine. These include the basics of pulmonary function testing, pulmonary rehabilitation, sleep medicine, pulmonary hypertension, sarcoidosis/interstitial lung diseases, thoracic oncology and cystic fibrosis. Fellows are also instructed in a variety of procedures, including ultrasound thoracentesis, bronchoscopy, endobronchial ultrasound. They are also exposed to other interventional procedures such as SuperDimension bronchoscopy.

Critical Care Medicine

Fellows will experience state-of-the-art Critical Care with rotations through Intensive Care Units in various hospitals of the Detroit Medical Center and the John D. Dingell VAMC. Fellows will have opportunities for primary management as well as supervisory experience. A pathophysiologic approach to management is emphasized. Procedural skills, broad-based clinical opportunities, ICU administration, and experience in all areas required to meet Board certification requirements are provided each of our fellows. Fellows also rotate on non-medical ICU services, including surgical intensive care, trauma, neurosurgery/neurology. Fellows are instructed in critical care ultrasound during their MICU rotations.

Quality Improvement

The division has a strong interest in Quality Improvement and has been a leader at the DMC in initiating programs to improvement quality of care. All fellows will participate in a formal curriculum on quality improvement that includes both lectures and participation in a quality improvement project.

Research

Fellows must select a mentor from the Faculty to supervise their research. While Fellows could "slot" into existing research studies, they are encouraged to develop their own protocols and experiments. The Program Director will assist Fellows in selecting mentors and may assign one, if necessary. The Fellows will be required to complete a curriculum related to human investigation mandated by the WSU Human Investigation Committee. They are encouraged to write a HIC proposal. It is expected that the Fellow will have given a scientific presentation of the previous year's research at a Research seminar, present his/her findings at a national meeting and have written a scientific paper by the time of graduation.

Sample Schedule

The usual duration of training in this track is three years. The exact curriculum for each year may vary. However, by the end of the three year Pulmonary/Critical Care combined training experience, each Fellow would have completed the following rotations:

1. Pulmonary Consult Service (including procedures): 8 months
2. PFTs/Multi-specialty rotation/Sleep: 5 months
3. MICU: 8 months
4. Other Critical Care rotations: 4 months
5. Research/Quality Improvement: 8 months
6. Vacation/Conference: 3 months

Clinical Rotations

Pulmonary Medicine

A. Pulmonary Consultation Service

This experience is available at all hospitals affiliated with the Wayne State University Pulmonary/Critical Care Program. It is intended to provide the trainee with an opportunity to develop the skills required to be an effective consultant in pulmonary medicine. We provide a complete and wide range of clinical experiences in pulmonary medicine. During the rotations the trainee, either personally or in conjunction with residents assigned to the service, is responsible for assessment of all new consults referred to the service as well as continuing care of those already being followed by the service. The trainee is expected to see the patient, ascertain the problems, and review pertinent records and tests. He/she should establish a differential diagnosis and plan an appropriate course of action including investigations and/or management. The case will then be presented in a logical and coherent manner to the Attending Faculty member for review.

The main referral sources at each of the hospitals will be from the general medicine floors. The DMC team is also responsible for all consults at the Karmanos Cancer Institute (including bone marrow transplantation service) and at Hutzel Hospital, the DMC obstetrics (including high risk obstetrics) and gynecology hospital.

The rotations include supervised teaching and experience in all the procedural skills required to be a competent pulmonologist, including.

B. Pulmonary Function Testing

During this rotation the trainee is expected to learn the principles of pulmonary function testing, its application and uses, the physiology underlying the tests and methods, and the interpretation of the results. The Pulmonary Fellow will learn the principles of measurements of lung mechanics, volumes, flows, diffusion, closing volume, oximetry and mass spectroscopy, use of the body box, calculation of airway resistance and conductance, compliance and other procedures including exercise testing and bronchial provocation. Skilled technicians as well as faculty members will assist the Fellow during this rotation.

C. Subspecialty Programs

All fellows have rotations that include sessions in the subspecialty clinics. In addition, fellows also may choose a senior concentration in one of these areas to acquire additional in-depth exposure. The rotation includes:

1. *Sleep Medicine*: the fellow will attend sleep practice sessions, attend the weekly sleep conferences and sit in with the sleep fellows for sleep interpretation.
2. *Cystic Fibrosis*: Harper University Hospital has an excellent adult cystic fibrosis program. Fellow will learn the basic pathophysiology of CF and gain an understanding of the care of adult patients with CF.
3. *Pulmonary Hypertension*: the fellow will attend the weekly Pulmonary Hypertension clinic. Fellow will learn the classification, diagnosis, and management of pulmonary hypertension, including the use of new drug modalities.
4. *Sarcoidosis*: fellow will attend the weekly sarcoidosis clinic. Fellow will learn about the diagnosis and management of sarcoidosis and other interstitial lung diseases.
5. *Thoracic Oncology*: fellow will attend a weekly lung cancer clinic to understand the role of the pulmonologist in the diagnosis and management of lung cancer. This clinic also evaluates patients with pulmonary complications of oncologic care.

D. Continuity Practice

All pulmonary/critical care track trainees will have a weekly continuity practice throughout the three year program. These sessions are held at the University Health Center at Detroit Receiving Hospital (2 years) and the John D. Dingell VAMC (1 year). Fellows are expected to evaluate and assess patients in conjunction with a supervising faculty member.

Critical Care

Required Medical ICU rotations

A. MICU-Detroit Receiving Hospital

This is the primary critical care teaching site for the first year fellows. The Medical Intensive Care Unit at Detroit Receiving Hospital provides a comprehensive exposure to medical problems encountered in the surrounding areas of Detroit. Common medical problems encountered in this unit are acute respiratory failure secondary to both cardiac and pulmonary disease and pneumonia, sepsis/septic shock, toxicologic emergencies (including alcohol withdrawal syndromes), hypertensive emergencies, and metabolic emergencies. Fellows are exposed to end-of-life/palliative care medicine through exposure to a full time nurse practitioner who works closely with the team on these issues. The rapid turnover of patients in the unit ensures repeated exposure to critical disorders and allows the acquisition of skills in procedures such as vascular cannulation and acute airway management, including intubation and bronchoscopy.

Patient care in these areas is provided by a physician team, directed by full-time faculty, and includes fellows, residents and students. Critical care and pulmonary fellows serve as supervisors and will be responsible for the care delivered by the resident. Teaching responsibilities in the Unit will be geared toward assuring that the residents understand the complex derangements affecting their patients. In addition, fellows will oversee and/or perform the necessary invasive procedures (catheterization, intubation, etc.) by residents. The fellows will have administrative roles, and will assist the staff physicians in making decisions about admissions to the Unit, and discharges and transfers between the Medical Intensive Care Unit and Intermediate Care Unit. This rotation does have required night call responsibility (one night per week).

B. MICU-Harper University Hospital

Harper University Hospital is the University tertiary referral center of The Detroit Medical Center. More complex critical care medicine is practiced in this ICU, primarily because of the complex patient population at Harper University Hospital. The 20 bed MICU service handles more than 1,000 admissions per year; these admissions include patients from the oncology and bone marrow transplant programs at the Karmanos Cancer Institute, an active nephrology service, and the general medicine floors. The MICU team also provides clinical care for the neurosurgical and obstetrics services. The team, consisting of a full-time faculty member, two fellows and 4-5 residents, co-manages every patient in the ICU. The Fellows receive more than ample training/experience in invasive hemodynamics, state-of-the-art invasive and non-invasive ventilation, bronchoscopy, airway management, chest tubes, etc. This rotation offers opportunity for moonlighting.

C. MICU-John D. Dingell VAMC

The Fellow works with a VA faculty member, and physician assistants and assumes a leadership role in the management of patients admitted to this 8 bed Unit. Night coverage is provided by contracted fee basis physicians; however, fellows remain on-call from home. This rotation provides opportunity for moonlighting.

D. Toxicology

All fellows will have a 1 month rotation on the DMC Toxicology service. This rotation includes a mix of lectures and ED/MICU consultations and exposes the fellow to the wide variety of toxicology emergencies encountered by ICU physicians. Rotation led by board-certified toxicologists.

Examples of non-MICU services

A. SICU/Trauma – Sinai-Grace Hospital

Primary management of trauma surgical critical care patients under the supervision of the Director of Trauma/SICU at SGH, as well as other trauma surgeons. This rotation has required night call responsibility. One month rotation.

B. Neurosurgery – Detroit Receiving Hospital

Fellows will be directly involved in the management of patients with a variety of neurosurgical and neurology emergencies including subarachnoid hemorrhage/intracranial bleeding/aneurysms and seizures/status epilepticus, as well as post-surgical care of craniotomies and back surgery. One month rotation.

Conferences and Seminars

- A. Pulmonary/Critical Care Core Curriculum
State of the art lectures that review the core curriculum of both pulmonary and critical care medicine. Lectures will emphasize both the basic pulmonary/critical care pathophysiology as well as diagnosis/management. Lecturers primarily given by faculty with invited speakers when available. Fellows participate in this conference in multiple ways:
1. Focused case conferences on the monthly theme.
 2. Year in Review: trainee reviews 6-8 important articles from the last year on a specific topic.
 3. End of Fellowship Lecture
- B. Pulmonary/Critical Care Case Conference Series
Case Conferences are held three weeks each month. These conferences are led by the fellows as part of their Practice Based Learning. Input from radiology and pathology services as well as other subspecialties are sought during these presentations. Radiology/pathology correlations are encouraged.
- C. Journal Club
Recent literature is critically by the Fellows and discussed in a group with attendings. Held monthly.
- D. Morbidity & Mortality Conference
Mortality and morbidity cases from the MICUs are critically reviewed. Held monthly.
- E. Medicine Grand Rounds: These are organized by the Department of Internal Medicine and attended by all faculty, residents fellows and students rotating in various clinical rotations.

Research

The Pulmonary and Critical Care Medicine Division conducts both clinical and basic science research.

A block of time is assigned for research training. This period will be in the third year of training All Fellows are expected to use this time to participate in a research project. While the project will be supervised by a Faculty member, the trainees are encouraged to develop their own protocols and projects. The Fellow is expected to write a research proposal and submit it for funding. Scientific papers and abstracts should be submitted for publication and presentation.

Some areas of current activity and research interests are listed below. Fellows are not necessarily restricted to these areas of endeavor.

1. Thoracic oncology
2. Quality improvement
3. Sleep disorders and breathing: pathogenesis of upper airway obstructions
4. Pulmonary hypertension
5. Sarcoidosis/ILD

Miscellaneous Information

Duty Hours

The Division of Pulmonary/Critical Care & Sleep Medicine adheres to the duty hours policies as set forth by the ACGME. Fellows are expected to log their duty hours on a bi-weekly basis.

Moonlighting

It is the policy of the fellowship program that moonlighting outside of the DMC/VAMC is not allowed.

Book Money

All fellows are provided a book money fund. These funds are used by the fellows to pay for registration/travel expenses for one national meeting each year (generally ACCP, SCCM or ATS conferences) and books, computers, society memberships.

Vacation Policy

Fellows are allowed 3 calendar weeks (15 working days) of vacation during the academic year. Fellows are allowed a maximum of 1 calendar week (5 working days) to attend an academic meeting.

Electives

Electives should be approved by the program Director. Proper forms should be filled and filed.

APPLICATIONS

The WSU Pulmonary/Critical Care and Critical Care Fellowships utilize the Electronic Residency Application Service (<http://www.aamc.org/students/eras/>) for all applications. The program also uses the National Residency Matching Program and does not offer pre-match appointments.

A completed application includes the following:

1. Completed ERAS application.
2. Uploaded CV
3. 3 letters of recommendation, with at least one from the program director of the internal medicine program from which the applicant will graduate or has graduated.
4. Personal statement
5. USLME/COMLEX scores for all 3 steps

Deadline for submission of all materials (including references) is July 31st. Applications incomplete on August 1st will NOT be considered.

The program will contact applicants for interviews by the end of August/early September with interviews occurring during September and early October.

TWO IMPORTANT NOTES:

1. The DMC does sponsor J-1 visas. However, it does NOT sponsor H-1B visas at this time and we will NOT consider applicants with this visa type.
2. We will NOT consider applicants who have NOT taken all 3 steps of the USLME or COMLEX.

**PULMONARY AND CRITICAL CARE
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