

Henry Ford Hospital
Department of Pulmonary Medicine
Pulmonary and Critical Care Fellowship Program
Competency Based, Milestone specific Integrated Curriculum

Rotation: K17 Pulmonary Clinic

Anticipated Learners: Pulmonary Fellows 1st (PGY4), 2nd year (PGY5) or 3rd year (PGY6)

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Staff Reviewer: Javier Diaz, MD

Faculty Contact: Patrick Bradley, MD

Location: Henry Ford Main Campus K17 Pulmonary Clinic

Rotation duration: 2-4 weeks

Rotation schedule: Teaching occurs in a variety of methods and forms during the rotation but is dominated by practice-based learning and independent reading. Patients coming to the outpatient Pulmonary Clinic are assigned to see specific trainees. Fellows perform comprehensive histories and physical exams on their assigned patients. They present their findings to assigned senior staff Pulmonologists (K17 OPD [Staff Schedule](#)) The senior staff will see and evaluate all patients with the fellow. Senior staff will provide immediate feedback to the fellow in important areas such as medical knowledge, professionalism, patient care skills (history taking, physical exam, and procedures), problem solving, critical thinking, billing and communication. Over the course of the rotation, supervising faculty assess the fellows' practice-based learning and improvement abilities as well as their ability to adapt and contribute to a systems-based practice.

There will be standard education with a didactic (Ambulatory Pulmonary Teaching Scripts) from 8-830 Monday-Friday in a schedule provided prior to the rotation. The fellow should review the material beforehand to allow for robust conversation. There will be patient care discussions from 1-130PM Monday-Thursday to discuss results and case follow up. These discussions will be in Bower Library. Other learning opportunities are available through attendance at weekly Pulmonary Seminars (Monday & Wednesday Bower Library 11:30-12PM, Friday 12-2PM).

Rotation Goals and Educational Purpose

During this ambulatory rotation, Fellows will develop the necessary knowledge, skills, and professional attitude important in the care of patients with respiratory illnesses.

Learning Objectives – Following completion of Pulmonary Clinic rotation, the fellow will be expected to:

PGY 4-6

Patient Care:

- Trainees should provide care that is compassionate, appropriate, and effective for the treatment of respiratory illnesses and promotion of respiratory health
- Enhance history-taking and physical exam with emphasis on respiratory illnesses, allergy, environmental, and occupational exposures

Medical Knowledge:

- Using patient information and medical knowledge, develop critical thinking skills with emphasis on appropriate application of diagnostic testing and treatment to specific patient situations
- Trainees will develop skills in the use and interpretation of pulmonary function testing (Spirometry, Lung Volumes, Diffusion, Respiratory Muscle Forces, and Methacholine Challenge), X-rays, and CT imaging
- Trainees will develop comprehensive knowledge of respiratory diseases. Components will include established and evolving knowledge in biomedical, clinical, epidemiological and socio-behavioral sciences

Systems-Based Practice:

- Trainees will demonstrate awareness and responsiveness to the larger context and system of health care when caring for specific patients, employ cost-effective care strategies and participate in collaborative care plans with other health providers.
- Trainees will contribute to quality assessment processes measuring quality of care.

Practice-Based Learning and Improvement:

- Trainees will investigate and evaluate their own patient care experiences, along with their appraisal and assimilation of scientific evidence

Interpersonal and Communication Skills:

- Trainees will effectively exchange information with patients, their families, and other care partners in a polite, efficient, and professional
- Trainees will efficiently communicate care plans with other physicians and care providers

Professionalism:

- Trainees will demonstrate commitment to patient care, unconditional regard for their patients, adherence to ethical principles, and sensitivity to a diverse group of patients.

Supervision

Direct supervision by teaching faculty pulmonologist

Evaluation methods for the above Learning objectives

1. Fellows will perform independent evaluations of patients, integrating their medical knowledge and key patient information, develop problem lists and a differential diagnosis, and propose a treatment plan. The fellow summarizes their approach to the dedicated supervising faculty, who then evaluates the patient with the fellow.
2. Fellows are expected to review daily topics prior to discussion of the topic to better enhance discussion with faculty.
3. Using explicit and implicit methods, faculty will encourage important self-directed learning skills with literature searches, web-based references and learning tools, textbooks, and the provided curriculum.

Program specific information:

1. Vacation policy: vacation not allowed
2. Expectations and Responsibilities (See Appendix 1)
3. Weekly Block schedule (see Appendix 2)
4. Reading List and On-line Resources (See Appendix 3)

Evaluation Tool

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

All fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. The fellow will professionally represent the Division of Pulmonary and Critical Care Medicine and Henry Ford Health System during their time on this rotation. Fellows will be expected to provide the skills, care and attitudes set forth by the ACGME's 6 core competencies. See Appendix 1 for additional/specific expectations and responsibilities.

Appendix 1: Expectations & Responsibilities

Fellow Expectations & Responsibilities

- a. Fellows will be punctual, enthusiastic and prompt.
- b. Complete timely office and consultation notes.
- c. Work respectfully with all members of the interdisciplinary team
- d. Attend 100% of academic sessions when no other conflicts occur.
- e. Demonstrate core humanistic values of integrity, compassion, and respect.
- f. Complete evaluations at the end of the rotation.
- g. Read assigned didactics

Faculty/Staff Responsibilities

- a. Review the curriculum, roles, and responsibilities on the first week of the rotation.
- b. Provide detailed oral and written feedback to the fellows you work with.
- c. Complete all evaluations in a timely manner
- d. Serve as a role model and resource for professionalism
- e. Be available to the fellows and patients at all times during clinic.

Appendix 2: Weekly Block Schedule

Weekly Schedule (K-17 Outpatient Pulmonary Clinic Rotation):

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00a – 8:30a	<u>Didactics:</u> Attending, Fellow, APP, other				
8:30a – 11:30a	Clinic*	Clinic*	Clinic*	Clinic*	Clinic*
11:30a – 12p	@Triage	@Triage	@Triage	@Triage	Fellowship Lectures
12p – 1p	Lunch	Lunch	Lunch	Lunch	Fellowship Lectures
1p – 1:30p	<u>Didactics:</u> Attending, Fellow, APP, other	<u>Didactics:</u> Attending, Fellow, APP, other	<u>Didactics:</u> Attending, Fellow, APP, other	<u>Didactics:</u> Attending, Fellow, APP, other	Fellowship Lectures
1:30p – 2p	<u>Attending reading PFT</u>	<u>Attending reading PFT</u>	<u>Attending reading PFT</u>	<u>Attending reading PFT</u>	Fellowship Lectures
1:30p – 5p	Clinic*	Clinic*	Clinic* #Fellows ADMINISTRATIVE	Clinic*	NO Clinic Fellowship Lectures

- *Clinic Roles:
 - Fellows: three 1 hour clinic slots for NEW patients (or 2 NEW patients and 2 RETURN patients)
 - APP: 1/2 hour slots for RETURN patients
 - Other (residents, rotating fellows): two to three 1 hour slots for NEW patients
 - Attending: Supervision of fellows, APP, other

- @Triage: Time for fellows to triage new outpatient referrals from RPO who cannot be scheduled on a timely fashion, electronic consults (Epic), and other. This is to be done under the supervision of attending.

- # Fellows Administrative: Time for fellows for administrative outpatient work:
 - Follow up on results (labs, images, bronchoscopy results, etc)
 - Communicate results to patients: phone calls, letters, etc
 - Communicate with Consultants about needs of patients
 - Send letters to referring physicians
 - **No NEW patients should be scheduled in clinic during Fellows ADMINISTRATIVE, only RETURNS (to be seen by APP)**

- Fellowship Lectures: Includes the entire Pulmonary Division. No patients should be scheduled in Clinic.

- **Morning Didactics:**
 - Will follow Ambulatory Pulmonary Teaching Scripts-ATS (for first and second year fellows)
 - Fellow and attending will come prepared to go over the scripts
 - One-on-one discussion between attending and fellow

- **Afternoon Didactics:**
 - Will vary depending on educational goals that fellow and attending have established for the entire rotation
 - Will include:
 - Discussion of an article from Reading List (Appendix 3)
 - Discussion of clinical cases from ATS Clinical Cases (<https://www.thoracic.org/professionals/clinical-resources/clinical-cases/>)
 - Watching video followed by discussion of one of ATS Video Lecture Series (<https://www.thoracic.org/professionals/clinical-resources/video-lecture-series/>)

Appendix 3: Reading List and On-Line Resources

Several resources of education material are available to trainees. The Ambulatory Pulmonary Teaching Scripts are located in the hfhpulm.com website. Furthermore, trainees are provided with a list of key manuscripts from the literature that serves as a foundation for other medical information. Several leading textbooks in Internal Medicine and Respiratory are available in the fellows' offices. electronic subscriptions through all computer terminals. A campus-wide subscription to Up- To-Date is available to trainees. The American Thoracic Society sponsors a web-based case series available to all professionals at: [ATS Reading List \(thoracic.org\)](http://thoracic.org)

In addition, fellows and students are provided with a collection of manuscript (please see below), each covering an important topic in ambulatory pulmonary medicine. In addition, fellows have access to the Bower Library, which is the principle library for the Division of Pulmonary, Critical Care Medicine, Allergy and Immunology.

Asthma

Global Strategy For Asthma Management and Prevention (2022 Update). Comprehensive updated resource. The most recent update provides updated definitions for mild and severe asthma, as well as recommendations on the use of LAMAs, azithromycin, and absolute eosinophil cut-offs for determining candidacy for biologics.

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2020 Focused Updates to the Asthma Management Guidelines: A Report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group. This update to the 2007 guidelines focuses on the use of FeNO, allergen mitigation, use of continuous vs. prn ICS, LAMAs, immunotherapy, and bronchial thermoplasty.

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Holguin F, Cardet JC, Kung JF, et al. **Management of severe asthma: A European Respiratory Society/American Thoracic Society guideline.** Eur Respir J. 2020; 55:1900588. This document provides useful recommendations for the management of severe asthma, with an emphasis on selection of patients suitable for biologic therapies, which is defined as asthma requiring high dose inhaled corticosteroids in combination with a second controller and/or systemic corticosteroids.

[PMID: 31558662](#)

[Free Full Text](#)

Papi A, Chipps BE, Beasley R, et al. **Albuterol-budesonide fixed-dose combination rescue inhaler for asthma.** N Engl J Med. 2022; 386:2071-83. This RCT of over 3,000 patients found prn use of an ICS/albuterol combination inhaler superior to prn albuterol alone for preventing severe asthma exacerbations (HR approximately 0.8 depending on dose of ICS). Unlike previous studies using ICS/LABA rescue inhalers, this study enrolled patients with moderate to severe asthma already receiving ICS at baseline.

[PMID: 35569035](#)

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O'Byrne PM, FitzGerald JM, Bateman ED et al. **Inhaled combined budesonide-formoterol as needed in mild asthma.** N Engl J Med. 2018; 378:1865-1876.

[PMID: 29768149](#)

[Free Full Text](#)

McGregor MC, Krings JG, Nair P, et al. **Role of biologics in asthma.** Am J Respir Crit Care Med. 2019; 199:433-445. A review of the action, indications, expected benefits, and side effects of approved biologics for severe uncontrolled asthma.

[PMID: 30525902](#)

[Free Full Text](#)

Parsons JP, Hallstrand TS, Mastrorarde JG, et al. **An official American Thoracic Society clinical practice guideline: exercise-induced bronchoconstriction.** Am J Respir Crit Care Med 2013; 187:1016-

1027. This guideline offers a succinct, practical overview of EIB management, including the strength of evidence supporting various options for diagnosis and treatment.

[PMID: 23634861](#)

COPD

Global strategy for the diagnosis, management, and prevention of chronic obstructive lung disease: 2023 Report. This year's update is noteworthy for a change in the GOLD stages to A, B, E, as well as greater recognition of patients with features of COPD that do not have airflow obstruction.

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Wedzicha JA, Banerji D, Chapman KR, et al, FLAME Investigators. **Indacaterol-Glycopyrronium versus Salmeterol-Fluticasone for COPD.** N Engl J Med 2016; 374: 2222-2234. The FLAME trial randomized 3300 patients with COPD and high exacerbation risk to indacaterol-glycopyrronium once daily versus salmeterol-fluticasone twice daily and found the LAMA/LABA combination reduced the annual exacerbation rate by 11% compared to ICS/LABA. Additionally, the salmeterol-fluticasone group had a higher rate of pneumonia (4.8 vs 3.2%).

[PMID: 27181606](#)

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Lipson DA, Barnhart F, Brealey N et al. **Once-daily single-inhaler triple versus dual therapy in patients with COPD.** N Engl J Med. 2018; 378:1671-1680. The IMPACT trial randomized over 10,000 subjects to triple therapy (ICS/LAMA/LABA) or dual therapy (LABA/ICS or LABA/LAMA). Triple therapy resulted in fewer exacerbations (0.91/year) compared to LABA/ICS (1.07/year), which in turn was superior to LABA/LAMA (1.21/year). A critique of the trial is that patients with a history of asthma were not excluded and most patients randomized to dual therapy were on an ICS prior to enrollment, raising the possibility that abrupt withdrawal of ICS accounted for the difference in efficacy.

[PMID: 29668352](#)

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Chapman KR, Hurst JR, Frent SM et al. **Long-term triple therapy de-escalation to indacaterol/glycopyrronium in patients with chronic obstructive pulmonary disease (SUNSET): A randomized, double-blind, triple-dummy clinical trial.** Am J Respir Crit Care Med. 2018;198:329-339. This study compared de-escalation to LABA/LAMA vs. continued triple therapy in patients with moderate-to-severe COPD and infrequent exacerbations. Direct de-escalation to LABA/LAMA led to a small decrease in lung function (26 mL), with no difference in exacerbations. Of note, a subgroup of patients with eosinophil counts >300 at baseline had greater lung function loss and higher exacerbation risk.

[PMID: 29779416](#)

Martinez, Fernando J., Calverley PM, Goehring UM, et al. **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. This is the first large trial to study the addition of roflumilast to inhaled corticosteroids and long-acting beta-agonists in patients with severe COPD and symptoms of chronic bronchitis. A majority of the 1,945 patients (70%) were also on tiotropium. They found a 14.2% decrease in rate of moderate to severe exacerbations over the course of 1 year in the intervention group. Of note, the study population was limited to those with a chronic bronchitic phenotype, and side effects were common.

[PMID: 25684586](#)

Albert RK, Connett J, Bailey WC, et al. **Azithromycin for prevention of exacerbations of COPD.** N Engl J Med 2011;365:689-98. In a large study of patients who required continuous oxygen or had required systemic steroids in the last year and had had at least one prior exacerbation, but who were stable for at least a month prior to the study, the use of daily azithromycin was found to increase the time to subsequent exacerbation from six months to nine months. An audiology-confirmed hearing decrement occurred in 25% of study patients and 20% of placebo patients (p=0.04).

[PMID: 21864166](#)

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Long-Term Oxygen Treatment Trial Research Group. **A randomized trial of long-term oxygen for COPD with moderate desaturation.** N Engl J Med 2016; 375: 1617-1627. This multicenter trial randomized 220 patients with resting oxygen saturation 89 to 93% to 24 hours/day supplemental oxygen plus 148 patients with exercise-induced hypoxia (O₂ sat 80 - 89% with exertion) to supplemental oxygen during exercise and

sleep only and compared these groups to 379 patients randomized to no treatment. They found no difference in time to death, first hospitalization, nor any other outcomes over 1 to 6 years of observation. Of note, the study was powered to detect a 40% mortality difference, an effect matched by few medical interventions. Nonetheless, this study supports limiting supplemental oxygen primarily to COPD patients with severe resting hypoxemia.

[PMID: 27783918](#)

[Free Full Text](#)

Flandes J, Soto FJ, Cordovilla R et al. **Bronchoscopic lung volume reduction**. Clin Chest Med. 2018 ;39:169-180. Comprehensive review of bronchoscopic lung volume reduction with an emphasis on recently FDA approved unidirectional endobronchial valves.

Bronchiectasis

Polverino E, Goeminne P, McDonnell M, et al. **European Respiratory Society guidelines for the management of adult bronchiectasis**. Eur Respir J. 2017; 50:1700629. These guidelines describe appropriate investigation and treatment strategies by posing nine key clinical questions and conducting systematic reviews to answer the questions.

[PMID: 28889110](#)

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O'Donnell AE, Barker AF, Ilowite JS, et al. **Treatment of idiopathic bronchiectasis with aerosolized recombinant human DNase I**. Chest 1998;113:1329-1334. A large multinational trial of patients with idiopathic bronchiectasis found increased exacerbation frequency and a more brisk decrease in FEV1. While noteworthy for its specific findings, this study is widely cited as a reason cystic fibrosis treatment strategies cannot be universally applied to all types of bronchiectasis.

[PMID: 9596315](#)

[Free Full Text](#)

Altenburg J, de Graaff CS, Stienstra Y, et al. **Effect of azithromycin maintenance treatment on infectious exacerbations among patients with non-cystic fibrosis bronchiectasis: the BAT randomized controlled trial**. JAMA. 2013;309:1251-9. A trial of chronic azithromycin treatment in patients with stable non-cystic fibrosis bronchiectasis. Azithromycin was associated with a decreased pulmonary exacerbation rate but increased macrolide resistance.

[PMID: 23532241](#)

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Cough

Gibson P, Wang G, McGarvey L, et al. **Treatment of unexplained chronic cough: CHEST guideline and expert panel report**. Chest; 2016;149:27-44. This guideline aims to clarify the best evidence for assessment and treatment of unexplained chronic cough (UCC). It highlights the significant morbidity of the condition and the limited evidence available to guide management.

[PMID: 26426314](#)

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Vertigan AE, Kapela SL, Ryan NM, et al. **Pregabalin and speech pathology combination therapy for refractory chronic cough: a randomized controlled trial**. CHEST. 2016; 149:639-48. This RCT of speech therapy with or without pregabalin in 40 patients with chronic refractory cough found improved cough severity, frequency, and quality of life in both groups. However, cough severity and quality of life were significantly better in the combined treatment group. The small sample size and stringent eligibility criteria may limit the generalizability of these findings.

[PMID: 26447687](#)

Chamberlain Mitchell, Garrod R, Clark L, et al. **Physiotherapy, and speech and language therapy intervention for patients with refractory chronic cough: a multicentre randomised control trial**. Thorax. 2017; 72:129-136. RCT of 34 patients with refractory cough found the combination of physiotherapy, speech and language therapy reduced cough frequency and improved health related quality of life. This trial highlights the potential benefit of non-pharmacologic therapy for refractory chronic cough.

[PMID: 27682331](#)

Pneumonia

Metlay J, Waterer G, Long A, et al. **Diagnosis and treatment of adults with community acquired pneumonia. An official clinical practice guideline of the American Thoracic Society and Infectious Disease Society of America.** Am J Respir Crit Care Med. 2019; 200:e45-67. Notable updates from 2007 guidelines include: recommendation against use of procalcitonin to guide initial antibacterial therapy, recommendation against use of corticosteroids, narrower indications for empiric MRSA and pseudomonas coverage, and abandoning use of HCAP category.

[PMID: 31573350](#)

[Free Full Text](#)

Blum CA, Nigro N, Briel M, et al. **Adjunct prednisone therapy for patients with community-acquired pneumonia: a multicentre, double-blind, randomised, placebo-controlled trial.** Lancet 2015; 385: 1511-8. This trial randomized 785 patients with community acquired pneumonia of varying severity (only 5% in the ICU) to prednisone 50 mg x 7 days vs placebo and found a 1.4 day reduction in “time to clinical stability” (24 consecutive hours of stable vitals) and a 1-day reduction in duration of hospital stay in the steroid group. Death, ICU admission, duration of ICU admission, and duration of antibiotics did not differ.

[PMID: 25608756](#)

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Ramirez JA, Musher DM, Evans SE, et al. **Treatment of community-acquired pneumonia in immunocompromised adults: a consensus statement regarding initial strategies.** Chest. 2020; 158:1896-1911. Immunocompromised patients have been excluded from previous guidelines on CAP management. This guideline was developed independent of academic societies by 45 clinicians with relevant expertise using Delphi survey methodology. The group defines various degrees of immunocompromise and provides guidance on the corresponding likely pathogens, appropriate evaluation, and empiric treatment. Given the paucity of evidence, most recommendations are based on expert opinion.

[PMID: 32561442](#)

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Sarcoidosis & Interstitial Lung Disease

Crouser ED, Maier LA, Wilson KC, et al. **Diagnosis and detection of sarcoidosis. An Official American Thoracic Society clinical practice guideline.** Am J Respir Crit Care Med. 2020; 201:e26-e51. This comprehensive diagnostic guideline includes recommendations on when to perform lymph node biopsy and screen for extra-pulmonary disease, as well as extensive differentials to consider based on biopsy and clinical findings. The strength of recommendations is uniformly low owing to a lack of supporting studies.

[PMID: 32293205](#)

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Robert P. Baughman, Daniel R. Ouellette, et al. **ERS clinical practice guidelines on treatment for sarcoidosis.** European Respiratory Journal 2021 ; DOI: 10.1183/13993003.04079-2020.

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Lazor R, Vandevenne A, Pelletier A, et al. **Cryptogenic organizing pneumonia: characteristics of relapses in a series of 48 patients.** Am J Respir Crit Care Med 2000; 162:571-7. This retrospective case series provides insight on the clinical course of COP and has influenced the way corticosteroids are used to treat COP.

[PMID: 10934089](#)

Mycobacterial Disease

Lewinsohn DM, Leonard MK, LoBue PA et al. **Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of tuberculosis in adults and children.** Clin Infect Dis. 2017; 64:111-115. Updated ATS/IDSA guidelines focusing on diagnostic testing for latent tuberculosis infection, pulmonary tuberculosis, and extrapulmonary tuberculosis.

[PMID: 28052967](#)

[Free Full Text](#)

Daley CL, Iaccarino JM, Lange C, et al. **Treatment of nontuberculous mycobacterial pulmonary disease: An official ATS/ERS/ESCMID/IDSA clinical practice guideline.** Clin Infect Dis 2020; 71:905-913. An updated version of the 2007 guidelines with a primary focus on treatment including recommendations for specific organisms. Diagnostic criteria are included in the 2020 update but the 2007 guidelines contain greater detail on aspects of taxonomy, diagnosis, and prevention.

[PMID: 17277290](#)

Haworth CS, Banks J, Capstick T, et al. **British Thoracic Society guidelines for the management of non-tuberculous mycobacterial pulmonary disease (NTM-PD).** Thorax. 2017; 72 (Suppl 2):ii1-ii64. This guideline includes useful recommendations on indications for treatment, susceptibility testing, treatment regimens for various organisms, and monitoring during treatment.

[PMID: 29054853](#)

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Lung Nodules/Cancer

MacMahon H, Naidich DP, Goo JM, et al. **Guidelines for management of incidental pulmonary nodules detected on CT images: From the Fleischner Society 2017.** Radiology. 2017; 284: 228-43. This statement gives recommendations on management of incidental pulmonary nodules. Significant changes include increasing the threshold size of nodules that need follow up and widening the range of timing of follow up scans. These new changes should translate into fewer nodules followed and fewer scans among patients undergoing follow up.

[PMID: 28240562](#)

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Mazzone PJ, Silvestri GA, Souter LH, et al. **Screening for lung cancer: CHEST guideline and expert panel report.** Chest. 2021; 160:e427-e494. Updated CHEST guidelines on lung cancer screening.

[PMID: 34270968](#)

Krist AH, Davidson KW, Mangione CM, et al. **Screening for lung cancer: US Preventive Services Task Force Recommendation Statement.** JAMA. 2021; 325:962-970. Noteworthy changes from the previous USPSTF statement include reducing the age of screening from 55 to 50 years of age and reducing pack-year history from 30 to 20. These changes substantially increase eligibility and have the potential to reduce existing sex, race, and ethnicity-based disparities in lung cancer screening.

[PMID: 33687470](#)

Occupational Lung Disease

Tarlo SM, Lemiere C. **Occupational asthma.** New Engl J Med 2014; 370:640-9. This succinct review provides an overview of the diagnosis, management, and prevention of sensitizer-induced and irritant-induced asthma.

[PMID: 24521110](#)

Lau A, Tarlo SM. **Work-related upper-airway disorders.** Clin Chest Med. 2020; 41:651-660. This review provides an overview of the presentation, diagnosis, and treatment of work related rhinitis and laryngeal syndromes. Noteworthy aspects include discussion of how laryngeal syndromes can mimic, as well as coexist with, occupational asthma and the role of occupational irritants in chronic cough that extends beyond working hours.

[PMID: 33153685](#)

Liu C, Chen R, Sera F, et al. **Ambient particulate air pollution and daily mortality in 652 cities.** N Engl J Med. 2019; 381:705-715. Study of 652 cities in 24 countries or regions. On average, an increase in 10 µg per cubic meter of both inhalable and fine particulate matter was associated with increased daily all-cause mortality, daily cardiovascular mortality, and daily respiratory mortality.

[PMID: 31433918](#)

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Selikoff IJ, Hammond EC, Churg J. **Asbestos exposure, smoking, and neoplasia.** JAMA 1968;204:106-12. Landmark study showing the synergistic effect of smoking and asbestos exposure.

[PMID: 5694532](#)

Pleural Disease

Light RW, MacGregor MI, Luchsinger PC, et al. **Pleural effusions: the diagnostic separation of transudates and exudates.** Ann Intern Med 1972;77:507-13. This paper is the basis for using pleural fluid LDH and protein to classify effusions as transudative or exudative.

[PMID: 4642731](#)

Lentz RJ, Lerner AD, Pannu JK, et al. **Routine monitoring with pleural manometry during therapeutic large-volume thoracentesis to prevent pleural-pressure-related complications: a multicentre, single-blind randomised controlled trial.** Lancet Respir Med. 2019; 7:447-455. This study randomized 124 patients with free-flowing effusions with estimated volume > 500 ml (63% with malignant effusion) to thoracentesis drainage based on symptoms alone vs. symptoms plus pleural manometry. There was no significant difference in chest discomfort, volume of fluid drained, proportion of patients with complete lung expansion, or clinically significant complications. Of note, the mean volume of fluid drained was 1,100 ml (SD 500 ml) and patients with known re-expandable lung, such as those with a large hepatic hydrothorax, were excluded.

[PMID: 30772283](#)

Feller-Kopman DJ, Reddy CB, DeCamp MM et al. **Management of malignant pleural effusions.** An Official ATS/STS/STR Clinical Practice Guideline. Am J Respir Crit Care Med. 2018; 198:839-849.

[PMID: 30272503](#)

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Neuromuscular Disease

Sahni AS, Wolfe L. **Respiratory care in neuromuscular diseases.** Respir Care 2018; 63:601-8. Concise review of the use of non-invasive ventilation and other respiratory care for patients with neuromuscular disorders.

[PMID: 29692352](#)

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Pulmonary Rehab

Spruit MA, Singh SJ, Garvey C, et al. **An official American Thoracic Society/European Respiratory Society statement: key concepts and advances in pulmonary rehabilitation.** Am J Respir Crit Care Med. 2013; e13-e64. This guideline replaces the 2006 version, provides an updated definition of pulmonary rehabilitation, and highlights new data demonstrating the efficacy of pulmonary rehab in patients with COPD. It also addresses the use of pulmonary rehabilitation in other pulmonary diseases.

[PMID: 24127811](#)

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Holland AE, Mahal A, Hill CJ, et al. **Home-based rehabilitation for COPD using minimal resources: a randomized controlled equivalence trial.** Thorax 2017; 72:57-65. Pulmonary rehabilitation remains underutilized but a home-based approach has the potential to increase patient enrollment. This RCT of 166 patients, as well as other similar trials, found similar gains between health center-based and home-based groups. Unfortunately, neither group has sustained gains when measured at 12 months.

[PMID: 27672116](#)

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Nolan CM, Kiliaraju D, Jones SE, et al. **Home versus outpatient pulmonary rehabilitation in COPD: a propensity-matched cohort study.** Thorax 2019; 74:996-998. This study explored whether the benefits of home pulmonary rehabilitation could be reproduced outside of a clinical trial. This observational study of 154 patients found similar improvements in quality of life but smaller improvements in exercise capacity in the home group compared to the matched supervised group. Based on this, the authors recommend home-based rehab be reserved for those unable to attend structured programs.

[PMID: 31278173](#)

Tobacco/Ecigarette

Leone FT, Zhang Y, Evers-Casey S, et al. **Initiating pharmacologic treatment in tobacco-dependent adults. An official American Thoracic Society Clinical Practice Guideline.** Am J Respir Crit Care Med. 2020; 202:e5-e31. This guideline is most noteworthy for recommending preferential use of varenicline, including in patients with a comorbid psychiatric condition and in patients who are not ready to quit smoking, over other pharmacologic treatments and e-cigs. Combination therapy and duration of therapy are also addressed.

[PMID: 32663106](#)

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Farber HJ, Gallego MCP, Galiatsatos P, et al. **Harms of electronic cigarettes: what the healthcare provider needs to know.** Ann Am Thorac Soc. 2021; 18:567-572. Review summarizes risks of e-cigarette use as well as efficacy of e-cigs for smoking cessation.

[PMID: 33284731](#)

Walker N, Parag V, Verbiest M, et al. **Nicotine patches used in combination with e-cigarettes (with and without nicotine) for smoking cessation: a pragmatic, randomised trial.** Lancet Respir Med. 2020; 8:54-64. This trial examined nicotine replacement alone vs in combination with nicotine or nonnicotine e-cigarettes. Six-month abstinence was achieved in 7% of those on NRT/nicotine e-cig, 4% NRT/nonnicotine e-cig, and 2% on sole NRT. There was a greater loss to follow up in the NRT only group which could have impacted the results.

[PMID: 31515173](#)

Baker TB, Piper ME, Smith SS, et al. **Effects of combined varenicline with nicotine patch and of extended treatment duration on smoking cessation: a randomized clinical trial.** JAMA. 2021; 326:1485-93. This trial found no difference in abstinence at 52 weeks with either adding nicotine replacement to varenicline or in extending duration of therapy from 12 to 24 weeks. Smoking cessation, based on carbon monoxide-confirmed self-reported 7-day point prevalence abstinence, was near 24% in all groups, higher than many other cessation trials.

[PMID: 34665204](#)

AUTHOR: The following information will outline educational goals as well as responsibilities for all participants of this rotation. Please contact Patrick Bradley if there are any questions or concerns.

Appendix 4: Continuity Clinic Evaluation (Fellow Evaluation by Attending)



Continuity Clinic
Evaluation v2.2.pdf