Lung Transplant Curriculum
Pulmonary and Critical Care Medicine Fellowship Program
Henry Ford Hospital

Updated: July 2026

Rotation Name: Lung Transplant

Rotation Site: Henry Ford Hospital (Main)

PGY level that will be taking rotation: Fellow 1st Year, Fellow 2nd Year, Fellow 3rd Year

Duration of Rotation: 4 weeks

Faculty Contact: Kaitlin Olexsey, DO

Supervising Faculty: Kaitlin Olexsey, DO

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i. Rotation Goals

- Understand indications, contraindications and timing of referral for lung transplant
- Perform comprehensive transplant evaluations
- Understand immunosuppressive therapies and prophylaxis
- Recognize and manage infectious and non-infectious complications

ii. Rotation Specific Information

Structure of Rotation (Appendix 1)

- Daily inpatient rounds with transplant staff starting at 9:30 am
- Weekly K16 transplant clinic (Thursdays)
- Daily didactics
- Weekly team conferences

Clinical Activities (Appendix 2)

- Inpatient consult service
- Lung transplant clinic
- Observation of lung transplant surgery

Conferences

- Weekly Multidisciplinary Selection Committee Conference
- Weekly patient review conference
- Other educational conferences
    - Daily scheduled fellow didactics
    - Transplant Institute Grand Rounds (select Mondays 12-1pm, Ford Hall)
    - Weekly fellowship Friday afternoon conference

Fellow Responsibilities and Expectations

- Manage assigned inpatient panel
    - Complete chart review and preround on all assigned patients prior to morning didactic sessions to be ready for rounds
    - Present patients during rounds
    - Develop and communicate treatment plans to primary services and consultant services as appropriate

    - Maintain detailed knowledge of:
        - Transplant history
        - Active clinical issues
        - Culture and biopsy results
    - Complete accurate and timely daily documentation using EPIC templates (Appendix 2)
    - Participate in ICU bronchoscopies
- Attend all scheduled daily didactic activities and conferences (Appendix 1)
    - Review provided material ahead of sessions to allow for robust discussions
- Attend Thursday transplant clinic to see new consults
    - Complete chart review prior to clinic day
        - Review internal and external records
        - External records can be found in EPIC Care Everywhere and uploaded in the media tab
    - Perform comprehensive history and physical exam with focus on pulmonary history and data
    - Staff new consults with pulmonologist assigned to clinic
    - Complete accurate and timely documentation of new consult note using EPIC template (Appendix 2)

Vacation Policy

- Limited to 1 week of vacation during rotation
- Any special circumstances/exceptions to be discussed with Dr. Olexsey and Program Director

iii. Learning Objectives

1. Patient Care & Procedural Skills

Data Gathering

- Perform comprehensive chart review and detailed history taking, including:
    - Underlying pulmonary disease
    - Comorbid conditions affecting transplant eligibility
- Conduct focused physical examinations to assess:
    - Disease severity
    - Impact on transplant candidacy and post-transplant outcomes
- Provide longitudinal follow-up of transplant patients, including:
    - Graft function assessment
    - Recognition of infection and rejection

Clinical Reasoning

- Evaluate patients for lung transplant candidacy
- Develop diagnostic workup plans including:
    - Laboratory testing
    - Imaging
    - Bronchoscopy
    - Cardiac catheterization
- Apply listing criteria and contraindications appropriately
- Understand:
    - Indications for bronchoscopy and transbronchial biopsy
    - Management of acute and chronic rejection
    - Principles of immunosuppression
- Recognize non-infectious complications including:
    - Airway complications
    - Phrenic nerve and diaphragmatic dysfunction
    - Gastrointestinal complications including gastroparesis

Patient Management

- Manage immunosuppressive therapies:
    - Dosing strategies
    - Monitoring for side effects
- Diagnose and treat infectious complications
- Coordinate follow-up care:
    - Testing schedules
    - Clinic visits
- Implement prophylactic strategies and medication management

Procedures

- No independent procedural requirements (participation as appropriate)

2. Medical Knowledge

Core Knowledge Areas

- Indications and contraindications for lung transplantation
- Pre-transplant evaluation and workup
- Post-transplant care and complications

Disease-Specific Knowledge

- Bronchiectasis (including cystic fibrosis)
- Chronic obstructive pulmonary disease (COPD)
- Idiopathic pulmonary fibrosis (IPF)
- Interstitial lung disease (ILD)
- Pulmonary arterial hypertension (PAH)
- Sarcoidosis

Post-Transplant Care

- Bronchoscopy protocols
- Immunosuppressive regimens and side effects
- Recognition and management of infection and rejection

Assessment

- Ongoing formative assessment based on clinical performance and knowledge application

3. Practice-Based Learning and Improvement

Evidence-Based Practice

- Apply current evidence to:
    - Bronchoscopy utilization
    - Diagnostic testing
    - Immunosuppressive and adjunct therapies
    - Pulmonary rehabilitation

Quality Improvement

- Participation in a QI project related to transplant care

Teaching

- Educate patients and families on:
    - Risks, benefits and treatment plans
- Provide teaching to peers and co-fellows
    - Journal club article presentation
    - F2 resident case discussion session

Scholarly Activity

- Case presentations
- Participation in research projects

4. Interpersonal and Communication Skills

Patient & Family Communication

- Provide clear, compassionate communication
- Discuss:
    - Diagnosis
    - Test results
    - Treatment plans
- Encourage questions and shared decision-making

Teamwork

- Collaborate with multidisciplinary team members:
    - Transplant surgeons
    - Cardiac Surgery Intensive Care team
    - Psychologists
    - Social workers
    - Nurse coordinators
    - Cardiologists
    - Infectious Disease specialists
    - Interventional Pulmonologists
    - Dieticians
    - Physical therapists
    - Respiratory therapists

Peer Communication

- Effectively communicate clinical information during transitions of care
- Present patient assessments and management plans clearly

Documentation

- Maintain accurate, timely and concise medical records
- Avoid redundancy while reflecting clinical reasoning

5. Professionalism

- Demonstrate honesty and integrity
- Fulfill professional responsibilities reliably
- Maintain appropriate professional relationships
- Engage in self-directed learning and continuous improvement

6. Systems-Based Practice

Care Coordination

- Facilitate transitions between inpatient and outpatient care
- Coordinate with multidisciplinary services

Team-Based Care

- Participate in multidisciplinary conferences
    - Present new patients seen in consultation
- Collaborate with primary and consulting services

Quality Advocacy

- Advocate for high-quality patient care

Systems Improvement

- Identify system-level issues
- Participate in QI initiatives

iv. Evaluation Method

- Fellows should discuss individual learning goals with the attending physician at the start of the rotation.
- Fellows are evaluated on all six ACGME core competencies within the relevant milestone domains.
- Formative verbal feedback is provided by supervising faculty during the rotation, including midpoint and end-of-rotation check-ins.
- Summative written evaluations are completed at the end of the rotation and filed in MedHub.
- Fellows provide anonymous feedback on faculty and the rotation via MedHub.
- The evaluation process ensures timely feedback, supports skill development and promotes progression toward advanced practice

v. Appendix 1: Structure of Rotation

<table>
<tr><th></th><th>Monday</th><th>Tuesday</th><th>Wednesday</th><th>Thursday</th><th>Friday</th></tr>
<tr><td>7:30-8:30am</td><td></td><td>Selection & Journal club</td><td></td><td></td><td></td></tr>
<tr><td>9-9:30am</td><td>Didactics</td><td></td><td>Didactics</td><td rowspan="2">Clinic</td><td>Didactics</td></tr>
<tr><td>9:30am-12pm</td><td>Inpatient rounds</td><td>Inpatient rounds</td><td>Inpatient rounds</td><td>Inpatient rounds</td></tr>
<tr><td>12-1pm</td><td>Lunch</td><td>Lunch</td><td>Lunch</td><td>Lunch</td><td rowspan="4">Fellowship program conference</td></tr>
<tr><td>1-1:30pm</td><td>Didactics</td><td rowspan="2">Patient review meeting</td><td>Path review</td><td>Didactics</td></tr>
<tr><td>2-2:30pm</td><td rowspan="2">Afternoon rounds/new IPD consults</td><td>F2 teaching</td><td rowspan="2">Charting & new IPD consults</td></tr>
<tr><td>2:30-5pm</td><td>Afternoon rounds/new IPD consults</td><td>Afternoon rounds/new IPD consults</td></tr>
</table>

Inpatient rounds

- Rounds start daily at 9:30 am
- See Appendix 2 for further details

Clinic

- Every Thursday on K16 starting at 9 am
- New consults to be seen by fellow
- See Appendix 2 for further details

Didactics

- Occur daily as outlined in weekly schedule
- One-on-one discussion between attending and fellow
- Refer to *Daily Didactic Activities* document for daily schedule of topics to be discussed with materials to review prior to didactic session

Journal club

- Occurs on the 2nd and/or 3rd Tuesday of the block immediately following selection meeting (8-8:30am)
    - When two fellows are on service, date assigned based on alphabetical order of fellow's last name (e.g., Dr. Blue will be assigned the 2nd Tuesday and Dr. Yellow the 3rd Tuesday)
    - Any switch in date must be discussed with Dr. Olexsey
- Fellow to select article to discuss from list provided (or as discussed with attending)
    - Fellow to notify Dr. Olexsey of article selection by the end of the first week of the block
    - Brief slide presentation ~15 mins in length with group discussion to follow

Path review

- Occurs on the 4th (last) Wednesday of the block
- Review slides with Thoracic Pathologist, Dr. Montecalvo

F2 teaching

- Occurs on the 1st and 3rd Wednesday of the block in the F2 conference room
- 1st Wednesday session – fellow to join while attending leads education with F2 residents
- 3rd Wednesday session – fellow to review an interesting case with the F2 residents
    - Fellow to identify case and discuss with attending
    - Encourage morning report style discussion

Conferences

- Weekly Multidisciplinary Selection Committee Conference
    - Occurs every Tuesday 7:30-8:30 am virtually via Microsoft Teams (invites will be sent to fellow)
    - Case discussions with pulmonologists, surgeons, transplant coordinators, social worker, psychology, transplant immunology, transplant pharmacist, dietician, financial coordinator
    - Fellow to present any new consults seen the week prior
    - Journal club presentation
- Weekly patient review conference
    - Occurs every Tuesday 1-2:30 pm in CFP 236
    - Case discussions with transplant pulmonology team
- Other educational conferences
    - Transplant Institute Grand Rounds (select Mondays 12-1 pm, Ford Hall)
    - Weekly fellowship program conference (Fridays 12-2 pm)

vi. Appendix 2: Clinical Activities

Inpatient Consult Service

- Daily workflow
    - Rounds begin at 9:30 am (meet in Cardiac Surgery ICU located on P5 or as per discussion with attending)
    - Fellow to complete chart review and preround on all assigned patients prior to morning didactic sessions to be ready for 9:30 am rounds
    - Cardiac Surgery ICU progression rounds on Thursdays at 11 am
    - Didactic activities as outlined above
    - Afternoon responsibilities
        - Finish rounds if needed
        - See new inpatient consults and staff with attending
        - Follow up on implementation of daily plans and lab review including immunosuppression drug levels
        - After discussion with attending, communicate to primary team any new recommendations especially changes in immunosuppression
        - Complete chart documentation with daily progress notes using EPIC templates
        - Independent reading and preparation for didactic sessions
- Team composition
    - Transplant pulmonologist
    - Pulmonary fellow
    - Lung transplant APPs
    - Cardiothoracic Surgery APP
    - Transplant pharmacist
    - Transplant coordinators
    - Social worker
    - Dietician
    - Cardiac Surgery ICU team
- Procedures
    - ICU bronchoscopy of post-transplant patients to be completed with attending pulmonologist
        - Fellow to obtain consent
        - Fellow to place any necessary orders including sedation medications and any specimens to be sent to the lab (primarily bronchial wash cultures)

- Patient population
    - *Pre-transplant patients* (primarily located on the pulmonary ward (F2), the MICU (C5 and C6) and the Cardiac Surgery ICU (P5) if on ECMO)
    - *Immediate post-transplant patients* (located in the Cardiac Surgery ICU (P5) and the Cardiac Surgery stepdown unit (I6))
    - *Post-transplant patients* (primarily located on the pulmonary ward (F2) or other GPU and the MICU (C5 and C6))
- EPIC templates
    - New inpatient consult
        - .LUNGTXPCONSULTIPD
    - Follow up inpatient pre-transplant (workup/listed)
        - .LUNGTXPIPDPRE
    - Follow up inpatient post-transplant
        - .LUNGTXPIPDPOST
    - Post-transplant immunosuppression/prophylaxis plan
        - .LUNGTXPPLAN

Lung Transplant Clinic

- Attend transplant clinic on K16 on Thursdays starting at 9 am
    - Fellow to see new consults
    - Complete chart review prior to clinic day
        - Review internal and external records
        - External records can be found in EPIC Care Everywhere and uploaded in the media tab
    - Perform comprehensive history and physical exam with focus on pulmonary history and data
        - Pertinent history and data to collect: referring pulmonologist name, year of diagnosis, bronchoscopy/biopsy history, thoracic or cardiac surgery history, hospitalizations, exacerbations, intubation/NIPPV history, current oxygen needs, home pulse oximetry, attendance in pulmonary rehab, quality of life and ability to perform ADLs, social history (including smoking, vaping, EtOH use, marijuana use, illicit drug use, chronic opiate and benzodiazepine use), usual ROS especially assess for weight loss, reflux symptoms and dysphagia in addition to pulmonary focused ROS, occupational history, health maintenance (cancer screening, dental care, immunizations), social support

    - Assess for transplant candidacy based on disease specific indications and contraindications and develop recommendations for any needed follow up
    - Staff new consults with pulmonologist assigned to clinic
    - Complete accurate and timely documentation of new consult note using EPIC template
    - Communication with transplant psychologist, social worker and dietician as necessary
- Additional clinic participation on an individual basis for senior fellows when paired with a junior fellow on service
- EPIC templates
    - New clinic consult
        - .LUNGTXPCLINICCONSULT
    - Follow up clinic patient in workup
        - .LUNGTXPCLINICPRE
    - Follow up clinic listed patient
        - .LUNGTXPCLINICLISTED
    - Follow up clinic post-transplant patient
        - .LUNGTXPCLINICPOST

Observation of lung transplant surgery

- Attend procurement and/or implantation procedures as available
- Provide contact information to transplant coordinators for case notification
- Transplant coordinator to provide fellow logistics and timing
- Fellow excused from service day after attending overnight transplant surgery

vii. Appendix 3: Reading Material

- **Lung Transplant Selection**
  - Leard LE et al. Consensus document for the selection of lung transplant candidates: An update from the International Society for Heart and Lung Transplantation. J Heart Lung Transplant. 2021; 40(11):1349-1379
- **Bronchoscopic Lung Volume Reduction for COPD**
  - Ido F et al. Bronchoscopic Lung Volume Reduction: A Narrative Review and Proposal for the Inclusion Criteria. J Clin Med. 2025 May 5;14(9):3190
- **Postoperative Care, Monitoring & Surviellence**
  - Snell GI et. Report of the ISHLT Working Group on Primary Lung Graft Dysfunction, part I: Definition and grading—A 2016 Consensus Group statement of the International Society for Heart and Lung Transplantation. J Heart Lung Transplant. 2017 Oct;36(10):1097-1103.
  - McWilliams et al. Surveillance Bronchoscopy in Lung Transplant Recipients: Risk versus Benefit. J Heart Lung Transplant. 2008 Nov;27(11):1203-9
- **Immunosuppression**
  - Kotecha S et al. Review: immunosuppression for the lung transplant patient. J Thorac Dis. 2021;13(11):6628-44
- **Prophylaxis**
  - Trachuk P et al. Infectious Complications in Lung Transplant Recipients. Lung. 2020;198:879-87
  - Kotton CN et al. The Fourth International Consensus Guidelines on the Management of Cytomegalovirus in Solid Organ Transplantation. Transplantation. 2025 July;109(7):1066-1110
  - Villalobos APR, Husain S. Infection prophylaxis and management of fungal infections in lung transplant. Ann Transl Med. 2020:8(6):414
  - Bitterman R, Marinelli T, Husain S. Strategies for the Prevention of Invasive Fungal Infections after Lung Transplant. J Fungi. 2021;7:122
- **Acute Cellular Rejection**
  - Parulekar AD, Kao CC. Detection, classification, and management of rejection after lung transplantation. J Thorac Dis. 2019;11(Suppl 14):S1732-9
  - Juvet S. ISHLT Consensus Statement on Acute Lung Allograft Dysfunction (ALAD): Definition, Etiology, Diagnostic and Therapeutic Approaches, and Research Priorities. J Heart Lung Transplant. 2026 July;45(7):E173-195

- **Antibody Mediated Rejection**
  - Levine DJ et al. Antibody-mediated rejection of the lung: A consensus report of the International Society for Heart and Lung Transplantation. J Heart Lung Transplant. 2016 April;35(4):397-406
  - Parulekar AD, Kao CC. Detection, classification, and management of rejection after lung transplantation. J Thorac Dis. 2019;11(Suppl 14):S1732-9
  - Juvet S. ISHLT Consensus Statement on Acute Lung Allograft Dysfunction (ALAD): Definition, Etiology, Diagnostic and Therapeutic Approaches, and Research Priorities. J Heart Lung Transplant. 2026 July;45(7):E173-195
- **Chronic Lung Allograft Dysfunction**
  - Verleden GM et al. Chronic lung allograft dysfunction: Definition, diagnostic criteria, and approaches to treatment—A consensus report from the Pulmonary Council of the ISHLT. J Heart Lung Transplant. 2019 May;38(5):493-503
- **Infectious Complications**
  - Trachuk P et al. Infectious Complications in Lung Transplant Recipients. Lung. 2020;198:879-87
- **CMV Infection**
  - Kotton CN et al. The Fourth International Consensus Guidelines on the Management of Cytomegalovirus in Solid Organ Transplantation. Transplantation. 2025 July;109(7):1066-1110
- **Fungal Infections**
  - Villalobos APR, Husain S. Infection prophylaxis and management of fungal infections in lung transplant. Ann Transl Med. 2020:8(6):414
  - Bitterman R, Marinelli T, Husain S. Strategies for the Prevention of Invasive Fungal Infections after Lung Transplant. J Fungi. 2021;7:122
- **Respiratory Viral Infections**
  - Bahakel H, Danziger-Isakov L. Respiratory viral infections in lung transplantation: Recent advances in epidemiology, clinical impact, and therapeutic approaches. JHLT Open. 2025 Nov;10C
- **Airway Complications**
  - Crespo MM et al. ISHLT Consensus Statement on adult and pediatric airway complications after lung transplantation: Definitions, grading system, and therapeutics. J Heart Lung Transplant. 2018;37:548-63
- **Non-Infectious Complications**
  - Garrido G, Dhillon GS. Medical Course and Complications After Lung Transplantation. Psychological Care of End-Stage Organ Disease and Transplant Patients. 2018 Jun 23:279-88

- **Pathology**
  - Roden AC et al. Diagnosis of Acute Cellular Rejection and Antibody Mediated Rejection on Lung Transplant Biopsies. Arch Pathol Lab Med. 2017 Mar;141:438-44
- **Radiology**
  - Ng YL et al. Imaging of Lung Transplantation: Review. AJR. 2009 Mar ;192(3)

- **Additional reading material located on the hospital shared drive**
  - S: → Main Campus → Pulmonary → Lung Transplant → Fellow Transplant Articles

viii. Appendix 4: Transplant Workup Evaluation Checklist

<table>
<tr><td colspan="2">Patient:</td><td>MRN:</td><td colspan="2">DOB:</td></tr>
<tr><td colspan="2">Date of presentation:
Fast-track (Y/N):</td><td>Date of consult:</td><td colspan="2">Coordinator:</td></tr>
<tr><td colspan="5">Recommendation:</td></tr>
<tr><td colspan="5">Referring Pulmonologist: PCP: Distance to HFH:</td></tr>
<tr><td colspan="3">Diagnosis:</td><td>ABO:

HLA:</td><td>Height:
Weight:
BMI:</td></tr>
<tr><td colspan="3">Bronchoscopy/biopsy:</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td colspan="3">NYHA:</td></tr>
<tr><td>PMH:</td><td>PSH:</td><td colspan="3">FMH:
Lung disease:
Cancer:</td></tr>
<tr><td colspan="3">Meds:</td><td colspan="2">Allergies:</td></tr>
<tr><td colspan="3"><u>PFTs</u>
FVC:
FEV1:
DLCO:
TLC:
O2 titration:
6MWD:
ABG:</td><td colspan="2"><u>RHC:</u>
PAP:
RAP:
PCWP:
CO/CI:
<u>LHC</u>:</td></tr>
</table>

HPI:		
CXR (date): CT chest (date): CT abd/pel (date):	V/Q (date):	EKG (date): Echo (date): Carotid US (date):
Colonoscopy (date): EGD (date): FOB (date):	Mammogram (date): PAP (date): PSA (date):	pH/manometry (date): Esophagram (date): Gastric emptying (date):
<u>Social Hx</u> Smoking: Vaping: EtOH: Illicits: Narcotics/Benzo:	SW Eval (date): Family meeting (date): Psych Eval (date):	Immunizations UTD: Transplant ID (date):
CTS consult (date):		
Dietician (date):	Dental (date): Derm (date):	Bone density (date): Endo (date):
Pulmonary rehab:		**Insurance:** **Clinicals submitted: date**
<u>Labs</u> Chem 7: Liver: CBC: Coags: FLP: TSH: A1C:	CMV: EBV: HSV: Toxo: Varicella: Syphilis/RPR: Alpha-1: HIV: Hepatitis: MMR serology:	UDS/nicotine: PEth: UA: Quantiferon: <u>Micro</u> Sputum:
Other:		
CAS note: (date completed)		