Henry Ford Hospital

Department of Internal Medicine

Internal Medicine Residency Program

Competency Based, Milestone specific Integrated Curriculum

Rotation: Pulmonary Inpatient (F2)

Anticipated Learners: Categorical PGY1- PGY-3. The team will consist of a senior staff physician (or a designated "junior attending,") a senior resident (PGY2 or PGY3,) and interns (PGY1 residents.) The team will often include year-3 and year-4 medical students as well

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Staff Reviewer:

CMR Reviewer:

Location: Henry Ford Main Campus

Rotation duration: one month

Rotation schedule:

Rotators will be assigned to one of two inpatient teams. All Internal Medicine residents will have a half-day of continuity clinic during this rotation. Residents are expected to attend the Internal Medicine Department's noon conferences, morning reports and Grand Rounds. In additional, all interns and residents are expected to attend a daily teaching session at 2 pm in the conference room (Monday through Thursday, see hfhpulm.com under F2 for the schedule). All interns and residents are expected to attend the F2 house officer orientation. Senior residents are expected to attend (and lead) collaborative team meetings each weekday at 11:00 AM.

Time away allowed: No vacation time during this rotation.

Rotation Goals and Educational Purpose

This rotation is required for all internal medicine residents. Most learning will happen through direct patient care which is supervised by a senior staff pulmonologist. On this rotation residents will have the opportunity to develop their medical knowledge and patient care skills around pulmonary diseases including pathophysiology, differential diagnosis, and ability to interpret and appropriately order imaging studies. Clinical staff will oversee management and ensure adequate transitions of care take place.

Learning Objectives – Following completion of the Pulmonary IPD rotation, the intern & resident will be expected to :

1. Interns will be able to synthesize all available data, including interview, physical examination, and preliminary laboratory data, to define each patient's central clinical problem (Patient Care)
2. Interns will understand the relevant pathophysiology and basic science for common medical conditions (Medical Knowledge)
3. Interns will gain the ability to effectively and efficiently search evidence-based summary medical information resources (Practice Based Learning and Improvement)
4. Interns will provide legible, accurate, complete, and timely written communication that is congruent with medical standards (Interpersonal communication skill and professionalism)
5. Interns will be able to interpret chest xray and CT chest images, and understand the indications for ordering these and other more advanced diagnostic tests. (patient care)
6. All residents will be able to effectively communicate the plan of care to all members of the health care team (Interpersonal Communication Skills)
7. Senior residents will be able to modify differential diagnosis and care plan based upon clinical course and data. (Patient Care)
8. Senior residents will demonstrate sufficient knowledge to evaluate complex or rare medical conditions and multiple coexistent conditions. (Medical Knowledge)
9. Senior residents will work effectively as a member within the inter-professional team to ensure safe patient care (System Based Practice)
10. Senior residents will minimize unnecessary care including tests, procedures, therapies, and ambulatory or hospital encounters (System Based Practice)
11. Senior residents will effectively communicate with other caregivers in order to maintain appropriate continuity during transitions of care (System Based Practice)

Teaching & Assessment methods for the above Learning objectives

- Daily presentations and discussions on rounds with observation by senior staff to review history, physical exam, assessment/plan, and overall presentation skills.
- Daily discussion and review of pulmonary pathophysiology as appropriate to patients on service.
- Utilization of online resources including online reading list (below) to obtain evidence based medicine.
- Demonstration of appropriate communication with members of health care team.
- Observation by senior staff for completion and accuracy of timely written notes and discharges summaries.
- Review of chest X-rays and CT images during rounds with observation of resident's ability to interpret data and knowledge of appropriateness of imaging.
- Direct observation of house officers, especially with regard to management and ordering tests, procedures, and therapies, with immediate feedback from senior staff.
- Team discussion regarding appropriate treatment plans for the team's patients.

- Team-based learning discussion focusing on communication with other caregivers and inter-professional team, during rounds or at other times during the week agreed upon by the team

Reading List/On-line Resources

Multiple resources are available to supplement education for the resident during this rotation. Updated April 2019:

Core Reading List:

- **The Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2019. https://goldcopd.org/wp-content/uploads/2018/11/GOLD-2019-v1.7-FINAL-14Nov2018-WMS.pdf**

- **Celli BR. Update on the management of COPD. Chest. 133(6):1451-62, 2008 Jun. UI: 18574288**
- **Management of community-acquired pneumonia in adults. Waterer GW. Rello J. Wunderink RG. American Journal of Respiratory & Critical Care Medicine. 183(2):157-64, 2011 Jan 15.] UI: 20693379**
- **Management of Adults With Hospital-acquired and Ventilator-associated Pneumonia: 2016 Clinical Practice Guidelines by the Infectious Diseases Society of America and the American Thoracic Society. Published CID, 7/14/2016**
- **Asthma. New England Journal of Medicine. 360(10):1002-14, 2009 Mar 5. UI: 19264689**
- **International ERS/ATS guidelines on definition, evaluation and treatment of severe asthma. Eur Respir J 2014;43: 343–373. Chung KF, Wenzel SE, Brozek JL.**
- **Pleural effusions. Light RW. Medical Clinics of North America. 95(6):1055-70, 2011 Nov. UI: 22032427. Wiener et al. The choosing wisely top five list in adult pulmonary medicine. Chest 2014; 145:1383-1391.**
- **Kearon et al. Antithrombotic therapy for VTE disease. Chest 2016; 149:315-352**

Supplementary Reading List:

I. COPD

- **Quon B, Gan W, Sin D. Contemporary Management of Acute Exacerbations of COPD. CHEST 133(3):756-66, Mar 2008.**

- **Decramer M. Janssens W. Miravitlles M. Chronic obstructive pulmonary disease. Lancet. 379(9823):1341-51, 2012 Apr 7. UI: 22314182**

- **Corticosteroids in the treatment of acute exacerbations of chronic obstructive pulmonary disease. Woods J et al. International Journal of COPD 2014:9 421–4.**

- **Effect of roflumilast on exacerbations in patients with severe chronic obstructive pulmonary disease uncontrolled by combination therapy (REACT): a multicentre randomised controlled trial. Lancet 2015; 385:857-866.**

- **Azithromycin for prevention of exacerbations of COPD. N Engl J Med 2011;365:689-98.**

II. Pneumonia

- **Health care-associated pneumonia: an evidence-based review. Attridge RT. Frei CR. American Journal of Medicine. 124(8):689-97, 2011 Aug. UI: 21663884**

- **Update in community-acquired and nosocomial pneumonia 2009. Torres A. Rello J. American Journal of Respiratory & Critical Care Medicine. 181(8):782-7, 2010 Apr 15. UI: 20382801**

III. Asthma

- Rodrigo, Gustavo J. MD; Rodrigo, Carlos MD; Hall, Jesse B. MD, FCCP. Acute Asthma in Adults. CHEST. 125(3):1081-1102, March 2004.
- Role of Biologics in Asthma, Mary Clare McGregor1, James G. Krings1, Parameswaran Nair2, and Mario Castro1. Am J Respir Crit Care Med Vol 199, Iss 4, pp 433–445, Feb 15, 2019

- Understanding asthma phenotypes: the World Asthma Phenotypes (WASP) international collaboration, ERJ Open Res. 2018 Jul; 4(3): 00013-2018. PMCID: PMC6104297

IV. Pulmonary Function Tests

- Pellegrino R, Viegi G, Brusasco V, et al. Interpretative strategies for lung function tests. Eur Respir J 2005: 26:948-68.
- Spirometry: don't blow it!. Lange NE. Mulholland M. Kreider ME. Chest. 136(2):608-14, 2009 Aug. UI: 19666760

V. Thromboembolic Disease

- Approach to outcome measurement in the prevention of thrombosis in surgical and medical patients: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice

- Antithrombotic Therapy for VTE Disease CHEST Guideline and Expert Panel Report 2016, CHEST. https://journal.chestnet.org/article/S0012-3692(15)00335-9/pdf

- Heparin for the prevention of venous thromboembolism in general medical patients (excluding stroke and myocardial infarction). Alikhan R. Cohen AT. Cochrane Database of Systematic Reviews. (3):CD003747, 2009. UI: 19588346

- **VI. Pleural Disease**

Diagnosis of pneumothorax by radiography and ultrasonography: a meta-analysis. Ding W. Shen Y. Yang J. He X. Zhang M. Chest. 140(4):859-66, 2011 Oct. UI: 21546439

- Shahriar Zehtabchi, Claritza L. Rios. Management of Emergency Department Patients With Primary Spontaneous Pneumothorax: Needle Aspiration or Tube Thoracostomy. Annals of Emergency Medicine. 51(1):91-100. January 2008.
- Todd W. Thomsen, M.D., Jennifer DeLaPena, M.D., and Gary S. Setnik, M.D. Thoracentesis. N Engl J Med. 355:e16. 2006.

- Pleural effusions. Light RW. Medical Clinics of North America. 95(6):1055-70, 2011 Nov. UI: 22032427

VII. Interstitial Lung Disease/Sarcoidosis

- Pulmonary sarcoidosis, Paolo Spagnolo, Giulio Rossi, Rocco Trisolini, Nicola Sverzellati, Robert P Baughman, Athol U Wells , www.thelancet.com/respiratory Vol 6 May 2018.

- A concise review of pulmonary sarcoidosis. Baughman RP. Culver DA. Judson MA. American Journal of Respiratory & Critical Care Medicine. 183(5):573-81, 2011 Mar 1. UI: 21037016

- Recent advances in sarcoidosis. Morgenthau AS. Iannuzzi MC. Chest. 139(1):174-82, 2011 Jan. UI: 21208877

- Idiopathic Pulmonary Fibrosis, David J. Lederer, M.D., and Fernando J. Martinez, M.D. May 10, 2018 N Engl J Med 2018; 378:1811-1823. DOI: 10.1056/NEJMra1705751

- Interstitial lung disease: the initial approach. Alhamad EH. Cosgrove GP. Medical Clinics of North America. 95(6):1071-93, 2011 Nov. UI: 22032428

- How to investigate a patient with suspected interstitial lung disease. Dempsey OJ. Kerr KM. Remmen H. Denison AR. BMJ. 340:c2843, 2010. UI: 20534676

- **Update in diffuse parenchymal lung disease 2010. Markart P. Wygrecka M. Guenther A. American Journal of Respiratory & Critical Care Medicine. 183(10):1316-21, 2011 May 15. UI: 21596834**

- **The idiopathic interstitial pneumonias: understanding key radiological features. Dixon S. Benamore R. Clinical Radiology. 65(10):823-31, 2010 Oct. UI: 20797469**

- **American Journal of Resp and Critical Care Medicine. Vol 183: 788-824, 2011. An Official ATS/ERS/JRS/ALAT Statement: Idiopathic Pulmonary Fibrosis: Evidence-based Guidelines for Diagnosis and Management.**

VIII. Sleep Apnea

Update in sleep medicine 2010. Mokhlesi B. Gozal D. American Journal of Respiratory & Critical Care Medicine. 183(11):1472-6, 2011 Jun 1. UI: 21642256

Updates on definition, consequences, and management of obstructive sleep apnea. Park JG. Ramar K. Olson EJ. Mayo Clinic Proceedings. 86(6):549-54; quiz 554-5, 2011 Jun. UI: 21628617

IX. Tuberculosis

Update in tuberculosis and nontuberculous mycobacterial disease 2010. Yew WW. Sotgiu G. Migliori GB. American Journal of Respiratory & Critical Care Medicine. 184(2):180-5, 2011 Jul 15. UI: 21765032

Tuberculosis. Lawn SD. Zumla AI. Lancet. 378(9785):57-72, 2011 Jul 2. UI: 21420161

Clinical practice. Latent tuberculosis infection in the United States. Horsburgh CR Jr. Rubin EJ. New England Journal of Medicine. 364(15):1441-8, 2011 Apr 14. UI: 21488766

Current concepts in the management of tuberculosis. Sia IG. Wieland ML. Mayo Clinic Proceedings. 86(4):348-61, 2011 Apr. UI: 21454737

X. Lung Transplantation

Lung transplantation. Kotloff RM. Thabut G. American Journal of Respiratory & Critical Care Medicine. 184(2):159-71, 2011 Jul 15. UI: 21471083

Pulmonary complications of lung transplantation. Ahmad S. Shlobin OA. Nathan SD. Chest. 139(2):402-11, 2011 Feb. UI: 21285054

Nathan, Steven D. MD, FCCP. Lung Transplantation: Disease-Specific Considerations for Referral. CHEST. 127(3):1006-16. March 2005.

XI. Lung Cancer

Detterbeck, Frank C. MD, FCCP; Boffa, Daniel J. MD; Tanoue, Lynn T. MD, FCCP. The New Lung Cancer Staging System. Chest. 136(1):260-271, July 2009

W. Michael Alberts. Diagnosis and Management of Lung Cancer Executive Summary: ACCP Evidence-Based Clinical Practice Guidelines (2nd Edition). CHEST. 1S–19. Sep 2007.

Gould MK. Diagnosis and Management of Lung Cancer: ACCP Guidelines (2nd Edition). Evaluation of Patients With Pulmonary Nodules: When Is It Lung Cancer? CHEST. Evidence-Based Clinical Practice Guidelines (2nd Edition). CHEST. 132(3): 108S-130S. Sep 2007.

XII. Pulmonary Hypertension

Chronic thromboembolic pulmonary hypertension. Piazza G. Goldhaber SZ. New England Journal of Medicine. 364(4):351-60, 2011 Jan 27.

2015 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension. Galiè N, Humbert M, Vachiery JL, et al. Eur Respir J 2015; 46: 903-975.

Pharmacologic Therapy for Pulmonary Arterial Hypertension in Adults CHEST Guideline and Expert Panel Report. Taichman D et al. CHEST 2014; 146 (2): 449 - 475

XIII. Preoperative Pulmonary Evaluation

Bapoje, Srinivas R. MD, MPH; Whitaker, Julia Feliz MD; Schulz, Tara MD; Chu, Eugene S. MD; Albert, Richard K. MD, FCCP. Preoperative Evaluation of the Patient With Pulmonary Disease. CHEST. 132(5): 1637-45, November 2007.

XIV. Interventional Pulmonary

Advances in diagnostic bronchoscopy. Haas AR. Vachani A. Sterman DH. American Journal of Respiratory & Critical Care Medicine. 182(5):589-97, 2010 Sep 1. UI: 20378726

Airway stents. Lee P. Kupeli E. Mehta AC. Clinics in Chest Medicine. 31(1):141-50, Table of Contents, 2010 Mar. UI: 20172440

Managing obstruction of the central airways. Williamson JP. Phillips MJ. Hillman DR. Eastwood PR. Internal Medicine Journal. 40(6):399-410, 2010 Jun. UI: 19849741

Massive hemoptysis: an update on the role of bronchoscopy in diagnosis and management. Sakr L. Dutau H. Respiration. 80(1):38-58, 2010. UI: 20090288

Evaluation Tool

All evaluations will occur through the Henry Ford Health System's graduate medical education evaluation tool (MyEvaluations.)

All Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. The resident will professionally represent the Division of General Medicine and Henry Ford Health System during their time on this rotation. Residents will be expected to provide the skills, care and attitudes set forth by the ACGME's 6 core competencies (see link at section IV.A.5: **https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/140_internal_medicine_07012013.pdf)** See Appendix 1 for additional/specific expectations and responsibilities.

Appendix 1: Expectations & Responsibilities

Intern Expectations & Responsibilities

a. Residents will be punctual, be responsive to their patient's needs, adhere to the highest regard of ethics, and show sensitivity to the diverse group of patients cared for during this rotation.
b. Complete timely H&Ps on all new admissions and transfers from other services and avoid unapproved abbreviations in EMR.
c. Adhere to policies and procedures regarding order writing, daily progress notes, and chain of command.
d. Attend 100% of academic sessions including daily teaching sessions which occur at 2 pm in conference room (M-Th).
e. Teach junior medical students.
f. Adhere to duty hours.

g. Cover for fellow interns as delegated by the senior resident when needed (when team members are doing continuity clinic or on a scheduled day off.)
h. Route via EPIC/Email/or phone all PCPs and pulmonologist of patient admission and discharge.
i. Round on transplant patients being worked up for lung transplant, with lung transplant as consultants who will help team with admission orders (using order set Lung Transplant Work Up).
j. Ensure follow up appointments for F2 patients by Referring Physicians Office. Place order in EPIC: follow-up primary physician (PCP) by 11am for same day appointment scheduling (can order earlier during admission as well). If after 11 am, call RPO at 313-876-4575.
k. Use q4 ATC nebs for the first 24 hours in patients admitted with COPD or asthma exacerbations.
l. Sign out when going to clinic and discharge patients before clinic when feasible.
m. Order evening labs, when appropriate, the day prior to avoid stat AM labs.

Resident Expectations & Responsibilities

a. Residents will be punctual, be responsive to their patient's needs, adhere to the highest regard of ethics, and show sensitivity to the diverse group of patients cared for during this rotation.
b. Carry the admission beeper and accept reports of new admissions.
c. Review each new admission with interns/students within 2 hours of reaching the floor. Assess patients and ensure they understand their diagnosis upon admission.
d. Ensure that all diagnostic and therapeutic interventions are carried out as planned.
e. Teach/supervise senior medical students and interns.
f. Lead multidisciplinary collaborative rounds Monday through Friday at 11am.
g. Be present for morning teaching/management rounds, afternoon sign-out rounds, and attend 100% of academic sessions.
h. Personally adhere to duty hours and oversee intern compliance with duty hours.
i. Delegate coverage of patients when interns are away doing continuity clinic or on a day off.
j. Ensure that all Remodulin (treprostinil) and Flolan (ipoprostinil) orders have the pulmonary hypertension staff called to verify dosing prior to order going to pharmacy; hard stop in EPIC
k. Ensure discharge as early as possible and coordinate post discharge care early in the admission when appropriate. Senior resident has the *autonomy* to discharge patients prior to staff rounding if goals for discharge are met in am.
l. Ensure that Nancy MacDonald (pharmacy) is consulted for inhaler teaching on all patients with COPD who will be discharged home on inhalers. This is part of the COPD readmission team initiative.
m. Ensure that a COPD readmission nurse/case manager (Louis) will evaluate COPD patients with >1 admission in past 6 months do teaching and coordination with home care to help prevent readmissions.

n. Call your senior staff with unexpected changes in patient status/ICU transfer/death, etc.

12. Faculty/Staff Responsibilities

a. Daily review and document in the inpatient charts.
b. Perform daily physician review and participate in multidisciplinary collaborative rounds Monday through Friday at 11am.
c. Provide feedback to intern and senior resident regarding their skills and behaviors set forth in curriculum objectives
d. Be available to the residents and patients at all times.
e. Teach residents to utilize medical resources (including tests and consult services) efficiently.
f. Adhere to the curriculum as a teaching and evaluation tool.
g. Complete resident evaluation forms in a timely fashion and provide constructive feedback to interns and residents at the end of the rotation.
h. Adhere to rounding times: 8:30 AM start time during the week, ending prior to 11:00 AM.
i. Enforce and monitor duty hours for all students and house officers.
j. Make OPD follow up appointments of patients with a pulmonologist on rounds prior to patient discharge.

AUTHOR: The following information will outline educational goals as well as responsibilities for all participants of this rotation. Please contact Daniel Ouellette,MD (douelle1@hfhs.org) if there are any questions or concerns.