

The University of Alabama at Birmingham

Department of Medicine

Division of Pulmonary, Allergy, and Critical Care

**Pulmonary and Critical Care Medicine
Fellowship Training Program**

FELLOWSHIP MANUAL



TABLE OF CONTENTS

Page	
I. GLOSSARY OF SELECTED TERMS.....	1
II. OVERVIEW	2
II.A. Program Leadership, Administration and Committee Structure.....	2
II.B. Fellowship Program Tracks	4
II.C. Eligibility for Pulmonary and Critical Care Fellowship Training.....	5
II.D. The Division of Pulmonary, Allergy and Critical Care Medicine: Clinical Services, Research, and Teaching.....	6
III. PULMONARY AND CRITICAL CARE FELLOWSHIP TRAINING CURRICULUM.....	9
III.A Mission Statement	9
III.B. Specific Goals by ACGME competencies	9
III.C. Major Clinical Rotations: Goals, Competencies, Objectives, Teaching Methods, Assessment Methods, Level of Supervision and Educational Resources.....	10
III.C.1 UAB Hospital MICU.....	10
III.C.2. UAB Hospital Consultation Service	20
III.C.3. UAB Hospital Inpatient Service (6S).....	30
Error! Bookmark not defined.	
III.C.4. Outpatient Procedures	38
III.C.5. Birmingham VAMC MICU.....	47
III.C.6. Birmingham VAMC Consultation Service	56
III.C.7. Lung Transplant	66
III.C.8. Sleep Medicine.....	74
III.C.9. Outpatient/Ambulatory Medicine Experience (TKC and BVAMC)	80
III.C.10 Interdisciplinary interactions	80
III.D. Research Experience	80
III.E. Continuing Medical Education and Society Memberships	81

III.F. Development of Teaching Skills	81
III.G. Development of Leadership Skills	82
III.H Methods of evaluation.....	82
IV. TEACHING CONFERENCES.....	86
IV.A. Fellows' Conference	87
IV.B. Journal Club	87
IV.C. Multidisciplinary Chest Conference	88
IV.D. Townhall Meeting	88
IV.E. Pulmonary Grand Rounds	88
IV.F. Department of Medicine Grand Rounds	88
IV.G. Critical Care Conference	89
IV.H. Interstitial Lung Disease Conference.....	89
IV.I. Mycobacterial Disease Conference	89
IV.J. Nuts and Bolts Series.....	89
IV. K. Lung Cancer Conference.....	89
IV.L. Other mandatory conferences.....	90
V. PULMONARY FELLOW SUPPORT SERVICES AND FACILITIES	91
V.A. Pulmonary Fellows Office Suite.....	91
V.B. Reference Materials	91
V.C. Computer Support	91
V.D. Medical Records (hard-copies).....	92
V.E. Copies	92
V.F. Libraries.....	93
V.G. Phones	93
V.H. Presentation materials.....	93
V.I. Malpractice Insurance.....	94

V.J. White Coats	94
V.K. Pagers	94
VI. PULMONARY FELLOW PROCEDURE LOGS	94
VI.A. ABIM Requirements	94
VI.B. Record Keeping	95
VII. DUTY HOURS, CALL ON WEEKNIGHTS AND WEEKENDS, MOONLIGHTING	95
VII.A. Duty hours	95
VII.B. On-Call Activities	96
VII.C. Holidays	98
VII.D. Coverage for Internal Medicine Residents	98
VII.E. Moonlighting	98
VIII. VACATIONS and MEETINGS	99
VIII.A. Vacation time	99
VIII.B. National Meetings	100
VIII.C. Regional Meetings	101
IX. RELATIONSHIPS WITH THE PHARMACEUTICAL INDUSTRY	101
X. APPENDICES	102

I. GLOSSARY OF SELECTED TERMS

ABIM: American Board of Internal Medicine

ACGME: Accreditation Commission for Graduate Medical Education

ACCP: American College of Chest Physicians

ALA: American Lung Association

ATS: American Thoracic Society

BVAMC: Birmingham Veterans Administration Medical Center

CPET: Cardiopulmonary Exercise Test

Fellow: Consistent with the definition provided by ACGME, subspecialty residents enrolled in the UAB Pulmonary and Critical Care Medicine Residency Program will be referred to as “fellows” (i.e. physicians in a program of graduate medical education accredited by the ACGME who have completed the requirements for eligibility for first board certification).

LHC: Lung Health Center

MET: Medical Emergency Team

PFTs: Pulmonary Function Tests

Pulmonary and Critical Care Medicine Fellowship Program: as used in this document, Pulmonary and Critical Care Medicine Fellowship Program refers to the Pulmonary and Critical Care Medicine Residency Program at the University of Alabama at Birmingham (also referred to as “the program” or “training program.”).

SCCM: Society of Critical Care Medicine

TKC: The Kirklin Clinic

UAB: University of Alabama at Birmingham

UH: University Hospital

II. OVERVIEW

The purpose of this manual is to acquaint starting Pulmonary and Critical Care Fellows with the basic mechanics of the combined Pulmonary and Critical Care Fellowship Program at UAB and to provide a reference source for teaching attendings, research mentors, upper level fellows, program staff, and all fellowship applicants. The Fellowship Program follows UAB Institutional GME Policies and Procedures (available for download at: http://services.medicine.uab.edu/publicdocuments/GME/GME_Policy_Manual_July_2011.pdf which will not be reiterated in this document. All individuals involved with the Pulmonary and Critical Care Fellowship Program must be familiar with the institutional as well as the program-specific policies and procedures.

II.A. Program Leadership, Administration and Committee Structure

Victor J. Thannickal, MD, Director, Division of Pulmonary, Allergy and Critical Care Medicine, holds ultimate responsibility for the Fellowship Program. He is assisted by:

J. Allen D. Cooper, Jr., MD, Director, Pulmonary and Critical Care Fellowship Program and Chief of the Pulmonary and Critical Care Section at the Birmingham VA Medical Center

Joao A.M. de Andrade, MD, Associate Director, Pulmonary and Critical Care Fellowship Program and Director of the MICU at the Birmingham VA Medical Center

Keith M. Wille, MD, Associate Director for Education and Curriculum Development, Pulmonary and Critical Care Fellowship Program and Medical Director of the UAB Lung Transplantation Program

Mark T. Dransfield, MD, Associate Director for Research and Chairperson of the Research Committee, Pulmonary and Critical Care Fellowship Program and Medical Director of the UAB Lung Health Center

Kathleen E. Harrington, PhD, MPH, Chairperson, Education Committee, Pulmonary and Critical Care Fellowship Program

Kara Newton, Division Administrator

Cyndi Calhoun, Program Administrator

The Chief Fellow: Each year, a fellow who has distinguished himself/herself academically and has demonstrated leadership skills is appointed to serve as the Chief Fellow. The Chief Fellow is responsible for developing the rotation and call schedules, is responsible for scheduling of lectures, must assure that necessary audiovisual equipment is requested and available for conference speakers, and

keeps track of the reference materials in the Fellows Library and requests updates as appropriate. He/she is encouraged to delegate tasks, as feasible, to develop leadership skills among more junior fellows. The Chief Fellow arranges coverage when fellows unexpectedly must leave the hospital due to becoming ill, having family emergencies or being required to leave the hospital after prolonged on-call activities (24+4 rule). He/she is encouraged to hold regular meetings with the other fellows to discuss program compliance with ACGME regulations, problems on specific rotations, and conflicts with attendings, and to lead discussions about potential solutions to these issues, as well as providing a communication conduit from Fellowship administration. He/she then provides feedback to the Program Director while preserving the anonymity of individual Fellows. The Chief Fellow sits on various committees as described below.

These individuals form **The Pulmonary and Critical Care Fellowship Program Committee**. The committee meets at least annually to discuss training program policies, funding issues, changes in the curriculum, etc. To keep the entire faculty apprised of Fellowship Program issues, the Fellowship Program Director reports to and seeks input from the Division faculty every month at the regularly scheduled faculty meetings. The Pulmonary and Critical Care Fellowship Program Committee is also responsible for the recruiting and hiring of applicants (eligibility criteria see Section II.C. below). Drs. Cooper and de Andrade are responsible for reviewing all applications received and inviting competitive applicants for interviews. It is Division policy to interview all internal UAB applicants. The Fellowship Program Director, the Associate Director, and the Chief Fellow, interview all of the invited applicants with additional input from faculty in the applicant's area of interest and, as appropriate, from other faculty members and fellows enrolled in the program. Based on the interview scores, a preliminary ranking list is constructed. The Pulmonary and Critical Care Fellowship Program Committee then meets to review each application in detail, to review the interview comments and scores, and to develop a final ranking of the applicants with input from all faculty, as appropriate.

The Pulmonary and Critical Care Fellowship Education Committee consists of Drs. Allen Cooper, Joao de Andrade, Veena Antony, Shawn Galin, Kathy Harrington (Committee Chair), Kevin Leon, Tracy Luckhardt, Victor Thannickal, Keith Willie and Cyndi Calhoun, The Chief Fellow and one peer-appointed Fellow Representative. This committee meets at least twice a year and reviews the educational progress of each fellow. The committee recommends to the Fellowship Director and Division Director actions to be taken should an area of concern be identified. It is also charged with ongoing review of program policies and procedures in light of evolving ACGME regulations. The committee develops recommendations for program and policy changes as needed. The Fellow representative is responsible for communicating ACGME policies to their peers and they assist the Program Director, the Associate Director and the Chief Fellow in the collection of necessary data to monitor compliance with ACGME regulations (e.g., work hour surveys, moonlighting permits).

The peer-appointed Fellow shall be selected each year by majority vote of the current Fellows. The appointment will be for one academic year. The Fellow representative will be expected to:

1. Become familiar with ACGME guidelines, GME policies and the Fellowship Program policies; (see **Appendices**)
2. Convey ideas and concerns of all the Fellows to the committee;
3. Convey the decisions of the committee to all the fellows;
4. Attend all committee meetings.

The Pulmonary and Critical Care Fellowship Research Committee consists of Drs. William Bailey, Ed Blalock, Allen Cooper, Joao de Andrade, Mark Dransfield (Associate Fellowship Program Director for Research and Committee Chair), Amit Gagar, Steve Rowe, Victor Thannickal, and Keith Wille, All Fellows in the Division are expected to be involved in research during their three years of training, regardless of career plans. The Associate Fellowship Program Director for Research oversees the Fellows' research progress with the advice and support of the Fellowship Program Research Committee who meets with the Fellow every six months, at a minimum, to provide guidance and feedback about their projects. This committee is also responsible for the collection and posting of faculty research interests and projects, updated at least annually, to assist Fellows in identifying projects and mentors for their individual research experiences.

II.B. Fellowship Program Tracks

The Division has a long history of providing excellent training in Pulmonary and Critical Care Medicine, and the primary mission of the training program is to assist fellows in achieving the goal of acquiring the skills, attitudes and knowledge to function as a pulmonary and critical care physician in the clinical and academic setting of choice. The experience acquired during fellowship training will be both general and specific and will include what is necessary to set up and run a pulmonary laboratory, respiratory therapy service and ICU, as well as what will satisfy the requirements of the American Board of Internal Medicine for certification in Pulmonary and Critical Care Medicine.

It is recognized that fellows may plan for various careers after leaving fellowship, including pursuit of academic careers with major research activity, clinical academic careers, and private practice. In recognition of this, a two-track system has been developed to support each of these goals optimally. At the end of the first year, fellows will be placed into one of the two tracks based on their interests, with the approval of the Fellowship Program Research Committee. The Division views the two tracks, Physician Scientist and Clinical Scholar, as equally important programs.

The **Clinical Scholar Track** is designed for fellows who wish to pursue a career in academics with a focus on teaching and clinical care, and for those who plan to

enter private practice. Fellows on this track will complete 22-24 months of clinical time and have 12-14 months protected for scholarly activities. The additional clinical rotations should support the fellow's clinical interests and career plans. These electives should be planned early in the fellowship and in close collaboration with the Fellowship Program Education Committee. Fellows on the Clinical Scholar Track are required to complete a mentored project and, at a minimum, will be expected to present their work in the form of an abstract at a national meeting and to the Division in the third year. Alternatively, a review paper would fulfill the requirement for mentored scholarly activities.

The **Physician Scientist Track** is designed for individuals who have an interest in pursuing a career in clinical or basic research in an academic setting. It is anticipated that the trainee will complete 18 months of clinical time and have 18 months protected to devote to research. During their dedicated research time most fellows will pursue a master's level degree to support their career plans. This may be in the UAB School of Public Health or in the UAB Department of Physiology with whom the Division has training agreements. In rare circumstances, the Fellowship Program Research Committee may approve other programs if they better support the trainee's career goals. Fellows may pursue basic, translational or clinical research projects but each must be under the direction of an established mentor and approved by the Fellowship Program Research Committee. It is expected that, at a minimum, the fellow will have a manuscript submitted for publication by the end of the three year training program and be prepared to apply for initial grant funding. Fellows on the Physician Scientist Track will present the background and rationale for their project to the Division during the second year and then present their results during Pulmonary Grand Rounds in the third year.

II.C. Eligibility for Pulmonary and Critical Care Fellowship Training

At the time of application, applicants must be enrolled in or have completed an ACGME accredited Internal Medicine training program. Candidates must be clinically competent, professional, demonstrate a commitment to continuing scholarship, and have high ethical standards consistent with policies outlined in the American Medical Association Guidelines (available at <http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics.shtml>). Excellent command of the English language is mandatory. USMLE scores and in-training exam scores will be considered. Research experience prior to or during Internal Medicine Residency is desirable. All candidates will interview with Pulmonary Faculty, and at this time, will be provided with information about program policies and procedures, salary and benefits, and will receive a sample contract for review.

Upon enrollment in the fellowship program, Fellows must be board-eligible or board-certified in Internal Medicine and must be eligible for licensing in the State of Alabama. Applications from women and minorities are encouraged. International Medical Graduates are eligible for enrollment, but must be enrolled in or have completed an ACGME accredited Internal Medicine training program at the time of

application and, if they are not US-citizens or permanent residents, must be eligible for J-1 or H-1 visas for the duration of training.

After an applicant is accepted into the program, the applicant must obtain an Alabama License, Alabama Controlled Substance Certification and Federal DEA License before he/she can be appointed as a Pulmonary and Critical Care Fellow. It is the fellow's responsibility to submit the application and supporting information to the State Board of Medical Examiners in a timely fashion. Pulmonary and Critical Care Fellows cannot have patient contact before the license has been issued. Appointment to the program may be delayed if a license has not been issued before the beginning of the academic year.

All candidates for The UAB Pulmonary and Critical Care Fellowship Program must participate in the ERAS and NRMP programs.

II.D. The Division of Pulmonary, Allergy and Critical Care Medicine: Clinical Services, Research, and Teaching

The mission of the Division of Pulmonary, Allergy and Critical Care Medicine encompasses three major areas: clinical services/patient care, research programs and teaching. The Division facilities are located on the University of Alabama at Birmingham Medical Center campus on the 4th floor of the Tinsley Harrison Tower (THT); the 4th floor of the Lyons-Harrison Research Building (LHRB); and the UAB Lung Health Center. Additional facilities are located on the 6th floor of the Birmingham Veterans Administration Medical Center (BVAMC), at The Kirklin Clinic and at the McCallum Basic Health Sciences Building. A list of the attending physician faculty can be found in **Appendix 1** while essential telephone numbers and administrative contacts can be found in **Appendix 2**.

Clinical Services

Inpatient services:

- Pulmonary Ward Service (6-South)
- UAB Hospital Medical Intensive Care Unit (MICU)
- UAB Hospital Consultation Service (UHC) and MET (UH Rapid Response Team)
- Birmingham VA Medical Center Medical Intensive Care Unit (VAICU)
- Birmingham VA Medical Center Consultation Service (VAC)

Inpatient Laboratories:

- UAB Hospital Pulmonary Function Laboratory
- UAB Hospital Bronchoscopy Laboratory
- Birmingham VA Medical Center Pulmonary Function Laboratory
- Birmingham VA Medical Center Bronchoscopy Laboratory

Outpatient services:

- The Cardiopulmonary Rehabilitation Program is located on the 4th floor of the Spain Rehabilitation Building (SRB). It is directed by Dr. Vera Bittner (Cardiology) and Dr. James Johnson (Pulmonary Medicine).
- The Kirklin Clinic is the UAB outpatient facility. The 4th floor Pulmonary and Allergy Clinic is directed by Dr. Jack Hasson. Pulmonary Fellows are assigned to an attending throughout their training and see patients jointly with the attending at least one-half day every week. The Kirklin Clinic also houses Pulmonary Function, Cardiopulmonary Exercise Physiology and Bronchoscopy Laboratories.
- VA pulmonary clinic patients are seen at the BVAMC, 2nd floor subspecialty outpatient clinic area. Two to three Pulmonary Fellows attend a one-half day general pulmonary clinic every week, supervised by a pulmonary attending. In addition, the fellow assigned to the VA consultation services attends the weekly Lung Mass Clinic supervised by a pulmonary attending and one Fellow attends the weekly Interstitial Lung Disease Clinic supervised by a pulmonary attending (Dr. Joseph Barney).
- UAB Sleep Disorders Center on the 7th floor of the Highlands Hospital, is supervised by Dr. Susan Harding and colleagues. Rotations on this service are month long and includes attendance at one overnight assessment at a minimum

***Note:** If a Fellow is only assigned to 18 months of clinical rotations during the three years of training (Physician Scientist track, as described above) it is mandated by ACGME that an extra six months of a half-day clinic per week is attended. Generally these extra clinics have been subspecialty clinics such as Cystic Fibrosis, COPD, ILD, Asthma or UAB Lung Mass clinic.*

Research

Division of Pulmonary, Allergy and Critical Care Medicine faculty members are involved in a wide variety of research programs, both basic and clinical, many of which involve close collaboration between the Division of Pulmonary, Allergy and Critical Care Medicine and other clinical and basic science departments on campus and/or at other academic institutions throughout the Nation. Curricula vitae and specific research interests for all members of the pulmonary faculty are available for review in the Pulmonary and Critical Care Program office and are updated annually.

All pulmonary fellows are required to obtain HIPAA training and to obtain training through the UAB Institutional Review Board (IRB) during the first three months of the fellowship; IRB training must be updated annually. All pulmonary fellows are required to attend the annual UAB Center of Clinical and Translational Science (CCTS) course “Vocabulary of Research” (<http://www.ccts.uab.edu/pages/vcts.aspx>) during their first or second year of fellowship training.

All Fellows in the Division are expected to be involved in research during their three years of training. Regardless of a fellow's career plans, participation in research is viewed as an essential part of fellowship training by both the Division faculty and the ACGME. The faculty is committed to supporting fellows in their research endeavors and multiple systems are in place to assure their success. Dr. Tracy Luckhardt is responsible for organizing the ***“Basic/Translational/Clinical Research Methods Conference”***

The Associate Fellowship Program Director for Research oversees the fellows' research progress with the advice and support of the Fellowship Program Research Committee who meets with the fellow every six months, at a minimum, to provide guidance and feedback on their projects.

Early in each academic year, faculty will present summaries of their current research activities with suggestions of how fellows may be integrated. Fellows are also encouraged to meet individually with faculty to better understand the research opportunities that are available. They can also contact Dr. Dransfield, Dr. Cooper or Dr. de Andrade for additional guidance. It is anticipated that fellows will have identified a primary mentor by early in the spring of their first year. The mentor should acknowledge responsibility for training the particular fellow in research. That mentor will be asked to complete evaluations of the Fellow's progress in research. Identification of a primary mentor is essential to successful research during fellowship. The mentor will be expected to supervise the fellow's research activity insuring that benchmarks for progress are met and will report to the Fellow Research Committee.

Fellows on the Clinical Scholar Track are required to complete a mentored project and at a minimum will be expected to present their work in the form of an abstract at a national meeting and to the Division in the third year. Alternatively, a review paper in the area of investigation would fulfill the requirement for scholarly activities. For those on the Physician Scientist Track it is expected that, at a minimum, they will have a manuscript submitted for publication by the end of the three year training program and be prepared to apply for transition funding such as K08, K23, ATS/ALA, CF Foundation or AHA grants. Fellows on the Physician Scientist Track will present the background and rationale for their project to the Division during the second year and then present their results during Pulmonary Grand Rounds in the third year.

Teaching

The teaching activities of the Division are carried out within the framework of the clinical services and via regularly scheduled teaching conferences. Pulmonary and Critical Care Fellows are encouraged to actively participate in all conferences and will be responsible for leading discussions and presenting conferences several times throughout the year. Conference presentations are to be prepared with Microsoft PowerPoint (or equivalent) and will be stored for self-guided teaching. These

conferences are explained in further detail in Section III of this manual below. Fellows are expected to teach pulmonary examination skills to medical students in the ICM course and are encouraged to volunteer as preceptors for this course. In addition, fellows are expected to serve as facilitators for small group discussions that occur during the pulmonary module of the UAB School of Medicine curriculum, as their clinical and research responsibilities allow. These activities will be coordinated by the Chief Fellow and the Fellows' Representative.

III. PULMONARY AND CRITICAL CARE FELLOWSHIP TRAINING CURRICULUM

III.A Mission Statement

The mission of the Division of Pulmonary, Allergy and Critical Care Medicine Fellowship Training Program is to produce physicians who are clinically competent in the broad fields of Pulmonary Disease and Critical Care; highly effective in a variety of clinical settings; and possess habits of life-long learning to allow for continued growth in knowledge, skills and other aspects of a professional career in Academic Pulmonary and Critical Care Medicine.

III.B. Specific Goals by ACGME competencies

- **Patient Care:** Pulmonary and Critical Care fellows must provide patient care that is compassionate, appropriate, and effective for the treatment of ill health and the promotion of health. This requires competency in patient care skills such as data gathering, appropriate use of diagnostic testing, clinical decision making, appropriate use and performance of procedures, implementation of the therapeutic plan, and ability to work with others in the patient care process.
- **Medical Knowledge:** Pulmonary and Critical Care Fellows must demonstrate knowledge about established and evolving biomedical, clinical, and cognate sciences and must be able to apply this knowledge to patient care.
- **Systems-based Practice:** Pulmonary and Critical Care Fellows must demonstrate awareness of and responsiveness to the interdependencies in the health care system that affect quality of care and must demonstrate the ability to call effectively on other resources in the system to provide optimal health care. Important aspects are the provision of cost-effective care, advocacy for quality patient care, and working with hospital management and interdisciplinary teams to improve patient care.
- **Practice-based Learning and Improvement:** Pulmonary and Critical Care Fellows must develop abilities to analyze practice performance and implement necessary improvements, to locate and apply scientific evidence to the care of patients, to critically appraise the scientific literature, to use the computer to support learning and patient care, and to facilitate the learning of other health care professionals.

- **Professionalism:** Pulmonary and Critical Care Fellows must be committed to professionalism. Facets of professionalism include integrity, honesty, discretion, and willingness to accept responsibility, acting in the interest of the patient and respecting his/her autonomy, with sensitivity toward patient's gender, age, culture, race, religion, disabilities and sexual orientation.
- **Interpersonal and Communication Skills:** Pulmonary and Critical Care Fellows must develop interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals. Such skills include, but are not limited to, ability to develop a therapeutic relationship with patients and their families, ability to use both verbal and nonverbal skills to facilitate communication with patients and their families, and ability to work effectively within teams and as team leader.

III.C. Major Clinical Rotations: Goals, Competencies, Objectives, Teaching Methods, Assessment Methods, Level of Supervision and Educational Resources.

III.C.1 UAB Hospital MICU

1. Description of Rotation

Dr. James Johnson directs The UAB Hospital Medical Intensive Care Unit (MICU). Pulmonary and Critical Care Fellows will be assigned to this service for several months during their clinical training. They will be responsible for organizing the patient care activities in the MICU under the direct supervision of the Pulmonary and Critical Care Medicine faculty members assigned to the service.

The University MICU Service is a 42-bed intensive care unit typically staffed by three teams. Up to 30 patients can be admitted to the housestaff teams (Green and Gold) and up to 12 patients can be admitted to the Nurse Practitioner team (Red). Each team is led by an attending physician and housestaff from the UAB Internal Medicine Residency Program. The two Pulmonary Fellows assigned to the housestaff teams rotate the responsibility of evaluating patients from the Emergency Department, and determining bed allocation in consultation with the attending physician on call and the Nurse Resource Coordinator (NRC) whenever appropriate. Senior fellows will occasionally rotate as "sub-attendings" in the NP service. This will be encouraged particularly for those bound to clinical practice, providing the opportunity for a senior fellow to lead an ICU team under the supervision of a faculty member. Pulmonary Fellows are expected to perform daily comprehensive assessment of all patients on mechanical ventilation prior to morning rounds and anytime during the day as appropriate. Fellows will be primarily assigned to the two housestaff teams.

The overall goals of the UH-MICU rotation are:

- To provide broad clinical exposure on the management of complex critically ill patients, including those on mechanical ventilation and/or hemodynamic monitoring/support.
- To provide clinical experience to develop proficiency in certain technical and organizational aspects as well as procedural skills related to critical care.

2. Patient Care

Goals: Fellows are expected to:

- Review history and ancillary tests of new MICU patients prior to morning rounds;
- Perform comprehensive daily evaluation of all patients on mechanical ventilation prior to morning rounds;
- Advise the housestaff on management of ICU patients during morning rounds and through the day, as needed;
- Advise the multidisciplinary team on the implementation of patient care protocols and clinical pathways;
- Assist, advise and supervise the housestaff on MICU procedures as permitted by their level of proficiency, as defined by the Fellowship Program specific policy.
- Participate in the Medical Emergency Team (UAB's rapid response team) in the evaluation, management and disposition of clinically unstable patients at UAB University Hospital.

Competencies: Fellows will:

- Increase knowledge and expertise in patient care through:
 - a. Reviewing history and ancillary tests of new MICU patients prior to morning rounds.
 - b. Performing comprehensive daily evaluation of all patients on mechanical ventilation prior to morning rounds.
 - c. Advising the housestaff on management of ICU patients during morning rounds and through the day, as needed.
 - d. Advising the multidisciplinary team on the implementation of patient care protocols and clinical pathways.
 - e. Assisting, advising and supervising the housestaff on MICU procedures as permitted by their level of proficiency, as defined by the Fellowship Program specific policy.
 - f. Participating in the education of patients and families on the diagnosis and management of critical care issues, including end-of-life discussions and palliative care.

- Develop proficiency in the following MICU procedures:
 - a. Airway management, including endotracheal intubation
 - b. Positive Pressure Ventilatory modes (invasive and non-invasive), including initiation, maintenance, and weaning of mechanical ventilation; respiratory care techniques and withdrawal of mechanical ventilatory support
 - c. Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
 - d. Insertion of arterial, central venous and pulmonary artery balloon flotation catheters
 - e. Insertion of chest tubes and management of drainage systems
 - f. Thoracentesis and related diagnostic procedures
 - g. Nutritional support
 - h. Emergency cardioversion
 - i. Interpretation of intracranial pressure monitoring
 - j. Operation of bedside hemodynamic monitoring systems
 - k. Quality improvement and patient safety activities in the intensive care unit

Objectives:

Essential components of this educational experience are the development and refinement of clinical skills in the evaluation, diagnosis, treatment and follow-up of patients with critical illnesses. These skills include the development of appropriate differential diagnoses, assessing the need for hospitalization, the development of diagnostic evaluation strategies and treatment plans, and the implementation of such plans. Through this experience, the Pulmonary and Critical Care Fellow will also develop a comprehensive understanding of the indications, contraindications, techniques, and complications of the entire spectrum of diagnostic and therapeutic procedures in critical care medicine.

3. Medical Knowledge

Goals: The Fellows are expected to have:

- A basic core understanding of anatomy, histology, physiology, biochemistry, immunology, genetics, pharmacology, epidemiology, statistics, ethics and human behavior relative to the practice of critical care medicine.
- Basic core knowledge of the pathogenesis, histopathology, pathophysiology, clinical manifestations, and management of critical illnesses.
- The ability to formulate appropriate differential diagnoses and therapeutic plans based on an ability to critically analyze the clinical data and integrate this analysis with the basic fund of medical knowledge.
- The knowledge of the treatment of the common and uncommon diseases found in the practice of critical care medicine, including an understanding of

- the principles, indications, contra-indications, risk, cost and expected outcome of the various treatments.
- The knowledge regarding performance and/or interpretation of diagnostic and therapeutic procedures common in the practice of critical care medicine, including the understanding of the principles, indications, contraindications, risk, cost and expected outcome of these procedures.

Competencies: The Fellows will:

- Increase knowledge in the diagnosis and management of the following:
 - a. Circulatory disorders
 - b. Shock syndromes
 - c. Cardiovascular diseases
 - d. Trauma
 - e. Neurological
 - f. Sepsis and sepsis syndrome
 - g. Hypertensive emergencies
 - h. Acute and chronic respiratory failure, including ARDS, acute and chronic respiratory failure in obstructive lung diseases and neuromuscular respiratory drive disorders
 - i. Pulmonary thromboembolism
 - j. Pneumothorax
 - k. Delirium and CNS-related critical care issues such as CVAs and status epilepticus
 - l. Critical Obstetric and gynecologic disorders
 - m. Acute metabolic disturbances, including overdosages and intoxication syndromes
 - n. Multi-organ failure
 - o. Electrolyte and acid-base disorders
 - p. Metabolic, nutritional, and endocrine disorders associated with critical illness
 - q. Hematologic and coagulation disorders associated with critical illness
 - r. Anaphylaxis and acute allergic reactions
 - s. Perioperative management of critically ill patients
 - t. Hemodynamic and ventilatory support of patients with organ damage in the post operative period
 - u. Iatrogenic and nosocomial problems in critical care medicine

- v. Psychosocial and emotional effects of critical illness on patients and their families
 - w. End of life issues and palliative care
- Increase knowledge and demonstrate proficiency in the following procedural and technical skills:
 - a. Airway management, including endotracheal intubation
 - b. Positive Pressure Ventilatory modes (invasive and non-invasive), including initiation, maintenance, and weaning of mechanical ventilation; respiratory care techniques and withdrawal of mechanical ventilatory support
 - c. Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
 - d. Insertion of arterial, central venous and pulmonary artery balloon flotation catheters
 - e. Insertion of chest tubes and management of drainage systems
 - f. Use of paralytic agents and sedative/analgesic drugs
 - g. Emergency cardioversion
 - h. Interpretation of intracranial pressure monitoring
 - i. Operation of bedside hemodynamic monitoring systems
 - j. Quality improvement and patient safety activities in the intensive care unit
 - k. Pericardiocentesis
 - l. Transvenous pacemaker insertion
 - m. Renal replacement therapy
 - n. Pharmacokinetics, pharmacodynamics, and drug metabolism and excretion in critical illness
 - o. Imaging techniques commonly employed in the evaluation of patients with critical illness and/or pulmonary disorders
 - p. Principles and techniques of administration and management of an MICU
 - q. Ethical, economic, and legal aspects of critical illness
 - r. Recognition and management of the critically ill from disasters, including those caused by chemical and biological agents

Objectives

- To master specific knowledge and competencies for the majority of diseases seen in the practice of Critical Care Medicine, including uncommon and complicated diseases.
- To develop proficiency as the primary health care provider in the acute inpatient setting, especially the intensive care unit.

4. Practice-Based Learning and Improvement

Goals: Fellows are expected to demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life long learning

Competencies: The Fellows will:

- Identify strengths, deficiencies and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice
- Locate, appraise and assimilate evidence from scientific studies related to their patient's health problems
- Use information technology to optimize learning
- Participate in the education of students and residents

Objectives: The Fellows will:

- Evaluate and improve management of MICU patients through self-evaluation and feedback from attending staff.
- Set learning and improvement goals based on self-evaluation and feedback from attending staff.
- Incorporate formative evaluation feedback into daily practice both by seeking/giving input from/to the attending staff and the other members of the MICU team.
- Locate, appraise and assimilate evidence from scientific studies related to MICU's patient's problems and share those with the rest of the multidisciplinary team.

- Use information technology databases available in the UAB system, such as e-journals, PubMed and UptoDate to optimize learning.
- Participate in the education of residents, students, other fellows and health care professionals by assisting with patient management, supervising procedures and assisting with interpretation of data from ancillary tests.
- Participate in the education of residents, students, other Fellows and health care professionals by delivering at least one lecture/week on relevant critical care subjects in collaboration with the attending.

5. Systems-Based Practice

Goals: Fellows must demonstrate awareness and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Competencies: The Fellows will:

- Coordinate patient care within the health care system
- Work in interprofessional teams to enhance patient safety and improve patient care quality.
- Participate in identifying systems errors and in implementing potential systems solutions.

Objectives: The Fellows will:

- Communicate with the ICU attending, other services at UAB and referring physicians/facilities regarding triage/bed allocation, admissions and disposition of critically ill patients following the medical center's policies.
- Work effectively with consultants in the UAB system to provide optimal patient care.
- Work with the MICU multidisciplinary team to enhance patient safety and improve patient care.
- Participate in regular meetings of the MICU leadership, the Division leadership as well as the UAB Hospital Critical Care Committee helping with the identification of systems errors and with the implementation of potential solutions.

6. Professionalism

Goals: Fellows must demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles.

Competencies: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

Objectives: The Fellows will:

- Demonstrate compassion, integrity, honesty and respect to others during all clinical and educational activities of the MICU
- Demonstrate responsibility, accountability, dependability, commitment, and encourage continuity of care, always assuring appropriate “hand-off” of patient care.
- Acknowledge errors and limitations
- Always demonstrate responsiveness to patients needs that supersedes self-interest
- Always demonstrate respect for the privacy and autonomy of patients and families during procedures, daily updates and discussions regarding goals of care.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

7. Interpersonal and Communication Skills

Goals: Fellows must demonstrate interpersonal and communications skills that result in the effective exchange of information with patients, their families as well as other healthcare professionals.

Competencies: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health related agencies.

- Work effectively as a member of the MICU team with important leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records.

Objectives: The Fellow will:

1. Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds during hospital admissions, daily updates and discussions regarding goals of care as well as informed consent for procedures.
2. Communicate respectfully and effectively with ED physicians, referring physicians, consulting physicians, other health care professionals.
3. Work effectively as a member of the MICU team with important leadership responsibilities.
4. Act in an effective consultative role to other physicians and health professionals.
5. Maintain comprehensive, timely and legible medical records.

8. Teaching Methods

All Attending physicians are expected to discuss the goals and objectives of this rotation with the fellow at the beginning of the month. Teaching methods for this rotation will include teaching rounds and supervision of the fellow's clinical activities as well as attending supervision of the fellows' educational responsibilities towards the other members of the team. The attending physician is expected to assist with literature reviews, formulation of clinically relevant questions to assist the fellow with literature searches as well as assist and polish the fellows as he/she prepares didactic materials for the internal medicine housestaff and the other members of the multidisciplinary team.

9. Assessment Method (Fellow)

Assessment methods for this rotation will include observation of fellow's performance on daily rounds, family conferences, procedures and his/her interactions with the other members of the team and other healthcare providers such as referring physicians, ED physicians and consultants. In addition, the attending physician is expected to be present for the weekly fellow didactic lectures to the internal medicine housestaff. At the end of the month, attendings are expected to give the fellow one-one feedback on their performance and complete the evaluation forms on E-value.

As part of the "360 degree" evaluation process, Fellows will be evaluated by the UAB MICU nursing staff and other members of the multidisciplinary team on a monthly basis.

10. Assessment Method (Program)

- Fellows will complete an evaluation of the rotation on E-value
- In-training exam scores on critical care will be reviewed annually
- ABIM scores on critical care will be reviewed annually

11. Level of Supervision

- Fellows are expected to evaluate all admissions to the MICU within one hour. Attending physicians are on-call and ought to be contacted if the fellow has any question regarding management or patient disposition as they interact with other services
- The attending physician will formulate daily plans of care with the fellow during morning rounds and later in the day as necessary
- Attending physicians are expected to be present for bedside bronchoscopies unless a life-threatening situation is present.

12. Educational Resources

Fellows' library

UAB Lister Hill Library – PubMed, E-journals and E-Books

www.thoracic.org/education/career-development/index.php

www.chestnet.org/accp/pccsu

www.learnICU.org

www.sccm.org

III.C.2. UAB Hospital Consultation Service (UHC)

1. Description of Rotation

The Division of Pulmonary, Allergy and Critical Care Medicine provides consultative services to the following affiliated hospitals on the UAB campus: University Hospital, Spain Rehabilitation Hospital and Center for Psychiatric Medicine. Such coverage is provided 24-hours a day, seven days a week. The Consult Service consists of a Pulmonary attending, Pulmonary Fellow, Internal Medicine residents and 4th year medical students. The actual number of internal medicine residents and students on the service varies from month to month.

Pulmonary and Critical Care Fellows will be assigned to the Pulmonary Consultation Service for several months during their clinical training. They will be responsible for organizing the patient care activities of this service under the direct supervision of an assigned Pulmonary and Critical Care faculty member. Essential skills in consultative pulmonary medicine and critical care will be developed on this service through direct exposure to patients with the full scope of pulmonary diseases and critical illnesses hospitalized on non-pulmonary/critical care services. Skills such as communication with referring physicians and support personnel and the coordination of specific procedures and therapies (e.g. bronchoscopy, thoracentesis, tube thoracostomy) with other procedures and needs of the patient will also be learned on this service. Pulmonary and Critical Care Fellows will become proficient in pre-operative risk assessment and peri-operative management of patients undergoing surgical procedures. Pulmonary and Critical Care Fellows will be called upon to perform literature searches on topics pertaining to specific patient care situations and will participate actively in the teaching of Internal Medicine Residents and Medical Students on the consultation team. Additionally, the fellow assigned to the Consultation Service is also responsible for responding to calls for the MET (UH rapid response team)

The goals of this rotation are:

- To provide broad clinical exposure on the management of complex non-medical critically ill patients, including those on mechanical ventilation and/or hemodynamic monitoring/support.
- To acquire proficiency in pre-operative respiratory risk assessment and perioperative management.
- To provide broad clinical exposure on the diagnosis and management of pulmonary disorders.
- To provide clinical experience to develop proficiency in certain technical and organizational aspects as well as procedural skills related to non-medical critical care and pulmonary medicine.

2. Patient Care

Goals. Fellows are expected to:

- To increase knowledge of pulmonary physiology and provide opportunities to demonstrate the application of that knowledge to the interpretation of pulmonary function tests.
- To provide opportunities to develop proficiency in the use and performance of bronchoscopy as a diagnostic and therapeutic tool.
- To provide clinical exposure on the management of general pulmonary medicine and critical care problems in surgical patients.
- To provide clinical exposure on the management of inpatient medical emergencies, particularly respiratory failure and endotracheal intubation.
- To increase knowledge on the assessment of perioperative risk of respiratory failure.
- To increase knowledge and develop proficiency in the assessment and management of pulmonary perioperative complications, including failure to wean from mechanical ventilation.
- To effectively communicate with the primary team and address the issues in question

Competencies. Fellows will:

- Increase knowledge and expertise in patient care through:
- Evaluate all new consults with the housestaff the same day, assuring that a note is placed in the patient's chart and rounding with attending staff within 24 hours or immediately, when appropriate.
- Review radiographs with Radiology attending whenever appropriate.
- Round daily on the consultation service and discussing findings and management strategies with attending staff and the rotating housestaff.
- Perform pre-bronchoscopy evaluations at UAB University Hospital and recognize the absolute and relative contraindications for bronchoscopy and other invasive procedures such as thoracostomy tube insertions and pleural biopsies.
- Managing complications of bronchoscopy, including bleeding, pneumothorax and respiratory failure to optimize patient safety.
- Assisting faculty and other Fellows with advanced bronchoscopic procedures whenever appropriate
- Participating in the education of patients and families on the diagnosis and management of pulmonary medicine issues, including the indications, usual

- risks and complications and meaning of results when procedures are performed.
- Develop proficiency in the following pulmonary procedures:
 - Respiratory care techniques
 - Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
 - Insertion of chest tubes and management of pleural drainage systems
 - Thoracentesis and related diagnostic procedures
 - Develop proficiency in the operation of a fiberoptic bronchoscope, supporting equipment and fluoroscope.
 - Develop proficiency in the following bronchoscopic procedures:
 - Airway examination
 - Bronchoalveolar Lavage
 - Bronchial brushing and washing
 - Endobronchial forceps biopsy
 - Transbronchial forceps biopsy
 - Transbronchial needle aspiration and core biopsies (Wang needle aspiration)
 - Foreign body removal
 - Develop proficiency in the proper use of analgesics and sedatives and in managing the complications of conscious sedation.
 - Develop proficiency at appropriately selecting the sampling methods and diagnostic tests to optimize yield.

Objectives: Fellows will:

- Be an effective consultant in pulmonary and critical care medicine
- Gather essential and accurate information by performing and complete a clinically relevant history and physical examination.
- Understand how to order and interpret appropriate diagnostic tests.
- Make informed diagnostic and treatment decisions by analyzing and synthesizing information.
- Understand the limits of their knowledge and expertise.
- Develop a differential diagnosis and management plan.
- Maintain comprehensive, timely, effective and legible medical records.
- Effectively counsel patients and families
- Effectively communicate with the primary healthcare team and effectively address issues in question.

3. Medical Knowledge

Goals: The Fellows are expected to have:

- A basic core understanding of anatomy, histology, physiology, biochemistry, immunology, genetics, pharmacology, epidemiology, statistics, ethics and human behavior relative to the practice of pulmonary and critical care medicine.
- Basic core knowledge of the pathogenesis, histopathology, pathophysiology, clinical manifestations, and management of pulmonary and critical illnesses.
- The ability to formulate appropriate differential diagnoses and therapeutic plans based on an ability to critically analyze the clinical data and integrate this analysis with the basic fund of medical knowledge.
- The knowledge of the treatment of the common and uncommon diseases found in the practice of pulmonary and critical care medicine, including an understanding of the principles, indications, contra-indications, risk, cost and expected outcome of the various treatments.
- The knowledge regarding performance and/or interpretation of diagnostic and therapeutic procedures common in the practice of pulmonary and critical care medicine, including the understanding of the principles, indications, contraindications, risk, cost and expected outcome of these procedures.

Competencies: The Fellows will:

- Increase knowledge in pulmonary physiology and the methods used to assess physiology in the following areas:
 - Flow volume loops and spirometry
 - Lung volumes
 - Specific airway resistance and conductance
 - Bronchial provocation testing
 - Gas exchange and diffusion capacity
 - Cardiopulmonary exercise testing
 - Respiratory muscle testing
 - Arterial blood gas analysis
 - Lung and airway anatomy.
- Increase knowledge in the perioperative pulmonary risk assessment instruments available in the literature.
- Be able to identify the indications, limitations, complications and likelihood of successful outcome in performing bronchoscopy and advanced bronchoscopy techniques.

- Increase knowledge in the pharmacology of analgesics, topical anesthetics and sedatives.
- Increase knowledge in appropriate bronchoscopy specimen processing and handling.
- Increase knowledge in basic cytology and surgical pathology techniques and findings applied to lung specimens obtained via bronchoscopy.
- Increase knowledge in assessment of perioperative risk of respiratory failure.
- Increase knowledge in the diagnosis and management of the following:
 - Obstructive lung diseases, including asthma, bronchitis, emphysema and bronchiectasis
 - Dyspnea and prolonged cough
 - Pulmonary malignancy – primary and metastatic
 - Pulmonary infections, including tuberculosis, fungal and those in the immunocompromised host
 - Diffuse parenchymal (interstitial) lung diseases
 - Pulmonary embolism and pulmonary embolic disease
 - Pulmonary vascular disease, including primary and secondary pulmonary hypertension and vasculitis and pulmonary hemorrhagic syndromes.
 - Occupational and environmental lung diseases
 - Pneumothorax – spontaneous and iatrogenic
 - Iatrogenic respiratory disease, including drug-induced disease
 - Pulmonary manifestations of systemic diseases, including collagen vascular disease and diseases that are primary in other organs
 - Disorders of the pleura and mediastinum
 - Perioperative respiratory failure and failure to wean from mechanical ventilation
- Increase knowledge and proficiency in the following procedural and technical skills:
 - Respiratory care techniques
 - Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
 - Insertion of chest tubes and management of pleural drainage systems
 - Imaging techniques commonly employed in the evaluation of patients with pulmonary disorders
 - Thoracentesis and related diagnostic procedures

- Imaging techniques commonly employed in the evaluation of patients with pulmonary disorders

Objectives:

- To master specific knowledge and competencies for the majority of diseases seen in the practice of Pulmonary and Critical Care Medicine, including uncommon and complicated diseases.
- To develop proficiency as health care provider in the acute inpatient setting, especially in non-medical intensive care unit.

4. Practice-Based Learning and Improvement

Goals: Fellows are expected to demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning

Competencies: The Fellows will:

- Identify strengths, deficiencies and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice
- Locate, appraise and assimilate evidence from scientific studies related to their patient's health problems
- Use information technology to optimize learning
- Participate in the education of students and residents

Objectives: The Fellows will:

- Evaluate and improve management of Consultation patients through self-evaluation and feedback from attending staff.
- Set learning and improvement goals based on self-evaluation and feedback from attending staff.
- Incorporate formative evaluation feedback into daily practice both by seeking/giving input from/to the attending staff and the other members of the Consultation team.
- Locate, appraise and assimilate evidence from scientific studies related to Consultation patient's problems and share those with the rest of the team.

- Use information technology databases available in the UAB system, such as e-journals, PubMed and UptoDate to optimize learning.
- Participate in the education of residents, students, other fellows and health care professionals by assisting with patient management, supervising procedures and assisting with interpretation of data from ancillary tests.

5. Systems-Based Practice

Goals: Fellows must demonstrate awareness and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Competencies: The Fellows will:

- Work effectively in various health care delivery systems
- Coordinate patient care within the health care system
- Work in interprofessional teams to enhance patient safety and improve patient care quality.
- Participate in identifying systems errors and in implementing potential systems solutions.

Objectives: The Fellows will:

- Develop proficiency in patient scheduling to maximize unit throughput.
- Increase understanding of how test results influence patient care.
- Communicate with consulting physicians in a timely way.
- Work effectively with consultants in the health care delivery system to provide optimal patient care.
- Incorporate considerations of cost awareness and risk-benefit analysis, as appropriate.
- Advocate for quality patient care and optimal patient care systems.

6. Professionalism

Goals: Fellows must demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles.

Competencies: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.

- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

Objectives: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities and sexual orientation.
- Demonstrate effective communication skills in interactions with procedure unit staff, nurses, and respiratory therapists.
- Demonstrate attendance to procedures, and inpatient rounds.
- Demonstrate dependability in the appropriate follow through of test results.
- Demonstrate effective communication with patients in delivering healthcare, and planning appropriate follow-up after procedures
- Demonstrate respect for patient privacy, autonomy and awareness during conscious sedation.
- Acknowledge errors and limitations

7. Interpersonal and Communication Skills

Goals: Fellows must demonstrate interpersonal and communications skills that result in the effective exchange of information with patients, their families as well as other healthcare professionals.

Competencies: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.

- Communicate respectfully and effectively with other physicians, other health care professionals and health related agencies.
- Work effectively as a member of the Consultation team with important leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records.

Objectives: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health-related agencies.
- Work effectively as a member of the Consultation team with leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records, specifically the Initial Consultation Note.
- Communicate respectfully and effectively with staff, nurses and technicians in procedural units, clinics and inpatient units.
- Act in a consultative role to other physicians and effectively communicate procedure results to the appropriate caretakers, when appropriate.

8. Teaching Methods

All Attending physicians are expected to discuss the goals and objectives of this rotation with the fellow at the beginning of the month. Teaching methods for this rotation will include teaching rounds and supervision of the fellow's clinical activities as well as attending supervision of the fellow's educational responsibilities towards the other members of the team. The attending physician is expected to assist with literature reviews, formulation of clinically relevant questions to assist the fellow with literature searches as well as assist and polish the fellows as he/she prepares didactic materials for the internal medicine housestaff and the other members of the multidisciplinary team.

9. Assessment Method (Fellow)

Assessment methods for this rotation will include observation of fellow's performance on daily rounds, family conferences, procedures and his/her interactions with the other members of the team and consulting healthcare providers. At the end of the month, attendings are expected to give the fellow one-one feedback on their performance and complete the evaluation forms on E-value.

10. Assessment Method (Program)

- Fellows will complete an evaluation of the rotation on E-value
- In-training exam scores will be reviewed annually
- ABIM scores will be reviewed annually

11. Level of Supervision

- Fellows are expected to evaluate all consultations in a timely fashion and because this is also a teaching service for the UAB Internal Medicine Residency Program, the Fellow is encouraged to assign cases to the rotating house officers as he/she see appropriate.
- The attending physician will formulate daily plans of care with the fellow and the housestaff during rounds and whenever necessary.
- Attending physicians are expected to be present for bedside bronchoscopies and other invasive procedures.

12. Educational Resources

Fellows' library – JT N 621

UAB Lister Hill Library – PubMed, E-journals and E-Books

www.thoracic.org/education/career-development/index.php

www.chestnet.org/accp/pccsu

www.learnICU.org

www.sccm.org

III.C.3. UAB Hospital Inpatient Service (6-South)

1. Description of Rotation

Dr. John Lazenby directs the UAB Hospital Inpatient Pulmonary Service (6-S) and Dr. Veena Antony directs the Cystic Fibrosis (CF) service . Pulmonary and Critical Care Fellows will be assigned to a combination of these two services for several months during their clinical training. They will be responsible for organizing the patient care activities in the 6-S step down unit (625) under the direct supervision of the Pulmonary and Critical Care Medicine faculty members assigned to the 6-S service and round daily with the CF NP's and attending. The fellow will also be responsible for assuring that procedures on all patients on the 6-S or CF service are performed optimally including bronchoscopies and supervising residents/NP's on other procedures if needed.

The goals of this rotation are:

- Development and refinement of clinical skills in the evaluation, diagnosis, treatment and follow-up of patients with pulmonary disease, especially patients with CF and those on chronic ventilator support and the
- Development and refinement of communication skills with patients, families, and other members of the healthcare team.
- Development of appropriate differential diagnoses, assessing the need for hospitalization, the development of diagnostic evaluation strategies and treatment plans, and the implementation of such plans.
- Development of a comprehensive understanding of the indications, contraindications, techniques, and complications of the entire spectrum of diagnostic and therapeutic procedures in pulmonary disease.
- Acquire skills in educating patients about diagnostic and therapeutic procedures in pulmonary medicine and obtaining informed consent

2. Patient Care

Goals: Fellows are expected to be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health care problems and the promotion of health.

Competencies: Fellows will:

- Increase knowledge and expertise in patient care through:
- Reviewing history and ancillary tests of new CF patients prior to morning rounds.

- Performing comprehensive daily evaluation of all patients on mechanical ventilation in the Step Down unit prior to morning rounds.
- Advising the housestaff on management of step down patients during morning rounds and through the day, as needed.
- Advising the multidisciplinary team on the implementation of patient care protocols and clinical pathways.
- Assisting, advising, and supervising the housestaff on procedures as permitted by their level of proficiency, as defined by the Fellowship Program specific policy.
- Reviewing radiographs with Radiology attending whenever appropriate.
- Performing pre-bronchoscopy evaluation at University Hospital Pulmonary Ward (6 South) and demonstrating understanding of the absolute and relative contraindications for bronchoscopy.
- Participating in the education of patients and families on the indications, usual risks and complications, and meaning of results when procedure are preformed, as well as on the diagnosis and management of pulmonary medicine issues.
- Develop proficiency in the following pulmonary procedures:
 - Respiratory care techniques
 - Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
 - Insertion of chest tubes and management of pleural drainage systems
 - Thoracentesis and related diagnostic procedures
- Demonstrate the operation of a fiberoptic bronchoscope, supporting equipment and fluoroscope.
- Develop proficiency in the following bronchoscopic procedures:
 - Airway examination
 - Bronchoalveolar Lavage
 - Bronchial brushing and washing
 - Endobronchial forceps biopsy
 - Transbronchial forceps biopsy
 - Transbronchial needle aspiration and core biopsies (Wang needle aspiration)
 - Foreign body removal
- Demonstrate understanding of the management of complications of bronchoscopy including bleeding, pneumothorax and respiratory failure to optimize patient safety.
- Develop proficiency in the proper use of analgesics and sedatives and in managing the complications of conscious sedation.
- Develop proficiency in appropriately selecting the sampling methods and diagnostic tests to optimize yield.

Objectives: Fellows will:

- Review history and ancillary tests of new CF patients prior to morning rounds;
- Perform comprehensive daily evaluation of all patients on mechanical ventilation in the Step Down unit prior to morning rounds;
- Advise the housestaff on management of pulmonary patients during morning rounds and through the day, as needed;
- Advise the multidisciplinary team on the implementation of patient care protocols and clinical pathways for patients with Cystic Fibrosis and for patients in the step down unit
- Assist, advise and supervise the housestaff on procedures as permitted by their level of proficiency, as defined by the Fellowship Program specific policy.
- Review radiographs with Radiology attending whenever appropriate.
- Take an active role in discharge planning.

3. Medical Knowledge

Goals: The Fellows must demonstrate knowledge of established and evolving bioethical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

Competencies: The Fellows will:

- Increase knowledge in lung and airway anatomy.
- Be able to identify the indications, limitations, complications and likelihood of successful outcome in performing bronchoscopy and advanced bronchoscopy techniques.
- Increase knowledge in the pharmacology of analgesics, topical anesthetics and sedatives.
- Increase knowledge in appropriate bronchoscopy specimen processing and handling.
- Increase knowledge in basic cytology and surgical pathology techniques and findings applied to lung specimens obtained via bronchoscopy.
- Increase knowledge in assessment of perioperative risk of respiratory failure.
- Increase knowledge in the diagnosis and management of the following:
 - Obstructive lung diseases, including asthma, bronchitis, emphysema and bronchiectasis
 - Pulmonary malignancy – primary and metastatic
 - Pulmonary infections, including tuberculous, fungal and those in the immunocompromised host
 - Diffuse interstitial lung diseases
 - Pulmonary embolism and pulmonary embolic disease

- Pulmonary vascular disease, including primary and secondary pulmonary hypertension and vasculitis and pulmonary hemorrhagic syndromes.
 - Occupational and environmental lung diseases
 - Pneumothorax – spontaneous and iatrogenic
 - Iatrogenic respiratory disease, including drug-induced disease
 - Pulmonary manifestations of systemic diseases, including collagen vascular disease and diseases that are primary in other organs
 - Disorders of the pleura and mediastinum
 - Failure to wean from mechanical ventilation
 - Cystic Fibrosis
 - End of life issues and palliative care
 - Iatrogenic and nosocomial problems in pulmonary medicine
 - Failure to wean from mechanical ventilation
- Increase knowledge and develop proficiency in the following procedural and technical skills:
 - Airway management, including endotracheal intubation
 - Positive Pressure Ventilatory modes (invasive and non-invasive), including initiation, maintenance, and weaning of mechanical ventilation; respiratory care techniques and withdrawal of mechanical ventilatory support
 - Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
 - Insertion of arterial and central venous catheters
 - Insertion of chest tubes and management of pleural drainage systems
 - Use of paralytic agents and sedative/analgesic drugs
 - Emergency cardioversion
 - Operation of bedside hemodynamic monitoring systems
 - Quality improvement and patient safety activities in the inpatient unit and the Step Down unit
 - Imaging techniques commonly employed in the evaluation of patients with pulmonary disorders
 - Principles and techniques of administration and management of an inpatient ward
 - Ethical, economic, and legal aspects of pulmonary disease
 - Thoracentesis and related diagnostic procedures

Objectives

- To master specific knowledge and competencies for diseases seen in the practice of Pulmonary and Critical Care Medicine, including uncommon and complicated diseases and especially Cystic Fibrosis

- To develop proficiency as health care provider in the acute inpatient setting.

4. Practice-Based Learning and Improvement

Goals: Fellows are expected to demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life long learning

Competencies: The Fellows will:

- Identify strengths, deficiencies and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice
- Locate, appraise and assimilate evidence from scientific studies related to their patient's health problems
- Use information technology to optimize learning
- Participate in the education of students and residents

Objectives: The Fellows will:

- Improve procedural practices by following up on test results in order to identify methods of optimizing yield and to identify special circumstances that alter yield and risks.
- Improve patient care practices through education of patients and families on the indications, usual risks and complications, and meaning of results when procedures are performed.
- Evaluate and improve management of pulmonary patients through self-evaluation and feedback from attending staff.
- Set learning and improvement goals based on self-evaluation and feedback from attending staff.
- Identify and perform appropriate learning activities based on specific objectives of the rotation.
- Systematically analyze practice, both regarding direct patient care and procedures, identifying methods to optimize yield, efficiency and safety.
- Incorporate formative evaluation feedback into daily practice both by seeking/giving input from/to the attending staff
- Locate, appraise and assimilate evidence from scientific studies related to the patient's problems and share those with the rest of the team.

- Use information technology databases available in the UAB system, such as e-journals, PubMed and UptoDate to optimize learning.
- Participate in the education of residents, students, other Fellows and other health care professionals by assisting with patient management, supervising procedures and assisting with interpretation of data from ancillary tests whenever appropriate.

5. Systems-Based Practice

Goals: Fellows must demonstrate awareness and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Competencies: The Fellows will:

- Work effectively in various health care delivery systems
- Coordinate patient care within the health care system
- Work in interprofessional teams to enhance patient safety and improve patient care quality.
- Participate in identifying systems errors and in implementing potential systems solutions.

Objectives: The Fellows will:

- Coordinate patient care within the health care system: communicate with the pulmonary attending, other services at UAB and referring physicians/facilities regarding triage/bed allocation, admissions and disposition of pulmonary patients and patients requiring admission to the Step Down unit following the medical center's policies.
- Develop understanding how test results influence patient care.
- Work effectively with consultants in the health care delivery system to provide optimal patient care.
- Incorporate considerations of cost awareness and risk-benefit analysis as appropriate.
- Advocate for quality patient care and optimal patient care systems
- Work in multidisciplinary teams to enhance patient safety and improve patient care.
- Participate in regular meetings of the 6S leadership helping with the identification of systems errors and with the implementation of potential systems solutions.

6. Professionalism

Goals: Fellows must demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles.

Competencies: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

Objectives: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.
- Demonstrate effective communication skills in interactions with procedure unit staff, nurses, and respiratory therapists.
- Demonstrate attendance to procedures, and inpatient rounds.
- Demonstrate dependability in the appropriate follow through of test results.
- Demonstrate effective communication with patients in delivering healthcare, and planning appropriate follow-up after procedures when appropriate.
- Demonstrate respect for patient privacy, autonomy and awareness during conscious sedation.
- Acknowledge errors and limitations

7. Interpersonal and Communication Skills

Goals: Fellows must demonstrate interpersonal and communications skills that result in the effective exchange of information with patients, their families as well as other healthcare professionals.

Competencies: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health related agencies.
- Work effectively as a member of the multidisciplinary team with important leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records.

Objectives: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health-related agencies.
- Work effectively as a member of the multidisciplinary team with leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records.
- Communicate respectfully and effectively with staff, nurses and technicians in procedural units, clinics and inpatient units.
- Act in a consultative role to other physicians and effectively communicate procedure results to the appropriate caretakers, when appropriate.

8. Teaching Methods

All Attending physicians are expected to discuss the goals and objectives of this rotation with the fellow at the beginning of the month. Teaching methods for this rotation will include teaching rounds and supervision of the fellow's clinical activities as well as attending supervision of the fellow's educational responsibilities towards the other members of the team. The attending physician is expected to assist with literature reviews, formulation of clinically relevant questions to assist the fellow with literature searches as well as assist and polish the fellows as he/she prepares didactic materials for the internal medicine housestaff and the other members of the

multidisciplinary team. For this rotation the fellow will be supervised by both the 6-S and the CF attendings.

9. Assessment Method (Fellow)

Assessment methods for this rotation will include observation of fellow's performance on daily rounds, family conferences, procedures and his/her interactions with the other members of the team and consulting healthcare providers. At the end of the month, attendings are expected to give the fellow one-one feedback on their performance and complete the evaluation forms on E-value.

As part of the 360 degrees evaluation process, the Program will ask the 6S Nursing Leadership as well as other members of the multidisciplinary team to provide a monthly evaluation of each rotating fellow.

10. Assessment Method (Program)

- Fellows will complete an evaluation of the rotation on E-value
- In-training exam pulmonary medicine scores will be reviewed annually
- ABIM Pulmonary Disease Certification Examination scores will be reviewed annually

11. Level of Supervision

- The attending physicians will formulate daily plans of care with the fellow and the housestaff during rounds and whenever necessary.
- Attending physicians are expected to be present for bedside bronchoscopies and other invasive procedures.

12. Educational Resources

Fellows' library – JT N 621

UAB Lister Hill Library – PubMed, E-journals and E-Books

Murray and Nadel's Textbook of Respiratory Medicine, 5th Edition

www.thoracic.org/education/career-development/index.php

III.C.4. Outpatient Procedures

1. Description of Rotation

Dr. Jack Hasson is the director of the Pulmonary and Allergy clinic at the 4th floor of TKC. Fellows will be assigned to this rotation for several months during their clinical training. During this rotation the Fellows are responsible for the electronic

interpretation of all pulmonary function tests performed both at TKC and UH. Their interpretations are supervised and confirmed by a faculty member of the Division. The Fellow will supervise all cardiopulmonary exercise tests and will discuss the interpretation with an assigned faculty member. The Fellow is also responsible for performing pre-bronchoscopy evaluations and bronchoscopy procedures at TKC on Mondays, Tuesdays, Thursdays and Fridays mornings. UAB Guidelines for bronchoscopies and the related pre and post order sets can be found in **Appendix 3** and **Appendix 4**, respectively. Early afternoons are reserved for independent review of bronchoscopically obtained specimens with the assigned attending from either Cytopathology or Surgical Pathology. In addition, the fellow assigned to that service is also expected to be available for other procedures performed at TKC such as outpatient thoracentesis, pleural biopsies, etc. Senior fellows may be assigned to an **elective** Endobronchial Ultrasound (EBUS) Rotation aimed at enhancing both procedural and clinical training in the diagnosis, staging and management of thoracic malignancies. Fellows assigned to the EBUS rotation are expected to attend specialized clinics (Lung Mass/Thoracic Malignancies) both at the BVAMC and TKC.

The goals of this rotation are:

- Development and refinement of knowledge as well as the clinical application of pulmonary physiology; lung and airway anatomy.
- Development and refinement of knowledge on identification of the indications, limitations, complications and outcomes in bronchoscopic and other outpatient diagnostic procedures, (including acquiring skills in educating patients and family members about procedures and obtaining informed consent).
- Understand the pharmacology of analgesics, topical anesthetics and sedatives.
- Understand appropriate biopsy and cytology specimen handling and processing as well as basic cytology and surgical pathology techniques and findings pertaining to lung specimens.
- Develop and refine communication skills with patients, families and other members of the healthcare team.

2. Patient Care

Goals: Fellows are expected to be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health care problems and the promotion of health.

Competencies: Fellows will:

- Increase knowledge and expertise in patient care through:
 - Interpreting the outpatient pulmonary function tests done at the UAB Kirklin Clinic.
 - Recognizing the appropriate clinical context for pulmonary function testing interpretation.
 - Supervising pulmonary function testing and cardiopulmonary exercise tests.
 - Performing pre-bronchoscopy evaluation at the UAB Kirklin clinic and demonstrate understanding of the absolute and relative contraindications for bronchoscopy.
 - Educating patients and families on the indications, usual risks and complications and meaning of results when procedures are performed
 - Demonstrate proficiency in the following bronchoscopic procedures:
 - Airway examination
 - Bronchoalveolar Lavage
 - Bronchial brushing and washing
 - Endobronchial forceps biopsy
 - Transbronchial forceps biopsy
 - Transbronchial needle aspiration and core biopsies (Wang needle aspiration)
 - Foreign body removal
- Develop proficiency in the operation of a fiberoptic bronchoscope, supporting equipment and fluoroscope.
- Demonstrate understanding of how to manage complications of bronchoscopy including bleeding, pneumothorax and respiratory failure, to optimize patient safety.
- Develop proficiency in the proper use of analgesics and sedatives and in managing the complications of conscious sedation.
- Develop proficiency at appropriately selecting the sampling methods and diagnostic tests to optimize yield.

Objectives: Fellows will:

- Interpret all PFTs performed at TKC
- Supervise and interpret all CPETs performed at TKC

- Perform all outpatient pre-bronchoscopy evaluations, discussing specifically the indications for the procedure with the attending physician and adhering to the UAB Bronchoscopy guidelines (see Appendix section).
- Perform and/or assist with other diagnostic outpatient procedures such as thoracentesis and pleural biopsies, always discussing the specific indications with the attending physician
- Discuss risks of procedures with patients and their family members
- Become familiar with the pharmacology of agents used for conscious sedation
- Become familiar with bronchoscopic sampling methods, specifically its indications and limitations
- Review cytopathology and surgical pathology specimens with assigned Dept. of Pathology attending on a daily basis and whenever necessary.

3. Medical Knowledge

Goals: The Fellows must demonstrate knowledge of established and evolving bioethical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

Competencies: The Fellows will:

- Increase knowledge in pulmonary physiology and the methods (including its limitations and indications) used to assess physiology in the following areas:
 - Flow volume loops and spirometry
 - Lung volumes
 - Specific airway resistance and conductance
 - Bronchial provocation testing
 - Gas exchange and diffusion capacity
 - Cardiopulmonary exercise testing
 - Respiratory muscle testing
 - Arterial blood gas analysis
 - Lung and airway anatomy.
- Be able to identify the indications, limitations, complications and likelihood of successful outcome in performing bronchoscopy.

- Increase knowledge in the pharmacology of analgesics, topical anesthetics and sedatives.
- Increase knowledge in appropriate bronchoscopy specimen processing and handling.
- Increase knowledge in basic cytology and surgical pathology techniques and findings applied to lung specimens obtained via bronchoscopy.

Objectives:

- To understand pulmonary physiology specifically in the areas of pulmonary function testing and cardiopulmonary exercise testing.
- To understand the methodology of pulmonary function testing as well as quality assurance procedures by reviewing those with the lead RT.
- To understand the indication, limitations and potential risks associated with bronchoscopic procedures and other invasive diagnostic procedures in the outpatient setting.
- To become proficient in bronchoscopic techniques, including recognition of the airway anatomy.
- To understand appropriate specimen handling.
- To review findings of invasive procedures with Cyto and Surgical Pathologists.

4. Practice-Based Learning and Improvement

Goals: Fellows are expected to demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life long learning

Competencies: The Fellows will:

- Identify strengths, deficiencies and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice
- Locate, appraise and assimilate evidence from scientific studies related to their patient's health problems
- Use information technology to optimize learning

Objectives: The Fellows will:

- Evaluate and improve pulmonary function test and CPET interpretation through self-evaluation and feedback from attending staff.

- Improve procedural practices by following up on test results in order to identify methods of optimizing yield and to identify special circumstances that alter yield and risks.
- Improve patient care practices through education of patients and families on the indications, usual risks and complications and meaning of results when procedures are performed.

5. Systems-Based Practice

Goals: Fellows must demonstrate awareness and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Competencies: The Fellows will:

- Work effectively in various health care delivery systems
- Coordinate patient care within the health care system
- Work in interprofessional teams to enhance patient safety and improve patient care quality.
- Participate in identifying systems errors and in implementing potential systems solutions.

Objectives: The Fellows will:

- Develop proficiency in patient scheduling to maximize unit throughput.
- Develop proficiency in managing a large, busy procedural unit. This includes managing nurses and technicians, patient flow and specimen collection, handling and transport.
- Demonstrate understanding of how test results influence patient care.

6. Professionalism

Goals: Fellows must demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles.

Competencies: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

Objectives: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.
- Demonstrate effective communication skills in interactions with procedure unit staff, nurses, and respiratory therapists.
- Demonstrate attendance to procedures.
- Demonstrate dependability in the appropriate follow through of test results.
- Demonstrate effective communication with patients in delivering healthcare, and planning appropriate follow-up after procedures when appropriate.
- Demonstrate respect for patient privacy, autonomy and awareness during conscious sedation.
- Acknowledge errors and limitations

7. Interpersonal and Communication Skills

Goals: Fellows must demonstrate interpersonal and communications skills that result in the effective exchange of information with patients, their families as well as other healthcare professionals.

Competencies: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health related agencies.
- Work effectively as a member of the multidisciplinary team with important leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records.

Objectives: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health-related agencies.
- Work effectively as a member of the multidisciplinary team with leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records, procedure records and interpretations.
- Communicate respectfully and effectively with staff, nurses and technicians in procedural units and clinics.
- Act in a consultative role to other physicians and effectively communicate procedure results to the appropriate caretakers, when appropriate.

8. Teaching Methods

All Attending physicians are expected to discuss the goals and objectives of this rotation with the fellow at the beginning of the month. Teaching methods for this rotation will include reviewing indications and limitations of each procedure by the supervising attending with the fellow. Attendings are present for outpatient diagnostic procedures, especially bronchoscopies and are expected to guide the fellow regarding airway anatomy and choice of appropriate sampling techniques. In addition, attending physicians will discuss the appropriate handling of specimens for

each invasive procedure. PFTs are “read over” by the attending physician and any necessary corrections will be discussed with the fellow. One attending physician is responsible for reviewing and assisting with the interpretation of CPETs on a monthly basis. Fellows are expected to contact the assigned attending physician in the Dept of Pathology to review their biopsy specimens on a daily basis.

9. Assessment Method (Fellow)

Assessment methods for this rotation will include observation of fellow’s performance on procedures and the fellow’s performance on interpretation of pulmonary physiology studies as well as his/her interactions with other healthcare providers. Attendings assigned to supervise invasive procedures are expected to assure that the fellow has appropriate knowledge of indications, limitations, appropriate sampling, specimen handling as well as the related anatomy. At the end of the month, attendings are expected to give the fellow one-one feedback on their performance and complete the evaluation forms on E-value.

As part of the 360 degrees evaluation process, the Program will ask the TKC Nursing Leadership as well as other members of the multidisciplinary team, particularly the lead RT, to provide a monthly evaluation of each rotating fellow.

10. Assessment Method (Program)

- Fellows will complete an evaluation of the rotation on E-value
- In-training exam pulmonary medicine scores will be reviewed annually
- ABIM scores on pulmonary medicine will be reviewed annually

11. Level of Supervision

- Attending physician will read over the fellow’s interpretation of all PFTs and CPETs.
- Attending physicians are expected to be present for bronchoscopies and other outpatient invasive procedures.

12. Educational Resources

Fellows’ library – JT N 621

UAB Lister Hill Library – PubMed, E-journals and E-Books

Murray and Nadel’s Textbook of Respiratory Medicine, 5th Edition, Chapters 22, 23, 24, 25

Wasserman's. Principles of Exercise Testing and Interpretation

2005 ERS/ETS Guidelines on Interpretation of Pulmonary Function Tests (hard copies are available at both TKC and UH PFT labs)

Hyatt, Scanlon and Nakamura. Interpretation of Pulmonary Function Tests – A practical guide, 3rd Ed.

III.C.5. Birmingham VAMC MICU

1. Description of Rotation

Dr. Joao de Andrade directs the BVAMC Medical Intensive Care Unit (MICU), which is located in the 6th floor of the Medical Center. It is the referral VA medical ICU for the entire State of Alabama. Pulmonary and Critical Care Fellows will be assigned to the BVAMC MICU for several months during their clinical training. They will be responsible for organizing the patient care activities in the MICU under the direct supervision of the Pulmonary and Critical Care Medicine faculty members assigned to the service.

The goals of this rotation are:

- To provide broad clinical exposure on the management of complex critically ill patients, including those on mechanical ventilation and/or hemodynamic monitoring/support.
- To provide clinical experience to develop proficiency in certain technical and organizational aspects as well as procedural skills related to critical care.

2. Patient Care

Goals: Fellows are expected to:

- Review history and ancillary tests of new MICU patients prior to morning rounds;
- Perform comprehensive daily evaluation of all patients on mechanical ventilation prior to morning rounds;
- Advise the housestaff on management of ICU patients during morning rounds and through the day, as needed;
- Advise the multidisciplinary team on the implementation of patient care protocols and clinical pathways;

- Assist, advise and supervise the housestaff on MICU procedures as permitted by their level of proficiency, as defined by the Fellowship Program specific policy.

Competencies: Fellows will:

- Increase knowledge and expertise in patient care through:
 - a. Reviewing history and ancillary tests of new MICU patients prior to morning rounds.
 - b. Performing comprehensive daily evaluation of all patients on mechanical ventilation prior to morning rounds.
 - c. Advising the housestaff on management of ICU patients during morning rounds and through the day, as needed.
 - d. Advising the multidisciplinary team on the implementation of patient care protocols and clinical pathways.
 - e. Assisting, advising and supervising the housestaff on MICU procedures as permitted by their level of proficiency, as defined by the Fellowship Program specific policy.
 - f. Participating in the education of patients and families on the diagnosis and management of critical care issues, including end-of-life discussions and palliative care.
- Develop proficiency in the following MICU procedures:
 - a. Airway management, including endotracheal intubation
 - b. Positive Pressure Ventilatory modes (invasive and non-invasive), including initiation, maintenance, and weaning of mechanical ventilation; respiratory care techniques and withdrawal of mechanical ventilatory support
 - c. Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
 - d. Insertion of arterial, central venous and pulmonary artery balloon flotation catheters
 - e. Insertion of chest tubes and management of drainage systems
 - f. Thoracentesis and related diagnostic procedures
 - g. Nutritional support
 - h. Emergency cardioversion
 - i. Interpretation of intracranial pressure monitoring
 - j. Operation of bedside hemodynamic monitoring systems

- k. Quality improvement and patient safety activities in the intensive care unit

Objectives:

Essential components of this educational experience are the development and refinement of clinical skills in the evaluation, diagnosis, treatment and follow-up of patients with critical illnesses. These skills include the development of appropriate differential diagnoses, assessing the need for hospitalization, the development of diagnostic evaluation strategies and treatment plans, and the implementation of such plans. Through this experience, the Pulmonary and Critical Care Fellow will also develop a comprehensive understanding of the indications, contraindications, techniques, and complications of the entire spectrum of diagnostic and therapeutic procedures in critical care medicine.

3. Medical Knowledge

Goal: The Fellows are expected to have:

- A basic core understanding of anatomy, histology, physiology, biochemistry, immunology, genetics, pharmacology, epidemiology, statistics, ethics and human behavior relative to the practice of critical care medicine.
- Basic core knowledge of the pathogenesis, histopathology, pathophysiology, clinical manifestations, and management of critical illnesses.
- The ability to formulate appropriate differential diagnoses and therapeutic plans based on an ability to critically analyze the clinical data and integrate this analysis with the basic fund of medical knowledge.
- The knowledge of the treatment of the common and uncommon diseases found in the practice of critical care medicine, including an understanding of the principles, indications, contra-indications, risk, cost and expected outcome of the various treatments.
- The knowledge regarding performance and/or interpretation of diagnostic and therapeutic procedures common in the practice of critical care medicine, including the understanding of the principles, indications, contraindications, risk, cost and expected outcome of these procedures.

Competencies: The Fellows will:

Increase knowledge in the diagnosis and management of the following:

- Circulatory disorders

- Shock syndromes
- Cardiovascular diseases
- Trauma
- Neurological
- Sepsis and sepsis syndrome
- Hypertensive emergencies
- Acute and chronic respiratory failure, including ARDS, acute and chronic respiratory failure in obstructive lung diseases and neuromuscular respiratory drive disorders
- Pulmonary thromboembolism
- Pneumothorax
- Delirium and CNS-related critical care issues such as CVAs and status epilepticus
- Critical Obstetric and gynecologic disorders
- Acute metabolic disturbances, including overdosages and intoxication syndromes
- Multi-organ failure
- Electrolyte and acid-base disorders
- Metabolic, nutritional, and endocrine disorders associated with critical illness
- Hematologic and coagulation disorders associated with critical illness
- Anaphylaxis and acute allergic reactions
- Perioperative management of critically ill patients
- Hemodynamic and ventilatory support of patients with organ damage in the post operative period
- Iatrogenic and nosocomial problems in critical care medicine
- Psychosocial and emotional effects of critical illness on patients and their families
- End of life issues and palliative care

Increase knowledge and demonstrate proficiency in the following procedural and technical skills:

- Airway management, including endotracheal intubation

- Positive Pressure Ventilatory modes (invasive and non-invasive), including initiation, maintenance, and weaning of mechanical ventilation; respiratory care techniques and withdrawal of mechanical ventilatory support
- Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
- Insertion of arterial, central venous and pulmonary artery balloon flotation catheters
- Insertion of chest tubes and management of drainage systems
- Use of paralytic agents and sedative/analgesic drugs
- Emergency cardioversion
- Interpretation of intracranial pressure monitoring
- Operation of bedside hemodynamic monitoring systems
- Quality improvement and patient safety activities in the intensive care unit
- Pericardiocentesis
- Transvenous pacemaker insertion
- Renal replacement therapy
- Pharmacokinetics, pharmacodynamics, and drug metabolism and excretion in critical illness
- Imaging techniques commonly employed in the evaluation of patients with critical illness and/or pulmonary disorders
- Principles and techniques of administration and management of an MICU
- Ethical, economic, and legal aspects of critical illness
- Recognition and management of the critically ill from disasters, including those caused by chemical and biological agents

Objectives:

- To master specific knowledge and competencies for the majority of diseases seen in the practice of Critical Care Medicine, including uncommon and complicated diseases.
- To develop proficiency as the primary health care provider in the acute inpatient setting, especially the intensive care unit.

4. Practice-Based Learning and Improvement

Goals: Fellows are expected to demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to

continuously improve patient care based on constant self-evaluation and life long learning

Competencies: The Fellows will:

- Identify strengths, deficiencies and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice
- Locate, appraise and assimilate evidence from scientific studies related to their patient's health problems
- Use information technology to optimize learning
- Participate in the education of students and residents

Objectives: The Fellows will:

- Evaluate and improve management of MICU patients through self-evaluation and feedback from attending staff.
- Set learning and improvement goals based on self-evaluation and feedback from attending staff.
- Incorporate formative evaluation feedback into daily practice both by seeking/giving input from/to the attending staff and the other members of the MICU team.
- Locate, appraise and assimilate evidence from scientific studies related to MICU's patient's problems and share those with the rest of the multidisciplinary team.
- Use information technology databases available both at the VA Library system and the UAB system such as e-journals, PubMed and UptoDate to optimize learning.
- Participate in the education of residents, students, other fellows and other health care professionals by assisting with patient management, supervising procedures and assisting with interpretation of data from ancillary tests.
- Participate in the education of residents, students, other Fellows and other health care professionals by delivering at least one lecture/week on relevant critical care subjects in collaboration with the attending.

5. Systems-Based Practice

Goals: Fellows must demonstrate awareness and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Competencies: The Fellows will:

- Work effectively in various health care delivery systems
- Coordinate patient care within the health care system
- Work in interprofessional teams to enhance patient safety and improve patient care quality.
- Participate in identifying systems errors and in implementing potential systems solutions.

Objectives: The Fellows will:

- Communicate with the ICU attending, other services at the BVAMC and referring physicians/facilities regarding triage/bed allocation, admissions and disposition of critically ill patients following the medical center's policies.
- Work effectively with consultants in the BVAMC to provide optimal patient care.
- Work with the MICU multidisciplinary team to enhance patient safety and improve patient care.
- Participate in regular meetings of the MICU leadership, the Division leadership as well as the BVAMC Critical Care Steering Committee helping with the identification of systems errors and with the implementation of potential solutions.

6. Professionalism

Goals: Fellows must demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles.

Competencies: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.

- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

Objectives: The Fellows will:

- Demonstrate compassion, integrity, honesty and respect to others during all clinical and educational activities of the MICU
- Demonstrate responsibility, accountability, dependability, commitment, and encourage continuity of care, always assuring appropriate “hand-off” of patient care.
- Acknowledge errors and limitations
- Always demonstrate responsiveness to patients needs that supersedes self-interest
- Always demonstrate respect for the privacy and autonomy of patients and families during procedures, daily updates and discussions regarding goals of care.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

7. Interpersonal and Communication Skills

Goals: Fellows must demonstrate interpersonal and communications skills that result in the effective exchange of information with patients, their families as well as other healthcare professionals.

Competencies: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health related agencies.
- Work effectively as a member of the MICU team with important leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records.

Objectives: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds during hospital admissions, daily updates and discussions regarding goals of care as well as informed consent for procedures.
- Communicate respectfully and effectively with ED physicians, referring physicians, consulting physicians, other health care professionals.
- Work effectively as a member of the MICU team with important leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible procedure and consultation records.

8. Teaching Methods

All Attending physicians are expected to discuss the goals and objectives of this rotation with the fellow at the beginning of the month. Teaching methods for this rotation will include teaching rounds and supervision of the fellow's clinical activities as well as attending supervision of the fellow's educational responsibilities towards the other members of the team. The attending physician is expected to assist with literature reviews, formulation of clinically relevant questions to assist the fellow with literature searches as well as assist and polish the fellows as he/she prepares didactic materials for the internal medicine housestaff and the other members of the multidisciplinary team.

9. Assessment Method (Fellow)

Assessment methods for this rotation will include observation of fellow's performance on daily rounds, family conferences, procedures and his/her interactions with the other members of the team and other healthcare providers such as referring physicians, ED physicians and consultants. In addition, the attending physician is expected to be present for the weekly fellow didactic lectures to the internal medicine housestaff. At the end of the month, attendings are expected to give the fellow one-one feedback on their performance and complete the evaluation forms on E-value.

As part of the "360 degree" evaluation process, the BVAMC MICU nursing staff will evaluate Fellows on a monthly basis.

10. Assessment Method (Program)

- Fellows will complete an evaluation of the rotation on E-value
- In-training exam scores on critical care will be reviewed annually
- ABIM scores on critical care will be reviewed annually

11. Level of Supervision

- The attending physician will formulate daily plans of care with the fellow during morning rounds and later in the day as necessary
- Attending physicians are expected to be present for bedside bronchoscopies unless a life-threatening situation is present.

12. Educational Resources

Fellows' library – JT N 621

UAB Lister Hill Library – PubMed, E-journals and E-Books

www.thoracic.org/education/career-development/index.php

www.chestnet.org/accp/pccsu

www.learnICU.org

www.sccm.org

III.C.6. Birmingham VAMC Consultation Service

1. Description of Rotation

Pulmonary and Critical Care Fellows will be assigned to the Pulmonary Consultation Service for several months during their clinical training. They will be responsible for organizing the patient care activities of this service under the direct supervision of an assigned Pulmonary and Critical Care faculty member. Essential skills in consultative pulmonary medicine and critical care will be developed on this service through direct exposure to patients with the full scope of pulmonary diseases and critical illnesses hospitalized on non-pulmonary/critical care services. Skills such as communication with referring physicians and support personnel and the coordination of specific procedures and therapies (e.g. bronchoscopy, thoracentesis, tube thoracostomy) with other procedures and needs of the patients will also be learned on this service. Pulmonary and Critical Care Fellows will become proficient in the

pre-operative risk assessment and perioperative management of patients undergoing surgical procedures. Pulmonary and Critical Care Fellows will be called upon to perform literature searches on topics pertaining to specific patient care situations. In addition, Fellows will also electronically interpret all PFT's (VMAX system) under the supervision of Dr. J. Allen Cooper, Jr. Fellows will also develop and refine clinical skills in the diagnosis and management of patients with thoracic malignancies by attending the weekly "Lung Mass Clinic."

The goals of this rotation are:

- To provide broad clinical exposure on the management of complex non-medical critically ill patients, including those on mechanical ventilation and/or hemodynamic monitoring/support.
- To acquire proficiency in pre-operative respiratory risk assessment and perioperative management.
- To provide broad clinical exposure on the diagnosis and management of pulmonary disorders, particular thoracic malignancies.
- To provide clinical experience to develop proficiency in certain technical and organizational aspects as well as procedural skills related to non-medical critical care and pulmonary medicine, including interpretation of PFTs.

2. Patient Care

Goals: Fellows are expected to:

- To increase knowledge of pulmonary physiology and provide opportunities to demonstrate the application of that knowledge to the interpretation of pulmonary function tests.
- To provide opportunities to develop proficiency in the use and performance of bronchoscopy as a diagnostic and therapeutic tool.
- To provide clinical exposure on the management of general pulmonary medicine and critical care problems in surgical patients.
- To increase knowledge on the assessment of perioperative risk of respiratory failure.
- To increase knowledge and develop proficiency in the assessment and management of pulmonary perioperative complications, including failure to wean from mechanical ventilation.
- To effectively communicate with the primary team and address the issues in question.

Competencies: Fellows will:

- Increase knowledge and expertise in patient care through:

- Evaluate all new consults the same day, assuring that a note is placed in the patient's chart (CPRS) and rounding with attending staff within 24 hours or immediately, when appropriate.
- Review radiographs with Radiology attending whenever appropriate.
- Round daily on the consultation service and discussing findings and management strategies with attending staff.
- Perform pre-bronchoscopy evaluations at BVAMC and recognize the absolute and relative contraindications for bronchoscopy and other invasive procedures such as thoracostomy tube insertions and pleural biopsies.
- Managing complications of bronchoscopy, including bleeding, pneumothorax and respiratory failure to optimize patient safety.
- Assisting faculty and other Fellows with advanced bronchoscopic procedures whenever appropriate
- Participating in the education of patients and families on the diagnosis and management of pulmonary medicine issues, including the indications, usual risks and complications and meaning of results when procedures are performed.
- Develop proficiency in the following pulmonary procedures:
 - Respiratory care techniques
 - Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
 - Insertion of chest tubes and management of pleural drainage systems
 - Thoracentesis and related diagnostic procedures
- Develop proficiency in the operation of a fiberoptic bronchoscope, supporting equipment and fluoroscope.
- Develop proficiency in the following bronchoscopic procedures:
 - Airway examination
 - Bronchoalveolar Lavage
 - Bronchial brushing and washing
 - Endobronchial forceps biopsy
 - Transbronchial forceps biopsy
 - Transbronchial needle aspiration and core biopsies (Wang needle aspiration)
 - Foreign body removal
- Develop proficiency in the proper use of analgesics and sedatives and in managing the complications of conscious sedation.
- Develop proficiency at appropriately selecting the sampling methods and diagnostic tests to optimize yield.

Objectives: Fellows will:

- Be an effective consultant in pulmonary and critical care medicine
- Gather essential and accurate information by performing and complete a clinically relevant history and physical examination.
- Understand how to order and interpret appropriate diagnostic tests.
- Make informed diagnostic and treatment decisions by analyzing and synthesizing information.
- Understand the limits of their knowledge and expertise.
- Develop a differential diagnosis and management plan.
- Maintain comprehensive, timely, effective and legible medical records.
- Effectively counsel patients and families
- Effectively communicate with the primary healthcare team and effectively address issues in question.

3. Medical Knowledge

Goals: The Fellows are expected to have:

- A basic core understanding of anatomy, histology, physiology, biochemistry, immunology, genetics, pharmacology, epidemiology, statistics, ethics and human behavior relative to the practice of pulmonary and critical care medicine.
- Basic core knowledge of the pathogenesis, histopathology, pathophysiology, clinical manifestations, and management of pulmonary and critical illnesses.
- The ability to formulate appropriate differential diagnoses and therapeutic plans based on an ability to critically analyze the clinical data and integrate this analysis with the basic fund of medical knowledge.
- The knowledge of the treatment of the common and uncommon diseases found in the practice of pulmonary and critical care medicine, including an understanding of the principles, indications, contra-indications, risk, cost and expected outcome of the various treatments.
- The knowledge regarding performance and/or interpretation of diagnostic and therapeutic procedures common in the practice of pulmonary and critical care medicine, including the understanding of the principles, indications, contraindications, risk, cost and expected outcome of these procedures.

Competencies: The Fellows will:

- Increase knowledge in pulmonary physiology and the methods used to assess physiology in the following areas:
 - Flow volume loops and spirometry
 - Lung volumes
 - Specific airway resistance and conductance
 - Bronchial provocation testing
 - Gas exchange and diffusion capacity
 - Cardiopulmonary exercise testing
 - Respiratory muscle testing
 - Arterial blood gas analysis
 - Lung and airway anatomy.
- Increase knowledge in the perioperative pulmonary risk assessment instruments available in the literature.
- Be able to identify the indications, limitations, complications and likelihood of successful outcome in performing bronchoscopy and advanced bronchoscopy techniques.
- Increase knowledge in the pharmacology of analgesics, topical anesthetics and sedatives.
- Increase knowledge in appropriate bronchoscopy specimen processing and handling.
- Increase knowledge in basic cytology and surgical pathology techniques and findings applied to lung specimens obtained via bronchoscopy.
- Increase knowledge in assessment of perioperative risk of respiratory failure.
- Increase knowledge in the diagnosis and management of the following:
 - Obstructive lung diseases, including asthma, bronchitis, emphysema and bronchiectasis
 - Dyspnea and prolonged cough
 - Pulmonary malignancy – primary and metastatic
 - Pulmonary infections, including tuberculous, fungal and those in the immunocompromised host
 - Diffuse interstitial lung diseases
 - Pulmonary embolism and pulmonary embolic disease
 - Pulmonary vascular disease, including primary and secondary pulmonary hypertension and vasculitis and pulmonary hemorrhagic syndromes.
 - Occupational and environmental lung diseases

- Pneumothorax – spontaneous and iatrogenic
- Iatrogenic respiratory disease, including drug-induced disease
- Pulmonary manifestations of systemic diseases, including collagen vascular disease and diseases that are primary in other organs
- Disorders of the pleura and mediastinum
- Perioperative respiratory failure and failure to wean from mechanical ventilation
- Increase knowledge and proficiency in the following procedural and technical skills:
 - Respiratory care techniques
 - Use of reservoir masks and CPAP for delivery of supplemental oxygen, humidifiers, nebulizers and incentive spirometry
 - Insertion of chest tubes and management of pleural drainage systems
 - Imaging techniques commonly employed in the evaluation of patients with pulmonary disorders
 - Thoracentesis and related diagnostic procedures
 - Imaging techniques commonly employed in the evaluation of patients with pulmonary disorders

Objectives

- To master specific knowledge and competencies for the majority of diseases seen in the practice of Pulmonary and Critical Care Medicine, including uncommon and complicated diseases.
- To develop proficiency as health care provider in the acute inpatient setting, especially in non-medical intensive care unit.

4. Practice-Based Learning and Improvement

Goals: Fellows are expected to demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life long learning

Competencies: The Fellows will:

- Identify strengths, deficiencies and limits in one's knowledge and expertise
- Set learning and improvement goals

- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice
- Locate, appraise and assimilate evidence from scientific studies related to their patient's health problems
- Use information technology to optimize learning
- Participate in the education of students and residents

Objectives: The Fellows will:

- Evaluate and improve management of Consultation patients through self-evaluation and feedback from attending staff.
- Set learning and improvement goals based on self-evaluation and feedback from attending staff.
- Incorporate formative evaluation feedback into daily practice both by seeking/giving input from/to the attending staff and the other members of the Consultation team.
- Locate, appraise and assimilate evidence from scientific studies related to Consultation patient's problems and share those with the rest of the team.
- Use information technology databases available in the VA Electronic Library as well as the UAB system, such as e-journals, PubMed and UptoDate to optimize learning.
- Participate in the education of residents, students, other fellows and other health care professionals by assisting with patient management, supervising procedures and assisting with interpretation of data from ancillary tests.

5. Systems-Based Practice

Goals: Fellows must demonstrate awareness and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Competencies: The Fellows will:

- Work effectively in various health care delivery systems
- Coordinate patient care within the health care system
- Work in interprofessional teams to enhance patient safety and improve patient care quality.
- Participate in identifying systems errors and in implementing potential systems solutions.

Objectives: The Fellows will:

- Develop proficiency in patient scheduling to maximize unit throughput.
- Increase understanding of how test results influence patient care.
- Communicate with consulting physicians in a timely way.
- Work effectively with consultants in the health care delivery system to provide optimal patient care.
- Incorporate considerations of cost awareness and risk-benefit analysis, as appropriate.
- Advocate for quality patient care and optimal patient care systems.

6. Professionalism

Goals: Fellows must demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles.

Competencies: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

Objectives: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities and sexual orientation.

- Demonstrate effective communication skills in interactions with procedure unit staff, nurses, and respiratory therapists.
- Demonstrate attendance to procedures, and inpatient rounds.
- Demonstrate dependability in the appropriate follow through of test results.
- Demonstrate effective communication with patients in delivering healthcare, and planning appropriate follow-up after procedures
- Demonstrate respect for patient privacy, autonomy and awareness during conscious sedation.
- Acknowledge errors and limitations

7. Interpersonal and Communication Skills

Goals: Fellows must demonstrate interpersonal and communications skills that result in the effective exchange of information with patients, their families as well as other healthcare professionals.

Competencies: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health related agencies.
- Work effectively as a member of the Consultation team with important leadership responsibilities.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records.

Objectives: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health-related agencies.
- Work effectively as a member of the Consultation team with leadership responsibilities.

- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records, specifically the Initial Consultation Note.
- Communicate respectfully and effectively with staff, nurses and technicians in procedural units, clinics and inpatient units.
- Act in a consultative role to other physicians and effectively communicate procedure results to the appropriate caretakers, when appropriate.

8. Teaching Methods

All Attending physicians are expected to discuss the goals and objectives of this rotation with the fellow at the beginning of the month. Teaching methods for this rotation will include teaching rounds and supervision of the fellow's clinical activities. The attending physician is expected to assist with literature reviews, formulation of clinically relevant questions to assist the fellow with literature searches.

9. Assessment Method (Fellow)

Assessment methods for this rotation will include observation of fellow's performance on daily rounds, family conferences, procedures and his/her interactions with the other members of the team and consulting healthcare providers. At the end of the month, attendings are expected to give the fellow one-one feedback on their performance and complete the evaluation forms on E-value.

10. Assessment Method (Program)

- Fellows will complete an evaluation of the rotation on E-value
- In-training exam scores will be reviewed annually
- ABIM scores on will be reviewed annually

11. Level of Supervision

- The attending physician will formulate daily plans of care with the fellow during rounds and whenever necessary.
- Attending physicians are expected to be present for bronchoscopies and other invasive procedures.

12. Educational Resources

Fellows' library – JT N 621

UAB Lister Hill Library – PubMed, E-journals and E-Books

Murray and Nadel's Textbook of Respiratory Medicine, 5th Ed.

www.thoracic.org/education/career-development/index.php

www.chestnet.org/accp/pccsu

www.learnICU.org

www.sccm.org

III.C.7. Lung Transplant

1. Description of Rotation

Dr. Keith Wille is the Medical Director of the UAB Lung Transplant Program. This is a multidisciplinary effort of our Division and the Division of Cardiothoracic Surgery of the Dept. of Surgery. Dr. David McGiffin is the lead lung transplant surgeon. Other members of the transplant team include Drs. Spencer Melby, Sonia Vishin, Kevin Leon, and Joseph Barney as well as a number of dedicated Transplant Coordinators and nurse practitioners. Inpatient care takes place at University Hospital in both the CICU and HTICU. Outpatient care takes place at the Kirklin clinic.

Specific expectations of this rotation

- Monday morning TKC 4th floor Pre Lung Transplant Clinic: Here fellows will learn the appropriate guidelines for referral and transplantation of patients with end stage lung disease. The fellows will primarily be responsible for performing full H&Ps on new patients and then discussing with the attending. Fellows will also evaluate patients who are listed for transplant and understand their outpatient management. Clinic begins at 8am.
- Wednesday morning Lung Transplant team meeting – JT 228 at 7:30: Here fellows will participate in weekly meetings where all patients are discussed by the transplant team including surgeons, nurses, pharmacy, ID and social worker. This time is used to determine new patient's candidacy for transplant, other medical issues in our post transplant patients and any new protocols or systematic changes.

- Wednesday morning TKC 4th floor Post lung transplant Clinic – immediately following lung meeting: Fellows will be responsible for evaluating post-transplant patients, including review of chest radiographs, PFTs, laboratory data and discussing with the attending. Here they will learn the outpatient management of chronic immune suppression, rejection and other details of lung transplant.
- Daily rounds on the inpatient HTICU lung transplant service. Time of rounds will be determined by the fellow and attending daily. The fellow will be responsible for procedures such as bronchoscopy, thoracentesis, etc on these inpatients. The fellow also provides support to the nurse practitioners with procedures, critical care, notes, or admissions as needed. The fellows are not expected to write progress notes on all patients each day, but may be asked to do so based on how busy the service becomes.

Fellows have to option to participate in an organ harvest and retrieval with the surgical team during the rotation, if the opportunity arises.

The goals of this rotation are:

- To provide a comprehensive clinical experience in the management of pre- and post-lung transplant patients.
- To provide the fellows with the opportunity of working on a non-medical ICU environment, in conjunction with nurse practitioners.
- To increase knowledge on the guidelines for referral and the appropriate timing for lung transplantation.
- To increase knowledge on the chronic management of immune suppression in the outpatient setting.
- To enhance skills on bronchoscopy and associated techniques/procedures in the lung transplant setting

2. Patient Care

Goals: Fellows are expected to provide patient care that is compassionate, appropriate, and effective for the treatment of healthcare problems and the promotion of health

Competencies: Fellows will:

- Learn short and long term inpatient management of lung transplant recipients.

- Learn perioperative management of lung transplant patients, including preoperative evaluation, preparation of transplant recipients, and postoperative administration of immunosuppressants.
- Learn long term outpatient management of lung transplant recipients
- Manage post-transplant pulmonary complications, including graft dysfunction.
- Learn how to perform lung allograft biopsies.
- Learn management of immunosuppression and how to identify side effects and toxicities.
- Learn problems that require referral to a transplant center.
- Learn diagnosis and treatment of rejection and complications of such treatment.
- Learn management of co-morbid conditions requiring hospitalization, including surgical and nonsurgical complications of transplantation.
- Understand the principles of organ harvesting, preservation, and sharing

Objectives: Fellows will:

- Evaluate all admissions on the lung transplant service (usually in collaboration with one of the nurse practitioners).
- Perform consultation service for lung transplant patients on other inpatient services.
- Perform lung allograft biopsies on patients admitted to the service.
- Perform consultation services for all new lung transplant recipients on the cardiothoracic surgical service.
- Coordinate care for patients admitted to the lung transplant service (usually in the HTICU).
- Attend lung transplant clinic on Wednesday mornings, TKC 5th floor (transplant meeting starts at 7:30am in the 5th floor TKC conference room).
- Evaluate patients followed in the clinic, gathering data necessary for patient evaluation and present patients to the clinic attending.
- Assist in executing plans for patient care.
- Attend Transplant ID clinic (at least twice during the month)

3. Medical Knowledge

Goals: Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

Competencies: The Fellows will:

- Learn short and long term inpatient and outpatient management of lung transplant recipients.
- Learn perioperative management of lung transplant patients, including preoperative evaluation, preparation of transplant recipients, and postoperative administration of immunosuppressants.
- Manage post-transplant pulmonary complications, including graft dysfunction.
- Learn management of immunosuppression and how to identify side effects and toxicities.
- Learn problems that require referral to a transplant center.
- Learn diagnosis and treatment of rejection and complications of such treatment.
- Learn management of co-morbid conditions requiring hospitalization, including surgical and nonsurgical complications of transplantation.

Objectives: The Fellows will:

- Evaluate all admissions on the lung transplant service (usually in collaboration with one of the nurse practitioners).
- Perform consultation service for lung transplant patients on other inpatient services.
- Perform consultation services for all new lung transplant recipients on the cardiothoracic surgical service.
- Attend lung transplant clinic on Wednesday mornings, TKC 5th floor (transplant meeting starts at 7:30am in the 5th floor TKC conference room).
- Attend Transplant ID clinic (at least twice during the month)

4. Practice-Based Learning and Improvement

Goals: Fellows are expected to demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning

Competencies: The Fellows will:

- Identify strengths, deficiencies and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice
- Locate, appraise and assimilate evidence from scientific studies related to their patient's health problems
- Use information technology to optimize learning
- Participate in the education of students and residents

Objectives: The Fellows will:

- Evaluate and improve management of lung transplant patients through self-evaluation and feedback from attending staff.
- Set learning and improvement goals based on self-evaluation and feedback from attending staff.
- Locate, appraise and assimilate evidence from scientific studies related to lung transplant patient's problems and share those with the rest of the multidisciplinary team.
- Use information technology databases available in the UAB system, such as e-journals, PubMed and UptoDate to optimize learning.
- Participate in the education of residents, students, other fellows and other health care professionals by assisting with patient management, supervising procedures and assisting with interpretation of data from ancillary tests.

5. Systems-Based Practice

Goals: Fellows must demonstrate awareness and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Competencies: The Fellows will:

- Work effectively in various health care delivery systems
- Coordinate patient care within the health care system
- Work in interprofessional teams to enhance patient safety and improve patient care quality.
- Participate in identifying systems errors and in implementing potential systems solutions.

Objectives: The Fellows will:

- Work with the Lung Transplant Program multidisciplinary team to enhance patient safety and improve patient care.
- Develop excellence in communication and coordination of care with referring physicians.
- Acquire skills in dealing with multiple health care systems.

6. Professionalism

Goals: Fellows must demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles.

Competencies: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

Objectives: The Fellows will:

- Demonstrate compassion, integrity, honesty and respect to others during all clinical and educational activities of the Lung Transplant Program
- Demonstrate responsibility, accountability, dependability, commitment, and encourage continuity of care, always assuring appropriate “hand-off” of patient care.
- Acknowledge errors and limitations

- Always demonstrate responsiveness to patients needs that supersedes self-interest
- Always demonstrate respect for the privacy and autonomy of patients and families during procedures, daily updates and discussions regarding goals of care.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

7. Interpersonal and Communication Skills

Goals: Fellows must demonstrate interpersonal and communications skills that result in the effective exchange of information with patients, their families as well as other healthcare professionals.

Competencies: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health related agencies.
- Work effectively as a member of the Lung Transplant multidisciplinary team.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records.

Objectives: The Fellow will:

6. Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds during hospital admissions, daily updates and discussions regarding goals of care as well as informed consent for procedures.
7. Communicate respectfully and effectively with ED physicians, referring physicians, consulting physicians, other health care professionals.
8. Act in an effective consultative role to other physicians and health professionals.
9. Maintain comprehensive, timely and legible medical records, both in the inpatient and outpatient settings

8. Teaching Methods

All Attending physicians are expected to discuss the goals and objectives of this rotation with the fellow at the beginning of the month. Specific teaching methods by the Lung Transplant Attending include teaching rounds, lectures, and supervision of clinical activities.

9. Assessment Method (Fellow)

Assessment methods for this rotation will include observation of fellow's performance on daily rounds, family conferences, procedures and his/her interactions with the other members of the team and other healthcare providers such as referring physicians, ED physicians and consultants. At the end of the month, attendings are expected to give the fellow one-one feedback on their performance and complete the evaluation forms on E-value.

10. Assessment Method (Program)

- Fellows will complete an evaluation of the rotation on E-value
- In-training exam scores on the subject of lung transplantation will be reviewed annually
- ABIM Pulmonary Certification exam scores on the subject of lung transplantation will be reviewed annually

11. Level of Supervision

- The attending physician will formulate daily plans of care with the fellow during CVICU and/or HTICU rounds and as necessary.
- The attending physician will formulate plans of care with the fellow for patients evaluated in the Lung Transplant Clinic.
- Attending physicians are expected to be present for bedside bronchoscopies unless a life-threatening situation is present.

12. Educational Resources

Fellows' library – JT N 621

UAB Lister Hill Library – PubMed, E-journals and E-Books

Specific didactic materials will be distributed by the Lung Transplant faculty at the beginning of the rotation.

III.C.8. Sleep Medicine

1. Description of Rotation

Dr. Susan Harding directs the UAB Sleep/Wake Disorders Center, which is located in the newly renovated quarters on the 7th floor of UAB Highlands Hospital. Its objective is to provide the highest quality evaluation and treatment to patients with sleep disorders, utilizing state of the art technology and equipment. Pulmonary and Critical Care Fellows are assigned to this rotation for about 10% of the time dedicated to their clinical training.

The goals of this rotation are:

- Development and refinement of clinical skills in the evaluation, diagnosis, treatment and follow-up of patients with sleep disorders
- Development and refinement of communication skills with patients, families, and other members of the healthcare team

2. Patient Care

Goals: Fellows are expected to be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health care problems and the promotion of health.

Competencies: Fellows will:

- Acquire proficiency in performing sleep history
- Elaborate differential diagnosis of sleep disorders
- Become familiar with technical aspects of polysomnographic recording
- Become familiar with appropriate prescription and management of CPAP, BiPAP and oxygen therapy

Objectives: Fellows will:

- Perform sleep history in the Sleep Center outpatient clinic
- Discuss differential diagnosis with attending physician
- Attend polysomnographic record review sessions with Sleep Center faculty daily
- Attend at least one nighttime hookup session
- Discuss appropriate indications for CPAP, BiPAP and oxygen therapy with Sleep Center faculty

- Participate in the education of patients and families on the management of sleep disorders

3. Medical Knowledge

Goals: The Fellows must demonstrate knowledge of established and evolving bioethical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

Competencies: The Fellows will:

- Increase knowledge in the recognition, differential diagnosis and management of common sleep disorders.
- Increase knowledge in the management of sleep-disordered breathing.
- Increase knowledge in the following procedural and technical skills:
 - Polysomnographic recording
 - Sleep technology and scoring
 - Sleep staging; respiratory, PLMS and Arousal Event Recognition
 - Record review with CPAP/BiPAP titration
 - Record review with Multiple Sleep Latency Test
 - Hooking up monitoring system for a Polysomnographic recording
 - Setting up CPAP/BiPAP

Objectives: The Fellows will:

- Discuss differential diagnosis with attending physician during sleep clinic
- Attend polysomnographic record review sessions with Sleep Center faculty daily becoming familiar with the scoring system.
- Attend at least one nighttime hookup session
- Discuss appropriate indications for CPAP, BiPAP and oxygen therapy with Sleep Center faculty
- Participate in the education of patients and families on the management of sleep disorders

4. Practice-Based Learning and Improvement

Goals: Fellows are expected to demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to

continuously improve patient care based on constant self-evaluation and life- long learning

Competencies: The Fellows will:

- Identify strengths, deficiencies and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Incorporate formative evaluation feedback into daily practice
- Locate, appraise and assimilate evidence from scientific studies related to their patient's health problems
- Use information technology to optimize learning

Objectives: The Fellows will:

- Evaluate and improve management of patients with sleep disorders through self-evaluation and feedback from attending staff.
- Set learning and improvement goals based on self-evaluation and feedback from attending staff.
- Identify and perform appropriate learning activities based on specific objectives of the rotation.
- Attend didactic teaching and discussion session with Sleep Center faculty.
- Set up time with sleep technologist once/week to review the following topics: sleep staging; respiratory, PLMS and Arousal Event Recognition; Entire record review with CPAP/BiPAP titration; Entire record review with Multiple Sleep Latency Test.
- Systematically analyze practice, both regarding direct patient care and procedures, identifying methods to optimize yield, efficiency and safety.
- Incorporate formative evaluation feedback into daily practice both by seeking/giving input from/to the attending staff and the other members of the Sleep Center
- Locate, appraise and assimilate evidence from scientific studies related to Sleep Medicine and share those with the rest of the multidisciplinary team.
- Use information technology databases available in the UAB system, such as e-journals, PubMed and UptoDate to optimize learning.

5. Systems-Based Practice

Goals: Fellows must demonstrate awareness and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Competencies: The Fellows will:

- Work effectively in various health care delivery systems
- Coordinate patient care within the health care system
- Work in interprofessional teams to enhance patient safety and improve patient care quality.
- Participate in identifying systems errors and in implementing potential systems solutions.

Objectives: The Fellows will:

- Incorporate considerations of cost awareness and risk-benefit analysis as appropriate.
- Participate in regular meetings of the Sleep Center leadership, whenever appropriate, helping with the identification of systems errors and with the implementation of corrective measures.

6. Professionalism

Goals: Fellows must demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles.

Competencies: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.

Objectives: The Fellows will:

- Demonstrate compassion, integrity and respect for others.
- Demonstrate responsiveness to patient needs that supersedes self-interest.
- Demonstrate respect for patient privacy and autonomy.
- Demonstrate accountability to patients, society and the profession.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity on gender, age, culture, race, religion, disabilities and sexual orientation.
- Demonstrate effective communication skills in interactions with procedure unit staff, nurses, and respiratory therapists.
- Demonstrate attendance to all activities of the Sleep Center.
- Demonstrate dependability in the appropriate follow through of test results.
- Demonstrate effective communication with patients in delivering healthcare, and planning appropriate follow-up after procedures when appropriate.
- Demonstrate respect for patient privacy, autonomy and awareness during conscious sedation.
- Acknowledge errors and limitations

7. Interpersonal and Communication Skills

Goals: Fellows must demonstrate interpersonal and communications skills that result in the effective exchange of information with patients, their families as well as other healthcare professionals.

Competencies: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health related agencies.
- Work effectively as a member of the multidisciplinary team.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records.

Objectives: The Fellow will:

- Communicate respectfully and effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.
- Communicate respectfully and effectively with other physicians, other health care professionals and health-related agencies.
- Work effectively as a member of the multidisciplinary team.
- Act in an effective consultative role to other physicians and health professionals.
- Maintain comprehensive, timely and legible medical records, procedure records and interpretations.
- Communicate respectfully and effectively with staff, nurses and technicians in procedural units and clinics.
- Act in a consultative role to other physicians and effectively communicate procedure results to the appropriate caretakers, when appropriate.

8. Teaching Methods

All Attending physicians are expected to discuss the goals and objectives of this rotation with the fellow at the beginning of the month. Teaching methods for this rotation will include daily one-to-one interactions between Sleep Center faculty during record review sessions as well as during the clinics. In addition, a series of lectures on the subject of sleep disorders are delivered through the month by the Sleep Center faculty.

9. Assessment Method (Fellow)

Assessment methods for this rotation will include observation of fellow's performance on clinics and record review sessions as well as his/her interactions with other healthcare providers. At the end of the month, attendings are expected to give the fellow one-one feedback on their performance and complete the evaluation forms on E-value.

10. Assessment Method (Program)

- Fellows will complete an evaluation of the rotation on E-value
- In-training exam scores on the subject of sleep disorders will be reviewed annually
- ABIM Pulmonary Certification exam scores on sleep disorders will be reviewed annually

11. Level of Supervision

- Attending physician will be present in the Sleep Center outpatient clinic and will discuss all cases evaluated by the fellow.

12. Educational Resources

Fellows' library – JT N 621

UAB Lister Hill Library – PubMed, E-journals and E-Books

Specific Educational resources for Sleep Medicine will be provided to the fellow during the first day of the rotation.

III.C.9. Outpatient/Ambulatory Medicine Experience (TKC and BVAMC)

All Fellows will be required to maintain the equivalent of a half-day continuity clinic per week at TKC or the BVAMC during each year of Fellowship to evaluate patients with pulmonary diseases and problems related to pulmonary disease. Clinics evaluate new outpatient consultations as well as established patients. This experience will continue with progressive responsibility through the Fellowship and will be appropriately supervised by dedicated attending faculty members. The goal of this experience will be for the Fellows to gain expertise in the outpatient evaluation and management of pulmonary problems. The experience provides an opportunity to develop an understanding of the natural history of these conditions over an extended period of time. Each Fellow should, on average, be responsible for four to eight patients during each half-day session. After initially evaluating the patient, Fellows will present the patient to the clinic attending, discuss the patient, and then evaluate the patient with the clinic attending. Fellows are responsible for transcribing patient encounters at TKC and for typing notes using the CPRS system at the BVAMC. The notes are electronically signed both at TKC and at the BVAMC; the Attending physician is expected to type an addendum to each note on CPRS and on CERNER to document appropriate supervision. One clinic attending will supervise each Fellow for the entire year and enter evaluation in the E-value system. The Fellow will transfer to another clinic attending for the duration of his or her second year and the same will then occur at the end of the second year.

III.C.10 Interdisciplinary interactions

The Fellow also will be provided with opportunity to pursue experiences in other disciplines whose expertise is required in the care of patients with Pulmonary Diseases and Critical Illnesses. These disciplines include: 1) non-medical ICU settings such as Surgical ICUs, Neuro ICUs, Heart and Lung Transplantation ICUs, 2) Cardiology, including Coronary Care ICUs (CCU) and the Advanced Heart Failure

Program 3) Thoracic Radiology, 4) Thoracic Surgery, and 5) Interventional Bronchoscopy. The goal of these experiences is for the Fellow to appreciate the approach to the specific conditions that relate to Pulmonary disorders and critical care within these subspecialties. These interdisciplinary interactions can occur in the form of a clinical rotation, multidisciplinary conference, etc. Clinical experiences will be under the direction of attending physicians in the respective specialty or subspecialty who participate fully in the development and implementation of the educational goals of the rotation. A formal agreement with a designated supervisor for these additional rotations needs to be in place prior to the Fellow's participation.

III.D. Research Experience

The goal of the research experience is for the Pulmonary and Critical Care Fellow to learn sound methodology in designing and performing research studies and to learn how to correctly interpret and synthesize research data. During this phase of training, the Pulmonary Fellow will work under close guidance of the research mentor. Refer to **Section II.D** above for more details on the expectations and different tracks.

III.E. Continuing Medical Education and Society Memberships

In addition to participating in the organized didactic conferences established within the Fellowship program all Fellows will become members of the American College of Chest Physicians (www.chestnet.org) and the American Thoracic Society (www.thoracic.org). Fellows are also encouraged to become members of the Society of Critical Care Medicine (www.sccm.org) Participation in the continuing medical education activities of these professional organizations will help foster the standards of professionalism and augment the process of lifelong learning. The Fellowship Program Coordinator can provide instruction on obtaining these memberships.

III.F. Development of Teaching Skills

All Pulmonary Fellows will be encouraged to educate medical students, resident physicians and other allied health personnel, as well as patients and families. These teaching activities may include formal presentations at conferences, informal case-based discussions in small group settings, didactic teaching in small group sessions (such as small group discussions in the annual Pulmonary Module of the current curriculum of the School of Medicine) and one-on-one interactions. Fellows will learn to effectively use presentation software, such as Microsoft Powerpoint, and be able to troubleshoot necessary hardware. Fellows will be required to teach chest exam techniques to medical students enrolled in the ICM course every year and are strongly encouraged to volunteer as preceptors for this course.

III.G. Development of Leadership Skills

Each year, a Chief Fellow is appointed who serves a critical role in the leadership structure of the Pulmonary and Critical Care Program as described above. The Chief Fellow is appointed by the Program Director. All Pulmonary Fellows are encouraged to participate in Divisional and Institutional Committees and to actively participate in committees of professional societies. One peer-appointed Fellow represents his/her peers on the Fellowship Education Committee whenever discussions regarding ACGME compliance occur. One Fellow each year represents the Pulmonary and Critical Care Fellows on the UAB House Staff Council and is encouraged to actively participate in the affairs of the Council. The House Staff Council meets on a monthly basis and provides residents with a system to communicate and exchange information on their work environment and their programs. The meetings are attended by the Designated Institutional Official and a member of the Graduate Medical Education Department (the latter also provides administrative support). The officers of the Council serve as voting members of the Dean's Council for Graduate Medical Education. The role of the House Staff Council is described in detail in the UAB GME Policies and Procedures. Fellows are also encouraged to actively participate as resident reviewers in Internal Reviews of other UAB Residency Programs.

III.H Methods of evaluation

An evaluation process, including evaluations of individual Pulmonary and Critical Care Fellows (formative and summative evaluation), evaluations of the program, and evaluations of individual faculty members has been designed to facilitate the Pulmonary and Critical Care Fellowship Program in assessing how well it meets set goals and objectives. Fellow, Faculty, and Program Evaluation Forms can be found in **Appendix 5**.

The Fellowship Program has implemented the electronic E-Value system with evaluations structured according to the six competencies. E-Value was chosen to provide consistency with the Internal Medicine parent program and many other residencies and fellowships across the Institution. E-Value has many advantages over the previous pen and paper evaluation system including, but not limited to:

- The system provides summaries of evaluations for each Fellow to facilitate review of progress during Committee meetings and one-on-one meetings with the Program Director.
- Automatic notifications are sent to the Program Director for scores below program standards. The Program Director reviews these notifications in timely fashion and meets with the Fellow as necessary to identify causes for the poor performance and the means for improving the deficiency.
- Pulmonary Fellows are able to access their evaluation as soon as completed and have full access to all their evaluations throughout their training.

- The system provides for anonymous evaluation of attendings / rotations by the Fellows. Summaries of these evaluations are accessible to the individual attendings who then can use the constructive feedback to improve their teaching skills.
- Evaluations are also accessible to the Division Director for use during faculty reviews. Feedback on specific rotations is used to guide changes / improvements to program content and logistics.
- Reminders about evaluations due are sent automatically, and repeated automatically, if the evaluations are not completed in timely fashion. This should allow for timely and complete assessment.

For each clinical rotation, the supervising faculty member will complete an E-Value evaluation. Since one-on-one feedback is most valuable if provided in person, attending physicians are required to discuss, in person, their evaluation with the respective Fellow. Fellows are strongly encouraged to seek face-to-face feedback if not offered spontaneously. For the outpatient ambulatory care experience, faculty members are asked to complete an evaluation every six months. Similarly, research mentors are asked to complete an evaluation of their mentees every six months. Fellows meet with the Program Director semi-annually to review all their evaluations and report on their clinical and research progress. These sessions are also designed to elicit Fellow feedback on program content and structure.

As part of the "360 degree" evaluation process, members of the many multidisciplinary teams they will be working with will evaluate Fellows.

Additionally, the ACGME has recently requested that each program establish milestones so that the evaluation system can be tailored to each level of training. Our Program's milestone chart can be reviewed below:

Milestone Chart		Patient Care		
ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	General Evaluation Strategies	
Clinical skills and reasoning	Historical data gathering		Standardized patient Direct observation	
	<ul style="list-style-type: none"> ⊗ Manage patients using clinical skills of interviewing and physical examination 	1. Acquire accurate and relevant history from the patient in an efficiently customized, prioritized, and hypothesis driven fashion		1
		2. Seek and obtain appropriate, verified, and prioritized data from secondary sources (eg, family, records, pharmacy)		1
	<ul style="list-style-type: none"> ⊗ Demonstrate competence in the performance of procedures mandated by the ABIM 	3. Obtain relevant historical subtleties that inform and prioritize both differential diagnoses and diagnostic plans, including sensitive, complicated, and detailed information that may not often be volunteered by the patient		3
	<ul style="list-style-type: none"> ⊗ Appropriately 	4. Role model gathering subtle and reliable information from the patient for junior members of the health care team	6	
	Performing a physical examination		Standardized patient	

use laboratory and imaging techniques	1. Perform an accurate physical examination that is appropriately targeted to the patient's complaints and medical conditions. Identify pertinent abnormalities using common maneuvers	1	Direct observation Simulation
	2. Accurately track important changes in the physical examination over time in the outpatient and inpatient settings	3	
	3. Demonstrate and teach how to elicit important physical findings for junior members of the health care team	1	
	4. Routinely identify subtle or unusual physical findings that may influence clinical decision making, using advanced maneuvers where applicable	3	
	Clinical reasoning		Chart-stimulated recall Direct observation Clinical vignettes
	1. Synthesize all available data, including interview, physical examination, and preliminary laboratory data, to define each patient's central clinical problem	3	
	2. Develop prioritized differential diagnoses, evidence-based diagnostic and therapeutic plan for common inpatient and ambulatory conditions	3	
	3. Modify differential diagnosis and care plan based on clinical course and data as appropriate	6	
	4. Recognize disease presentations that deviate from common patterns and that require complex decision making	12	
	Invasive procedures		
1. Appropriately perform invasive procedures and provide post-procedure management for common procedures	12	Simulation Direct observation	

Procedure logs: Each Pulmonary Fellow is required to keep a log of the supervised procedures performed during the course of his/her Fellowship, which will document progression in skills and training. Details of these logs can be found in Section IX.

Summative Evaluation of Pulmonary Fellows. When Pulmonary Fellows meet individually with the Program Director for their semi-annual meeting, both formative and summative feedback on their performance will be given. A summary of the content of the meeting, including plans for remediation of any deficiencies identified, prepared by the Program Director, is signed by the Program Director and the Pulmonary Fellow. Similar minutes will be prepared should formal interim meetings be necessary.

The Pulmonary and Critical Care Fellowship Education Committee reviews the overall performance of each Pulmonary Fellow once or twice a year. This committee monitors the performance of the Pulmonary Fellows and assesses the level of competence for each Fellow beyond the individual faculty evaluations documented in each Fellow's file. The committee's assessment is summarized in writing and recorded in the program files for future reference purposes.

Any adverse judgments or evaluations regarding a Pulmonary Fellow's level of performance or competence will first be directed to the Program Director, who then will discuss the situation with the specific Fellow in a timely manner. It is expected

that most issues can be resolved at that level. The Pulmonary and Critical Care Fellowship Program Executive Committee will discuss serious grievances or repeated offenses. The committee in turn will develop a specific plan and timeline for remediation, which will be communicated to the Fellow by the Program Director and/or Division Director both verbally and in writing. The committee will reassess the Fellow's performance as outlined in the remediation timeline. Unsatisfactory performance may lead to probationary status, suspension, or termination from the training program as outlined in the UAB GME Policies and Procedures. Such measures can be appealed by the Fellow in a multi-stage process according to the procedures outlined in the UAB GME Policies and Procedures. Fellows graduating from the program receive a Final Evaluation regarding their demonstration of sufficient professional ability to practice competently and independently.

ABIM tracking: The Program Director is required to submit annual evaluations of each Fellow to the ABIM. This evaluation represents a composite of rotation-specific evaluations by faculty, performance in teaching conferences, strengths and weaknesses identified at the Education Committee meetings, and personal interactions with the Program Director. The evaluation will be discussed with each Fellow in a one-on-one meeting with the Program Director in June of each academic year.

Conditions for Advancement During Training. Conditions for initial appointment to the program are delineated in Section II.C. of this manual. Advancement from year to year is governed by UAB "*GME Policies and Procedures*" and by Divisional Policy. Advancement is contingent upon satisfactory performance on clinical and research rotations as assessed by individual faculty, the Program Director and the Pulmonary and Critical Care Education Committee as outlined above.

Evaluation of the Faculty and Program: After each clinical rotation, each Pulmonary Fellow is required to complete an evaluation of the faculty and the specific rotation on E-value. Evaluations of Faculty and rotations in E-Value are anonymous to allow candid feedback without fear of repercussions.

Additional feedback from Fellows will be sought during the semi-annual one-on-one meetings with the Program Director. Fellows who do not wish to communicate their comments verbally, are encouraged to put them in writing and give them to the Chief Fellow who will then pass the comments on to the Program Director without revealing the identity of the Fellow providing the feedback. Fellows can also informally voice any concerns to the Chief Fellow who will then communicate these concerns directly to the Program Director.

The Program Director and Division Director will review evaluations of the Faculty and Program in an on-going basis. Teaching faculty are encouraged to view their

personal evaluations and modify their teaching content and methods, as necessary, based on the feedback provided. Faculty evaluations will be discussed with faculty members during meetings with the Division Director annually, or as appropriate.

Communication: Pulmonary Fellows are encouraged to maintain a high level of communication with the Program Director and teaching faculty, including research faculty. Monthly (on the last Monday of the month), group meetings will be held between the Fellows and the Program Director, and other faculty, as deemed appropriate. These meetings will be used to disseminate information, receive timely feedback, etc.

The feedback received through formal evaluations and during formal and informal meetings will be discussed by the Pulmonary and Critical Care Fellowship Program Executive Committee and used to make programmatic changes as appropriate.

IV. TEACHING CONFERENCES

Weekly teaching conferences in the Division of Pulmonary, Allergy and Critical Care Medicine are scheduled as outlined in Table 1 and described in more detail below. Attendance is monitored carefully on a prospective basis, especially for Core Clinical Conferences. Sign-up sheets are available and over the course of any given academic year, 70% of core conferences attendance is expected. Excused absences (vacation, out of town meetings, research responsibilities, patient care and extenuating circumstances) are deducted from the denominator to compute this percentage. Therefore, it is very important that the Fellow notify the Fellowship Administrator by email about specific dates of planned absence. All teaching attendings are encouraged to release the Fellow from routine clinical responsibilities during conference hours. Fellows are encouraged to report failure to do so to the Program Director. Fellows involved in the care of acutely ill patients are excused from conference, but should notify the Program Director via email following the missed conference.

Table 1. Teaching Conferences for Pulmonary Fellows

Day	Title	Time	Location	
Mon	Multidisciplinary Chest Conference (1 st and 3 rd Monday)	12:00-01:00 pm	FOT Conference Room	
	Methods of Research Conference* (2 nd and 4 th Monday)		THT Conference Room	
	Fellows Town hall Meeting (4 th week of month, usually quarterly)		THT Conference Room	
Tue	Fellows Conference	Pulm case-based conf (1/ 4 wks)	12:00-01:00 pm	THT Conference Room

	Core Lecture (1 -2/4 wks)		
	Journal Club (1/4 wks)		
	Faculty Meeting (2 nd Tuesday each month)	12:00-1:00pm	THT Conf Rm
Wed	Dept. of Medicine Grand Rounds	12:00-01:00 pm	Spain Auditorium
Thu	ILD Conference (2/4 wks) – see website for schedule	07:30-08:30 am	THT Conference Room
	Pulmonary Grand Rounds	12:00-01:00 pm	Finley Conference Room
Fri	Lung Cancer or Transplant/CF Conference or Pleural Disease (1 st Fri of month)** Critical Care Conference (case presentations) (2 nd and 3 rd Fridays) Multi-disciplinary CC conference (4th Fri of month)	12:00-01:00 pm	THT Conference Room
	Mycobacterial Disease Conf. (1 st Fri of month)	1:00-2:00 pm	THT Conf Rm

*core conference

Content of the conferences is monitored on an ongoing basis to assure that all content areas required by ACGME and ABIM, are covered during each Fellows' training.

You can find the list of specific topics that will make up the ABIM examination in Pulmonary Disease and Critical Care Medicine in the following sites:

http://www.abim.org/pdf/blueprint/pulm_cert.pdf

http://www.abim.org/pdf/blueprint/ccm_cert.pdf

IV.A. Fellows' Conference

This conference is given by faculty or Pulmonary Fellows. Speakers from other Departments are invited as appropriate (e.g., Thoracic Radiology and Surgery, Neurology ICU, Trauma, etc.). The goal is to cover all topics relevant to ABIM Board Certification in Pulmonary Disease and Critical Care Medicine either through a formal lecture or a pulmonary/critical care case-based discussion.

IV.B. Journal Club

Under the guidance of an assigned faculty mentor, Pulmonary Fellows present

pertinent research articles from the current literature preceded by a brief overview of the field to put the article in perspective. Interaction between presenter and audience (Fellows and faculty) are strongly encouraged. Discussion emphasizes methodological aspects of these papers (design, analysis, interpretation of the data) and implications for clinical care including the practice of cost-effective care.

IV.C. Multidisciplinary Chest Conference

This conference's main objective is as a forum for dynamic interaction of pulmonologists, thoracic radiologists and lung pathologists. The conference series aims to cover all major pulmonary diseases during the course of a two-year cycle. Second year pulmonary Fellows select recent cases and present those to faculty and other fellows from all three departments in a format that encourages faculty participation and discussion. Fellows will choose on aspect of one of the cases Presentations and cases are discussed one week in advance with Dr. Joao de Andrade to assure that the presentations are appropriate and objective. In addition, the Radiology attending assigned to each conference presents "classical" chest x-ray findings during a brief "intermission" between cases.

IV.D. Town hall Meeting

This meeting is designed to facilitate and promote communication between Fellowship leadership and Fellows. This meeting provides a forum to discuss changes, problems, and other information that is of mutual interest.

IV.E. Pulmonary Grand Rounds

Topics of clinical relevance and cutting edge research are presented by UAB faculty from within and outside of the Division of Pulmonary, Allergy and Critical Care Medicine and Visiting Professors from institutions across the World. Attendance is mandatory for Pulmonary Fellows and Faculty. Second year Fellows are expected to present their research project (usually two Fellows will be assigned each a 30-minute session), and Third year Fellows, especially those in the Physician Scientist Track, are expected to present their research results in a one-hour session towards the second half of their third year. This conference is CME accredited.

IV.F. Department of Medicine Grand Rounds

This is a weekly conference for the Department of Medicine at large. Topics vary widely, but speakers with topics relevant to subspecialty training in pulmonary disease and critical care medicine from within and outside the institution are featured frequently. Attendance by Pulmonary Fellows and pulmonary attending is encouraged. This conference is CME accredited.

IV.G. Critical Care Conference

Fellows assigned to the UAB MICU service are responsible for presenting cases to the faculty and other Fellows. The presentation is followed by an open discussion as cases usually represent common ICU problems with diagnostic and management dilemmas. Attending physicians from other critical care services (i.e., Neuron ICU, CCU, Trauma/Burn, etc) are periodically invited to lecture (or discuss cases in a morbidity and mortality discussion format) on topics relevant to their areas of expertise so Pulmonary Fellows and faculty can receive the necessary critical care interdisciplinary training.

IV.H. Interstitial Lung Disease Conference

This conference, coordinated by Dr. Joao de Andrade is attended by the Pulmonary Fellows and faculty from the Interstitial Lung Disease Program (Drs. Joseph Barney, Tracy Luckhardt and Victor Thannickal), and, as opportunity permits, by other pulmonary faculty and invited faculty from the Depts. of Radiology and Pathology. This is a faculty-driven case presentation and is aimed at exposing Pulmonary Fellows to issues pertaining to the diagnosis and management of Interstitial Lung Diseases.

IV.I. Mycobacterial Disease Conference

This conference is directed by Dr. Ed Kahn (Jefferson County Health Dept. and UAB Division of Infectious Diseases). The Pulmonary Fellows, Infectious Diseases Fellows, ID faculty and Pulmonary faculty attend it, as opportunity permits. The conference features faculty presenting interesting cases with emphasis on diagnostic and management issues of patients with Mycobacterial diseases.

IV.J. Nuts and Bolts Series

From early July to mid-August each year, daily noon conferences are held instead of the regularly scheduled conferences. These “nuts & bolts” conferences cover key topics in pulmonary disease and critical care and are aimed at introducing Pulmonary Fellows to policies and procedures in the Division. **Attendance by first year Pulmonary Fellows is mandatory** and encouraged for all other trainees. Topics for this conference can be found in **Appendix 6**.

IV. K. Lung Cancer Conference

This conference, coordinated by Dr. Mark Dransfield, is attended by the Pulmonary Fellows and faculty from the Thoracic Neoplasm and Interventional Bronchoscopy Programs, and, as opportunity permits, by other Pulmonary faculty and invited faculty from the Departments of Radiology and Pathology. This is a faculty-driven

case presentation and is aimed at exposing Pulmonary Fellows to issues pertaining to the diagnosis and management of Lung Cancer and other thoracic neoplasms.

IV.L. Pleural Disease Conference

This conference will be coordinated and led by Drs. Veena Antony and Jason Zolak. It will be attended by the Pulmonary Fellows and faculty as well as Internal Medicine house officers. This conference is aimed at exposing pulmonary fellows to cutting edge concepts in the management of pleural diseases via case discussions and reviews of the literature.

IV.M. Other mandatory conferences

Dean's Council Lectures: The Dean's Council for GME has developed a lecture series to assist residents and Fellows in meeting the ACGME Common Program requirements. Lectures will be held approximately four to five times per year with all topics completed over a two-year period. The lecture series will be repeated biannually. Topics will include: sleep deprivation, stress and substance abuse, depression/anxiety/stress, ethics and professionalism, ACGME competencies and compliance. Future topics are still under discussion.

Attendance is mandatory for all Fellows by either attending the lecture, viewing the presentation, or completing the education on a web-based application. Each topic will be presented twice (same presentation, but different time of day). For Fellows unable to attend the lecture, the information will be available on HealthStream, an education software package implemented by the Health System as a mechanism for various required educational training. Instructions on how to access HealthStream can be obtained with the Fellowship Program Coordinator.

Vocabulary of Clinical and Translational Science (CTS) is a 20-hour course that includes fundamental information on hypothesis generation and testing; informatics; biostatistics; epidemiology and population research; clinical trials; ethics; overviews of translational and outcomes research; accessing information; the IRB and oversight of research; and critical review of clinical and translational literature. **The Vocabulary course is required for all School of Medicine Fellows who are in Fellowship programs longer than one year** and serves as the introductory coursework for the Clinical and Translational Science Training Program. The Vocabulary of CTS course is held for two consecutive weeks in September of each year. The objectives of this course are three-fold:

- To facilitate understanding of clinical and translational science in a way that participants are better prepared to read and interpret the medical literature through their understanding of types of research design, conduct, analysis, and interpretation.
- To prepare attendees to make informed decisions regarding whether or not to pursue clinical and translational science as part of their career path.

- To provide a foundation for further clinical training for participants in UAB's Clinical and Translational Science Training Program.

V. PULMONARY FELLOW SUPPORT SERVICES AND FACILITIES

V.A. Pulmonary Fellows Office Suite

Office space has been made available for each Pulmonary Fellow in the Jefferson Tower, room JT N621. The office is equipped with two personal computers, which are connected to the Division of Pulmonary, Allergy and Critical Care Medicine network that also gives access to both UAB and UAB-hospital networks.

V.B. Reference Materials

Reference materials are available in a variety of formats in the Pulmonary Fellows' office, in the Lister Hill Extension library (24 hour access available) and online through Lister Hill library and websites of professional organizations. Available hard-copy materials in the office include common textbooks of Pulmonary and Critical Care, the ACCP Board Review Courses in both Pulmonary Disease and Critical Care as well as several ACCP SEEK book series with commented questions to assist Fellows in their preparation for ABIM exams. Fellows monitor the content of the library and request additions / replacements as indicated. Requests have to be approved by the Program Director before additional purchases are made.

Fellows are encouraged to save a copy of their conference Powerpoint presentations in fellows' office computer and to save relevant "pdf" files from their literature searches. This presentation repository with reference files can be used by Fellows and faculty for self-teaching and slides can be used for future presentations within and outside the Division.

V.C. Computer Support

1. Division of Pulmonary, Allergy and Critical Care Medicine

Pulmonary Fellows have password-protected access to The Division of Pulmonary, Allergy and Critical Care computer network. Two PC's are located in the Fellows' office suite and provide access to email (Groupwise software), Internet, and the online resources of the Lister Hill Library, which include an online catalog, electronic full text journal access, and links to various search engines. Microsoft Office is installed on both computers and available for word-processing, limited data analysis, and creation of slides and overheads. Fellows are required to check their email daily as many announcements, some of which may be time-sensitive, are distributed through the Division via email. Fellows should use their UAB email for work related activities, in accordance with the UAB SOM policy on Internet and email use (see **Appendix 7**). The Division has access to several full-time computer specialists

available to help with computer software and hardware problems. If a Fellow has any computer-related problems, he or she should contact the Fellowship Program Coordinator (934-4328).

The pulmonary computer network is HIPAA compliant. Emails with patient health information may be sent from Groupwise to Groupwise server to facilitate communication within the Medical Center. **Emails to patients or referring physicians outside the UAB system are prohibited by HIPAA regulations.** All Fellows have to undergo HIPAA training upon enrollment in the Fellowship program and access to the pulmonary server will be contingent on successful completion of this training.

2. UAB Hospital and The Kirklin Clinic

Medical records are available through several computerized data retrieval systems. Access is contingent on successful completion of HIPAA training.

- The **IMPACT system** can be accessed from terminals on the hospital units. An individual password is required and is to be kept confidential. Patient data, including all laboratory reports and many radiology test results are available on IMPACT. Doctor's orders are placed directly into the IMPACT system.
- **CDA and Horizon** can be accessed from terminals throughout the hospital and from selected on-campus and off-campus computers. Use of a VPN dialer may be necessary from various locations. Records available on this system include hospital discharge summaries, radiology reports, laboratory data, clinic notes, stress test reports, etc. An individual password is required and is to be kept confidential.
- High resolution viewing terminals are placed at strategic locations throughout the hospital which permit viewing of digital radiographs. Access is via Horizon.

3. BVAMC

Medical records are available through "CPRS." The same system is used for order entry and retrieval of test results. An individual password is required and must be kept confidential. **The VA system does not allow for USB drives to be used in its computer network.** It is important that all notes be signed after completing. If notes are left unsigned the Fellow will be contacted and it is requested that those notes be signed within 24 hours of being contacted.

V.D. Copies

Office copiers are available to Pulmonary Fellows on the 4th floor of THT. Administrative support for Fellows can be obtained through the Fellowship Program

Coordinator (Cyndi Calhoun, extension 4-4328) or through the assigned continuity clinic attending's administrative assistant.

V.E. Libraries

The Lister Hill Library is the main medical library for UAB and is located within a couple of blocks from the BVAMC and University Hospital. The Library maintains a large collection of books, journals, audiovisual materials, and, increasingly, online resources. Catalogs are computerized and the library provides free access to Medline, other relevant databases, full-text retrieval sites, and on-line textbooks. Access to these resources is via Blazer ID, a university wide password system. The Lister Hill Extension Library is a branch office of the Lister Hill Library located within University Hospital. This branch maintains a collection of key textbooks, provides access to recent key journals, provides computer access for literature searching, and has facilities for study and copying of materials. The extension library is accessible 24 hours per day with a numerical access code.

V.F. Phones

Local calls: Local calls can be placed from any UAB phone by dialing 9 and the phone number. Long distance calls within the state of Alabama can be placed from any UAB phone by dialing 8-1-area code + the phone number.

Long distance calls within Alabama: Fellows must use the WATTS line for these calls (8- 1-Alabama area code – phone number).

Long distance calls outside Alabama: These business calls (to other physicians or to patients) should be placed through the UAB's Medical Information Service via Telephone (MIST) system. The MIST operator can be accessed by Pulmonary Fellows by dialing 4- 6478 from any campus phone or by dialing 205-934-6478 from any phone outside campus. Operators will assist in locating referring physicians

Incoming calls from referring physicians: Physicians calling into UAB can contact the MIST office by dialing 1-800-822-6478 (1-800-UAB-MIST). Incoming MIST calls generally involve referral of patients to the Pulmonary Service or the MICU from outside UAB and will be handled by the MICU Fellows and/or the attending on-call when appropriate.

Personal long-distance calls should be via one's personal cellular telephone or charged to a personal credit card.

V.G. Presentation materials

Slides can be created using Powerpoint software on the two PC's in the Pulmonary

Fellows' office suite. Posters for research presentations should be created on PowerPoint and can be imaged on hard-copy by web-based suppliers or one of the many specialized facilities on UAB campus. Funding for these posters should be arranged through the research mentor whenever possible. General Division resources are usually not available, but special requests can be made to the Program Director.

V.H. Malpractice Insurance

Graduate Medical Education pays malpractice insurance for Fellows (not applicable for any moonlighting activities outside the UAB system or the BVAMC).

V.I. White Coats

GME will provide Fellows with white coats. The drop-box for having coats cleaned is located in THT 422.

V.J. Pagers

Pagers should be worn at all times during working hours. Batteries are available in the Division Office at THT 422.

VI. PULMONARY FELLOW PROCEDURE LOGS

VI.A. ABIM Requirements

Requirements for the **American Board of Internal Medicine** certification in the subspecialty of Pulmonary Disease and Critical Care Medicine require demonstration of competence in the following procedures and technical skills (numbers in parentheses indicate numerical requirements per ACGME guidelines [see **Appendix 11**] where applicable):

- Airway management including endotracheal intubation (20)
- Fiberoptic bronchoscopy and accompanying procedures (50)
- Noninvasive and invasive ventilator management (30)
- Thoracentesis (20)
- Arterial puncture (20)
- Placement of arterial, central venous and pulmonary artery balloon flotation catheters (20)
- Calibration and operation of hemodynamic recording systems (10)
- Supervision of the technical aspects of pulmonary function testing (10)
- Progressive exercise testing (10)
- Insertion and management of chest tubes (10)
- Moderate sedation (20)
- Use of ultrasound to guide central line placement and thoracentesis (10)

- Advanced Cardiac Life Support (10)

Attending faculty must be present at all procedures for those to be counted towards certification. For additional and up-to date information on training requirements and certification, Pulmonary Fellows should consult the following web pages: www.abim.org and www.acgme.org.

VI.B. Record Keeping

All Pulmonary Fellows are required to keep a log of clinical procedures performed, identifying the type of procedure, date performed, indications and complications. Procedures should also be entered into E-Value. It is up to each Fellow to develop a system to track their procedures. An updated log will be reviewed at each six month meeting with the Program Director to identify potential deficiencies and is included in the minutes from these meetings. At the end of training, the contents of the procedure log will be summarized and documented in the final evaluation letter which will be made available to hospitals, licensing boards, or other outside credentialing bodies as required. Pulmonary and Critical Care Fellows will not be given credit for procedures performed but not documented in this procedure log – meticulous documentation of procedures is thus critical for future attainment of clinical privileges. Fellows are encouraged to keep copies of their original procedure data and are required to maintain these files according to HIPAA guidelines.

VII. DUTY HOURS, CALL ON WEEKNIGHTS AND WEEKENDS, MOONLIGHTING

VII.A. Duty hours

Duty hours are defined as all clinical and academic activities related to the residency program, i.e., patient care (both inpatient and outpatient), administrative duties related to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled academic activities such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.

Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities. The Fellowship program monitors duty hours following the latest guidelines. **Fellows must record their duty hours (time in/time out) on E-Value on a daily basis.** Members of the Education Committee and the Chief Fellow are responsible for reporting any violations to the Program Director for immediate remediation.

Consistent with ACGME requirements, Pulmonary Fellows are provided with a minimum of one day in seven free from all educational and clinical responsibilities, averaged over a four-week period, inclusive of call (one day is defined as one continuous 24-hour period free from all clinical, educational, and administrative activities). Additionally, assuring a 10-hour time period between all daily duty periods provides adequate time for rest and personal activities.

VII.B. On-Call Activities

Pulmonary Fellows are allowed to take call from home as the MICU census allows. The weekend/weeknight call schedule is made several months in advance by the Chief Fellow. Both weekend and weeknight call frequency decrease as the Pulmonary Fellow rises in seniority and varies depending on the number of first year fellows in a given year. Approximately 45% of calls are divided among 1st year fellows, 35% of calls are divided among 2nd year fellows, and 20% of calls are divided among 3rd year fellows. ACGME guidelines are implemented to ensure that Pulmonary Fellows abide by the 80-hour weekly limit and 24+4 in-house limit.

Check-in/check-out must be performed at the beginning and end of each call period to assure continuity of care.

Weeknight call (Monday-Friday) starts at 5:00 pm and ends at 7:00 am. Call on consecutive weeknights is not permitted. The weekend coverage consists of 2 fellows: one “night fellow” and one “day fellow”. The “night fellow” covers Friday (5:00 pm to 7:00 am) & Saturday (7:00 pm to 7:00 am). The “day fellow” covers Saturday and Sunday from 7:00 am to 7:00 pm. The “day fellow” may choose to round with one of the MICU teams if his/her call duties allow.

Call can be switched among Pulmonary Fellows. If the switch occurs after the call schedule is made, the fellow requesting the switch must notify the Chief Fellow as well as the Fellowship Program Coordinator via email. If the fellow makes a switch to take call on a night prior to that fellow’s continuity clinic, he/she must arrange clinic coverage as well.

The duties of the on-call Pulmonary Fellow include:

- a. Triage of patients for admission to the MICU from UH Emergency Department. No patient can be admitted to the MICU service without approval from the Pulmonary Fellow on call.
- b. The Attending physician on call is responsible for answering MIST calls from referring physicians requesting transfers to the UAB Pulmonary/MICU services. The Attending must confer with the fellow on call prior to accepting a transfer to ensure bed availability and facilitate transition of care. The fellow on call will collaborate with the Attending physician on call and the Nurse Resource Coordinator, following both hospital and statewide policies (see specific documents and regulations in the appendix section). Whenever a question arises on how to best deal with the specific case, the Attending on call must be notified for guidance.
- c. Evaluate all admissions to the MICU within one hour. Fellows must discuss diagnosis and formulate a plan of care with the Internal Medicine Residents on call and document their assessment and plan on a succinct note. Fellows do not have to personally evaluate patients admitted to the BVAMC MICU. The Attending assigned to the BVAMICU should be called first whenever the housestaff has questions regarding management but

the Fellow may be called to assist with unstable patients if they are already on campus.

- d. Serve as a backup person for questions from the IM Residents covering the Pulmonary Inpatient Service (6-South), UH MICU, and BVAMC MICU.
- e. Assist IM Residents with procedures in the MICU services, as appropriate.
- f. Evaluate emergent consultations at UH or the BVAMC called after 5:00 pm and on weekends. He/She will notify the appropriate Consultation Fellow the following weekday so the consultation can be staffed and followed up. On weekends, the Attending assigned to the BVAMC MICU service will staff new consultations both at the BVAMC and University Hospital.
- g. Answer phone calls from the TKC Pulmonary patients. A record of the call must be forwarded to the Pulmonary Attending who cares for the patient the following day (either by direct contact with said Attending or via the Fellowship Coordinator).
- h. Perform emergent bronchoscopies at UH. A bronchoscopy technician is on call to assist with such procedures. The Attending on call should be present for emergent bronchoscopies when possible.
- i. Perform emergent bronchoscopies at BVAMC. The Respiratory Therapy Supervisor will assist with the procedure. The Attending on call should be present for emergent bronchoscopies when possible.

On many occasions, call nights may get so busy that the Pulmonary Fellow spends most of the night in-house. In addition, if the MICU census approaches the resident cap, the Pulmonary Fellow may choose to stay in the hospital for assistance (the Chief Fellow, Program Director, and MICU Director will keep fellows abreast of this cap). When this occurs, ACGME regulations covering in-house call go into effect. The Pulmonary Fellow in question must notify the Chief Fellow and the Program Director so that appropriate coverage can be arranged and the post-call Fellow must go home in accordance with the 24+4 rule (“**24+4 rule**”: start work at 8 AM on the on-call day, leave by noon post call). The Chief Fellow and members of the Education Committee will re-emphasize the importance of tracking time spent in-house on call throughout the year and will report any concerns to the Program Director. Attendings who observe apparent violations of work-hour rules are encouraged to report these to the Program Director.

Even when adhering to work hour regulations, fatigue among Fellows may occur. Signs and symptoms of fatigue may include:

- Inability to stay attentive and awake during conferences, procedures, or clinical duties;
- Communication problems or conflict with other members of the health care team, patients, or families;

- Declining performance in executing clinical duties and in professionalism (conduct and appearance);
- Obsession with sleep, headache, forgetfulness, use of pharmacological stimulants;

Fellows and attendings who observe fatigue sufficient to affect Fellow performance are asked to report such instances to the Program Director who will discuss the situation with the Fellow in question and make schedule adjustments as necessary. A lecture about recognition of signs and symptoms of fatigue is given annually as part of the “Dean’s Council Lectures” series.

VII.C. Holidays

Pulmonary Fellow duties on Holidays are identical to those on weekends and are included in the call frequency calculations detailed above. The Chief Fellow will arrange specific clinical service and call coverage by Pulmonary Fellows around the Christmas and New Years Holidays for the year (half the Fellows are off for the first Holiday period, the other half for the second Holiday period). True holidays are designated by the UAB calendar.

VII.D. Coverage for Internal Medicine Residents

Twice a year, subspecialty Fellows are asked to assume the responsibilities of the medicine residents. For the Internal Medicine Program Retreat (“Camp Dismukes”), Pulmonary Fellows will cover one Saturday in the Fall starting at 8 AM and ending on Sunday morning at 8 AM. For the Spring Party, coverage starts at 5 PM on Saturday and ends at 8 AM on Sunday morning. Coverage will occur both at the UH (MICU, 6-S) and the BVAMC (MICU).

VII.E. Moonlighting

Because Pulmonary and Critical Care Fellowship is a full-time endeavor, the Program Director must ensure that moonlighting does not interfere with the ability of the Fellow to achieve the goals and objectives of the educational program. The Pulmonary and Critical Care Fellowship Program complies with UAB’s written policies and procedures regarding moonlighting, in compliance with the ACGME Institutional Requirements (see UAB GME policies in **Appendix 12**). Any hours a Fellow works for compensation at UAB or any of UAB’s primary clinical sites must be considered part of the 80-hour weekly limit on duty hours. See the Moonlighting and Duty hours Report form in **Appendix 13**.

Moonlighting for the first year is strongly discouraged and not allowed during inpatient clinical months. Prior approval of all moonlighting activities by the Program Director is mandatory. All Fellows are required to sign the Fellowship Moonlighting Policy and Procedures Form by the end of the first week of orientation.

The form can be obtained from the Fellowship Program Coordinator (see **Appendix 14**).

VIII. VACATIONS and MEETINGS

VIII.A. Vacation time

Pulmonary Fellows have a total of three weeks of paid personal vacation time annually, including two weeks that can be schedule year round and one week around the Christmas or New Years Holidays. Fellows also have time off on other Holidays on which they are not on call. The following apply:

1. General Rules and Principles

- Vacation time must be approved **at least one month in advance** by the Pulmonary and Critical Care Fellowship Director.
- Vacation time must be requested in writing using the Fellow Official Travel and Vacation Form (see **Appendix 15**).
- Advance notice of vacation dates must be given to the Fellow's Continuity Clinic Attending **at least one month in advance**. This allows the attending to adjust his/her clinic schedule so no coverage is needed by another Fellow. However, the Pulmonary Fellow must find coverage for absences from the VA clinics, or from clinical rotations as appropriate – see items 2 and 3 below.
- Advance notice must also be given to the Fellowship Program Coordinator, and the Chief Fellow so adjustments can be made to the call schedule and written notices can be sent by the Fellow's clinical secretary, to the Pulmonary faculty, other Fellows, administrative staff, and secretaries as well as the pager operators.
- Vacation time should be taken during a month in which no coverage is needed or coverage can be easily arranged (see items 2, 3 and 4 below).
- Policies regarding medical leave, family leave, maternity leave, leave for examinations, educational leave, physician impairment and disability, jury duty, counseling services, and grievance procedures can be found in the **UAB Graduate Medical Education Policies and Procedures Manual**. This manual is distributed to all new Fellows at orientation. See **Appendix 16** for Internal Medicine Residency Parental Leave/Long Term Leave Policy

2. Clinical time

With the exception of ICU months and December, vacation is allowed any month. However, vacation for 1st year Fellows is generally best arranged on either 6 South or Outpatient Bronchoscopy/Transplant rotations. No vacation will be permitted

during December as specific arrangements are made each year for coverage of the clinical services during the Christmas and New Year's Holidays.

If vacation is taken during the 6 South months, the attending physician must be notified in advance. Fellows taking vacation during that period are responsible for arranging coverage for procedures such as bronchoscopy, chest tubes, etc (i.e., another Fellow must be available in case coverage becomes necessary.)

Fellows taking vacation during Outpatient Procedures or Transplant rotations must arrange coverage for interpretation of *all* PFTs and for bronchoscopies scheduled on Mondays, Tuesdays, and Thursdays. They are not required to arrange coverage for Wednesday Transplant clinic or HTICU rounds.

3. Research time

The Research Mentor and the Chief Fellow must approve vacation time in advance. Conflicts will be resolved by the Program Director. No vacations will be permitted during December as specific arrangements are made each year for coverage of the clinical services during the Christmas and New Year's Holidays.

Coverage arrangements have to be recorded in the Program Office in the Sign-out log. Fellows agreeing to provide this coverage have to co-sign the log to minimize any chance for miscommunication. Beepers should be reprogrammed to the Fellow providing the coverage.

VIII.B. National Meetings

Pulmonary Fellows are encouraged to attend National Meetings and to submit their research results for presentation. The following travel guidelines must be observed:

- Pulmonary Fellows who are presenting abstracts have first priority to attend meetings. Such time is considered “educational leave” and does not count towards one’s personal vacation time and travel is expected to be funded by the primary mentor. It is the responsibility of these Fellows to arrange coverage for call and clinical rotations. If they are unable to find coverage, the Program Director or Chief Fellow will designate another Fellow to cover in their absence.
- All other Fellows wishing to attend meetings may do so with prior approval provided that all clinical duties are appropriately covered (including call), but expenses are the responsibility of the Fellow. Fellows currently doing research have priority, but they must still take responsibility in assuring that the clinical schedule including calls is covered.

VIII.C. Regional Meetings

First year Pulmonary Fellows are expected to attend the Annual Tri-State Conference in January. Two to three cases are selected for presentation. Such time is considered “educational leave” and does not count towards one’s personal vacation time and travel and registration for the conference will be funded by Divisional or Training Grant funds, as appropriate and depending on the availability of such funds.

IX. RELATIONSHIPS WITH THE PHARMACEUTICAL INDUSTRY

Over the years, pharmaceutical representatives have been very generous by providing text books and other teaching materials, lunches for the Division’s didactic conferences, unrestricted educational grants to fund outside speakers, travel funds (through company sponsored national travel programs) that have allowed Pulmonary Fellows to attend important educational and scientific meetings, and funding for investigator-initiated and industry-initiated collaborative research projects.

In recent years, there has been growing concern about actual or perceived conflict of interest because of this close relationship between industry and physicians, including residents in training. The Division encourages all Pulmonary Fellows to carefully review the “**University of Alabama at Birmingham School of Medicine and UAB Health System Guidelines for Relationships with Industry - March 2009**” (See *Appendix 17*). The key points are as follows:

- UAB academic medical centers (AMC) employees and trainees shall not accept any form of personal gift from industry or its representatives, regardless of the value or nature of the gift,
- **With the exception of food provided in connection with an ACCME-accredited program and in compliance with ACCME guidelines**, meals directly funded by industry shall not be provided on the UAB AMC campus. Industry-supplied food and meals are considered personal gifts and thus shall not be permitted or accepted on the UAB AMC campus. Similarly, UAB AMC employees and trainees are strongly discouraged from participating in non-ACCME accredited industry-sponsored meals off-campus.
- UAB AMC employees and trainees shall not use or display industry paraphernalia in patient care areas (i.e., pens, notepads, clipboards, etc), with the single exception of educational materials. These materials may be used at the discretion of the UAB AMC employee or trainee as needed within the clinical setting, but should not be on general display.

X. APPENDICES

Appendix 1. Pulmonary and Critical Care Attendings (office, beeper numbers, email Essential Telephone Numbers and Administrative Contacts)

Appendix 2. UAB Bronchoscopy Guidelines

Appendix 3. Pre/Post Bronchoscopy Order Sets

Appendix 4. Fellow, Faculty, and Program Evaluation Forms

Appendix 5. Nuts & Bolts Conference Topics

Appendix 6. UAB SOM Policy on internet and email use

Available at: <http://main.uab.edu/uasom/2/show.asp?durki=18358>

Appendix 7 UAB Adult ICU Patient Transfer Acceptance Policy (includes EMTALA)

Appendix 8. MICU Overflow Policy

Appendix 9. Capped Medical Services Policy

Appendix 10. ACGME Policies and Procedures Available at:

http://www.acgme.org/acWebsite/about/ab_ACGMEPoliciesProcedures.pdf

Appendix 11. UAB GME Policies Available at:

http://services.medicine.uab.edu/publicdocuments/GME/GME_Policy_Manual_July_2011.pdf

Appendix 12. Moonlighting and Duty hours Monthly Report form

Appendix 13. Moonlighting Policy and Request form

Appendix 14. Fellow Official Travel and Vacation Form

Appendix 15. Internal Medicine Residency Parental Leave/Long Term Leave Policy

Appendix 16. UAB SOM Guidelines for Relationships with Industry

Available at:

<http://www.uasom.uab.edu/PublicDocuments/FOT/Guidelines%20for%20Relationships%20with%20Industry.pdf>