

**ST. ELIZABETH'S MEDICAL CENTER
PULMONARY/CRITICAL CARE MEDICINE FELLOWSHIP PROGRAM**

PROGRAM GOALS AND OBJECTIVES

The primary objective of the Division of Pulmonary, Critical Care and Sleep Medicine at St. Elizabeth's Medical Center is to provide superlative care for patients with respiratory diseases and those who are critically ill. The care should be compassionate, appropriate and effective. The division also has a mission of training physicians in the science and art of diagnosing and treating pulmonary illnesses and critical care diseases through its fellowship program with the same mission and purpose. The division also trains medical, anesthesia, and surgical residents and medical students in the same areas. Finally, the division is involved in an active research program related to respiratory illness. At the present time the division is comprised of a medical intensive care unit, a pulmonary physiology laboratory, active outpatient clinics, a bronchoscopy service (including interventional bronchology), respiratory therapy, and a sleep laboratory.

The medical staff consists of six full time faculty. Dr. Armin Ernst is the division chief and supervises all activities of the division. The full time medical staff based at St. Elizabeth's Medical Center consists of Dr. Lawrence Kenny, who coordinates the respiratory therapy service, Dr. Gerard Hayes who coordinates the respiratory intensive care unit and research activities of the fellowship, Dr. Katherine Hendra who runs the sleep medicine program, Dr. Samaan Rafeq who runs the thoracic oncology and interventional bronchology services, and Dr. Peter LaCamera who supervises the pulmonary physiology laboratory. Additional part time faculty based at St. Elizabeth's Medical Center include Dr. Luca Bigatello who is the director of the surgical ICU, Dr. Sadamu Ishikawa who runs the lung sounds program, Dr. Reda Safieddine who supervises the long-term care and rehabilitation rotation, and Dr. John Unterborn, who is the director for the internal medicine residency program.

The Pulmonary/Critical Care Medicine Fellowship Program is organized to fulfill the ACGME competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communications skills, professionalism and system based practices.

Patient care is used to help fellows learn the practice of health promotion, disease prevention, diagnosis, care and treatment of patients of both genders and all stages of disease. Medical knowledge is increased by helping the fellows learn the scientific method of problem solving, evidence based decision, and attitude. Practice-based learning and improvement aims to identify strengths and deficiencies to one's knowledge and expertise and to set learning and improvement goals. Interpersonal and communications skills are enhanced by support fellows in improving communication with their peers, families, relatives, as well as apply their knowledge as consultants. Professionalism is an intrinsic part of the program, fellows are taught to act with respect for privacy and autonomy, accountability, and sensitivity. Finally, given the availability of wide health care system resources, fellows are exposed to those environmental medical resources so that they can learn about the need to integrate to improve patient care and learning.

The Division of Pulmonary, Critical Care and Sleep Medicine has drafted a curriculum and policy procedure for each of the sections in the division with those goals in mind. The practical implementation of the goals is achieved through these specific rotations:

I. Respiratory Intensive Care Unit (RICU)

Educational Purpose, Rationale and Value:

The educational purpose of this unit is to provide training in the assessment, diagnosis and management of a wide range of acute illness and conditions. Patients are admitted to the RICU from the community, the inpatient floors, or transferred from outside facilities. A wide range of medical diagnosis are seen in the RICU including (but not limited to) acute respiratory failure from restrictive and obstructive lung disease requiring mechanical ventilation, acute respiratory distress syndrome and acute lung injury resulting from a variety of causes including infection, surgical procedures, aspiration and trauma, acute renal failure complicated by severe metabolic derangements, seizures, acute neurological injury, acute gastrointestinal bleeding, pancreatitis, septic shock, polysubstance overdose, critical complications in obstetrical patients (eclampsia, hemorrhage, amniotic fluid embolism, tocolytic induced injury) and acute coronary and other cardiac syndromes. In addition, the pulmonary/ critical care medicine fellow on the RICU rotation provides consultation service to a seven-bed coronary care unit (CCU) and a ten-bed surgical intensive care unit (SICU). All fellow activities are directly supervised by a member of the pulmonary/ critical care and sleep medicine division.

Teaching:

The RICU is staffed by a first year pulmonary/critical care fellow and a pulmonary/ critical care attending, as well as house officers from the internal medicine residency. Rounds are conducted twice daily, seven days a week with the pulmonary fellow, attending, residents, medical students, nursing staff and respiratory therapist. A member of the pharmacy staff and nutritionist also rounds. Rounds are directed at diagnosis and treatment of each patient in the RICU, including a complete review of the patient's clinical, social, family and non-medical issues, with the goal being a favorable outcome in all of these areas. Teaching is conducted at the bedside in a case oriented format. In addition, the pulmonary/ critical care fellow and internal medicine residents are required to relate topics in a didactic fashion several times a week. The fellows attend all didactic conferences of the fellowship during this rotation, including those aimed at critical care medicine topics.

Teaching Materials:

The daily bedside evaluation and management of patients provides the major clinical teaching of this rotation. Didactic sessions are provided as noted above. The intensive care unit area has portable computer terminals with direct access to the Tufts University library and common learning resources such as Pub Med and UpToDate. In addition, recommended textbooks are available in the library that has been established within the domains of an educational center that has been developed in the pulmonary division. The textbook as well as all major respiratory, critical care, and sleep journals are available to the fellows 24 hours a day. Examples of the books include Textbook of Critical Care (Shoemaker et al editors), Critical Care (Civetta, et al.), Principles of Critical Care (Rippe et al., editors), and The ICU Manual (Marini, editors). In addition, online medical information programs, such as UpToDate are widely available to the fellows, including in the fellows staff room. Reviews and pertinent research articles are reviewed and discussed during rounds and didactic sessions, including monthly journal club. The resources are obtained not only from journals of critical care and pulmonary medicine, but also those focusing on surgical, neurologic, cardiac, and nutritional aspects of ICU care.

Procedures, Functions, and Supervision:

- A. Attending rounds are conducted twice daily.
- B. Patients are admitted to the RICU after they have been assessed by the pulmonary/critical care medicine fellow and/or the attending physician assigned to the unit, and deemed appropriate from admission.
- C. Daily radiograph rounds are conducted with support from the radiology department.
- D. The RICU is a “closed unit” where all patients are admitted to the service of the Pulmonary/ Critical Care attending. The following people are authorized to arrange a patient transfer to the RICU:
 - Emergency Department Attending staff
 - Pulmonary/critical care and sleep medicine staff
 - Pulmonary/critical care medicine fellows
 - All admissions and discharge must be approved by one of these individuals, and the attending of record is then notified. Admission and discharge criteria are provided in the RICU policy manual.
- E. House Staff in the respiratory intensive care unit include:
 - A pulmonary/ critical care medicine fellow assigned to the rotation. This fellow directs the RICU service and is responsible for the screening of patients admitted to the RICU, the management of these patients, and participating in all appropriate procedures performed in the RICU.
 - PGY-1 and PGY-2 internal medicine residents as determined by the Department of Internal Medicine. PGY-1 Obstetrics and Gynecology residents also rotate in the RICU, as determined by the Department of Obstetrics and Gynecology at Tufts Medical Center.
 - Fourth year medical students; the majority of whom are from Tufts University School of Medicine, who rotate for one-month blocks.
- F. House staff must write a separate daily note on each patient, attested to by the attending physician. Fellows are responsible for writing an admission history and physical note for all patients. Fellows are also required to write a daily progress note on all consultative patients being followed in other critical care units. All notes are reviewed with the attending physician, who will add his/her own note following Medicare rules.
- G. The daily census in the RICU varies. There are seven RICU beds, however, if necessary patients will be boarded in other critical care units or in the post-anesthesia care unit (PACU) according to plans outlined by the ICU Executive Committee.

Educational Goals:

The RICU is primarily a first year rotation. Although during each individual block rotation in the RICU each trainee may encounter various pathologic conditions, by the completion of the year, all fellows should have gained a solid understanding of the pathophysiology and management of critical illness in the disease states indicated above. This must include the skills to manage various etiologies of shock states, ventilation management in restrictive and obstructive respiratory failure, and the ability to perform critical care related procedures including the placement of invasive monitoring devices and critical care bronchoscopy. All fellows must be ACLS certified at the beginning of the rotation and maintain certification during the entire fellowship. This requirement applied to all rotations and fellow related activities. In addition to the specific medical issues highlighted, a special emphasis is made to the end-of-life issues that are frequently encountered in the ICU. The fellow and attending are actively involved in the exchange of information with patients, family, and health proxy's as to the patient's desire and decision.

Evaluation:

A review of each fellow's performance on the critical care rotation is conducted at the end of each month and documented using the American Board of Internal Medicine format. In addition, fellows meet at the end of each rotation with pulmonary/ critical care attending on the rotation to review aspects of the rotation and their performance. Every effort is made to address and correct weaknesses in this area. The fellow is encouraged to provide feedback regarding the educational value of the rotation directly with their attendings and also in monthly division staff meetings, which the fellows attend. Finally, the fellow completed an anonymous evaluation of each attending at the completion of the rotation.

There is also a formal review of outcomes, which is practically implemented with a monthly mortality conference where all deaths are reviewed with active participation of attendings and fellows. In addition, a formal review of complications and line infections are documented monthly.

Progressive Years of Training Responsibilities

The RICU is primarily a first year fellow's rotation. Second and third year fellows will share coverage of the ICU on weekends and holidays where they round together with the attending on call.

II. Consultation and Medical Step Down Unit

Educational purpose, rationale and value

The consultation rotation constitutes one of the primary elements of the pulmonary/critical care medical trainee's experience. The objective of this rotation is to provide the fellow with a clinical experience which will allow him/her to obtain, rationalize, categorize, and prioritize information obtained from patients who require sub-specialist pulmonary and critical care evaluations. Patients are seen in the inpatient, outpatient, and urgent care settings. Pulmonary/critical care medicine fellows initially evaluate patients who require subspecialty care in these areas and then present the consult to an attending physician from the division, who is assigned to the service, in a timely, academic and informative fashion. Due to the complexity of these clinical

encounters, an optimal teaching environment is afforded to the trainee. Patients seen on this rotation include, but are not limited to, those suffering from cardiovascular, renal, gastrointestinal, hematological, musculoskeletal, infections, immunologic, neurologic, obstetrical and post-operative complications, and the respiratory manifestation of these disorders. Individuals requiring potential critical care management are also evaluated. Emphasis is placed on the assessment and treatment of respiratory illnesses related to metabolic, endocrine, coagulation, trauma and psychological disorders.

The fellow rotating in the consultation service is also responsible for the patients in the medical step-down unit where patients requiring non-invasive mechanical ventilation for both acute respiratory failure, sleep disordered breathing and neuromuscular diseases are also admitted. In this unit, other patients in conditions not severe enough to require the intensive care unit but more than a regular medical floor are monitored and treated.

Teaching:

Rounds are conducted on a daily basis, led by a division attending, seven days a week. Teaching is personal and case directed. Teaching is centered on increasing medical knowledge on evolving biomedical, clinical, epidemiological, and social-behavioral sciences. There is an opportunity to review cases in weekly didactic conference and radiology conferences, as outlined in the appropriate appendix of this document. Reading materials include in this rotation include standard textbooks of pulmonary medicine, such as Murray and Nadel, core journal articles and online resources such as UpToDate. All of these are available in the pulmonary education center with computer access to medical records, radiological studies and the national library of medicine. More general resources are also available in the medical library.

Procedures, function and supervision:

A. Attending rounds are conducted daily, seven days a week by a member of the pulmonary and critical care division. Rounds include the attending physician, pulmonary/critical care medicine fellow assigned to the rotation, resident physicians and medical students assigned to this service. Members of the nursing and respiratory therapy staff also attend rounds.

B. The consult fellow is responsible for:

- Evaluating all patients from whom admission to the step-down unit are requested. The fellow makes decisions, together with the attending, about all admissions and discharge to and from the step-down unit. In addition, the fellow rounds on all patients in that unit.
- Collecting and distributing all consults to other members of the service, including resident physicians and medical students. Consult requests are made to the secretarial staff of our division, or called directly to the fellow.
- The fellow will ensure that all consults are seen within 24 hours, that the case has been discussed with the primary medical staff caring for the patient, and that an appropriate consult note, which includes complete recommendations has been placed on the chart and that a copy is available in the pulmonary/ critical care and sleep medicine division office.
- Attending physicians will review each consult case and addend the written consult accordingly. Consult notes are completed with an attending member of the division.

- The fellow will maintain a consult logbook to identify unusual cases for future teaching purposes.
- Fellows on the consult service are responsible for selection of cases for conferences and presentations and presentations in the weekly X-ray, tumor, physiology, or sleep conferences.
- Fellows will partake in the teaching of houses staff and students on the service.
- The fellow on the consult service, will, with the supervision of the attending physician, evaluate and select all inpatients for invasive procedures such as bronchoscopy. The fellow will obtain consent for these procedures, including risks and benefits of these procedures.
- The fellow on the consult service will review and interpret all pulmonary function testing (including spirometry, lung volume determinations, diffusing capacity and determination of respiratory muscle force) performed daily in the pulmonary function laboratory with the consult service attending, who signs off on the final interpretation.

Educational Goals:

The pulmonary consult service rotation occurs primarily during the first year of fellowship, although second year fellows do cover the service for first year vacations. Although during each individual block rotation on the consult service, each trainee may encounter various pathologic conditions, by the completion of the year, all fellows should have gained a solid understanding of the pathophysiology and management of pulmonary disease in the disease states indicated above. This includes the ability to interpret chest radiographs and pulmonary function testing. In addition, the fellow is expected to become an effective consultant and to prioritize this in their communications with other physicians. Second year fellows on this rotation are expected to perform essentially the same function as the first year fellow, but their assessment of a consult patient, including the formulation of a differential diagnosis and therapeutic plan are expected to be more complete than a first year trainee.

Evaluation

A review of each fellow's performance on the consultation rotation is conducted at the end of each month and documented using the American Board of Internal Medicine format. In addition, fellows meet at the end of each rotation with the pulmonary/critical care attending on the rotation to review aspects of the rotation and their performance. Every effort is made to address and correct weaknesses in this area. The fellow is encouraged to provide feedback regarding the educational value of the rotation directly with their attending and also in monthly division staff meetings, which all fellows attend. Finally, the fellow completes an anonymous evaluation of each attending at the completion of the rotation.

Specific informative cases are selected for formal presentation to the entire group of fellows and attendings. In that format, differential diagnosis, medical decisions on testing and treatment are reviewed to enhance the educational value of the experience.

Progressive years of training Responsibilities

The Pulmonary Consult service is primarily a first year rotation. However second year fellows cover the consult service for vacationing first year trainees. Although the basic responsibilities of the rotation are similar in the two years, the more senior the fellow assumes a greater role in teaching of residents and medical students on the rotation. The fellow is also expected to present the attending with a somewhat more complete plan of care for each patient, consistent with the additional training.

III. Kindred Hospital of Boston Rotation

During the second and third year of fellowship training, trainees will spend 8 weeks each year at the acute care mechanical ventilation unit (LTACH) of Kindred Hospital of Boston. This facility is within walking distance of the medical center. The unit is under the direction of Dr. Reda Safieddene. Dr. Gerard Hayes is the local site director for the fellowship program at Kindred Hospital. The unit is staffed by all members of the division who rotate on a scheduled basis.

Educational purpose, value, and rationale:

The goals of the rotation are to expose the fellow to the complex management of patients with a wide variety of underlying diagnosis who have been unable to wean from mechanical ventilation in the acute care setting. This increasingly important setting includes patients with post-operative respiratory failure, post-ARDS fibrosis, respiratory failure resulting from neuromuscular disease including critical care neuropathy, patients who are profoundly deconditioned following critical illness, respiratory failure following solid organ transplantation and trauma, and patients who may require prolonged mechanical ventilation due to renal, hepatic, metabolic, or endocrine causes. Patients who require non-invasive mechanical ventilation due to similar pathologies are also managed in this unit. This rotation provides fellows with a unique opportunity managing patients who require nutritional support, rehabilitation, ventilation weaning and care of complex medical issues, including the management of tracheotomy tubes in this population. The unit also provides an outstanding opportunity for continuity of care, and the follow up of patients in the critical care setting, as many of the patients admitted to the unit are transferred from the critical care units of St. Elizabeth's Medical Center.

Teaching:

All patients admitted to the LTACH are assigned to the attending rotation in the unit. The pulmonary/critical care fellow is responsible for the initial evaluation of each patient, including formulating a multidisciplinary management plan. All admissions are reviewed with the attending who is responsible for co-signing all history and physicals. The fellow on rotation in the LTACH is present in the unit daily, but is not required to perform overnight calls, holidays, or weekend coverage. Rounds are conducted on a daily basis with the attending, fellow, nutritionist, nurse, physical/ occupational therapist, and respiratory therapist present. These rounds constitute the majority of the teaching experience, and are devoted to reviewing clinical issues and providing individualized education for the fellow. Pertinent laboratory and radiographic studies are assessed. Unusual cases are gleaned from the rotation, and presented at the appropriate conferences. Reading material available for this rotation include standard pulmonary textbooks, such as Murray and Nadel, journal articles dealing with long term acute care (file collection), reference manuals for respiratory care and online search services, such as Med Line. These are available in the educational center and the fellow's room at the hospital. Weekly multidisciplinary

patient care conferences also provide a valuable teaching resource, especially in the care of tracheotomy and ventilator weaning as well as end of life and directives experience.

Procedure, function, and supervision:

A. Rounds are conducted daily with the attending. The fellow and attending will review each patient, and discuss a management plan for each case. The fellow is encouraged to formulate an initial plan, which is then reviewed in detail with the attending before implementation.

B. The unique experience in the LTACH provides the trainee the opportunity to manage all medical issues, ventilator management (invasive and non-invasive), and the consequences of critical illness complicating the course of these patients.

C. The objective of the LTACH rotation is educational and at no time will the census of patients in the unit exceed 15. If required, patients will be transferred to the direct care of a house physician for the remainder of their admission. Although the trainee is not required to provide routine care to patients not the CVU service, in the event of an emergency the fellow may be asked to provide care to those patients.

Educational Goals:

The Kindred Hospital rotation occurs during the second and third year fellowship. At a minimum this rotation occurs in four-week blocks, allowing the fellow to gain skills in the management of patients and related procedures as indicated above. In addition by maintaining this rotation duration, the trainee acquires knowledge of the unique aspects of post critical care patient management, and long term ventilator weaning including an appreciation of the extended time often required for these patients to regain function and weaning. This is a vital and increasingly important component of training in critical care medicine.

Evaluation

A review of each fellow's performance on the LTACH rotation is conducted at the end of each month and documented using the American Board of Internal Medicine format. In addition, fellows meet at the end of each rotation with the pulmonary/ critical care attending on the rotation to review aspects of the rotation and their performance. Every effort is made to address and correct weakness in this area. The fellow is encouraged to provide feedback regarding the educational value of the rotation directly with their attending and also in monthly division staff meetings, which all fellow attend. Finally, the fellow completes an anonymous evaluation of each attending at the completion of the rotation.

Progressive Years of Training Responsibilities

The Kindred Hospital Chronic Ventilator Unit rotation is a second and third-year only rotation

IV. St. Elizabeth's Medical Center SICU Rotation

Educational value, purpose, and resources

This rotation has its main goal to expose the trainee to the problems encountered in a general surgical ICU such as at St. Elizabeth's Medical Center. The Surgical ICU is a multidisciplinary surgical unit with a diverse population of critically ill non-medical patients. The critical care

service also cares for post-operative patients with critical care illnesses, including patients undergoing thoracic, abdominal, vascular, and orthopedic procedures. There is an active neurosurgical service, including patients with head trauma. In addition, patients undergoing coronary artery bypass, complex valvular cardiac surgery, cardiac-assist device implantation and complex genitourinary cancer surgeries are cared for here. The unit is a modern, 10 bed, well-staff ICU which is run by a surgical critical care team and directed by a surgical intensivist, Dr. Luca Bigatello. This rotation occurs in blocks of one month, and second year fellows are assigned one blocks during the year. Due to its teaching purpose the fellow only attends during the five days a week, without any on-call or weekend coverage.

Teaching

As in all rotations, the fellow is fully supervised during this rotation by a board-certified critical care physician. Dr. Luca Bigatello is the attending assigned to coordinate this rotation. Teaching takes place using a one-on-one format during daily rounds on all patients in the ICU. The fellow is a member of the SICU team which includes the anesthesia-trained surgical intensivist (Dr. Bigatello), the surgical attending staff, surgical house officers (PGY1, PGY2 and PGY3), anesthesia house officers (PGY1), medical students (primarily from Tufts University) cardiothoracic physician assistants, surgical critical care nurses, a critical care pharmacist, pharmacy interns, and respiratory therapists. In addition, there are frequent conferences, which are more formal teaching venues. Members from the pulmonary disease and critical care division provide lectures, which are supplemented by surgical house staff and attending staff. This rotation is particularly useful in exposing the fellows to an extensive cardiovascular and surgery experience. Members of the cardiology division and surgical department round daily in the ICU and also provide teaching on a regular basis. Recommended textbooks are available in the library and copies are provided to the fellow. These include the Textbook of Critical Care (Shoemaker et. Al editors), Critical Care (Civetta, et. Al), Principles of Critical Care (Rippe et. Al) editors), and the ICU Manual (Marini, editors). In addition, online medical information programs, such as UpToDate are widely available to the fellows, including in the fellow's staff room and in the ICU.

Procedures, function, and supervision:

The fellow will round with an attending on a daily basis, and a critical care attending is present in the ICU at all times. The focus of the rotation is to participate in the management of patients admitted to a surgical ICU. The fellow will:

- A. Participate in evaluation and decision making regarding patient admission to the SICU.
- B. Manage critical care problems that may arise as a member of the SICU team.
- C. Obtain appropriate consultations and coordinate care of the patients.
- D. Write progress and procedure notes on all patients in the SICU that the fellow has participated in the care of. All notes will be co-signed by the attending.
- E. With attending supervision perform procedures related to critical care, and interpret the results of these tests.
- F. Provide lectures to the surgical house staff that are case-based and of clinical relevance to the patients seen in the SICU, on topics in surgical critical care. The fellow will fully participate in

the academic discussion on rounds as well as all surgical department conferences, including Surgical Grand Rounds.

Educational goals:

The St. Elizabeth's SICU rotation occurs during the second year of fellowship. Although during each individual block rotation on the service, each trainee may encounter various pathologic conditions, by the completion of the required block, all fellows should have gained additional experience in the management of critical illness in these non-medical patients, as indicated above. Fellows also acquire additional proficiency in ICU related procedures. This includes additional training in airway management, invasive monitoring and ventilator management. They are also asked to provide formal didactic to the surgical house staff during the rotation.

Evaluation:

A review of each fellow's performance on the SICU rotation is conducted at the end of each month and documented using the American Board of Internal Medicine format. In addition, fellows meet at the end of each rotation with the pulmonary/ critical care attending on the rotation to review aspects of the rotation and their performance. Every effort is made to address and correct weaknesses in this area. The fellow is encouraged to provide feedback regarding the educational value of the rotation directly with their attending and also monthly division staff meetings, which all fellows attend. Finally, the fellow completes an anonymous evaluation of each attending at the completion of the rotation.

Progressive Years of Training Responsibilities:

Second year trainees rotate to the Saint Elizabeth's SICU. Second year trainees have responsibilities beyond those of a first year trainee, including serving as a pulmonary consultant on the surgical cases seen, participating in the training of surgical house officers, and assisting and supervising the surgical house officers in performance of procedures. Second year fellows would assume the role of a code team leader in the SICU, and to directly support the training mission of the surgical service by clinical teaching activities during ICU rounds with the back-up support of the attending.

V. Pulmonary Physiology Laboratory Rotation

Education purpose, value and resources:

This rotation is structured to provide the fellow in training with the skills required to perform and interpret the physiologic evaluation of the respiratory system. The purpose of the physiology laboratory is to provide a physiologic analysis, including detailed interpretation of appropriate testing, in patients with diverse respiratory disease. This includes patients with obstructive and restrictive lung diseases, neuromuscular disease, pulmonary vascular disease, cardiac disease, and those requiring detailed pre-operative assessment.

Teaching:

Dr. Peter LaCamera is the director of the pulmonary physiology section. Attendings assigned to the clinical consult service assist in the interpretation of pulmonary function testing. All tests are initially interpreted by the fellow on the rotation and then reviewed in detail with an attending physician. Unusual or complicated pulmonary function tests, bronchial-provocation tests, and

tests of neuromuscular function and respiratory drive are also reviewed at one of the clinical conference (Thoracic Oncology, Thoracic Radiology or Clinical Case Presentation Conference) appropriate to the clinical context . In many instances, the final interpretation will be arrived at during the conference. The fellow on the rotation is responsible for presenting all studies during this conference. Resources available to the fellow during this rotation include standard textbooks of pulmonary medicine, such as Murray and Nadel, journal articles relating to pulmonary physiology, manuals of pulmonary function testing and cardiopulmonary testing (ATS) and online search services such as UpToDate. These can be found in the pulmonary physiology laboratory and also in the fellows' room.

Procedures, function and supervision:

The physiology laboratory follows American Thoracic Society and European Respiratory Society Guidelines for the performance of pulmonary function testing (PFT). The technical director of the respiratory section is responsible for the performance of routine PFTs. The laboratory is currently capable of performing the following services:

- A. Complete lung volumes
- B. Forces vital capacity and volume loops
- C. Diffusion capacity for carbon monoxide
- D. Arterial blood gases
- E. Bronchial-provocation testing
- F. Control of breathing, including assessment of respiratory muscle function Hypoxic and hypercarbic stimuli
- H. Evaluation of dyspnea
- I. Simple and cardio-pulmonary exercise testing
- J. Forced oscillatory determination of resistance and reactance

On a daily basis the first year pulmonary/ critical care fellow assigned to the consult service rotation will perform PFT interpretation, and review these studies with an attending from the division. Once read, studies become a component of the medical record. Test scheduling is performed in the pulmonary office by the appropriate secretary. On occasion, an urgent interpretation may be required.

All cardio-pulmonary exercise testing is performed with the second year Pulmonary Physiology Laboratory fellow present during the entire study. Whenever possible, these studies will not be scheduled to conflict with other fellow activities, such as conferences. The fellow is responsible for an initial brief evaluation of the patient, monitoring the patient during the study, and obtaining arterial blood gases for analysis. A staff member of the division is available for assistance at all times. All exercise studies are initially interpreted by the fellow, and then reviewed with a staff member before becoming part of the medical record.

The fellow on the service will also obtain consent from patients undergoing bronchial-provocation testing, and provide interpretation of these studies. An attending from the division is available for assistance, and provides final interpretation of the study.

Educational Goals:

The Pulmonary Physiology Rotation occurs primarily during the second and third year fellowship. Although during each individual block rotation on the service, each trainee may encounter various pathologic conditions, but the completion of the required blocks, all fellows should have gained experiences in conduction and interpretation of physiology relation procedures as indicated above. Fellows on this rotation are required to present all cardio-pulmonary tests at a weekly physiology conference. This includes an interpretation of test results and when appropriate, a management plan. Fellows must also become effective consultants during this procedure, communicating the findings of these studies to other physicians in a meaningful and practical fashion.

Evaluation:

A review of each fellow's performance on the physiology laboratory rotation is conducted at the end of each month and documented using the American Board of Internal Medicine format. In addition, fellows meet at the end of each rotation with the pulmonary/ critical care attending on the rotation to review aspects of the rotation and their performance. Every effort is made to address and correct weaknesses in this area. The fellow is encouraged to provide feedback regarding the educational value of the rotation directly with their attending and also in monthly division staff meetings, which all fellows attend. Finally, the fellow completes an anonymous evaluation of each attending at the completion of the rotation.

Progressive Years of Training Responsibilities

Second and third year fellows participate in this rotation. Advancement of fellows' responsibility in the performance of all procedures is based on each individual's level of skill and the nature of the procedure. In general, there is an appropriate progression for all fellows performing these procedures towards independent and competent initiation and completion of the entire procedure. However, all procedures are fully supervised by a member of the division during all years of training.

VI. Sleep Medicine and Sleep Laboratory Rotation

Educational purpose, value and resources

Within St. Elizabeth's Medical Center a four bed sleep laboratory has been established under the direction of Dr. Katherine Hendra. The Center for Sleep Diagnostics was opened in May 2003 and operates in conjunction with a system wide network of fully accredited sleep laboratories. Full overnight polysomnograms, multi sleep latency testing and nap tests are performed. Although fellows are not assigned to rotations in the sleep laboratory, they do participate in the interpretation of polysomnograms in the third year of training.

Teaching:

A curriculum of didactic lectures on sleep medicine and related topics is presented throughout the year. In addition, journal club related to sleep medicine topics are a component of the

regular journal club schedule. Trainees in all years of fellowship participate in these lectures and conferences. In addition, fellows who participate in the interpretation of polysomnograms are under the direct supervision of Dr. Katherine Hendra a sleep board certified pulmonologist, who reviews all studies with the trainee. Individualized teaching sessions are a components of the sleep fellowship, but available to all members of the division who wish to attend. Dr. Hendra also runs a bi-weekly sleep clinic, which is attended by rotating fellow. This clinic is in addition to the fellows' regular continuity clinic schedule and provides fellows with exposure to patients with sleep related problems. Patients seen in the clinic and sleep laboratory present with a diverse spectrum of sleep disorders, including, but not limited to, obstructive and central sleep apnea syndromes, idiopathic snoring, circadian rhythm disturbance, narcolepsy, hypoventilation syndromes, psychiatric causes of sleep disturbance and insomnia. There is also frequent interactions with allergists, otolaryngologists and neurologists that frequently use the sleep laboratory resources.

Procedures, Function and Supervision:

- A. The sleep laboratory at St. Elizabeth's medical center is capable of performing overnight polysomnography, including split night testing, multiple sleep latency testing, and video monitoring testing where appropriate.
- B. The sleep laboratory is staffed by technicians
- C. Pulmonary/ critical care medicine fellows may participate in the interpretation of PSG studies under the supervision of Dr. Katherine Hendra, a board certified attending.
- D. Dr. Hendra is responsible for reviewing and co-signing all studies performed at the Steward Center for Sleep Medicine.

Evaluation:

Formal evaluations are completed for the pulmonary/ critical care medicine fellows participating in the sleep laboratory services. Feedback is given by Dr. Hendra following each clinic session and at sessions where sleep diagnostic studies are interpreted.

Progressive Years of Training Responsibility:

Fellows in all three years participate in the didactic portion of sleep medicine training. The interpretation of sleep diagnostic studies and the outpatient evaluation of sleep medicine patients is available only to second and third year fellows.

VII. Pulmonary Procedures Services

Educational purpose, value and resources:

The pulmonary procedures service is responsible for all bronchoscopies, closed pleural biopsies, and thoracentesis performed through the division. An attending from the division and a second or third year pulmonary fellow is assigned to the rotation. A full section in the fellow's manual is devoted to a detailed outline of these procedures. The objective of the rotation is to educate the fellow in the appropriate indications, risks, complications, and management of

patients requiring these procedures. Procedures are performed in a state of the art, fully monitored, bronchoscopy suite located within the division, under the direct supervision of an attending. Patients seen on this rotation include, but are not limited to, those with possible or confirmed lung cancer, pulmonary nodules, airway obstruction, typical and atypical infections including those with immunosuppression, diffuse non-infectious parenchymal lung disease, pleural effusions, empyema and diffuse disease of the pleura (malignant and non-malignant).

Teaching:

An attending from the division is present and supervises all procedures. Patients being considered for procedures are often discussed at the appropriate conference, including a careful review with oncology and thoracic surgery, before the procedure is performed. Although the fellow will often identify and evaluate patients prior to a procedure, in all instances, an attending from the division must also evaluate the patient and determine the appropriateness of the intended testing. Resource material available to the fellow during this rotation and throughout the fellowship include standard text books of pulmonary medicine, such as Murray and Nadel, manuals on the conduction of fiber-optic bronchoscopy and related procedures, relevant journal articles, appropriate models of airway anatomy and online service services. These are located in the pulmonary education resource center, in the fellows room, and also in the bronchoscopy suite.

Procedure, Function, and Supervision:

- A. All procedures will be performed by the pulmonary/ critical care division on medical/ surgical patients as required and following an appropriate evaluation
- B. The fellow assigned to the rotation is responsible for evaluating all requests except those scheduled for outpatient procedures by a division member
- C. The fellow assigned to the rotation must assure that all appropriate pre-procedure laboratories and radiographs have been obtained and reviewed with the attending completing the procedure.
- D. Procedures are scheduled by the attending in conjunction with the administrative manager for the section. Whenever possible these procedures are scheduled to allow fellows to attend scheduled conferences of the division, as well as Department of Medicine conferences such as Grand Rounds and Morbidity and Mortality Conference.
- E. The fellow on the RICU and consult service will be responsible for evaluating all inpatients requiring a procedure. They will discuss the procedure with the patient and/ or their family/ guardian, obtain written informed consent and write pre-operative orders. These are specified in the procedures manual. All fellows are trained in the performance of procedures by ABIM certified pulmonologists familiar with the procedures.
- F. Routine procedures are completed in the bronchoscopy suite. Outpatients are admitted to the day surgery area. Fluoroscopy services are available in radiology if required. Emergency procedures will be performed at any time of the day, either in the bronchoscopy suite, or other area of the hospital as indicated.
- G. All patients with a tracheostomy who are going to have the tracheotomy tube plugged will undergo bronchoscopy to evaluate their upper airway.

H. After each procedure, the fellow performing the procedure will write post-procedure orders in the medical record. The initial written report is placed in the chart by the attending, who also dictates the final procedure note.

I. All procedures are supervised by an attending. Quality assurance and improvement will be maintained to assure that procedures adhere to the guidelines outlined in the procedure manual, and meet the standards set by hospital policy.

J. All complications will be annotated for each patient. The follow-up of this complication will be filed within the week of the occurrence.

K. During the weekend, and after routine clinical hours, the fellow and attending on-call are responsible for procedures.

L. Maintenance of the bronchoscope and other procedure equipment, preparation for the procedure, and cleaning of the equipment will be completed by members of the respiratory therapy section.

M. If a transbronchial biopsy is performed, the technique and results of the biopsy, including notation of the post-procedure chest X-ray will be detailed in the medical record.

N. The bronchoscopy service is reviewed at least annually by the division, and represents a vital component of quality assurance. Cases are also reviewed at the division's morbidity and mortality sessions when appropriate.

Educational Goals:

The pulmonary invasive procedures rotation occurs primarily during the second year of fellowship. Although during each individual block rotation on the service, each trainee may encounter various pathologic conditions, by the completion of the required blocks, all fellows should have gained experience in condition of invasive pulmonary procedures. Fellows are expected to gain adequate skills in administering topical anesthesia, conscious sedation and non-invasive monitoring interpretation as indicated above. Fellows on this rotation are also required to present appropriate bronchoscopy findings at a weekly lung cancer conference, including an interpretation of how results may impact on cancer staging and therapy. Fellows must also become effective consultants during this procedure, communicating the findings of invasive pulmonary procedures to other health care providers in a meaningful and practical fashion.

Evaluation:

A review of each fellow's performance on the pulmonary procedure rotation is conducted at the end of each month and documented using the American Board of Internal medicine format. In addition, fellows meet at the end of each rotation with the pulmonary/ critical care attending on the rotation to review aspects of the rotation and their performance. Every effort is made to address and correct weaknesses in this area. The fellow is encouraged to provide feedback regarding the educational value of the rotation directly with their attending and also in monthly division staff meetings, which all fellows attend. Finally, the fellow completes an anonymous evaluation of each attending at the completion of the rotation. Outcomes are evaluated by

quarterly reviews of all bronchoscopies. The complications and results are compared with national threshold values. Fellows are asked to actively participate in the review of such data.

Progressive Years of Training Responsibilities

Third year fellows may on occasion be asked to provide coverage for second year fellows on this rotation, or to assist the second year fellow if there are scheduling conflicts. Advancement of fellow responsibility in the performance of all procedures is based on each individual's level of skill and the nature of the procedure. In general, there is an appropriate progression for all fellows performing these procedures towards independent and competent initiation and completion of the entire procedure. However, all procedures are fully supervised by a member of the division during all years of training.

VIII. Respiratory Therapy Department

Educational purpose, value and resources

Although there is no formal rotation through the respiratory therapy department, this area is integral in the training of pulmonary/ critical care medicine fellows. The respiratory therapy department has extensive, and throughout fellowship training, emphasis is placed on making these available. The department is capable of supplying ventilators for non-invasive and invasive ventilation to adults and neonates, including high frequency jet ventilation. Respiratory therapists are available 24 hours daily. The technical aspects of the department are directed by Robert Garland, RRT. The medical director is Dr. Lawrence Kenney.

Function

The purpose of the department is to provide respiratory services to the entire hospital and its patients. It adheres to the clinical guideline as outlined by the American Association of Respiratory Care in compliance with the American Thoracic Society and the American College of Chest Physicians. Additional information is in the appropriate division manual.

IX. Outpatient Continuity Clinics

Educational purpose, value and resources

Outpatient pulmonary medicine continuity clinics occur during all three years of training. These clinics expose the fellow to a broad cross section of clinical pulmonary medicine and allow the fellow to follow a panel of patients during the three years of training. A number of primary pulmonary diseases and systemic manifestations of respiratory diseases are represented in the clinic population, as detailed in the Pulmonary/ Critical Care Medicine Fellowship Curriculum. It is expected that the fellow will refine the specialty oriented history and physical examination, and the ordering and review of the specific laboratory exams with special emphasis being placed on chest radiographs, pulmonary function tests, and polysomnograms during their clinic training. Where appropriate the results of pathological specimens are reviewed. A special effort is made to instruct the trainee in the proper use of medications, drug interactions, the appropriate use of invasive and non-invasive testing and the psychological and physical impacts of chronic diseases.

Teaching and resources

Pulmonary fellows are assigned to several pulmonary clinics. All fellows rotate through the outpatient clinics at St. Elizabeth's Medical Center. Fellows are assigned to an individual clinic of a pulmonary/ critical care and sleep medicine attending for the entire three years of training. In this clinic fellows are assigned patients, who they follow on return visits.

Fellows also rotate through the Brighton Marine Health Clinic, which is held on Friday mornings. Second and third year fellows participate in this clinic and fulfill continuity of care for patients from this institution seen at St. Elizabeth's Medical Center. In both continuity clinics, trainees follow patients and coordinate their outpatient pulmonary work-ups including the appropriate utilization of radiographic, physiologic and procedural evaluations. Both clinics are supervised at all times by an attending physician from the pulmonary disease division and offer a diverse range of respiratory patients, and diversify the trainee's outpatient experience. In addition, clinics in allergy, otolaryngology and sleep medicine are also available as elective rotations to the fellows.

Reading material include in this rotation include standard textbooks of pulmonary medicine, such as Murray and Nadel, core journal articles, and online resources, such as UpToDate. All of these are available in the pulmonary educational center, the fellow's room, and also in the medical library.

Procedures, function and supervision

Patients in these clinics will be assigned to the fellow, who will initially evaluate the patient with a full history and physical examination. The fellow will then present their finding to the attending who is present in the clinic at all times, and a final therapeutic plan will be determined. For all patients the fellow is expected to demonstrate the following:

- A. A courteous approach to interviewing and examining patients in the outpatient setting, paying attending to the particular sensitivities due to each patient and their families.
- B. Obtain a comprehensive yet pertinent and relevant medical, social, family, and occupational history, history of medication use and prescription history, and identifying the potential influence of the medication history upon the current presentation of symptoms.
- C. Perform a pertinent physical examination appropriate to the level of care, and be able to demonstrate to the attending physician the salient interesting or abnormal features of the examination as well as being able to demonstrate the proper techniques of physical examination targeting the respiratory system.
- D. Transcribe this information in an acceptable legible format onto the outpatient chart.
- E. In addition fellows are expected to acquire skills relevant to out-patient management, such as the writing of appropriate prescriptions and be responsible for the follow-up on retrieving data obtaining during clinical testing, and the data from tests and procedures, which have been ordered.

F. The fellow will be encouraged to provide an initial interpretation of all relevant patient studies, such as Chest CT scans and MRI of the mediastinum and pleura and become familiar with the use of PET scanning in pulmonary medicine.

G. The pulmonary fellow is expected to demonstrate to medical students and medical residents who are rotating in the clinic any aspect of their patients physician exam. Fellows must also formally teach the medical student or resident the features of each disease that the patient presents. This includes interpretation of chest radiography studies, Chest CT scans, pulmonary function tests, and other testing pertinent to the patients diagnosis, including physiologic evaluation such as exercise testing.

H. The fellow is expected to become proficient at taking consultation questions over the phone from the patients primary provider and directing an efficient and appropriate evaluation for each patient.

I. The fellow is expected to provide teaching to each patient regarding their disease, the appropriate use of medications, environmental measures, lifestyle management, and smoking cessation to determine each individual understandings of their respiratory disorder.

Evaluation

A review of each fellow's performance in the outpatient clinics is conducted at the end of each six-month period and documented using the American Board of Internal Medicine and their performance. Every effort is made to address and correct weaknesses in this area. The fellow is encouraged to provide feedback regarding the educational value of the clinics directly with their attending and also in monthly division staff meetings, which all fellows attend. Finally the fellow completes an anonymous evaluation of each attending supervising their outpatient clinics.

X. Research

Educational purpose, value and resources:

During the second and third year of fellowship training, trainees will spend 16 weeks each involved in clinical research. This facility is located in the pulmonary division at the medical center. The research program is under the direction of Dr. Armin Ernst who works closely with Dr. Gerard Hayes to assure that the educational components of the rotation are being met. The research of the division is supported by a dedicated Research Office and a research administrative coordinator, Mr. Arthur Dea.

The goal of the rotation is to expose the fellow to several aspects of clinical research. This includes initial design of a project, review of the literature, writing and submitting all necessary forms for the institutional review board (IRB), including a protocol, initial research form, informed consent form and annual review form. The fellow must also read the manual for investigative site entitled "Protecting Study Volunteers in Research", 2nd edition. This manual will prepare the fellows to assume a critical role in clinical research and includes ethics and Federal regulations, roles, and responsibilities of the institution in Human Subject research, roles and responsibilities of the investigator, behavioral research issues, conflict of interest and informed consent. To be allowed to participate in clinical research, the fellow must take and pass a 50-question exam.

Teaching and resources

This rotation provides fellows with a unique opportunity during their training to participate in a guided clinical research project in the areas of pulmonary, critical care and sleep medicine. Studies conducted in this laboratory can be observational and/ or interventional studies.

Observational studies: These studies are related to chronic obstructed pulmonary disease (COPD) including exercise performance and cardio-pulmonary interaction in patients with COPD, a prospective evaluation of control non-smokers, smokers and COPD patients to determine the presence of biomarkers of disease activity and comparison of these markers with phenotypic expression of the disease. We are also conducted studies related to diagnosis of COPD as well as clinical, physiologic and systemic repercussions of exacerbation of COPD.

Interventional Studies: Several interventional studies have been completed and are scheduled to start. The clinical areas include Critical Care Medicine and Pulmonary disease. Examples include a phase I study trial of bronchoscopic lung volume reduction system in patients with advance heterogeneous emphysema, use of erythropoietin in patients with anemia in the ICU setting, placebo-control study to determine the effect of tiotropium in dynamic hyperinflation and cardiac interaction in patients with COPD.

Reading material included in this rotation include a collection of relevant, timely review journal articles and book chapters written on selected clinical research topics. Medline searching is also available in the fellow's conference room, as is UpToDate, which provides excellent information on statistical methods and study design.

Procedure, function and supervision:

Prior to starting their second year of training, fellows meeting with Drs. Ernst and Hayes to discuss the different projects available, and to review their individual research interests. The selection of the projects is based on several factors, including the estimated duration of the project, the basic knowledge required by the fellow to participate and fellow and attending preferences. The projects are assigned to a single fellow (responsible for the project) with other fellows as co-participants. This assures that fellows be exposed to several different projects, and that they also assume the role of principle investigator for at least one research activity. Each fellow has a direct research mentor who is a staff member ultimately responsible for the research protocol and supervises the fellows directly.

The fellow will be responsible to perform the following duties during the rotation:

A. Initial review of the literature: this activity will bring the fellow up to date to the current knowledge of the topics to be investigated. The fellow will present and discuss this with Dr. Hayes and the faculty member who is serving as the principle investigator.

B. Protocol writing: The fellow will write a research protocol with supervision and assistance of the staff in charge of the project. After completion, the protocol will be presented in a research meeting (staff and fellows) to be critiques and modify accordingly.

C. Institutional Review Board (IRB) Requirements: Each fellow is responsible for completing IRB required forms with input from the staff mentor of the protocol. These include initial research, informed consent HIPAA and annual review forms. The fellow

participates in the initial IRB meeting reviewing his/ her protocol. The fellow will also be responsible for implementing any changes required by the IRB.

D. Protocol Implementation: the trainee and attending are responsible for the implementation of the protocol. Initially, the fellow will be accompanied by the attending to assure the correct patient selection and protocol execution. After the attending confirms the trainee expertise to carry the project on, the fellow will continue the project with a lower level of supervision. However, the staff mentor is always available to discuss unusual circumstances of the project, and review the fellows progress regularly.

E. Protocol Management: The fellow will be responsible for completing all the forms required by the protocol as well as any queries generated by a clinical research organization (CRO) or monitor of the study, as required by the IRB.

F. Protocol Competition: Based on pre-determined estimation and/ or interim results, the protocol will be concluded. The fellow will inform the IRB about this action.

Evaluation

A review of the trainee's performance during the PPL rotation is conducted at the end of each block and documented using the ABIM format. In addition, trainees met with their research mentor to review their performance and correct any potential weakness. The fellow is encouraged to provide feedback regarding the educational value of the rotation. In addition, fellows complete an anonymous written evaluations of the rotation and their mentor. As an outcome, all fellows are expected to present at regional and national meetings where peer review will evaluate the output of the research endeavor.

Progressive Years of Training Responsibilities

The PPL rotation is a second and third-year rotation. During the second year fellows are introduced to clinical research as detailed above. During the subsequent year of training, fellows assume greater responsibility for their project including patient recruitment, conduction of research, data collection and analysis and presentation of findings.

On Call Schedule

A. Pulmonary attendings are on call seven days a week on a rotating basis. The on call schedule is given to the pulmonary secretary, the hospital operator, posted in the fellows room and is available for patients as needed.

B. The on call schedule for the fellows is elaborated in conjunction with the attending staff and managers, and is also widely available in the hospital. Details regarding the on call schedule are provided in the division policy regarding duty hours. All call activities follow the specified guidelines of this policy, including the limitation of appropriate duty hours to no more than 80 hours/ week.

C. Pulmonary fellows will round on every patient under the care of the pulmonary/ critical care medicine division seven days a week as stated in the manual.

D. When fellows are called regarding an acute medical situation the following procedure will be followed:

- Initial advice will be given over the phone
- If necessary, the on call fellow will return to the hospital to evaluate the patient and recommend additional management.
- The on-call fellow may immediately obtain additional input regarding the situation for the on call attending, who may also need to return to the hospital.
- The on call fellow is responsible for the placement of pulmonary artery catheters in the RICU patients during weekends, holidays, and nights

Teaching Conferences

The following teaching conference are integral component of the St. Elizabeth's Medical Center Division, including quality assurance and morbidity and mortality reviews.

1. Thoracic Oncology Conference: Multidisciplinary conference attended by members of the pulmonary, radiology, oncology, pathology, radiation oncology and thoracic surgery divisions where patients with suspected or known malignancy involving the lung are discussed. Second year fellows organize the conference.
2. Pulmonary/Critical Care Seminars: Didactic conference given by invited clinicians and researchers, which deepens the breadth and scope of the division.
3. Case Presentations: First year fellows research and prepare a presentation focused on a clinical case encountered by them on the clinical service, the ICU or the clinic which demonstrates an interesting or unusual condition, presentation of disease, novel therapeutic option or clinical decision-making process. Two cases (one per first year fellow) are presented.
4. Journal Club: Alternates between pulmonary medicine, critical care medicine, and sleep medicine peer-reviewed journal articles, presented and discussed in an evidence based medicine format by fellows from all years of training.
5. Didactic Fellows' Conference: Topical lectures covering a broad range of topics in pulmonary, critical care and sleep medicine given by division and non-pulmonary/ critical care subspecialty faculty.
6. Department of Medicine Morbidity and Mortality Conference: Conference reviewing two to four recent cases of a mortal or near mortal complication, poor outcome, or "near miss" on the general internal medicine service, many of whom have been cared for in the ICU. Focus is on process improvement, system analysis, and identifying gaps in care for quality improvement.
7. Thoracic Radiology Conference: Opportunity to review unusual radiographs of pulmonary patients including those from the RICU, consult and outpatient services. Plain chest radiographs, CT Scans, MRI and PET scans are discussed. The first year fellows organize this conference, which is attended by the pulmonary faculty and one of two dedicated radiologists.
8. Research Conferences: At this conference fellows and staff are encouraged to review their ongoing research projects. Focus is on peer review of the research design, recruiting, and execution, as well as serving as a forum for discussing and designing new projects.

9. Pulmonary/Critical Care Morbidity and Mortality Conference: Monthly review of all patients expiring in the ICU or on the Pulmonary/Critical Care service, as well as those with significant morbid complications or “near-misses” in order to identify deficiencies in care process with the goal of improving our patient care.

10. Pulmonary Medicine InterCity Conferences between the major medical centers are held four times per the academic year.

11. Medical Grand Rounds are held weekly on Wednesday mornings. All members of the division are encouraged to attend.

Elective Rotations:

Elective rotations in Lung Transplant medicine (Brigham and Women’s Hospital) and Newborn Intensive Care Unit, (SEMC) are available. Additional details regarding these electives are detailed in the curriculum for each elective.

Evaluations:

Fellow evaluation

The primary objective of the fellowship-training program is to help trainees obtain their individual educational goals. Evaluations follow the American Board of Internal Medicine format. As outlined for each rotation, fellows are evaluated on a monthly basis at staff division meetings held for this purpose. Completed forms are placed in the fellows file, which is available for the fellows review at any time. Attendings also provide constructive and timely feedback to each fellow on individual rotations. In addition the program director meets with each fellow on an individual basis at least twice during the academic year, and meets the fellows as a group on a bi-monthly basis.

Attending Evaluations

Each fellow is asked to evaluate the attendings performance in an anonymous fashion on a form specified for this purpose. The program director and division chief meet with fellows to discuss issues, which may arise regarding specific division members.

Program evaluation

A monthly staff meeting occurs which is attended by all members of the division, including fellows. At this meeting each component of the program is reviewed and discussed. Feedback is encouraged from every member of the division and in particular from the trainees. The objective of this meeting is to provide a mechanism of constant review and improvement of the program. In addition, trainees complete monthly reviews of each rotation, and annual reviews of the program as a whole. All of these evaluations are completed in an anonymous fashion. Pulmonary/ critical care and sleep medicine attending also meet at least bi-annually to review the program as a whole including assuring that the goals and objectives of the program and the outlined curriculum are being adhered to, and where necessary, being revised to meet the educational purpose of the fellowship.