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DIVISION OF PULMONARY AND CRITICAL CARE

FELLOWS CURRICULUM

Fellowship Director: Pratibha Kaul, MD

Pulmonary and Critical Care Medicine
750 East Adams Street
Syracuse, NY 13210

1. Introduction

The fellowship in Pulmonary and Critical Care Medicine at the Upstate Medical University of New York at Syracuse utilizes four main institutions and several supporting institutions. The Upstate Medical University, Upstate Community General Hospital, Crouse Hospital and the VA Medical Center serve as referral hospitals not only for the Syracuse metropolitan area, but for a wide area in New York State extending north to the Canadian Border and south to the Pennsylvania border. In addition, these institutions serve as primary care centers.

Upstate Medical University, the primary facility, is a 409-bed institution that serves as both a primary care institution for Syracuse and a tertiary referral center for the Upstate New York region (service area of approximately 1.8 million people). Core rotations include a pulmonary inpatient/consultative service and two MICU inpatient services, providing the fellows with an opportunity to gain experience in managing primary patients and consultations. Internal Medicine residents rotate on these services, providing fellows a supervisory role. On the pulmonary consult service residents, under the guidance of the fellow, evaluate the patients before faculty rounds. The intensive care units of University Hospital (on the 6th floor) are closed units, each with a team that comprises three residents from Internal Medicine (an intern and two upper class residents), although often one of the residents will be from the Anesthesia on Team MICU A. The Pulmonary/Critical Care fellows function in a supervisory role for these residents. Rounds are conducted each morning by the fellows and residents; these are followed by attending rounds. Each fellow conducts afternoon work rounds. The fellows also participate in a continuity clinic as part of the division's group practice. Also, University Hospital's Endoscopy suite provides both inpatient and outpatient bronchoscopy services. Finally, the elective rotations in thoracic surgery, cardiac surgery neurosurgical/neurology ICU, SICU/Burn; sleep/PFT/rehabilitation, cardiac ICU, anesthesia and radiology are all based at University Hospital

The Syracuse Veterans Administration Hospital, a 150-bed facility located across the street from the University Hospital, serves as a primary and tertiary care center for the regions veteran population. The VAH core rotation includes consultation services in pulmonary medicine, a sleep rotation and a critical care medicine rotation. The ICU at the VA is a closed unit. The fellow supervises a medical resident. The Division of Pulmonary and Critical Care provides critical care coverage on all medical ICU patients and on surgical and cardiology patients. The attending physician, the medical resident and the fellow make morning ICU rounds. The fellow conducts afternoon rounds. A second fellow is also assigned to the pulmonary consultation service at the VA. This fellow provides coverage for interpretation of pulmonary function studies, bronchoscopy procedures and all pulmonary consultations. Dr. Pratibha Kaul, a pulmonary specialist at the Veterans Administration Hospital, participates in all conferences/functions at the University Hospital and is the faculty sponsor of the Veterans Administration Hospital rotation. The sleep rotation gives the Pulmonary and Critical Care fellow an opportunity to see sleep patients, score and interpret sleep studies. This is done under the supervision of Pratibha Kaul, M.D.

Crouse Hospital is a 506-bed primary and secondary care facility attached to the Upstate Medical University. The faculty at Upstate Medical University also have courtesy or consulting privileges at Crouse Hospital. Consultations are routinely performed at Crouse. When these consultations are requested, the fellow assigns and supervises a medical resident from the Upstate Medical University pulmonary service who performs the initial evaluation and management with subsequent review by the pulmonary attending physician and the fellow. The pulmonary consult fellow does consults at Crouse. The OB/ICU rotation is also done at Crouse Hospital.

In the Upstate Medical University, the average number of patients seen on the pulmonary consult service is 14, but patient load may run as high as 20. Fellows on either one of the two Upstate ICU services will attend to an average of 14 ICU patients daily.

At the VA Hospital, the average runs 5 patients on the pulmonary consultation service and 8 to 10 patients in the ICU.

On all clinical services daily rounds are made with an attending physician. All patients are seen by an attending physician on a daily basis. All consultations are presented to and seen with an attending physician. Follow-up visits are made on a daily basis. A faculty physician is always readily available for guidance on patient care. In the out patient clinic all patients are each reviewed by a faculty physician. On the pulmonary consult service, teaching rounds are conducted by attending physicians together with residents emphasizing important points on history, physical examination and laboratory test interpretation. These rounds may serve as work rounds as well. Additionally, short didactic discussions by the attending physician, concerning imaging studies and reviews of the current literature are incorporated into the daily routine. On the critical care services, work rounds are done by the fellow and the residents prior to attending rounds.

The degree of responsibility given the fellow by the faculty in each of the areas increases as the experience and competence of the fellow increases, as determined by the subsequently discussed evaluation system. As the residents mature in training responsibility for conducting work rounds is increased. The responsibilities will include general patient management, the evaluation of unstable patients and the monitoring of patients after procedures. As residents gain more knowledge, they are given more responsibility in the decision making process. The Pulmonary and Critical Care fellows are provided with increasing levels of responsibility in the day-to-day management of the medical ICU over the course of the fellowship. This is manifested by the fellow's conductance of morning work rounds and afternoon checkout rounds.

Additionally, as the fellow gains competence in procedures he/she may perform these procedures independently and supervise residents in the performance of these procedures. Bronchoscopy is always done under the supervision of an attending physician, but as the fellow progresses through training he/she assumes an increased role, with the aim of making him/her a competent independent practitioner.

2. Clinical Curriculum

Rotation Schedule

The requirements the ACGME and ABIM placed on a fellowship in terms of patient care experience are significant. At a minimum they must complete a three-year program with a minimum of 18 months of direct patient care. In reality, the board **requires 18** months of patient care experience in each discipline for a total of 24 months but gives double credit to 6 months of time where the 2 disciplines are closely interwoven. Of these 18 months therefore, **9 months must be devoted to pulmonary, 9 months in critical care medicine,** of which 6 months are devoted to the care of critically ill medical patients(MICU/CICU or equivalent); at least 3 months devoted to the care of critically ill non-medical patients (SICU, burn unit, transplant unit, neuro intensive care unit or equivalent). This experience should consist of at least one month of direct patient care activity with the remainder being fulfilled with either consultative activities or with direct care of such patients. OB ICU, NeuroICU and SICU will be mandatory. For Neuro ICU, fellows will have direct patient care responsibility.
To accomplish these goals the following rotations are to be performed in two to four-week blocks to correspond to the Department of Medicine schedule.

Core Rotations(2 week blocks)
- UH/Crouse Pulmonary consult service
- UH ICU
- VA Pulmonary
- VA ICU
- CROUSE

Non-Core Rotations
- Anesthesia
- PFT Lab/Sleep Clinic
- Thoracic Surgery
- Radiology
- Neurosurgical ICU
- Surgical ICU
- OB ICU
- Echo Ultrasound
- VA Sleep
- Research

Each rotation has a curriculum that has been carefully worked out with the participating service. At the end of each block of time, the attending physician will fill out an evaluation form. This evaluation should be **discussed** with the fellow. The form is available at all times for elective review. **If you are assigned to a rotation you are expected to be there for all clinical responsibilities. If personal time is needed during that block, it is the responsibility of the fellow to obtain coverage.**

Written Curriculum

1. Written Goals and Objectives
2. A defined methodology for teaching
3. An explicit method of evaluation

Must include

1. The educational purpose, rationale and value
2. The principle teaching method
3. The most important educational content;
   - Mix of diseases
   - Patient characteristics
   - Types of clinical encounters, procedures and services
4. The principle ancillary education materials to be used such as reading lists and pathological material
5. The methods to be used evaluating both resident and program performance
6. Must identify both the strengths and limitations specific to the resources of the sponsoring institution.

I. Goals for the Pulmonary/Critical Care Fellows rotating through the UH Pulmonary Consult Service:

The service consists of one attending physician and one fellow along with 0-2 residents and 0-1 Medical students. Additionally, the medical services taking care of the inpatient pulmonary patients interact with the attending and fellow on a regular basis. Reading material will come from the curriculum, standard text books and journal articles provided by the attending physician or obtained by the fellows. In order to produce a more academic program we, as a division, should attempt to provide a relevant article to the house staff for each patient seen. Reading material will also come from the bibliography found at the ATS website.
(http://www/thoracic.org/) During the rotation the fellow will:

1. Be on call 24 hours a day from Sunday through Friday. Weekend call will be rotated with the VA fellow.
2. Be responsible for all consultations on the pulmonary consult service at UH and Crouse. This will include consults in the CP ICU unit.
3. Be responsible for the reading of all PFT's and cardiopulmonary exercise studies.
4. Perform or supervise all inpatient bronchoscopies, pleural biopsies, thoracentisis or related procedures.
5. Be responsible for organizing cases, in conjunction with the VA and ICU fellows and presenting cases at the Clinical Case Conference.
6. Evaluate all pathology specimens obtained by the pulmonary service.
7. Evaluate all radiographic tests, including: chest x-rays, CT of chest, V/Q scans and other related studies.
8. The fellow will provide **patient care** that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health.
9. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
10. The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence and improvements in patient care.
11. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families and health professionals.
12. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.
13. The fellow will participate in a **system-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optimal health care.

Specific topics that will be learned during the rotation include:

1. Principles of pulmonary consultation and clinical decision-making
2. Pre-operative and post-operative pulmonary care
3. Management of chronic mechanical ventilation
4. Management of patients with tracheotomy
5. Bronchoscopic skills, including BAL, transbronchial biopsy, Wang needle aspirates, and bronchial brushing. The fellow will learn Endo Bronchial Ultrasound.
6. Management of pneumonia and related pulmonary infections
7. Inpatient management of obstructive lung diseases
8. Evaluation and management of venous thromboembolic disease
9. Evaluation of dyspnea and respiratory failure including neuromuscular disease, obesity, hypoventilation syndrome and sleep related breathing disorder

Description of the Upstate Medical University and Crouse Hospital **Pulmonary Consult Service**

On the pulmonary services the fellow is responsible for evaluating each primary patient/consultation both initially and then daily. If an internal medicine resident rotates on the service the fellow acts in a supervisory role for the resident and is responsible for evaluating the patient with the resident. The fellow then decides upon diagnostic and therapeutic options. In all situations, interventions are to be discussed with an attending physician and fellows are held accountable for all decisions. Fellows are then responsible for rounding with and presenting this information to the attending physician on at least a daily basis. The fellow serves as the liaison to the primary service and other consulting services both before and after presentation of the case to the faculty. Additionally, the fellow is responsible for the performance, interpretation and report of all pulmonary function laboratory studies, exercise studies, bronchoscopic studies, or other pertinent procedures.

Fellows are responsible for the performance of work rounds each morning in conjunction with the house staff. Formal teaching rounds with the attending physician will follow at subsequent time that day, but in all cases the fellow should be prepared to begin consult teaching rounds by 1:00 PM. Changes in the rounding schedule may be made at the discretion of the attending physician.

A. Goals and Level of Competencies by Year of Training for Pulmonary Consult Service

During the first year the fellow can achieve the following goals and sciences as well as the application of this knowledge to patient care:

Competencies:

- Learn the elements and be able to perform a comprehensive pulmonary consultation.
- Learn how to manage the patient with respiratory failure including weaning.
- Learn how to interpret pulmonary function studies.
- Learn how to oversee the pulmonary function laboratory.
- Achieve competence in diagnostic bronchoscopy and EBUS.
- Achieve competence in ultrasound guided thoracentesis
- Learn how to diagnose sleep apnea.
- Learn the fundamentals of scoring a sleep study.
- Manage and diagnose patients with COPD, asthma, sleep apnea and bronchogenic carcinoma.
- Learn how to formally present a patient at conference.
- Learn how to identify pre-operative risk.
- Learn how to consult on a patient in a critical care area.
- Learn how to wean from mechanical ventilation post operative patients.
- The fellow will provide patient care that is compassionate, appropriate and effective for the treatment for health problems and the promotion of health.
- The fellow will enhance their medical knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
- The fellow will continuously review practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence and improvements in patient care.
- The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families and health professionals.
- The fellow will practice professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.
- The fellow will participate in a system-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

B. During the second year of training the Pulmonary Consult fellow will:

- In addition to skills acquired at the previous level.
- Learn how to prescribe a pulmonary rehab program tailored for the individual patient.
- Follow patients through a pulmonary rehabilitation program.
- Improve their bronchoscopy skills by mastering transbronchial needle biopsies, endobronchial brachy therapy, endobronchial ultrasound, endobronchial biopsy and transbronchial biopsy. Learn skills, indications and limitations for navigational bronchoscopy, bronchial thermoplasty and placement of brachytherapy catheter.
- Manage and diagnose Sarcoidosis, Interstitial lung disease and occupational lung disease.

- The fellow will refine skills in Seep Medicine.
- The fellow will provide patient care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health.
- The fellow will enhance their medical knowledge of established and evolving biomedical, clinical epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
- The fellow will continuously review practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence and improvements in patient care.
- The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families and health professionals.
- The fellow will practice professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.
- The fellow will participate in a system-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.
- Learn how to use and the indications for Balloon counter pulsation devices.
- Develop increased understanding of extra corporeal membrane oxygenation.

C. Third Year Pulmonary Consult Service

In addition to the skills acquired during the previous 2 levels, the Pulmonary and Critical Care Fellow will:

a. Learn how to improve the system of care in the delivery of pulmonary medicine.
b. Improve bronchoscopic skills including learning skills and the indication and the limitations of navigational bronchoscopy, bronchial thermoplasty, endobronchial stent placement, balloon bronchial dilatation, brachytherapy and cryotherapy.
c. Learn how and manage patient with pulmonary hypertension, hypersensitivity pneumonitis and occupational asthma.
d. Manage and diagnose a patient with pneumonconiosis.
e. Learn about sleep disorder other than obstructive sleep apnea.
f. The fellow will provide patient care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health.
g. The fellow will enhance their medical knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care.
h. The fellow will continuously review practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence and improvements in patient care.
i. The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families and health professionals.
j. The fellow will practice professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.
k. The fellow will participate in a system-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system resources to provide optima.
l. Learn the uses an limitation of right and left heart assist devices

II. Goals for the Pulmonary/Critical Care Fellows rotating through the UH MICU Service

The fellow will serve as the primary resource for the two MICU teams (A & B), which will consist of three to four residents. The fellow is responsible for all the patients for their assigned ICU team all day (8AM to 5 PM) Mon-Friday and every other night (5 pm to 8 AM) and every other weekend. The attending physician acts as a consultant/teacher to the fellow. Reading material will come from the curriculum, standard textbooks and journal articles provided by the attending physician or obtained by the fellows. During the rotation the fellow will:

1. Be on call 24 hours every other day Monday through Friday.
2. Serve as team leader for the assigned ICU services, consisting of residents, medical students, interns, nurses, pharmacists and other ancillary personnel.
3. Make attempts to attend autopsies of every ICU death where a post-mortem was obtained as well as evaluate all pathology obtained during ICU rotation.

4. Be responsible for performing or supervising all procedures in the ICU.
5. Be responsible for ventilator management of all patients requiring mechanical ventilation in the ICU.
6. Be responsible for presentation at the clinical case conference and the chronic care conference.

Description Medical Intensive Care Unit Rotation (MICU)

Fellows on the critical care services are similarly responsible for initial and daily evaluations of all patients on the ICU service (UH, VA and/or CGH). Additionally, they are responsible for supervising the residents who are directly responsible for the care of the patient. The fellows are responsible for the conductance of work rounds each morning and afternoon. The fellow is notified of each admission and is responsible for the initial evaluation, formulation and institution of a plan. The fellow is also responsible for all procedures in the ICU, either performing them or supervising them. Finally, the fellow is responsible for the presentation of the case to the attending physician initially as well as monitoring the case presentations by residents during attending rounds. The fellow is responsible for the initial triage decisions on all admissions. The fellow is also responsible for conducting weekly multi disciplinary rounds for evaluation of long-term patients.

Additionally, many of the more complex patients are transferred from the ICU to the pulmonary service at UH. This provides direct follow up on those patients for the faculty and fellows of our division. Many of these patients are then followed in our outpatient clinics.

Personnel

The medical ICU teams consists of an attending and fellow from the Division of Pulmonary and Critical Care, and 3 residents (PGY 2 or 3) from the Department of Medicine and Anesthesia. Additionally, there may be 2 medical students (fourth year medical students). The residents will be on call every third or fourth night on a rotating basis and are the primary providers for each patient they admit. Residents will be able to go home after attending rounds the day after call and their patients will be covered by the resident on call. All other residents can leave at the completions of checkout rounds (start at 4PM). Each resident will have 1 day off each week. The resident will be responsible to the fellow who in turn will be supervised by the attending physician on the service. One of the two MICU attending at UH will take home calls for admissions, consults and questions from the MICU resident. This will give the fellow, one night in the middle of the week when he or she can be assured of an uninterrupted night of sleep. The MICU fellows will continue to have two days off every other weekend.

Routine

1. Morning work rounds will be conducted by the fellow with the residents each morning. Daily issues can be dealt with at that time.
2. Work rounds need to be completed and attending rounds will begin at 9:30 AM, after completion of any necessary patient care matters.
3. Afternoon rounds will be conducted by the fellow starting at 4 PM for the entire team (except for the post call resident).
4. Admissions will be evaluated by the resident on call. Once evaluated, the resident is responsible to contact the fellow to discuss appropriate diagnostic and management interventions. The fellow in turn is responsible for contacting and discussing each admission with the attending physician.
5. The resident is responsible for contacting the fellow for any significant change in patient status or for any procedures. The fellow will be available at all times for the residents for consultation. In turn the fellow is also responsible for contacting the attending physician for any change in patient condition or any concerns.
6. Each resident will be responsible for the patients they admit as long as the patient remains on the service, including any administrative tasks secondary to the patient's admission (IE death/discharge summaries).
7. If any fellow comes in at night, the fellow will not return until he/she has had a minimum of 8, but preferably 10 consecutive hours off.

A. Goals and objectives for the 1st year MICU A & B fellows:

1. The History and Physical Exam of the critically ill patient
2. Basics of ICU management
3. Understanding of cardiac and pulmonary physiology and how it applies to the care of critically ill patients
4. Acid-Base Physiology
5. Understanding the indications, rationale, institution/technical aspects and pitfalls of hemodynamic monitoring in medical patients
6. Airway management
7. Mechanical ventilation in the critically ill
8. Sepsis
9. Procedural skills in Central Lines, A-lines, PA Catheters and others as indicated

10. Nutrition in the ICU
11. Management of shock
12. Management of diseases common to the ICU:
    GI bleeding
    Overdoses/Poisonings
    ARDS
    MSOF (SIRS)
    Respiratory failure
    Others as indicated
13. Understand the principles and the use of sedation and analgesic in the ICU
14. Ethics in the ICU
15. The fellow will provide **patient care** that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health.
16. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social behavioral sciences, as well as the application of this knowledge to patient care.
17. The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
18. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families, and health professionals.
19. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
20. The fellow will participate in a **system-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

B. Goals and Objectives for the 2nd year MICU A & B Fellows:

1. Learn how to manage patients with difficult airways.
2. Learn advanced mode of mechanical ventilation such as APRV and high frequency oscillator ventilation.
3. Learn how to wean a patient from mechanical ventilation.
4. The fellow will provide **patient care** that is compassionate, appropriate, and effective for the treatment of health problem and the promotion of health.
5. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social behavioral sciences, as well as the application of this knowledge to patient care.
6. The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvement in patient care.
7. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families, and health professionalism.
8. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
9. The fellow will participate in a **system-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

C. Goals and objectives for the 3rd year MICU A & B Fellows:

1. Learn how to improve systems of care.
2. Master newer modes of mechanical ventilation.
3. Learn when to consult in the MICU.
4. Learn how to present information both encouraging and discouraging to families whose loved ones are critically ill.
5. Learn how to discuss end of life issue with patients and loved ones.
6. The fellow will provide **patient care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
7. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.

8. The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific, and improvements in patient care.
9. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families, and health professionals.
10. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
11. The fellow will participate in a **systems-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

Education

The above goals will be met utilizing both a formal and an informal approach. Many of these topics will be routinely dealt with during daily attending rounds. In order cases topics will be dealt with by brief didactic presentations by the attending or the fellow. In addition, there are several formal lectures that residents will be required to attend.

1. Weekly Pulmonary/Critical Care Case Conference
2. Weekly Pulmonary/Critical Care Scientific Sessions
3. Bimonthly Journal Club
4. Monthly Pulmonary Pathology Conference
5. Monthly Pulmonary and Critical Care Research Conference
6. Monthly Lecture Series
7. The fellow will be familiar with the bibliography on the ATS website. (http://www.thoracic.org/go/atsreading list)

IV. Goals and objectives for the VA Pulmonary/Sleep and ICU Service

There are two core rotations in which the Pulmonary and Critical Care fellow will participate:

1. Medical Critical Care and Surgical Critical Care
2. Inpatient Pulmonary Consultation

Beside these rotations, the fellow will also attend outpatient pulmonary and sleep medicine clinic and participate in sleep study interpretation. Fellows will also be instructed in procedures such as: Fiber optic bronchoscopy, endobronchial ultrasound and CT guided needle biopsy.

Use of social networking sites in relation to patient care:
It has come to the VISN's attention that there have been several recent occurrences of VISN clinical staff utilizing social networking mediums (Twitter, Facebook, MySpace, etc.) as an adjunct medium for communicating and/or monitoring a patient. While use of these social networking mediums is expanding in general society, use of these medium in patient care generates significant liability issues regarding privacy and confidentiality, boundary issues, and precedent burden issues for clinical staff. Therefore, effective immediately, be advised that use of social network medium as an adjunct to the care and services provided to our Veterans is strictly prohibited. This prohibition does not apply to the use of My Healthe-Vet , which is the only VA secure and approved medium connection. Your immediate compliance is necessary and appreciated. (8/2009 Linda W. Weiss, MS, FACHE
Deputy Network Director, VISN 2)

Re: ICU

1. VA Medical and Surgical ICU Rotation

A. Goals and Objectives of the 1st year fellow will be given opportunity to encounter patients with medical problems requiring ICU admission. At this level of training, fellow will develop an understanding of common problems encountered in the ICU including:

1. Resuscitation of critically ill patients including management of cardiac arrest patients, during and after resuscitation.
2. Resuscitation and management of patients with septic shock or other life threatening infections.

3. Resuscitation and management of patients presenting with acute coronary syndromes or complications following acute coronary syndrome.
4. Resuscitation and management of patients with seizure disorder.
5. Mechanical ventilation and management of patients with Acute Lung Injury.
6. The ability to formulate a differential diagnosis for a patient potentially suffering from a toxic Syndrome and undertake a sequential plan to support organ function, prevent further absorption, alter distribution, and if possible, enhance elimination.
7. Skills acquired: central line placement, arterial line placement and intubation.
8. The fellow will provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
9. The fellow will enhance their medical knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
10. The fellow will continuously review practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
11. The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and health professionals.
12. The fellow will practice professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
13. The fellow will participate in a systems-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

B. Goals and Objects of the 2nd year fellow will further develop understanding of critically ill patients with improved understanding of specific organ dysfunction:

1. The pathophysiology and management of acute and chronic liver disease
2. The diagnosis and management of renal failure
3. The diagnosis and management of acid-base and/or electrolyte disturbances.
4. Dialysis support in ICU including continuous renal replacement therapy, and intermittent dialysis. Cardiac dysfunction including acute coronary syndrome, congestive heart failure and management of various arrhythmias.
5. Skills acquired: use of the ultrasound to evaluate for pleural effusions, cardiac dysfunction, deep venous thrombus and other organ evaluation. To learn about Swan-Ganz catheter insertion and interpretation
6. The fellow will provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
7. The fellow will enhance their medical knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.
8. The fellow will continuously review practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
9. The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and health professionals.
10. The Fellow will learn the art or interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and health professionals.
11. The fellow will practice professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
12. The fellow will participate in a systems-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

C. Goals and Objectives for the third year fellow will focus on consolidation of the knowledge and skills.

1. Assume the role of junior attending.
2. Participate in end of life issues and family meetings.
3. Teach junior fellows and residents.
4. Investigate research topics and present findings.

The rotation should enable the fellow to develop the knowledge, skills, and attitude necessary to be a Critical Care Physician.

During the rotation the fellow will:

1. Be responsible for all patients followed by the two MICU services 24 hours on alternating days and alternating weekends.
2. Be responsible for all procedures performed on that service.
3. Perform work rounds on patients prior to formal attending rounds
4. Rounds in the ICU from 8:30-9:30, M-F.
5. The fellow will lead afternoon checkout rounds with the on call team.
6. Round on surgical patients with the ICU team
7. The fellow will provide **patient care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
8. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
9. The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
10. The fellow will learn the art of **interpersonal and communication** skills that result in effective information exchange and collaboration with patients, their families, and health professionals.
11. The fellow will practice **professionalism** as manifested through a commitment to carrying out patient population.
12. The fellow will participate in a **systems-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

Specific topic that will be learned during the rotation for PGY 1, 2, and 3 include:

1. Principles in clinical decision-making in a medical and surgical ICU
2. The history and physical exam of the critical ill patient
3. Basics of ICU management.
4. Understanding of cardiac and pulmonary physiology and how it applies to the care of critically ill patient
5. Acid-Base Physiology
6. Management of Shock
7. Understanding the indications, rationale, institution/technical aspects and pitfalls of hemodynamic monitoring in medical patients.
8. Airway management: Intubation with a laryngeal scope and a bronchoscope.
9. Mechanical ventilation in critically ill.
10. Sepsis management
11. Procedural skills with insertion of Central Lines, A-Line performing CT guided biopsy and use of endobronchial ultrasound. Will learn about indications and management of PA Catheters,
12. Acquire proficiency in use of ultrasound for vascular access, pleural and pericardial effusion evaluation, other organ system evaluation such as cardiac, renal and hepatobiliary
13. Management of diseases common in ICU practices:

    GI Bleeding
    Overdoses/Poisonings
    ARDS
    MSOF (SIRS)
    Respiratory Failure
    Others as indicated

14. Management of Critically III Cardiac patient
15. Understanding management of:
    a. Heart failure
    b. Acute coronary syndrome
    c. Arrhythmia
    d. Valvular disease
    e. Cardiomyopathy
16. Post-operative ventilation, hemodynamic and infection management of critically ill surgical patients.
17. Ethics in the ICU

18. Nutrition in the UCU

Re: PULMONARY

Description of the VA Pulmonary Service for 1st, 2nd, and 3rd year Fellow:

On the pulmonary service the fellow is responsible for evaluating each primary patient consultation both initially and then daily. The evaluation includes the history, physical examination and any pertinent laboratory or radiography date. The fellow then decides diagnostic and therapeutic options. In all situations, interventions are to be discussed with an attending and fellows are held accountable for all decisions. Fellow is then responsible for rounding with and presenting this information to the attending on at least a daily basis. The fellow serves as the liaison to the primary service and other consulting services both before and after presentation of the case to the faculty.

The fellow is responsible for the performance, interpretation and report of all pulmonary function laboratory studies, cardiopulmonary exercise studies, and sleep studies. Fellow will also perform all outpatient and pulmonary consult related bronchoscopy and CT guided need biopsy of lung lesion under the supervision of the pulmonary attending.

Fellow will be scheduled to attend pulmonary clinic on Wednesday morning and will be supervised by the pulmonary consult attending. Fellow will also be scheduled to attend the sleep clinic once a week either on Tuesday or Thursday afternoon, and will be supervised by an attending.

1. VA Pulmonary Medicine Rotation for 2nd Year Pulmonary/Sleep Fellow:

During the rotation the fellow will:

1. Evaluate and discuss all of the inpatient pulmonary consults
2. Attend pulmonary clinic on Wednesday morning 9:00-12:00noon.
3. Perform inpatient and outpatient bronchoscopies and CT guided needle biopsy
4. Attend sleep clinic on Tuesday and Thursday
5. Interpretation of sleep studies, pulmonary function test and cardio-pulmonary exercise tests
6. The fellow will provide **patient care** that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health
7. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social behavioral sciences, as well as the application of this knowledge to patient care.
8. The fellow will continuously review **practice based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
9. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families, and health professionals.
10. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.
11. The fellow will participate in a **system-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

Specific Topics that will be learned during the rotation include:

1. Principle of pulmonary consultation and clinical decision making
2. Pre-operative and post-operative pulmonary care
3. Management of chronic mechanical ventilation
4. Management of patients with a tracheotomy
5. Bronchoscopic skills, including BAL, transbronchial biopsy, Wang needle aspirates, and bronchial brushing
6. Endobronchial Ultrasound for needle aspiration of mediastinal lymph nodes
7. Computer tomography guided needle biopsy of lung lesions and thoracentesis
8. Management of pneumonia and related pulmonary infections
9. Inpatient management of obstructive lung diseases

10. Evaluation and management of venous thromboembolic disease
11. Evaluation of dyspnea and respiratory failure
12. Pathology or Airway Diseases
13. Emphysema: clinical manifestations, diagnosis, prognosis, management
14. Chronic Bronchitis: clinical manifestations, course, complications, management
15. Bronchiectasis: Diagnosis, treatment, management of massive hemoptysis
16. Pulmonary Lymphoma
17. Alveolar Hemorrhagic Disease
18. Pulmonary Hypertension
19. Pulmonary Tuberlosis
20. Community Acquired Pneumonia
21. Opportunistic Pulmonary Infection
22. Frugal Infection of the Lung
23. Pathology of Pulmonary Neoplasms
24. Management and Prognosis in Lung Neoplasia
25. Paraneoplastic syndromes
26. Pleural Effusion: evaluation and management
27. Structural Imaging of the Lung

2. <u>VA Pulmonary Clinic (Wednesday AM)</u>

During this rotation the fellow will:

1. Manage pulmonary condition in outpatient setting
2. Initial consultation for diagnosis, and treatment of pulmonary disease
3. Follow up on going management of pulmonary illness

Specific topics that will be learned during the rotation include:

1. Outpatient management of airway disease
   a. COPD
   b. Asthma
   c. Bronchectasis
2. Outpatient management of ILD
   a. Sarcoidosis
   b. Collagen Vascular Diseases
   c. Environment Lung Disease
   d. Wegener Granulomatosis
3. Diagnosis and management approach for lung nodules
4. Chronic pulmonary infections
   a. Tuberculosis
   b. Non-tuberculosis mycobacterium
   c. Fungal
5. Diagnosis and management of pulmonary hypertension

<u>4. VA Sleep Medicine Rotation</u>

During this rotation the fellow will:

1. Be responsible for all inpatient consults for patients with sleep-disordered breathing as requested by the pulmonary service.
2. Participate in scoring and interpretation of sleep studies.
3. See patient in the sleep clinic on Thursday

Specific topics that will be learned during this rotation include:

1. Understanding of basic sleep mechanisms and physiology
2. Sleep apnea, diagnosis and treatment
3. Knowledge of symptomatology of sleep disorder
4. Differential diagnosis of excessive daytime sleepiness
5. Clinical utilization and basic interpretation of overnight polysonography
6. How respiratory disease and drugs interact with sleep
7. Clinical utilization of multiple sleep latency testing

Description of the sleep rotation at VA Hospital

The Goal of the sleep rotation is to allow the fellow to manage patients with sleep-disordered breathing and make appropriate referrals for other sleep disorders.

III. Goals and Objectives for Crouse ICU Rotation

A. Goals for the Crouse Service

The fellow will serve as the primary resource for the ICU team, which consists of 7 residents. The fellow is responsible for all the patients in the ICU 10 hours a day. The attending physician acts as a consultant/teacher to the fellow. Reading material will come from the curriculum, standard textbooks and journal articles provided by the attending or obtained by the fellows.

During the rotation the fellow will:

1. Be on call 10 hours a day from Monday through Saturday. Attending will take on call at night and Sunday.
2. Serve as team leader for the ICU service, consisting of residents, medical students, interns, nurses, pharmacists and other ancillary personnel
3. Attend autopsies of every ICU death where a post-mortem was obtained as well as evaluate all pathology obtained during ICU rotation.
4. Be responsible for performing or supervising all procedures in the ICU.
5. Be responsible for ventilator management of all patients requiring mechanical ventilation in the ICU
6. Be responsible for presentation at the clinical case conference

Description Medical Intensive Care Unit Rotation

Fellows on the critical care services are similarly responsible for initial and daily evaluations of all patients on the ICU service (VA, CGH, Crouse, or UH). Additionally, they are responsible for supervising the residents who are directly responsible for the care of the patient. The fellows are responsible for the conductance of work rounds each morning and afternoon. The fellow is notified of each admission and is responsible for the initial evaluation, formulation and institution of a plan. The fellow is also responsible for all procedures in the ICU, either performing them or supervising them. Finally, the fellow is responsible for the presentation of the case to the attending initially as well as monitoring the case presentations by residents during attending rounds. The fellow is responsible for the initial triage decisions on all admissions. The fellow is also responsible for conducting weekly multi disciplinary rounds for evaluation of long-term patients.

Personnel

The Crouse ICU team consists of two attendings and a fellow from the Division of Pulmonary and Critical Care, and 7 residents PGY 1,2 or 3 from the Departments of Medicine, and Emergency Medicine. The residents will be on call every third night on a rotating basis and are the primary providers for each patient they admit. Residents will be able to go home after attending rounds the day after call and their patients will be covered by the resident on call. All other residents can leave at the completion of checkout rounds (start at 3PM). Each resident will have one day off each week. The residents will be responsible to the fellow who in turn will be supervised by the attending on the service.

Routine

1. Morning work rounds will be conducted by the fellow with the residents each morning. Daily issues can be dealt with at that time.

2. Work rounds need to be completed and attending rounds will begin at 9:00 AM, after completion of any necessary patient care matters.

3. Afternoon rounds will be conducted by the fellow starting at 3PM for the entire team (except for the post call resident.

4. Admissions will be evaluated by the resident on call. Once evaluated, the resident is responsible to contact the fellow to discuss appropriate diagnostic and management interventions. For transfers from the floor to ICU the decision to transfer is between resident and fellow. For admissions to the hospital on the ICU service through the ED or outside transfers the attending will remain the first point of contact and once the attending agrees to admit the resident will see the patient and run the case with the fellow. After hours and on Sundays the resident will run the case directly with the attending. The fellow in turn is responsible for contacting and discussing each admission with the attending.

5. The resident is responsible for contacting the fellow for any significant change in patient status or for any procedures. The fellow will be available at all times for the residents for consultation. In turn the fellow is also responsible for contacting the attending for any change in patient condition or any concerns.

6. Each resident will be responsible for the patients they admit as long as the patient remains on the service, including any administrative tasks secondary to the patient's admission (IE death/discharge summaries).

7. The nursing staff has been instructed that first point of contact for an 'attending' level question, is to be to the fellow.

Goals and objectives unique to the Crouse ICU:

1. Management of the critically ill obstetrical patient
2. Management of the critically ill surgical patient
3. Management of the critically ill neurological patient.
4. Management of the critically ill neurosurgical patient.
5. Management of the adult ECMO patient

Goals and objectives for the 1st year Critical Care Fellow:

1. The History and Physical Exam of the critically ill patient.
2. Basics of ICU management.
3. Understanding of cardiac and pulmonary physiology and how it applies to the care of critically ill patients.
4. Acid-Base Physiology
5. Understanding the indications, rationale, institution/technical aspects and pitfalls of hemodynamic monitoring in medical patients.
6. Airway management.
7. Mechanical ventilation in the critically ill.
8. Sepsis
9. Procedural skills in Central Lines, A-lines, PA Catheters and others as indicated.
10. Insertion of chest tubes and drainage systems
11. Emergency Cardioversion
10. Nutrition in the ICU
11. Management of Shock.
12. Management of Diseases common to the ICU:
    - GI Bleeding
    - Overdoses/Poisonings
    - ARDS
    - Multi-organ system failure
    - Respiratory Failure
    - Metabolic, nutritional and endocrine effects of critical illness
    - Hematologic and coagulation disorders associated with critical illness
13. Understand the principles and the use of sedation and analgesic in the ICU.
14. Ethics in the ICU
15. The fellow will provide **patient care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
16. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.

17. The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
18. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families, and health professionals.
19. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
20. The fellow will participate in a **systems-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima

Goals and objectives for the 2nd year MICU Fellow:

1. Learn how to manage patients with difficult airways.
2. Learn advanced mode of mechanical ventilation such as APRV and high frequency oscillator ventilation.
3. Learn how to wean a patient from mechanical ventilation.
4. Take care of trauma patients
5. Renal replacement therapy.
6. Take care of neurosurgical emergencies.
7. Interpretation of intracranial pressure monitoring.
8. Insertion of transvenous pacemaker.
9. Take care of critical obstetric and gynaecological disorders.
10. The fellow will provide **patient care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
11. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
12. The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
13. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families, and health professionals.
14. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
15. The fellow will participate in a **systems-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima

IV. Goals and Objects for BRONCH UH Rotation

Description of Bronch Service: Each fellow will complete 4 weeks of bronch rotation per year.
Outpatinet/inpatient bronch- read Pulm function test—CF Clinic/TOPS
Outpatient- come from clinic or outside referrals—bronchs scheduled based on attending schedule- penny—emails bronch schedules and can view schedule in EPIC. Check schedule on Sunday-- pre-sedation—stable patient, proceed with procedure.. monitor patient in bronch suite for an hour or two. Sometimes in OR or bronch suite. ICU bronch—ICU fellow completes. Trach in ICU- ICU fellow/Bronch fellow do. Inpatient- pulm fellow/attending.

Goals and Objectives- 1st Year Fellows

1. Fellow is able to properly set up the bronchoscopy cart:

- Suction apparatus properly set up and functioning
- Injection and suction ports attached and working
- Bronchoscope clean and functioning, including video screen and fiberoptics
- Airway management equipment at the bedside and available (ambu bag, oxygen, yankauer suction catheter)
- Fellow is able to obtain conduct an appropriate procedural informed consent.
- Fellow introduces scope in a straight position and maintains appropriate body/scope relationship.

2. Fellow is able to insert flexible bronchoscope and identify major landmarks including

- Base of tongue, epiglottis and vocal cords (notes proper physiologic movement of cords)
- Carina and main stem bronchi
- Fellow is able to identify each of the segmental airways accurately and insert flexible bronchoscope into each correctly.
- Fellow is able to keep bronchoscope centered in the airway MK, PC
- Fellow appropriately guides bronchoscopy assistant through procedure

3. Following the procedure the fellow is able to

- Demonstrate knowledge of post-procedure monitoring and care
- Draft a basic procedure note with the help of supervising attending
- Appropriately inform family of procedure outcome

Goals and Objectives- 2nd Year Fellows

- Fellow has passed the Competent Cognitive Skills Assessment (if applicable).
- Fellow is able to describe the indications for the bronchoscopic procedure, the specific procedure to be performed, and the lab tests for the expected samples obtained.
- Fellow is aware of the risks and contraindications of the procedure to be performed and the patient factors that could lead to complications.
- Fellow is able to independently locate and visually inspect each of the segmental airways correctly.
- Fellow is able to locate each of the lymph node stations (2, 4, 7, 10) from within the airway.
- Fellow is able to accurately describe mucosal findings and any visualized lesions, including size, quality, and differential diagnosis.
- Fellow is able to determine the appropriate procedure based upon the clinical, radiographic, and visualized airway features of the case.
- Fellow is able to draft a detailed and accurate procedure note.
- Fellow uses techniques to minimize channel contamination.
- Fellow properly wedges bronchoscope in the appropriate sub segment based on the pre-procedure plan.
- Fellow collects BAL fluid into a sterile trap or syringe.
- Fellow appropriately calls for serial aliquots of sterile BAL fluid and waits for complete injection before applying suction.
- Fellow instills sufficient lavage for parenchymal sampling (at least 50cc) and is able to anticipate the needed amount of fluid for the required studies and limits procedure to the needed BAL fluid return.

Transbronchial biopsy

- Fellow confirms with the bronchoscopy assistant the immediate availability of resources in the event of hemorrhage that requires intervention (i.e. epinephrine, cold saline, and topical thrombin as per local practice/policy).
- Fellow obtains the needed number of specimens and correctly instructs the bronchoscopy assistant on the handling of specimens.
- Fellow understands the local indications for post-procedure chest X-ray.

Transbronchial forceps biopsy

- Fellow properly wedges bronchoscope in the appropriate sub segment based on pre-procedure planning.
- Fellow appropriately directs the use of the forceps (if applicable). ISC, PC, MK
- Fellow utilizes the proper technique of transbronchial biopsy so as to avoid the visceral pleura.
- Fellow is careful to keep the bronchoscope wedged in the sub segment during and immediately after biopsies are performed.

Transbronchial forceps biopsy with fluoroscopy

- Fellow demonstrates understanding of knowledge and practice of radiation safety as required by local practice/policy.
- Fellow demonstrates with the attending the functions and operations of the fluoroscopy machine (if fluoroscopy in use).
- Fellow directs the fluoroscopist in proper location of fluoroscopy arm and appropriately limits timing of the use of fluoroscopy so as to limit radiation exposure.

Transbronchial Needle Aspiration (TBNA)

- Fellow is able to determine the most appropriate station and location of needle biopsy based upon imaging and staging preference.
- Fellow utilizes safe and appropriate use of the TBNA needle during biopsy so as to ensure patient safety and reduce the risk to the bronchoscope.
- Fellow demonstrates one of the appropriate techniques for penetrating the bronchial wall with application of suction.
- Fellow communicates with cytopathologist to ensure the amount and location of biopsy specimens is adequate for diagnosis (if applicable).
- Fellow is successful in obtaining an adequate specimen and demonstrates proper handling of specimens (if applicable).

Endobronchial biopsy

- Fellow is able to determine the appropriate biopsy modality (FNA, forceps, brushing)based upon the pre-procedure planning.
- Fellow confirms with the bronchoscopy assistant the immediate availability of resources in the event of hemorrhage that requires intervention (i.e. epinephrine, cold saline, topical thrombin as per local policy).
- Fellow is able to appropriately describe the visualized lesion, including size, character, quality, and differential diagnosis.

Endobronchial Needle Aspiration

- Fellow appropriately directs bronchoscopy assistant in the use of the forceps (if applicable). ISC, PC, MK
- Fellow obtains the needed number of specimens and correctly instructs the bronchoscopy assistant on the handling of specimens.

Endobronchial FNA

- Fellow utilizes appropriate use of the TBNA needle so as to ensure patient safety and reduce the risk to the bronchoscope.
- Fellow obtains the needed number of specimens and correctly instructs the bronchoscopy assistant on the handling of specimens.

Bronchial Brush

- Fellow confirms with the bronchoscopy assistant the immediate availability of resources in the event of hemorrhage that requires intervention (i.e. epinephrine, cold saline, topical thrombin as per local policy).
- Fellow uses safe and appropriate technique to avoid complications (pneumothorax, excessive bleeding).
- Fellow properly stores the brush in the preservative for transport to the cytopathology lab.
- Fellow understands the indications for post-procedure chest X-ray.

Goals and Objectives for the MICU-C/Back up

This is a 2-week rotation for all pulmonary and critical care fellows and it starts on Wednesday and ends on Tuesday. The goal of this required elective is to work on quality improvement projects and to improve skills as an educator. The fellow will learn to identify a quality improvement project, write up methods, evaluations etc. The fellow will work with a mentor who will guide the fellow to accomplish this. Quality improvement projects can be for inpatient or outpatient services.

The work schedule will be as follows.

1. On Monday/Tuesday, cover MICU fellow that is on call for the day with all the responsibilities of the MICU fellow.

2. On Wednesday- Fellow will cover the MICU NIGHT FLOAT fellow from 7PM-7AM with all responsibilities of the night float rotation

Continuity clinic/Educational Conferences: The quality fellow will be required to participate in all required educational conferences during this rotation. The fellow will not be assigned continuity clinic during this rotation

Evaluation for this rotation will be performed by the research/quality improvement mentor that the fellow is working with. The mentor will also have access to the questionnaire filled out by the residents.

Goals and Objectives: Research Block

Nieman – Cardiopulmonary Critical Care Lab
Director: Gary Nieman
Lab Manager: Josh Satalin
Research Scientist/Technician: Sarah Baker

Objectives:
Primary
Understanding ARDS pathophysiology and the mechanism of ventilator induced lung injury (VILI) at the alveolar level.

Using the above knowledge, determine how to adjust the mechanical breath necessary to open and stabilize alveoli to minimize VILI

In depth understanding of the how to apply our novel Time Controlled Adaptive Ventilation (TCAV) protocol using the airway pressure release ventilation (APRV) mode in clinically applicable animal models. The TCAV protocol has been shown to effectively open and stabilize alveoli, minimize VILI, and reduce ARDS mortality.

Secondary
Learning methods of sterile surgical techniques including but not limited to:
- Sedation/paralytics of large/small animals
- Vascular cannulation with surgical technique
- Surgical tracheostomy
- Surgical laparotomy
- In depth anatomy review
- Primary/secondary closure
- Thoracotomy
- Sternotomy

Arterial Blood Gas Analysis

Learning how to manage Alaris pumps, plasma sample collection and all management of ancillary staff that fellows usually do not participate in during clinical practice

Goals:
a. Complete a review paper on any critical care topic by the end of the 6-month rotation. The fellow should have a topic in mind when entering the lab and Gary Nieman and the CPL (cardio-pulmonary lab) team will mentor in constructing the outline for the paper and continually edit the manuscript as it develops
b. The Fellow will work with the CPL team to identify a possible original research project. This will not always be possible in a 6-month period without specific funding for the fellow but will be attempted if time and money is available.
c. In addition to any original research project that the Fellow is conducting he/she will continue the Fellow's research project that was initially started by the previous Fellow in the lab
d. The Fellow can earn authorship on active CPL project if their contributed to the project is sufficiently significant.

Additional leaning opportunities:
Opportunity to work with Gary Nieman who has over 40 years of basic science research and is considered an expert in the field of pulmonary physiology, alveolar mechanics and ARDS.

Opportunity to work with and collaborate with Dr. Nader Habashi – Maryland Shock Trauma, Dr. Maurizo Cereda – University of Pennsylvania, and other collaborations with the University of Vermont, Tulane University and others.

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Non-Core Rotations

When the fellows do their non-core rotations in these units, they are given to opportunity to direct the clinic activities of the junior fellow on these services. They are not routinely involved in an administrative decisions pertaining to these units. When our residents rotate on these services, they follow those patients both in the ICU and after they are discharged to the floor. On the Thoracic Surgery/ICU service, post hospital follow-up is required component of the elective and is accomplished by attending thoracic surgery clinics while on the service.

I. Goals for the Thoracic Surgery

The fellow will function as a member of the thoracic surgery service and participate in all activities of the thoracic surgery service. Directed reading for the fellows in the form of references from either standard tests or recent literature will be necessary. Reading material will also come from the bibliography found at the ATS website (http:/www.thoracic.org/). This rotation is usually done in the second year. The goals and objectives are the same no matter the year of the rotation; the fellow is assigned to this rotation only once.

Pre-operative:

The fellow should perform as many pre-op evaluations as possible including evaluation of the patients CXR, and CTs, pulmonary functions, and history and physical with a goal of assimilation this information about the patient and participating in the decision-making process regarding course of treatment and operative procedure.

Operative:

1. To observe and becoming familiar with the technical aspects, limitations, advantages, indications and complications of:
    a. The various approach to thoracic surgery, median sternotomy, postero-lateral thoracotomy, limited thoracotomy and video-assisted thoracic surgery.
    b. Open lung biopsy vs. thorascopy lung biopsy.
    c. Mediastinoscopy
2. The fellow will become familiar with anesthesia and pain management of the patient through discussion with the anesthesiologists before, during and after the case. This may be accomplished by the fellow conversing with the anesthesiologist during the less critical parts of the case or times when teaching attention is necessarily more focused on the patient and/or the surgical house staff.
3. To become familiar with the indications/insertion/management of chest drainage (minimum of 5 chest tube placements).

Post operative:

1. Exposure to and reasonable proficiency in the post-operative care of patients as part of the standard thoracic surgery service routine, including decisions to extubate the patient post-operatively.
2. Chest tube removal
3. Post-operative pain management.
4. The fellow will provide **patient care** that is compassionate, appropriate, and effective for the treatment and health problems and the promotion of health.
5. The fellow will enhance their **medical knowledge** of established and evolving biochemical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
6. The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluations of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
7. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families, and health professionals.
8. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principle, and sensitivity to a diverse patient population.
9. The fellow will participate in a **systems-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

The milestone evaluation form will be sent electronically through Medhub to evaluate each fellow, and will be distributed to the thoracic surgical attending physicians. The elective supervisor should review the evaluation with the fellow. The fellow is expected to participate in all activities of the service, including morning and evening rounds and conferences. Time away will be permitted for Pulmonary and Critical Care conferences and continuity clinic. No formal night call will be required but participation until completion of evening activities is expected.

Goals for the Pulmonary/Critical Care Fellows Rotating through the UH Cardiac Surgery/ICU Service

The fellow will function as a member of the cardiac surgery service and participate in all activities of the thoracic surgery service, with the direction of activity in consideration of the following goals. Directed reading for the fellows in the form of references from either standard texts or recent literature will be necessary. Reading material will also come from the bibliography found at the ATS website. (http://www/thoracic.org/) This rotation will be done during the 2nd and 3rd year of the Pulmonary and Critical Care Fellowship. The Pulmonary/Critical Care Fellow is expected to concentrate education efforts in the following areas during the cardiac surgery elective:

Goals for the 2nd year fellow are:

Pre-surgical risk identification phase.
Operative procedure including induction of anesthesia.
Conduct of cardiopulmonary bypass (via observation and interaction with the perfusionist).
Understanding and management of cardiac assist devices including intra-aortic balloon pumps.

Immediate recovery from surgery.
Specifically weaning from mechanical ventilation and discharge from the intensive care unit.

Post-phase of illness to hospital discharge.
The fellow is expected to learn the prior cycles and management of cardiogenic shock including balloon count pulsation.

The resident will become familiar with the patients' risk of morbidity and mortality on the basis of underlying medical conditions, the events of anesthesia, surgery and cardiopulmonary bypass which predispose a patient to/or are predictive of further morbidity and mortality. The resident should become familiar with the concept of "fast tracking" of the recovery period from anesthesia and be able to define the ideal candidate for such a course.

Finally, the fellow should become familiar with the expected post-ICU phase of illness, expected length of hospital stay and the standard clinical pathway of the non-complicated post-operative course. Some effort is expected in understanding the standard outcome measures which quantitate functional status of patients during the recovery period and following hospital discharge.

To accomplish the above goals, the resident is expected to participate in the evaluation and management of patients preoperatively as permitted by the supervising surgeon on the elective. The resident will attend surgical conferences, participate in hospital rounds, and observe surgery, including the induction of anesthesia and assist in post-operative management as directed by the supervising surgeon.

The fellow is expected to participate in all activities of the service, including morning and evening rounds and conferences. Time away will be permitted for Pulmonary and Critical Care Conferences and Continuity Clinic. No formal night call will be required but participation until completion of evening activities is expected. The standard ABIM medicine evaluation form will be used to evaluate each fellow, and will be distributed to the cardiothoracic surgical attending physicians and cardiothoracic chief resident on the service. The elective supervisor should review the evaluation with the fellow. The evaluation will then be returned to the Pulmonary and Critical Care Division for placement in the fellow's file.

- The fellow will provide **patient care** that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health.
- The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
- The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence and improvements in the patient care.
- The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange an collaboration with patients, their families and health professionals.
- The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.
- The fellow will participate in a **system-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

Goals and objectives for the 3rd year fellow are:

1. The fellows need to become familiar with balloon counter pulsation device as a support for cardiogenic shock.
2. Read and develop some understanding of right ventricular and left ventricular support devices.
3. The fellow should develop increase understanding of extracorporeal membrane oxygenation.

4. The fellow should develop knowledge of the using of inhaled nitric oxide in the treatment of right heart failure in post-operative heart patients.
5. The fellow will provide **patient care** that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health.
6. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
7. The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
8. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families and health professionals.
9. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.
10. The fellow will participate in a **system-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

II. Goals for the UH Neurological ICU

Pulmonary Critical Care fellows will spend at least one month during their training in the Neurological Intensive Care Unit. They will function as part of the Neurological Intensive Care Unit team and will be supervised by the Neurocritical Care attending. **They will have primary patient responsibilities in the Neuro ICU.** They will also interact daily with the Neurosurgery resident and staff in the evaluation and treatment of critical ill neurological patients both in the Emergency Department and in the unit. This rotation is done only once in the second or third year. The goals and objectives are the same whether the fellow does the rotation in the second or third year. Reading material will also come from the bibliography found at the ATS website. (http://www.thoracic.org/).

At the end of the Neurological Intensive Care Unit rotation, the fellow should:

1. Understand general principles of management of critical ill neurologic patients including:
    a. The management of agitation and pain
    b. The management of volume status and blood pressure
    c. The management of cardiac, pulmonary, and gastrointestinal complications
    d. The management of nosocomial infections

2. Understand mechanical ventilation in critically ill neurologic patients including:
    a. Indications for medical ventilation
    b. Weaning from mechanical ventilation

3. Understanding fluids, electrolytes, and nutrition in critically ill neurologic patients including
    a. Management of acid-base disorders
    b. The management of nutrition

4. Understand how to approach a comatose patient in the Emergency Department

5. Understand the pathophysiology and management of increase distracranial pressure

6. Understand the pathophysiology and management of acute ischemic stroke, including acute middle cerebral artery occlusion, basilar artery occlusion, and cerebral infraction. The fellow should:
    a. Understand the mechanism of ischemia
    b. Be able to initiate the appropriate work-up
    c. Understand grading systems for stroke (e.g., NIH Stroke Scale)
    d. Understand treatment approaches (including the role of anticoagulation and thrombolysis)
    e. Understand and be able to manage clinical deterioration

7. Understand the pathophysiology and management of hemorrhagic stroke, including epidural and subdural hemorrhage, subarachnoid hemorrhage, and intra-cerebral hemorrhage. The fellow should:
    a. Understand the mechanisms of hemorrhage
    b. Be able to initiate the appropriate work-up
    c. Understand grading systems for hemorrhage (e.g., Hunt and Hess Scale)

d. Understand treatment approaches (including indications for hemorrhage evacuation, aneurysm clipping vs. interventional radiology techniques)
e. Understand and be able to manage clinical deterioration including cerebral vasospasm.

8. Understand the pathophysiology and management of head injury. The resident should:
   a. Understand the mechanisms of injury
   b. Understand indications for intracranial pressure monitoring
   c. Understand grading systems for head injury (e.g., Glasgow Coma Scale)
   d. Understand and be able to manage clinical deterioration

9. Understand the pathophysiology and management of the following conditions commonly seen in a Neurological Intensive Care Unit:
   a. Brain abscess
   b. Acute viral encephalitis
   c. Status epilepticus, including EEG monitoring
   d. Acute inflammatory demyelinating polyneuropathy (Guillain-Barre Syndrome)
   e. Myasthenia gravis
   f. Brain tumors (including perioperative care and monitoring)

10. Understand the concept of brain death and be familiar with brain death criteria

11. The fellow will provide **patient care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

12. The fellow will enhance their **medical knowledge** of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.

13. The fellow will continuously review **practice-based learning and improvement** that involves:
   a. Investigation and evaluation of their own patient care,
   b. Appraisal and assimilation of scientific evidence, and
   c. Improvements in patient care.

14. The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families, and health professionals.

15. The fellow will practice **professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

16. The fellow will participate in a **systems-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima

Faculty Evaluators:
Julius Gene Latorre, MD MPH - Director of Neurocritical Care Service
Ziad El-Zammar, MD
Ashok Devasenapathy, MD

III. Goals for Anesthesia Service

This rotation will be done once. **The fellow is to report to the Anesthesia Officer of the Day at the beginning of this rotation so they can do as many cases as possible.** The goals and objectives are the same regardless of year of training. Reading material will also come from the bibliography found at the ATS website. (Http://www.thoracic.org) Ideally the fellow would function as a member of the anesthesia service, with some understanding and direction of activity in consideration of the following goals:

Anesthesia preoperative evaluation

The fellow should be involved in the preoperative evaluation of patients with an eye toward understanding operative and airway risk.

Intraoperative care

The fellow should become proficient in airway management as well as develop an understanding of the induction/maintenance of anesthesia and other pharmacologic care of the patient during surgery.

Postoperative care

The fellow should develop an understanding of post operative anesthesia care including extubation and reversal of anesthesia.

During the rotation the fellow will become proficient in:

1. Establishment of an airway.
2. Maintenance of an open airway in nonintubated, unconscious paralyzed patients.
3. Oral and nasal intubation (20 intubations).
4. Ventilation by bag/mask.

Specific topics that will be learned during the rotation include:

1. Risk factors for anesthesia
2. Pharmacology during anesthesia:
    - Paralytics
    - Sedatives/Analgesics
    - Anesthetics
    - Vasoactive medications
3. Anesthetic techniques during CABG
4. The management of pain.

Directed reading for the fellows in the form of references from either standard texts or recent literature would be requested. The standard medicine evaluation form will be used to evaluate each fellow, and will be distributed to Dr. Lopez. The elective supervisor should review the evaluation with the fellow and have the fellow sign the evaluation. The evaluation will then be returned to the Pulmonary and Critical Care Division for placement in the fellows file.

The fellow will provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

The fellow will enhance their medical knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.

The fellow will continuously review practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.

The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and health professionals.

The fellow will practice professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

The fellow will participate in a systems-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima

IV. Echo Ultrasound Rotation for Pulmonary/CC Fellows:

A PGY-4/PGY-5 fellow will spend at least one 4 week rotation on the Echo/Ultrasound Rotation during their Pulmonary/CC fellowship training. The primary purpose of this rotation is to learn the underlying principals of ultrasound and the application of technique as utilized in the Intensive Care Unit. The fellow will have the opportunity to evaluate echocardiograms in consult with faculty member as well as the opportunity to work with the sonographer to learn the actual techniques involved in recording echocardiograms.

The fellow will have an opportunity, in addition, to review the core teaching tapes in the echocardiogram lab to allow review and independent study of the primary basic concepts of echocardiography.

Goals and Objectives for Echo Ultrasound Rotation:

While on this rotation the fellow and teaching faculty will place special emphasis on learning the following:

a) Evaluation of IVC collapse and evaluating fluid requirements
b) The evaluation of contractility in evaluating cardiac disease as a cause of shock
c) Evaluation by echo for the presence of pericardial effusion and pericardial tamponade
d) Evaluation of tricuspid regurgitation and Pulmonary hypertension
e) Evaluation of left ventricular relaxation and left atrial size in the evaluation of diastolic dysfunction of the heart.

US machines in ICU have LIMITED setting controls on their machines. There will be a focus on how to use these machines. There will also be a focus on an AXIS shots and instruction on avoiding over interpretation of off AXIS views.

Views:

1. PLAX
2. SAX mid ventricle
3. Apical 4 chamber
4. Subcostal SAX mid ventricle
5. Subcostal 4 chamber for ventricle
6. IVC collapsibility
7. Doppler of mitral inflow

Interpretation/Measurements

1. LVEF
2. Whether LV is under filled
3. RV size judged in relation to LV,
4. RV systolic function
5. E to A ratio
6. pericardial effusion whether there might be tamponade
7. IVC size and degree of collapse
8. Really obvious, gross regional wall motion abnormalities
9. Severe valvular stenosis/insufficiency
10. extra stuff: aortic valve thickening/calcification, AR, MR, mitral thickening/calcification, TR, ASD, VSD, PDA, Hypertrophic cardiomyopathy, asymmetric hypertrophy/hypertrophic obstructive cardiomyopathy , SAM, thrombus, vegetations/endocarditis.

System-based improvement will be evaluated by your performance on your Practice Improvement Module and by your attending (Kan Liu, MD/Harold Smulyan, MD) evaluation on this rotation.

Reading Material:

1. Beaulieu Y. Bedside Echocardiography in the assessment of the Critically Ill. CCM 2007 May;35:s235-49 PMID: 17446784

2. Beaulieu Y. Specific Skill Set and Goals of Focused Echocardiography for Clinical Care Clinicians. CCM 2007 May;35:s144-9 PMID: 17446773

V. SICU Service

This rotation will be done once. The goals and objectives are the same despite the year in which the training occurs. The fellow will function as a member of the SICU team. The fellow will round with the SICU service daily. The fellow will serve as a medical advisor to the SICU team. Directed reading for the fellow on the form of reference from standard text or recent literature will be done. Reading material will also come from the bibliography found at the ATS website. (http://www.thoracic.org) The fellow is expected to correlate education efforts in the following areas:

1. The physiologic changes that occur secondary to major surgery.
2. Pain control in the surgical patient.
3. The Management of fluids and electrolyte in the surgical patient.
4. The management of airway in burn patients.
5. The management of fluids and electrolyte in burn patients.
6. The recognition and management of carbon monoxide poisoning and other toxic gases released by fires.
7. The fellow will provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

8. The fellow will enhance their medical knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
9. The fellow will continuously review practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
10. The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and health professionals.
11. The fellow will practice professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
12. The fellow will participate in a systems-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima.

To accomplish the above goals the fellow is expected to participate in the evaluation and management of patients post operatively and after major trauma. The fellow is expected to round with the SICU team and the trauma team daily. The fellow is expected to participate in the evaluation and management of trauma patients in the ICU and in the ER while on duty. The fellow is expected to participate in conferences. The standard medical evaluation form (ABIM Model) will be used to evaluate the fellow. The surgical attending on service will evaluate the fellow. No formal night call will be done on the service.

Goals and Objectives for the Pulmonary/CCM and Critical Care Medicine Fellows from Upstate Medical University Rotating through St. Joe's Cardiovascular ICU

The Pulmonary/Critical Care fellow or the Critical Care fellow will function as a member of the cardio-vascular ICU service and participate in all activities of the cardio-vascular ICU service and will be supervised by the Attending physician. They will also interact daily with the cardiovascular team and staff in the evaluation and treatment of critically ill cardiovascular patients in in the unit. The rotation will be for a total of 4 weeks, in 2-week blocks.

The goals and objectives are the same whether the fellow does the rotation in the first, second or third year. To make this a robust experience, the rotation may include spending time in the Operating Room, working with perfusion services, cardiac anesthesia and help with pre-operative and post-operative management of these patients in the cardiovascular ICU.
The fellow will provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
During the rotation:

The fellow will become familiar with the patients' risk of morbidity and mortality on basis of underlying medical conditions, the events of anesthesia, surgery and cardiopulmonary bypass which predispose a patient to/or are predictive of further morbidity and mortality. Pre-surgical risk identification phase.
The fellow will learn about operative procedures including induction of anesthesia.
The fellow will learn about conduct of cardiopulmonary bypass (via observation and interaction with the perfusionist).
The fellow will learn about the expected post-ICU phase of illness, expected length of hospital stay and the standard clinical pathway of the non-complicated post-operative course.

The fellow will:
- Specifically learn weaning from mechanical ventilation in patient post cardiac surgery and discharge from the intensive care unit.
- Become familiar with balloon counter pulsation device as a support for cardiogenic shock and learn how to manage this.
- Learn to recognize and manage post-operative complications in patients after cardiac surgery.
-Understand about right ventricular and left ventricular support devices and learn management of these devices.
- Learn to evaluate and manage patients with valvular disease and Transcatheter aortic valve replacement (TAVR).
- Develop increased understanding of extracorporeal membrane oxygenation in patient with cardiac disease.
- Develop knowledge of right heart failure in post-operative heart patients.
- Learn skills of post-phase of illness to hospital discharge.

To accomplish the above goals, the fellow will participate in the evaluation and management of patients preoperatively as permitted by the supervising attending physician on the elective. The fellow will attend surgical conferences, participate in hospital rounds, and observe surgery, including the induction of anesthesia and assist in post-operative management as directed by the supervising attending.

The fellow is expected to participate in all activities of the service, including morning and evening rounds and conferences. Time away will be permitted for Pulmonary and Critical Care Conferences and Continuity Clinic. No formal night call/weekend call will be required but participation until completion of evening activities is expected. Daily rounds start at 7:15 am in Cardiovascular ICU(CVICU) and end by 5 PM. The fellow will follow and write notes on postop patients as assigned by the CVICU attending. The fellows will provide direct care and perform procedures like bronchoscopy, placement of central lines, intubations etc. after clearance from the ICU attending. Other specialized procedures, per direction of the attending physician, may be performed under direct supervision.
The fellow is expected to review a manual put together by Dr. Fetterman for ECMO and Mechanical support which has articles and questions. The fellow is expected to read the manual, answer the questions and hand them in before getting the answer key.
The fellow will provide patient care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health.
The fellows will enhance their medical knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families and health professionals.
The fellow will practice professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.
The fellow will participate in a system-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optimal care.
The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and health professionals.
In addition to the ICU manual discussed above, directed reading for the fellows in the form of references from either standard texts or recent literature will be necessary. Reading material will also come from the bibliography found at the ATS website. (http://www/thoracic.org).
The standard ABIM medicine evaluation form will be used to evaluate each fellow and will be distributed to the cardiovascular ICU attending physician. The elective supervisor should review the evaluation with the fellow. The evaluation will then be returned to the Pulmonary and Critical Care Division at the Upstate University for placement in the fellow's academic file.

Revised by: Pratibha Kaul, MD on 9/6/19

VI. OB-GYN ICU Service

This rotation will be done once. The fellow will report to Dr. John J. Folk at Crouse Hospital. The goals and the objectives are the same despite the level of training at which it occurs. The fellow will function as an integral member of the Obstetrical Critical Care Team. The fellow will be a resource to the Obstetrics residents, helping them understand the pathophysiology of shock and mechanical ventilation. The fellow will round with the Critical Care Obstetric Team daily. The fellow will participate in their teaching conferences. The fellow will use standard texts and the recent literature to gain competency in the management of OB GYN. Reading material will also come from the bibliography found at the ATS website. (http://www.thoracic.org)

The fellow is expected to participate in daily rounds and conferences. The fellow is expected to participate in the care of these patients with the obstetric residents. The fellow will be assessed using the standard ABIM medical evaluation form. No formal night call will be done on this service. The fellow will be available to evaluate and help manage obstetrics patients, who require critical care management.

Core Curriculum: Obstetric Critical Care Rotation

Physiologic Changes

A. Cardiovascular
    1. Blood volume
    2. Cardiac Output
    3. Blood Pressure
    4. Right and left-sided Filling Pressures
    5. Physiologic S3

6. Oxygen Delivery and Consumption
7. EKG Changes

B. Hematologic
1. Delusional Anemia with Red Cell Mass and Plasma Volume changes
2. While cell count increase.
3. Clotting factor changes

C. Respiratory.
1. Minute ventilation changes via tidal volume and respiratory rate.
2. Functional Residual Capacity decrease.
3. Compensated Respiratory Alkalosis
4. Normal $PaCO_2$ significance with respect to presence of respiratory failure.
5. Chest Wall compliance.
6. Chest X-Rays changes with increased lung markings and horizontal position of heart.
7. Pharyngeal and Airway Mucosal edema.

D. Gastrointestinal.
1. Lower Esophageal sphincter pressure decreases.
2. Increase in Gastroesophageal Reflux.
3. Nausea, Vomiting.
4. AST, ALT, Bilirubin and GGT concentration changes.

HEELP Syndrome

A. Diagnosis.
1. Hemolysis.
2. Elevated Liver Enzymes.
3. Low platelet count.
4. Nonspecific Clinical signs and symptoms
5. More common in multiparity, >35 yrs old, Caucasian
6. 27-36 week occurrence but can occur after delivery
7. Hypertension may be absent.
8. May Occur in Severe preeclampsia.

B. Management.
1. Urgent Delivery
2. $MgSO_4$
3. Antihypertensive Treatment for DBP >110.
4. Plasmapheresis.
5. Dexamethasone (10-12 mg q12hrs until delivery)-no-effect on mortality but may improve maternal outcomes.
6. Anticipate and manage complications-Liver hematoma, Hemorrhage and Renal Failure.

Thrombotic Thrombocytopenic Puerperal in Pregnancy

1. Association with pregnancy.
2. Overlap with severe preeclampsia, eclampsia and HEELP syndrome.
3. Distinguishing characteristics of TTP in pregnancy.
4. Management.
   a. Steroids.
   b. Plasma Exchange.

Shock in Pregnancy

A. Hypovolemic/Hemorrhagic
1. Placenta Previa
2. Placental Abruption
3. DIC
4. Uterine Rupture
5. Ruptured Ectopic Pregnancy
6. Trauma.

B. Cardiogenic
1. Pre-existing Cardiac disease. (MS, Prosthetic valves)
2. Peripartum Cardiomyopathy.

3. Aortic Dissection

C. AMI
   1. Septic Shock
   2. Chorioamnionitis
   3. Pyelonephritis
   4. Postpartum endometritis
   5. Septic pelvic thrombophlebitis.

D. Trauma.
   1. Initial assessment
   2. Importance of Left lateral decubitus positioning or elevation of right hip.
   3. Signs of hypovolemia-develop later due to increased blood volume.
   4. Use of Rh-Neg blood for transfusion.
   5. Use of X-rays and necessity of shielding.
   6. Ultrasound to monitor fetal cardiac activity and identify intraperitoneal fluid.
   7. Rh0 (D) immune globulin within 72 hrs of injury if Rh-Negative.
   8. Injuries from blunt trauma-placental abruption, uterine rupture, bladder injury, retroperitoneal hemorrhage.

E. Advanced Life Support.
   1. Elevated right hip
   2. Displace left breast for defibrillation.
   3. Consideration of Cesarean Section if gestational age of fetus > 24 weeks.
   4. Delivery within 4-5 minutes of arrest.

Hypertensive Disorders

A. Diagnosis
   1. Preeclampsia
   2. Severe Preeclampsia
   3. Eclampsia

B. Pathophysiology

C. Management.
   1. Maternal/Fetal monitoring.
   2. Corticosteroids for fetal lung maturation if <34 weeks.
   3. Early delivery and its indications.
   4. Seizure Prophylaxis
   5. Blood Pressure control.
   6. Supportive Measures.

Respiratory

A. Mechanical Ventilation
   1. Smaller ETT due to laryngeal/tracheal edema
   2. Maintain arterial saturation >94%
   3. Positive pressure may decrease venous return
   4. Adjust ventilator settings to maintain $PaCO_2$ 30-32 mmHg.
   5. Safety of permissive hypercapnia not known.
   6. High airway pressures may not indicate alveolar over distension.
   7. Caution with noninvasive ventilation because of increased aspiration risk.

B. Asthma.
   1. Inhaled agents preferred.
   2. Systemic steroids safe.
   3. Aminophylline for refractory cases.

C. Tocolytic Induced Pulmonary Edema.
   1. B2 agonists known cause-ritodrine, terbutaline, isoxuprine, albuterol.
   2. Mechanisms
   3. Response to discontinuation of tocolytic +/- diuretics.

4. Mechanical ventilation rarely needed.

D. Amniotic Fluid Embolism.
   1. Risks
   2. Occurrence during labor.
   3. May occur during abortions.
   4. Often present with cardiovascular collapse, hypoxia and DIC.
   5. May present with abnormal fetal heart rate patterns.
   6. Difficult diagnosis which needs ruling out other conditions first.
   7. Management-supportive with uterine evacuation.

E. Venous Air Embolism
   1. Occurrence during/after CS, orogenital sex, normal labor with previa and illegal abortions.
   2. Sudden hypotension and/or respiratory arrest.
   3. Precordial mill-wheel murmur.
   4. Management.

F. ARDS
   1. Recognition of causes inherent to the pregnant patient.
   2. Indications for emergent delivery
   3. Management.

G. Exacerbation of underlying pulmonary disease in pregnancy.

H. Airway Problems in pregnancy.

Thromboembolic Disease

A. Recognition of Increased risk and its causes.
B. Pulmonary Embolism
C. DVT
D. Management

Acute Fatty liver of Pregnancy

A. Occurrence at >28 weeks gestation.
B. nonspecific symptoms
C. Diagnosis may be difficult without biopsy.
D. Treatment-termination of pregnancy.
E. Differentiation of liver disease in pregnancy with respect to liver function abnormalities in acute fatty liver, Eclampsia/Preeclampsia and HEELP syndrome.

Drugs in Pregnancy

1. See Table enclosed.
2. Consider adverse effects on fetus.
3. Consult clinical pharmacist.

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The fellow will continuously review **practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.

The fellow will learn the art of **interpersonal and communication skills** that result in effective information exchange and collaboration with patients, their families, and health professionals.

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The fellow will participate in a **systems-based practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima

Risk Categories for selected drugs during Pregnancy

Drugs	Risk Category
Antiarrhythmics	
1. Lidocaine	C
2. Procainamide	C
3. Amiodarone	D
Anticonvulsants	C
1. Carbamazepine	B
2. Magnesium sulphate	D
3. Phenobarbital	D
4. Phenytoin	
Antihypertensives	
1. ACE Inhibitors	D
2. Beta blockers	C/D
3. Clonidine	C
4. Hydralazine	C
5. Nifedipine	C
Cardiovascular Medications	
1. Aspirin	C
2. Atropine	C
3. Digoxin	C
4. Dobutamine	C
5. Epinephrine	C
6. Nitroglycerin	C
7. Nitroprusside	C
8. Norepinephrine	D
9. Thrombolytics	D
10. Vasopressin	B
Diuretics	
1. Furosemide	C
2. Spironolactone	C
Muscle Relaxants	
1. Succinycholine	B
2. Cisatracurium	B
3. Vecuronium	C
4. Rocuronium	C
Sedatives/Analgesics	
1. Benzodiazepines	D
2. Codeine	C
3. Morphine	B
4. Propofol	B
Steroids	
1. Cortisone	D
2. Dexamethasone	C
3. Prednisone	B

Antibiotics

1. Acyclovir		B
2. Aminoglycosides	C	
3. Azithromycin		B
4. Cephalosporins-avoid ceftriaxone/cefotetan	B	
5. Clindamycin		B
6. Imipenem		C
7. Metronidazole (not in 1st trimester)	B	
8. Meropenem		B
9. Penicillins		B
10. Quinolones		C
11. Sulphonamides	B	
12. Trimethoprim		C
13. Vancomycin		B

Others

1. Aminophylline	C	
2. Insulin		B
3. H2 Blockers		B
4. Heparin (LMWH)		B
5. Heparin (unfractionated)	C	
6. Mennitol		C
7. Warfarins		D

FDA RISK CATEGORIES

A: Controlled studies fail to demonstrate a risk

B: Animal studies do not indicate a risk to the fetus with no controlled human study; animal studies show an adverse fetal effect but well controlled studies in pregnant women have failed to demonstrate risk to fetus.

C: Animal studies show teratogenic or embryocidal effects, but no controlled studies are available in women; no studies are available in either animals or women.

D: Positive evidence of human fetal risk exists, but benefits in certain situations may make use of the drug acceptable despite its risks.

VII. Research

Fellows will participate actively in journal club and in seminars where they are required to explain study design and define statistical methods, which justify conclusions of the papers presented. In addition, the general format of involvement of fellows in research with the three levels of study provides for understanding the use of informed consent, research methodology and interpretation of data. As part of the monthly Research Conference there is a lecture series on statistics, epidemiology and research methods.
There is an expectation that all residents will be involved in research and all work will be submitted for presentation at a national meeting and/or for publication. It is the long-term goal of the program to have each resident involved in three projects as follow:

1. A project, which is being summarized and formalized for presentation or publication. Such projects are likely to be completed by a faculty member or third year resident. (Level 1 project)
2. A second project which is ongoing but requires significant data collection and analysis before presentation or publication is possible. (Level 2 project)
3. A third project is expected to be started anew with hypothesis formulation, data collection, organization and analysis. (Level 3 project)

For a list of ongoing and new research projects it is important that the fellow contact the members of the department within the first month of his fellowship so the fellow can become involved in research projects as soon as possible. The Pulmonary and Critical Care Division/Dr. Iannuzzi is involved in many ongoing projects many of which should prove exciting to the fellow. Basic science research opportunities are available in Gary Nieman and Michael Cynamon's laboratories.

The fellows will report to their mentor monthly while on their research rotation. They will establish a mentor during the first year. The mentor will help them establish projects and over see their progress.

Goals and objectives for the 1st year Research fellow:

1. Establish a relationship with a mentor.
2. Develop goals and objectives for his research rotation
3. Start one project to be evaluated by his/her mentor. If the fellow establishes a research relationship with a faculty member other than the first year mentor, the faculty member involved with the project will assume the role of the fellow's research mentor. The mentor will evaluate the fellow for each month the fellow is assigned to a research rotation. The fellow will be evaluated as to the following performance components:
    a. spirit of inquiry
    b. scientific integrity
    c. collegiality
    d. productivity
    e. responsiveness to criticism
    f. proficiency in research methods
    g. project/study design and analysis
    h. critical interpretation of scientific literature
    i. conceptual and statistical ability
    j. research ethics
    k. responsible use of informed consent
    l. principles of authorship/research papers

4. The mentor may use any of the following criteria to evaluate the above components:
    a. performance in design of research project
    b. performance in granting writing
    c. observation and supervision of research
    d. participation in research conferences
    e. scientific presentations
    f. publications in peer-reviewed journals
    g. other_____

Goals and objectives for 2nd year research fellow:

Continue with the project to be evaluated by his/her mentor. If the fellow establishes a research relationship with a faculty member other than the first/second year mentor, the faculty member involved with the project will assume the role of the fellow's research mentor. The mentor will evaluate the fellow for each month the fellow is assigned to a research rotation. The fellow will be evaluated as to the following performance components:

1. spirit of inquiry
2. scientific integrity
3. collegiality
4. productivity
5. responsiveness to criticism
6. proficiency in research methods
7. project /study design and analysis
8. critical interpretation of scientific literature
9. conceptual and statistical ability
10. research ethics
11. responsible use of informed consent
12. principles of authorship/research papers

The mentor may use any of the following criteria to evaluate the above components:

1. performance in design of research project
2. performance in grant writing
3. observation and supervision of research
4. participation in research conferences
5. scientific presentations
6. publications in peer-reviewed journals
7. other_____

VIII. Radiology

During the two years of training for the pulmonary/critical care fellows the fellows spend one month in chest radiology. There is extensive interaction with the radiology department including nuclear medicine during this month as well as during their active pulmonary and critical care rotations during their three years. Also, during the two years of training the fellows experience several electives, which include rotations with the Department of Neurosurgery in the Neurologic/Neurosurgical ICU, Department of Surgery, Department of Obstetrics, Department of Anesthesiology, Division of Cardiology during a CCU rotation, and the Department of Cardiothoracic Surgery. On a daily basis, the fellows interact with residents in all stages of the institutional residency and fellowship training programs. Our fellows attend Power Rounds once weekly. The fellows interact daily with members of the radiology department during routine rounds. Reading material will also come from the bibliography found at the ATS website. (http://www.thoracic.org)

Goals for the Critical Care Fellow rotating through the Radiology Service

The fellow should function as a member of the radiology service, with some understanding and direction of activity in consideration of the following goals:

1. The fellow should acquire knowledge of and ability to interpret the following procedures:
    - Chest roentgenogram
    - CT of the chest, abdomen and pelvis
    - V/Q Scans
    - Pulmonary angiogram
    - Other studies as appropriate
2. The fellow should gain understanding concerning the utility of interventional radiographic techniques.
3. The fellow should gain an understanding of the utility of various portable techniques used in the ICU including portable CXR, portable KUB, and ultrasound.

Directed reading for the fellows in the form of references from either standard texts or recent literature would be requested. Reading material will also come from the bibliography found at the ATS website. (http://www.thoracic.org) The standard medicine evaluation form will be used to evaluate each fellow in EVALUE.

There is also an extensive collaboration with the Pathology Department reviewing biopsies of specimens obtained during the Critical Care rotations. Also the division faculty and fellows always ask permission for autopsies, and these are reviewed with pathology when obtained. Once weekly there is a Pulmonary/Critical Care case conference attended by the division faculty, fellows, medicine residents, thoracic surgeons, radiologists and pathologists. Many patients admitted to the ICUs and the VA requires consultation from specialties such as general surgery, cardiology, nephrology, and/or infectious diseases at some time during their ICU stay. It has consistently been our policy and practice under these circumstances to make treatment decisions based on joint discussions between the ICU and the consulting services wherein review is made of the clinical circumstances relevant to the present illness. Fellows rotate on the thoracic surgery, the cardiac anesthesia surgery, SICU, and ICU, the neurosurgical service, and on the CCU service in month blocks. While on these services, they also have significant interaction with cardiology and infectious disease. Residents from Internal Medicine are assigned to both the critical care and pulmonary service for formal education in Pulmonary and Critical Care Medicine. In these situations, the fellows take a supervisory role.
All Issues Described Here May Be Modified at the Discretion of the Program Director.

All rules and regulations of the department of medicine and the SUNY Health Science Center apply to each fellow as described in Resident policy handbook.

The fellow should function as a member of the radiology service, with some understanding and direction of activity in consideration of the following goals. This rotation is done the first year only.

1. The fellow should acquire knowledge of and ability to interpret the following imaging procedures:
    - Chest roentgenogram
        - CT of the chest, abdomen and pelvis
        - V/Q Scans
        - Pulmonary angiogram
        - Other studies as appropriate
2. The fellow should gain understanding concerning the utility of interventional radiographic techniques. In particular, the fellow should learn the indications and risk of needle aspiration of the lung.

3. The fellow should gain an understanding of the utility of various portable techniques used in the ICU including portable CXR, portable KUB, and ultrasound.
4. The fellow will provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
5. The fellow will enhance their medical knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
6. The fellow will continuously review practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
7. The fellow will learn the art of interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and health professionals.
8. The fellow will practice professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
9. The fellow will participate in a systems-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optima

Directed reading for the fellows in the form of references from either standard texts or recent literature should be requested. Reading material will also come from the bibliography found at the ATS website. (http://www.thoracic.org) The standard medicine evaluation form will be used to evaluate each fellow, and will be distributed to Dr. Scalzetti or Dr. Grage. The elective supervisor should review the evaluation with the fellow and have the fellow sign the evaluation. The evaluation will then be returned to the Pulmonary and Critical Care Division for placement in the fellows file.

Procedures

Upon entering the program all fellows are asked to submit an appropriately documented record of the procedures they performed as a resident. Fellows are then clinically evaluated by an attending for competence in these procedures and if found competent they are certified for that procedure in our program. All other procedures are supervised by an attending until a minimum number of procedures, as prescribed by the division and the Department of Medicine, have been performed **and** a faculty member has attested to the fellow's competence in that procedure. The minimum number of procedures necessary has been adapted from a discussion on procedural training of Pulmonary/Critical Care fellows published in American Journal of Respiratory and Critical Care Medicine. **It is the responsibility of the fellow to request a faculty member to attest to his or her competence once the minimum number has been reached**. Once the fellow has met these criteria he or she becomes certified in the procedure and can perform these procedures independently. The fellows will document the procedure and whether any complications occurred into MedHub. It will be the fellow's responsibility to name the supervising physician's signature who will then attest to the procedure in MedHUb. After a sufficient number of procedures are done to qualify for credentialing in a skill, and if competency has been demonstrated, then the Fellowship Director will certify the fellow for the procedure. Bronchoscopy and pleural biopsy are always performed under the direct supervision of the attending physician.

Procedure List	
Intubation Oral	20
Intubation Nasal	5
Ventilator Management	50
Management of Non-invasive Ventilation	10
Thoracentesis	5
US Thoracentesis	5
Chest Tube Placement and Management	5
Pleurodesis	5
CVC - IJ	5
CVC - subclavian	5
CVC - Femoral	5
Pulmonary Artery Catheterization	5
Arterial Line Placement - Femoral	5
Arterial Line Placement - Radial	5
Balloon Pump Insertion and Management	10
Lumbar Puncture	10
Abdominal paracentesis	5
Foley Catheter Insertion	5
Venopuncture	5

Arterial Blood Gas	5
Peripheral IV placement	5
Cardioversion - Elective	5
ACLS	1
ATLS	1
Respiratory Therapy Course/Oxygen Utilization	1
Calibration and Operation of Monitoring Systems	1
Airway Course	1
Vas Cath Placement (subcl/feml/jugl)	5

Deep Sedation Credentialing Process

Deep Sedation is a drug induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

CC Fellows will be credentialed in deep sedation by completing the following:

1. Viewing the moderate sedation video and passing the exam for moderate sedation credentialing.
2. Successful completion of 20 moderate sedation procedures supervised by University Hospital (UH) faculty credentialed in moderate sedation.
3. Performance of 20 endotracheal intubations supervised by UH faculty credentialed to perform endotracheal intubation.
4. Achieving and maintaining ACLS provider status.
5. Reading and being familiar with UH's Deep Sedation policy (CM D-05)
6. Successful completion of 20 deep sedation procedures supervised by UH faculty credentialed in deep sedation.
7. Approval by Pulmonary/CC Fellowship Director.

Successful completion of this curriculum will allow for deep sedation credentialing within University Hospital's Pulmonary/CC Division. Even after successful credentialing, Pulmonary/CC Fellows will always be directly supervised by a Pulmonary/CC Attending physician credentialed to perform deep sedation when providing deep sedation in the University Hospital.

Fellow Responsibilities

Each fellow will spend 28 blocks of the 39-block training period on a clinical service: 21 blocks of core rotations (seven blocks each on the UH pulmonary service, UH ICU service and the VA service) and nine blocks in non-core rotations. While on the core rotations the fellow will take call from home six days a week (there is no in-house call during that time). One day each weekend the fellow will be completely free of clinical duties including call. During the six months spent on the electives the fellow will not take in house call. The other electives will be free of call and weekend clinical responsibility. During research time the fellow will be free of clinical responsibilities and call except for emergencies. While on research time the fellow will attend outpatient clinic for ½ day per week.

Fellows are responsible for attending all conferences where attendance will be taken. Promptness is demanded. Attendance at 70% of all conferences is required for a fellow to obtain board eligible status through this program. If your conference attendance is poor, this could lead to not being promoted for the academic year. Be sure to sign the sign in sheet at each conference.

Vacation/Conference Time

1. Vacation days must be taken in one-week blocks (i.e. 5 days) no more than 2 weeks at a time. The only time this is overruled is when the request is approved by Pratibha Kaul, MD and/or Dana Savici, MD. Time off is per the Department of Medicine policy. The amount of time that may be taken and is equal to 20 days. All 20 days must be taken over the course of an academic year and cannot be carried over to the next academic year. Vacation is scheduled and built into the rotation schedule at the start of the academic year.
2. **Vacation time does not carry over to the next academic year.**
3. **No more than 2 fellows can be on vacation at any time**
4. **Vacations will not be approved during ACCP and ATS**
5. Away Conferences:
   a) Vacation should not be planned during Annual Chest or ATS meetings.

6. If a fellow has a paper, abstract, or case report to present at a national or state meeting, we will try and make arrangements for that fellow to attend that meeting.

Reimbursement

1. Fellows will be allowed $300 per year in reimbursement from the division for legitimate conferences or other educational literature/devices - per department of medicine definition. This reimbursement is pending Department/Division finances.
2. $1200 for first author poster presentations at annual conferences is allowed per academic year
3. Reimbursement will be made after **all original receipts** are returned to the program coordinator.

UH Conferences

Fellows are responsible for attending all conferences where attendance will be taken. Promptness is demanded. Attendance at 70% of all conferences is required for all fellows. If your conference attendance is poor this could lead to not being promoted for the academic year.

Each academic year will start with a "Boot Camp" lecture series for incoming fellows. This series will give introductory lectures within the first 2 weeks in July. This will be followed by the following recurring conferences starting in September.

1. Clinical Case Conference – 3109 WSK- Cases are presented by the fellow during this twice monthly clinical conference (held on Wednesday mornings from 7:30 to 8:30 A.M.), ideally one pulmonary and one critical care case twice a month. Fellows are expected to present a concise summary of the patient's history, emphasize important physical examination findings and laboratory results and prepare a discussion of the unique features of the case or a review of literature on important questions. Cases should be either diagnostic dilemmas or cases where the management is the question. If the case is a diagnostic dilemma then it should be presented as an unknown with diagnostic and therapeutic advice solicited from the audience. The more discussion the better. Topics to be covered in this conference include pathology, physiology and clinical management skills.

2. Journal club - 3109 WSK- Will be held once a month on Thursday from 4:30-5:30 PM. Two journal articles are presented once at each of these conferences. The responsibility of choosing the article and presenting the paper is rotated through the attending physicians and fellows. The fellows are expected to present the background, objectives, methods, results, conclusions and critique of the paper. The articles reviewed in this conference should be basic science or clinically based. The goals of this conference are to acquire and improve analysis skills and to foster an understanding of the scientific method.

3. Scientific sessions: 3109 WSK- Thursday mornings from 7:30-8:30 AM-This conference is an in depth discussion of selected topics in pulmonary and critical care. Speakers include the faculty of the division of pulmonary and critical care, faculty from other divisions, and visiting professors (hopefully 3-6 per year). Topics to be covered include physiology, pathology, statistics, immunology as well as specific clinical entities.

4. Evidence-Based Medicine Conference: 3109 WSK- Wednesday once a month at 7:30 AM-8:30 AM. The chief fellow will develop a rotating schedule of which fellows present at a given conference. The assigned fellow will raise a clinical question. The fellow will then research the literature to see what evidence is available for the treatment or diagnosis of that problem. The fellow will then present that material as well as a critique of the quality of the data supporting those conclusions.

5. Pulmonary Pathology Conference is held the first Wednesday of each month at 7:30 AM-8:30 AM in room 6717/UH. This conference aim is teach pulmonary pathology. It will be a combined conference and is attended by Pathology, Thoracic Surgery, Radiology and Pulmonary/Critical Care. The Thoracic Surgery resident and a Pulmonary/Critical Care fellow will each present a case. The PGY-6 fellow will e-mail or call Dr. Curtiss (4-4670) to meet and review their cases for the Pathology conference. Radiology or Dr. Curtiss may have interesting cases that may be presented as well. The PGY-6 fellow will present a brief history and physical exam in, the radiographs will be reviewed and then Dr. Curtiss will present the Pathology. There will be a broad discussion of the outcome of the case by the fellow. The PGY-6 fellows will share the responsibility for this conference.

6. Research Conference: 3109 WSK- Thursday afternoon 4:30 PM-5:30 PM, held once a month. The purpose of this conference is to discuss ongoing projects or proposals for new projects.

7. Morbidity & Mortality Review Conference 3109 WSK - Wednesday's 7:30 AM-8:30 AM- will be held every other month. The purpose of this meeting is to review cases with unexpected or negative outcomes and to

explore what could have been differently to achieve a better outcome. 2 fellows will be assigned to present during each conference

8. Board Review Conference: 3109 WSK-4:30 PM- 5:30 PM, once a month on Thursday. The Pulmonary/CC attending physicians will rotate with this conference.

9. Medical Power Rounds – Occurs each Thursday from 12:15-1PM and is a requested but not mandatory conference. Attendance when the Pulmonary & Critical Care faculty are presenting IS mandatory.

Evaluation of the Fellows

The fellows are evaluated monthly by the attending of the service of each rotation. The fellows are also evaluated while they are on their research rotation. The evaluation forms used are those provided by the American Board of Internal Medicine for subspecialty training. These evaluations give us a continuous picture of the fellow's progress. The evaluation forms will be kept on file and the fellow will be free to review them. In addition, at least semi-annually the fellowship director will meet with the fellows individually to formally evaluate their progress in the fellowship. During this meeting the fellows are given an opportunity to review their folders and the fellowship director will discuss their strengths and weaknesses. Suggestions from the fellows for improvement of the program will also be discussed at this meeting.

A summation of the fellow's performance will be prepared semi annually. The American Board of Internal Medicine's tracking form will be used.

The Pulmonary and Critical Care Fellowship Program must demonstrate that it has an effective plan for assessing resident performance throughout the program and for utilizing assessment results to improve fellowship performance. This plan should include:

a. use of dependable measures to assess fellows' competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism and a system-based practice
b. mechanisms for providing regular and timely performance feedback to fellows
c. a process involving use of assessment results to achieve progressive improvements in fellows' competence and performance.

All evaluations will be performed using predetermined milestone evaluation for this rotation.

1. **Patient care** will be evaluated by the attending on service and by the nursing staff. This will be done through MedHub. Your performance is available on MedHub.
2. **Medical knowledge** will be assessed by the attending through MedHub. Medical knowledge will also be assessed through the in-service exam and by your Pulmonary and Critical Care boards. Your scores will be reported to you.
3. **Practice-based learning and improvement** will be assessed by the attending through MedHub. Your practice-based learning will also be assessed by the nursing staff and by your performance at Evidence-based Medicine Conference will also contribute to your evaluation of practice-based learning and improvement.
4. The fellows' **interpersonal and communication** skills will be evaluated by the attending physician in MedHub. Your interpersonal and communication skills will also be evaluated by a survey at the pulmonary clinic and by the nurses on the floors. Survey results will be provided to you through MedHub.
5. **Professionalism** will be evaluated by your attending physician on MedHub and by the nurses as well as an occasional patient survey. The survey will be provided to you.
6. **System-based** improvement will be evaluated by your performance on your practice improvement module and by your attending physician evaluation on this rotation.

Evaluation of the Program

The fellows will evaluate the attending every 6 months. Again, the forms used will be those provided by the ABIM. These evaluations are an important part of our review of the overall efficacy of the program. The fellows' review of the program highlights areas where improvement of the fellowship is possible and should give a view of the program's performance.

The faculty will meet regularly to evaluate the program's goals and objectives. A representative of the fellows will attend these meetings and a record will be kept of these meetings. At one such meeting per year the financial support of the program, the contribution of each institution to the program, the volume of patients and procedures, the performance of the faculty and the quality of the supervision of the fellows will be reviewed.

The fellowship is reviewed periodically by the sponsoring institution. This gives a picture of our program from outside the Division of Pulmonary and Critical Care. Independent measures are important to access the effectiveness of the program. One such measurement is the performance of the fellows in their ABIM certifying examinations in Critical Care. Since the re-organization of the program into a combined fellowship the pass rate for these examinations has been 100%. Another measure of the effectiveness of our program is the fellows' performance once they leave the institution. Recently, our graduates have been accepted into prestigious sleep fellowships and they have all been able to attain positions in their specialty. We will periodically survey our graduates to ascertain the adequacy of their training. One year and every five years thereafter, a written survey will be sent to our graduates. The survey will inquire into the adequacy of their fellowship training.

Pulmonary and Critical Care Policies

Dealing with Fatigue and Stress

Emotional exhaustion, sleep deprivation, depersonalization, perceived low personal accomplishment, doubt, guilt, family issues, compulsiveness, dissatisfied patients, and the psychology of postponement (things will get better when…) can impact the balance of body, mind, and spirit for successful fellowship practice.

Physicians often have difficulty accepting help, due to the pressures of perfection that are often part of the intrinsic nature of high achievers. Physicians-in-training might be unable or unwilling to recognize their own state of health.

The Department of Medicine is keenly aware of and responsive to the serious consequences that fatigue and stress can have on fellows in any subspecialty. In response to this, the Department has set forth the following guidelines:

1. Faculty and fellows must first be attuned to and accepting of the signs and results of excess fatigue, stress, and possible impairment.
2. Faculty and fellows are required annually either to attend a presentation or to complete online training on the possible influence of fatigue and stress.
3. Fellows should be permitted to be comfortable in expressing unrest in a confidential manner, without fear of being made to feel inadequate.
4. Colleagues, including administrators, nurses, auxiliary staff, and other physicians, must monitor and question appearances of extreme exhaustion or stress, especially following extended time on service.
5. Associates should be vigilant of fellows' behavioral or attitudinal changes, as these could signal physician impairment (substance or alcohol abuse).
6. Fellows ought to acknowledge that family, marital, personal, or financial problems might adversely impact their performance. Positive as well as negative life-altering events, such as a birth, job change, death, divorce, or sudden accident should be taken into consideration.
7. Faculty advisors and mentors discuss stress issues during semi-annual evaluations with fellows. Concerns are noted.
8. Mistakes in judgment or treatment concerning patient care can have lasting effects on fellows, and can exacerbate existing depression. Patient downturns or death can deplete fellows' confidence, temporarily or permanently.
9. Programs should have contingency plans for rescheduling assignments in the event fellows have to be excused to seek treatment.
10. Faculty and fellows are reminded that Employee Health Services offers counseling and assistance, pursuant to GME MC-HR Policy No. 500.

During the three years of the Pulmonary and Critical Care Fellowship there might be a time where the fellow may experience fatigue, sleepiness, anxiety, and/or depression. If any of the fellows are having a hard time coping with any of

these, whether it is at work or home, the Program Director has an open door policy and will provide necessary resources to the fellow and their family. Also, SUNY Upstate Medical University has available to any employee and their family, the Employee Assistance Program located at Room 510 Jacobsen Hall. They can be reached at (315) 464-4260/464-5760. Signs of fatigue and the effects of performance are available on the SUNY Upstate Medical University Hospital blackboard site at www.upstate.edu/blackboard /courses/GME Education. It is recommended that all pulmonary fellows review this website.

If at any time during a rotation a pulmonary fellow is feeling fatigued due to extended hours at the hospital performing patient care, they are to contact the Program Directors office and coverage will be arranged. If they are unable to safely return home, transportation will be arranged for them. It is essential to the fellow's health that the Pulmonary and Critical Care fellow strictly adhere to the 80-hour work limit.

Tips for combating stress: foster relationships, involve religion or spirituality, practice self-care physically and psychologically, derive new meaning for work, develop a new approach to life with insight, understanding, and core values.

~ John B. Schorling, MD **16June08**

Fellowship Moonlighting Policy

Moonlighting is not encouraged. Currently University Hospital does not offer a moonlighting position. The fellows are responsible for obtaining a license that will allow them to moon light within federal and/or New York State regulations. The fellows must not exceed the 80 hour work limit. This limit includes all of their clinical and fellowship responsibilities as well as their moonlighting hours. Failure to follow this rule will have serious consequences and could lead to dismissal from the fellowship program. Moonlighters' supervision will be the responsibility of the institution for which the fellow is moonlighting. Since this is not a part of fellowship training, the Pulmonary-Critical Care faculty will have no supervision responsibilities regarding moonlighting. The exception to this supervision responsibility is that the Program Director or Program Director Designee will have the responsibility of monitoring and enforcing the 80 hour work week and all other ACGME regulations (NYS Dept Health Code 405 Regulation). **These regulations include 10 hours off between shifts and a requirement to have a 24 hour period off time at least once per week.** If a fellow has any concerns or questions regarding this policy, the fellowship director is available to discuss them.

Dealing with Deficiencies

Given the above evaluation process, any deficiencies will be identified early and counseling will be instituted promptly. In this way the fellow or the attending will have ample opportunity to improve performance. Counseling of the fellows will be done by the Program Director and a written record of the meeting will be kept and shared with the fellow.

In the event of inappropriate behavior the Program Director will counsel the fellow. If appropriate, professional counseling will be offered the fellow. If the problem persists, or if the initial event is egregious, the problem will be brought to the attention of the Division Chief, the Director of Educational Programs for the Department of Medicine and to the Chief of Medicine. At their discretion the matter will be presented to the Residency Review Board. If the Residency Review Board meets, the fellow will be given an opportunity to present a defense. Any disciplinary action will be up to the Residency Review Board.

III. Evaluation Process

A. **Professional Standards and Evaluation**

All residents are expected to conform to Standards of Professional Conduct, and Professional Ethics. All residents shall comply with the campus policy on anti-discrimination and civility. Alleged violations of these policies and/or misconduct as defined in Section 6530 of the New York State Education Law may be grounds for probation, or suspension pending a final determination. A finding of violation of these policies and/or misconduct may be grounds for disciplinary action including probation, suspension, or termination and reporting to the New York State Office of Professional Medical Conduct as required by law. All determinations regarding unprofessional behavior shall be fully supported by the Department. Upon a recommendation by the Department to the Associate Dean of Graduate Medical Education, probation, suspension or termination may be imposed. The resident shall be notified in writing of the determination, and the right to appeal. If a report has not already been made, absent an appeal, or following the sustaining of adverse action following an appeal, a report shall be made to the New York State Office of Professional Medical Conduct. A pending charge of unprofessional behavior does not preclude Upstate Medical University from non-renewing the resident at the end of the appointment under any circumstances.

B. Academic Standards and Evaluation: Routine Procedures for All Residents

The primary responsibility for defining the standards of academic performance and personal professional development rests with the individual Departments and program directors based on ACGME standards. When a resident's performance is not adequate, notification of the deficiencies must be made, in writing to the resident by the program director with copies to the Associate Dean for Graduate Medical Education. A plan to correct deficiencies, which include the manner and time frame in which the deficiencies will be corrected, and the consequences of not correcting the deficiencies within the time frame, should be a part of this notice. There may be a specific probation period, before a decision is made to recommend termination of a resident for academic performance, except that a resident on academic probation may be non-renewed at the end of the appointment under any circumstances.

1. **Criteria**

   A. Depending upon the program, performance criteria may include cognitive objectives, skills (credentialing requirements), and patterns of behavior indicative of professional attitudes. They should be clearly defined and given to the resident in written form.

   B. Criteria must be reasonable and related to patient care and the practice of medicine. They should include evidence of satisfactory progressive scholarship and professional growth including demonstrated ability to assume graded and increasing responsibility for patient care.

2. Assessment and Notification

   A. At least semiannually, the program director and faculty of each program should use appropriate procedures and criteria to evaluate the knowledge, skills and professional growth of its residents. The results of the evaluation should be in writing and communicated to each resident in a timely manner and the record of the evaluation should be accessible to the resident. The program director must provide a final evaluation for each resident who completes the program. The evaluation must include a review of the resident's performance during the final period of education and should verify that the resident has demonstrated sufficient professional ability to practice competently and independently. The final evaluation must be part of the resident's permanent record maintained by the institution. A copy of this evaluation form will be distributed to the Office of Graduate Medical Education

   B. Supporting documentation such as non-supervisory senior resident and attending physicians' evaluation forms as well as other appropriately solicited written comments must be collected and maintained. These documents may be released to the resident only with the written permission of the non-supervisory evaluator.

   C. Residents should be advanced to positions of higher responsibility only on the basis of an evaluation of their knowledge, ability and readiness to cope with increased responsibility and professional comportment.

IV. Remediation

1. Recommendations for remedial action and consequences of continued deficiency should be clearly defined for the resident in writing in each individual case. A copy of the notification to the resident should be submitted to the Graduate Medical Education Office.
2. A reasonable timetable for corrective action by the resident should be established. Absent extraordinary circumstances, this should be a period of at least three months.
3. If remedial action does not result in satisfactory performance, notifications of continued deficiency on the part of the resident and the consequences, (i.e., probation, suspension or proposed termination) should be provided **IN WRITING** to the resident and to the Office of Graduate Medical Education.
4. All informal and formal meetings with the resident related to deficiencies should be documented with dated notes or memoranda to file.

V. Intent not to Renew for Placement in a Residency Program

1. Upstate Medical University's clinical residency programs will provide a written notice of intent not to renew a resident's agreement for placement in a residency program no later than four months prior to the end of the resident's current agreement. Copies of this notice will be sent to the GME Office. However, if the primary reason(s) for the non-renewal occurs within the four months prior to the end of the agreement, the residency program will provide the resident with as much written notice of the intent not to renew as the circumstances will reasonably allow, prior to the end of the agreement.

2. Residents will be allowed to implement the following appeal procedure if they have received a written notice of intent not to renew for placement in a residency program:
   - An appeal letter from the resident must be sent to the Associate Dean of Graduate Medical Education within 10 working days of receipt of notice of intent.
   - The Associate Dean of Graduate Medical Education will review all appropriate departmental documentation supporting the notice of intent. The Associate Dean may consult with other individuals as appropriate.
   - The Associate Dean will provide a letter of decision within 30 days of receipt of request for review. This letter will be provided to both the resident and program director and will be placed in the resident's file. The Associate Dean's decision is final.

VI. Early Termination

1. If early termination from a residency program is being considered, the Program Director will notify the Associate Dean of Graduate Medical Education to discuss the findings and recommendations of the Program Director and faculty of said department. (The Associate Dean may consult with Legal Counsel and the Human Resources Department to discuss these findings.)
2. If early termination from a residency program prior to the academic year is being considered based on inadequate academic performance, the Program Director will notify the Associate Dean of Graduate Medical Education to discuss the findings and recommendations of the Program Director and faculty of said department. (The Associate Dean may consult with Legal Counsel and the Human Resources Department to discuss these findings.)
3. If early termination from a residency program prior to the academic year is being considered based on conduct which violates the Standards of Professional Conduct and/or Professional Ethics, and/or which is deemed to be a danger to patients, the Program Director will notify the Associate Dean of Graduate Medical Education to discuss the findings and recommendations of the Program Director and faculty of said department. (The Associate Dean may consult with Legal Counsel and the Human Resources Department to discuss these findings.)
4. After consultation with GME, the Program Director then notifies the resident of his or her **recommendation** regarding termination from a residency program. The notice will advise the resident that they may appeal the termination decision by requesting a review within 10 business days of the notice from the Office of the Dean of GME (See – Appeal Process for Early Termination).
5. If termination prior to the end of the academic year is considered based on the belief that a resident is impaired and/or his/her performance is a threat to patients and or staff, the resident **may** be suspended from all patient care responsibilities pending a **final** determination **regarding appropriate action.**
6. If early termination from a residency program is effectuated, the program must make a determination, in consultation with the GME Office about whether reporting to the Office of Professional Medical Conduct is required. The Associate Dean may consult with Legal Counsel to discuss the legal requirements for reporting. See also section VII.

VII. Appeal Process for Early Termination from a Residency Program

1. If a resident would like to appeal a termination from their fellowship program decision prior to the end of the academic year of his/her program, the fellow should make a written request for such to the Associate Dean for Graduate Medical Education. Such a request must be made in writing within 10 working days of notice of intent to terminate from the program.
2. The Office of Graduate Medical Education will select a three-member panel consisting of members of the Graduate Medical Education Committee. The members of this panel will consist of one resident and two program directors, from other than the petitioning resident's department. The date set will not be adjourned absent extraordinary circumstances.
3. A hearing will be scheduled within 30 days of notice of intent to terminate. The Program Director of said department, or his or her designee, will present the case for termination from the residency program. The resident is afforded the opportunity to bring witnesses to this hearing and any documentation s/he deems appropriate. The resident may have an advisor who may be present, but may advise the resident only and cannot participate in the hearing. Witnesses may make statement by telephone, and their non-availability shall not per se, be grounds for adjournment. Failure of the resident to appear shall result in forfeiture of the right to question the Department witnesses.
4. The three-member panel will render a majority decision based upon the information provided. This decision will be transmitted via written correspondence to the petitioning resident, the Program Director of said department, and the Associate Dean of GME within 10 working days of the hearing procedure.

5. If either party would like to appeal the panel's decision, a formal letter within 10 working days must be sent to the Associate Dean for Graduate Medical Education who will present the matter to the Dean of the College of Medicine. Failure to notify the Associate Dean within this time frame will terminate the appeal process and the panel's decision will become final.
6. If the matter is appealed, the Dean of the College of Medicine will then make a final decision within a reasonable period of time. The Dean of the College of Medicine will transmit his decision to the Associate Dean for Graduate Medical Education. The Associate Dean will transmit in writing to the petitioning resident and the Program Director of the relevant department notification of the Dean's final decision.
7. Copies of the notification of final decision are sent to the Program Chairperson, the Associate Vice President for Human Resources and the University Hospital Medical Staff Office.
8. If the notification of final decision supports early termination from a residency program, the Program Chairperson will notify the program faculty as well as appropriate staff coordinators at affiliated hospitals that the resident in question is no longer authorized to be present or provide patient care in their facilities.
9. If the notification of final decision supports early termination from a residency program, the Associate Dean for Graduate Medical Education will inform the Payroll Office of the date of suspension of pay. The Payroll Office will, in turn, inform the SUNY Central Office of Employee Relations and Human Resources of the change in the resident's status with a Form UP-2, *Notification of Professional Change of Status.* Administrative policy #E-08, "Employee Separation and Transfer Policy" will be implemented. A Form PR-75, *Payroll Action Form,* with appropriate information regarding the resident is sent to Audit and Control in Albany.

VIII. Reporting Requirements

1. The New York State Public Health Law requires that, "Hospitals and other facilities approved pursuant to this article (PHL 2803-e) shall make a report or cause a report to be made within thirty days of the occurrence of any of the following: the suspension, restriction, termination or curtailment of the training employment, association or professional privileges or the denial of the certification of completion of training of an individual licensed pursuant to the provisions of title eight of the education law or of a medical resident with such facility for reasons related in any way to alleged mental or physical impairment, incompetence, malpractice or misconduct or impairment of patient safety or welfare; the voluntary or involuntary resignation or withdrawal of association or of privileges with such facility to avoid the imposition of disciplinary measures; or the receipt of information which indicates that any professional licensee or medical resident has been convicted of a crime; the denial of staff privileges to a physician if the reasons stated for such denial related to alleged mental or physical impairment, incompetence, malpractice, misconduct or impairment of patient safety or welfare."
2. Depending upon the specialty involved, the Residency Review Committee may require notification of the departure of a resident from the program. Program directors are advised to check with their RRC in this regard.

IX. Responding to Verifications for Residency

1. For those residents who have been terminated prior to the completion of their residency, requests for information regarding their tenure at SUNY Upstate Medical University should be addressed or redirected to the Office of Graduate Medical Education for completion.
2. All other requests for verification will be completed by the appropriate department or the Office of Graduate Medical Education.

Complete Reading List of Pulmonary and Critical Care Topics Websites

- http://www.thoracic.org/education/career-development/residents/ats-reading-list/index.php This is a complete up to date bibliography maintained by ATS and broken down into subject heading (pulmonary, critical care and sleep disease are all covered). You can click on the disease process, e.g. COPD and get the bibliography for that topic. It is provided by the Am Thoracic Society. This is the main bibliography for the program and is continually updated so it will not go out of date.

- www.pneumotox.com
- www.radiologyassistant.nl
- www.chestray.com
- http://eradiology.bidmc.harvard.edu
- http://www.med-ed.virginia.edu/courses/rad/cxr/index.html

Program Aims

The Pulmonary and Critical Care training program strives to improve procedural skills via simulation training such as intubation/EBUS and fiber-optic bronchoscophy. We also want to achieve a higher quantity of scholarly activity to continue our excellence on the Pulmonary and Critical Care Boards. We encourage the fellow's involvement in national organizations and CHEST Challenge as well. Our goal is to provide a well-rounded educational experience ultimately shaping an extraordinary physician with an aim to grow our faculty numbers.