GOALS AND OBJECTIVES FOR RESPIRATORY ROTATION

Introduction:
This two-month rotation consists of rotations involving inpatient pulmonary unit, inpatient consult service, and weekly pulmonary outpatient clinic. Residents are scheduled to spend equal amount of time rotating on inpatient pulmonary unit and inpatient pulmonary consult service. The resident is expected to make an oral presentation on a clinical case and /or a relevant respiratory topic during weekly Respiratory rounds on at least one occasion during their rotation.

For pulmonary rotation, residents will be assigned to Mubarak Al-Kabeer Hospital, Al-Amiri Hospital, Al-Adan Hospital, Jahra Hospital or Farwanieyha Hospital.

Rotation Structure and Schedule:
On the inpatient pulmonary unit, residents are expected to round on an average 2-4 patients per day. At the discretion of the attending supervision physician, the resident is expected to admit patients presenting with pulmonary disease, including obstructive pulmonary disease, restrictive pulmonary disease, infectious lung diseases, and thromboembolic pulmonary disease. The resident is expected to pre-round on their patients daily, write progress notes in the chart and discuss daily progress of their patients on rounds with the rest of the pulmonary team lead by the consultant pulmonologist. It is expected that the resident completes their progress notes prior to rounds and, in certain instances, the residents may ask to complete a discharge summary when their patients are discharged from the service.

On the consult service, it is expected that resident sees an average of 2-4 new cases per day, and follow up on an average of 3-5 cases/day. The resident will initially perform all new consults. The patient is subsequently seen jointly by the rest of pulmonary team. Consultation note prepared by the resident will not be placed in the chart until signed by the attending. Emphasis is placed upon a pertinent history and physical with review of laboratory trends and imaging data. Residents are expected to learn to formulate appropriate management plans for patients with pulmonary diseases. The resident will also be called upon to provide accurate pre-operative pulmonary risk assessment for patients undergoing non-cardiac surgeries.

In the outpatient pulmonary clinic, the resident is expected to work with consultant pulmonologist on a one to one basis evaluating and managing patients presenting with common pulmonary problems and diseases including: Cough; Shortness of breath; Hypoxemia; Airflow obstruction (including optimal use of pharmacologic agents); Bronchiectasis; Pulmonary nodules and lung cancer; Acute and chronic pneumonia; Non-tuberculous mycobacterial infections; Interstitial lung disease (e.g., sarcoidosis); and Obstructive Sleep Apnea.

Sample Daily Schedule on pulmonary Consult Service:

7:30 am to 8:00 am: Resident attends morning report. Residents must maintain 70% mandatory attendance.
8:00 am to 12:00 am: Resident follows up on old patients and work up new consults.
12:30 pm to 2:00 pm: Team gather and round on all new and old patients.

Sample Daily Schedule on Inpatient pulmonary service:

7:30 am to 8:00 am: Resident attends morning report. Residents must maintain 70% mandatory attendance.
8:00 am to 9:00 am: Pre-Rounds on patients
9:00 am – Noon: Teaching rounds with rest of the team and consultant pulmonologist.
12:30 pm -2:00 pm: Teaching/Didactics/Follow up on patients.

Sample Daily Schedule on Outpatient Pulmonary Clinic:
7:30 am to 8:00 am: Resident attends morning report. Residents must maintain 70% mandatory attendance.
8:00 am to 1:00 pm: See patients in ambulatory pulmonary clinic along with supervising attending pulmonologist.
1:00 pm to 2:00 pm: Didactic teaching session.

On-call Schedule:
There is no assigned call or weekend coverage on pulmonary rotation. Hence, the Internal Medicine resident must take general medicine call, as assigned by the internal medicine program director.

Objectives and Core Competency:
Residents are evaluated monthly based on CAN med core competency: (1) Medical expert; (2) Communicator; (3) Collaborator; (4) Leader; (5) Health advocate; (6) Scholar; and (7) Professional.

22. **Medical Expert:**

- **R1-R2 residents:**

By the end of the rotation, the resident will be able to:

49) **The resident must be able to complete a comprehensive pulmonary consultation including proper patient identification, chief complaint, history of present illness, past medical history, review of systems, personal and social history, and complete physical examination with focus on the pulmonary examination. An assessment and diagnostic/treatment plan should be attempted.**
50) **The resident must be able to interpret pulmonary function tests, pleural fluid analysis, arterial blood gases, and acid base abnormalities. The resident must be able to read chest x-rays and understand the general diagnostic features of ventilation/perfusion scans and chest CT. Residents should be able to understand and recognize various disorders of breathing that occur during sleep, as well as the indications for referral for a sleep study.**
51) **The resident must be able to evaluate and manage obstructive pulmonary disease, restrictive pulmonary disease, infectious lung diseases, lung cancer, acute and chronic respiratory failure, sleep disorders, and thromboembolic pulmonary disease.**
52) **The resident will recognize crackles, rhonchi, wheezing, bronchial breathing, stridor, friction rub, alterations in the intensity of breath sounds, and normal and abnormal diaphragmatic motion. In addition, the resident should be able to identify disorders of neuromuscular**

respiratory control including: Kussmaul breathing, Cheyne-Stokes ventilation, use of accessory respiratory muscles of respiration, and paradoxical abdominal/thoracic muscle function.

- **R3-R4 residents:**

By the end of the rotation, the resident will be able to:

44) Meet competency stated for R1-R2 residents.
45) The resident will demonstrate the ability to describe the etiology, epidemiology, pathophysiology, clinical features, relevant laboratory knowledge, and the therapeutic options for major pulmonary disease, including:

I. Acute and chronic dyspnea
II. Chronic cough
III. Wheeze
IV. Hemoptysis
V. Interpretation of Pulmonary Function Testing
VI. Pneumonia
VII. Chronic obstructive lung disease
VIII. Bronchial asthma
IX. Interstitial lung disease
X. Pulmonary embolism
XI. Pneumothorax
XII. Pleural effusion
XIII. Sarcoidosis
XIV. Connective tissue and granulomatous diseases
XV. Occupational lung diseases
XVI. Pulmonary embolism
XVII. Pulmonary hypertension
XVIII. Lung cancer: primary and metastatic including paraneoplastic syndromes

46) Residents demonstrate understanding id the action and pharmacology of common pulmonary medications including inhaled medications, steroids, other anti-inflammatory agents, and ancillary pharmacological therapies.
47) The resident will understand the use and indications for pulmonary rehabilitation, postural drainage, incentive spirometry and CPAP therapy. In addition, the resident will demonstrate understanding of the major modalities of oxygen supplementation and ventilation techniques, including: nasal canula, venture, aerosol, and non-rebreathing masks, nasal and facial CPAP and other commonly used modes of non-invasive-positive pressure ventilation.
48) Understand the indications and contra-indications for respiratory procedures (thoracentesis, chest tube insertion, pleurodesis, bronchoscopy and biopsy, open lung biopsy).
49) Develop the following technical skills
    I. Diagnostic and therapeutic thoracentesis
    II. TB skin tests
    III. Management of chest tubes & exposure to chest tube placement
    IV. Arterial puncture

- **R5 resident:**

By the end of the rotation, the resident will be able to develop proficiency and competency in the following areas:

20) **Meet competency stated for R3-R4 residents.**
21) **Demonstrate diagnostic and therapeutic skills for the assessment and management of respiratory emergencies including upper airway obstruction, acute severe asthma, tension pneumothorax, massive hemoptysis, and respiratory arrest.**

2. Communicator:

By the end of this rotation, the resident at all levels will be able to perform the following:

24) **Establish a therapeutic relationship with patients and their families, emphasizing active listening, understanding, trust, empathy, and confidentiality.**
25) **Communicate in an effective manner, verbally and in written form, with other members of the health care team. Residents are expected to act as a constructive and proactive member of the pulmonary rounding team.**
26) **The resident will develop and demonstrate skill communicating with patients who severe and life threatening pulmonary conditions and communicate effectively with the families of very ill patients.**
27) **Communicate effectively with all non-physician members of the health care team to assure comprehensive and timely care of patients.**
28) **Present information concisely and clearly both verbally and in writing on patients.**

23. Collaborator:

By the end of this rotation, the resident at all levels will be able to perform the following:

15) **Work effectively with, and enhance the interdisciplinary team involved in the delivery of medical care to respiratory patients.**
16) **Work effectively in an interdisciplinary team, demonstrating an understanding and respecting the roles of other health disciplines.**
17) **Residents will utilize ancillary services such as respiratory therapy to facilitate a multidisciplinary approach to the care of patient with pulmonary disease.**

4. Leader:

By the end of this rotation, the resident at all levels will be able to perform the following:

43) **Residents will demonstrate timeliness in completing assignments & performing consultations (which should typically be completed and reviewed on the day received), and progress notes.**
44) **Resident will demonstrate the ability to prioritize and perform necessary follow-up.**
45) **Resident will demonstrate a commitment to ethical principles pertaining to confidentiality of patient information and informed consent.**

46) Residents will demonstrate self-initiative in the use of information technology to access and retrieve materials for self- education regarding pulmonary cases and demonstrate skills of critically appraising medical literature, and apply evidence to the care of patients.

5. Health Advocate:

By the end of this rotation, the resident at all levels will be able to perform the following:

26) Residents are expected appropriately access different facets of the health care system necessary for the care of their patients. This includes but not limited to PT/OT services and discharge planning services in the inpatient setting, and proper and effective engagement of system resources in the outpatient care environment.
27) Residents are expected to utilize health care resources effectively and efficiently, demonstrating an awareness of the most cost-effective way of managing patients.

6. Scholar:

By the end of this rotation, the resident at all levels will be able to perform the following:

14) Residents will demonstrate self-initiative in the use of information technology to access and retrieve materials for self- education regarding pulmonary cases and demonstrate skills of critically appraising medical literature, and apply evidence to the care of patients.
15) Facilitate the learning of students and other health care professionals.

7. Professional:

By the end of this rotation, the resident at all levels will be able to perform the following:

26) Throughout the rotation, residents are expected to exhibit reliability in their clinical duties, as well as integrity and respect in their interactions with patients, their family members, colleagues, and all other members of the healthcare team.
27) Residents will be able to demonstrate appropriate consultative principles of communication and responsiveness to professional consultative requests.
28) Demonstrate appropriate professional attitudes with respect to attendance and punctuality.

Evaluations:

Evaluations should be done on an ongoing basis and residents should ensure they receive and provide verbal mid-rotation feedback to discuss strengths & weaknesses and ensure objectives are being met. At the end of the rotation, a written evaluation will be completed by the attending, with whom the resident spent much of their rotation. It is also expected that the residents will complete evaluations on all attendings with whom they have worked.