June 22, 2021

Dear Internal Medicine Resident,

Welcome to the Advanced Heart Failure rotation! If you have any specific interests and goals, please contact me (Patty Chang, MD) before or on the first day of your rotation. In general, your rotation will be a combination of inpatient and outpatient experiences, Monday through Friday, as outlined below.

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| --- | --- | --- | --- | --- | --- | --- |
|  | **General Weekly Schedule** | | | | | |
|  | Mon | Tues | Wed | Thurs | Fri | Sat/Sun |
| AM | **MED D** | **MED D**  *-- OR---*  **Cath lab C: RHC/ Heart biopsies** (8:00: **Dr. Byku**)  *-- OR---*  **Dr. Lisa Rose-Jones**  (Pulmonary HTN Clinic) | **Heart Transplant/LVAD Selection Meeting**  (8:30-9:30 am Transplant Conference Room)  *-- AND---*  **MED D** | **MED D**  *-- OR---*  **Cath lab C: RHC/ Heart biopsies** (8:00: **Dr. Chang/Rose-Jones**) | **MED D**  *-- OR –*  **Eastowne HF Cardiology Clinic:**  **Dr. Mirnela Byku**  (Congenital also) |  |
| 12:00-1:00 pm | Cardiology OR Internal Medicine Conference | Cardiology OR Internal Medicine Conference | Cardiology OR Internal Medicine Conference | Medicine Grand Rounds | Cardiology OR Internal Medicine Conference |  |
| PM | **VAD Clinic:**  **Dr. Mirnela Byku** | **Eastowne HF Cardiology Clinic:**  **Dr. Brian Jensen**  (Cardio-oncology also)  *-- OR---*  **Dr. Lisa Rose-Jones**  *-- OR---*  **Dr. Patty Chang** | **VAD Clinic:**  **Dr. Chris Chien/Dr. Beth Volz/Dr. Sudha Jaganathan** | **VAD/TX Medical Management meeting**  (2:00-3:00Burnett-Womack 6050 or Echo Conference Room**)** | **Heart Multidisciplinary Meetings** (2:30-3:00 weekly, 3:00-4:00 biweekly) |  |

Inpatient – MED D (MDD) component:

The MDD service includes MDD attending(s), fellow(s), a nurse practitioner/advanced practice provider (APP), IM/anesthesiology intern, and sometime a 4th year medical student (MEDI 475 rotation), plus our PharmDs and nurses for HF, VAD and Transplant. Details about MDD inpatient rotation are available on the IM Resident website – Service-Specific Resources (<https://www.med.unc.edu/medicine/education-2/residency/current-resident-resources/>) (older version: <https://www.med.unc.edu/medicine/internal-medicine-resident-links/>). The HF Elective resident is encouraged to round alongside the MDD attending, to see the wide range of the primary service patients (on the floor and in the CICU) and the consult patients (in the CVTICU and elsewhere). The HF Elective resident should coordinate with the MDD fellow re: timing and location of MDD rounds. The resident can be as involved as they wish with these inpatients.

Outpatient component – VAD, HF, and PH Clinics:

*Clinic locations*:

**VAD Clinic** – 4th floor Jason Ray Transplant Clinic (4 West). (During April-June 2020, this clinic was temporarily moved to the ACC. For July 2020, please confirm clinic location with the VAD Clinic faculty/VAD coordinators.)

The Epic context is “UNCH Heart Transplant and LVAD Chapel Hill”.

**Eastowne HF Cardiology Clinics** – 2nd floor (984-974-7244), <http://www.uncheartandvascular.org/indexfa07.html?d=10&p=97>.

The Epic context is “UNCH Cardiology Eastowne Chapel Hill”; use this context to preview the clinic of the specific faculty.

Dr. Jensen’s Tuesday HF Clinic also includes Cardio-Oncology patients. Dr. Rose-Jones’ Tuesday morning clinic is Pulmonary Hypertension clinic with the Epic context “UNCH Pulmonary Specialty Cl Eastowne Chapel Hill”.

If interested in seeing cardiopulmonary exercise stress testing (CPET, CPX, or VO2 tests) while at Meadowmont, contact Sarah Waters ANP re: the schedule.

In preparation for the clinic, please review the clinic schedule of the specific provider. We encourage you to contact the provider whose clinic you will be attending, at least the morning before the clinic to confirm time. Our emails are generally firstname\_lastname@med.unc.edu; but please page us if we don’t email-reply in a timely manner.

Other opportunities:

* **Cath Lab** on Tuesdays and Thursdays as outlined in the schedule: Observe and potentially assist in procedures (right heart cath, heart biopsy, CardioMEMS implantation).
* **CVTICU Rounds** start at 8:00 AM (with the MED D fellow/attending; coordinate with fellow).
* **Noon conference**: Cardiology typically has conferences at noon every day (12n-1pm in Burnett-Womack or via Zoom) except for Thursday (DOM Grand Rounds). Cardiology Grand Rounds intermittently occurs on Monday in an auditorium (Bondurant G100 or via Zoom or otherwise specified). The resident can choose whether to attend the internal medicine or cardiology conferences.
* **OR**: Observe surgeries (LVAD, Transplants).
  + If interested in seeing VAD surgeries, alert VAD coordinator (e.g., Ashley Downing or VAD Coordinator on call pager) re: timing of the planned surgery.
  + If interested in seeing Transplant surgeries if they occur during your rotation, alert Transplant coordinator (Ashley Putman or Karen Stupp)
* **PH Consult inpatient Service** (with Dr. Rose-Jones when she is on MDD; ask her directly about this if interested).
* **Multidisciplinary Meetings** with the Heart team as outlined in the schedule. These include our weekly Heart Selection Conference on Wednesdays, our weekly Thursday Medical Management meetings on Thursdays, Friday inpatient-oriented and quality meetings

Useful resources/references:

* VAD and Transplant coordinators (who generally join AM rounds)
* “VAD 101” and “VAD 102” handouts (available on Internal Medicine Resident website, <https://www.med.unc.edu/medicine/education-2/residency/current-resident-resources/>; previously <https://www.med.unc.edu/medicine/internal-medicine-resident-links/>; e.g., <https://www.med.unc.edu/medicine/internal-medicine-resident-links/files/2019/03/VAD-101-2016.pdf>)

Heart Failure

* + Yancy CW, et al, 2013 ACCF/AHA guidelines for the management of heart failure. J Am Coll Cardiol. 2013 Oct 15;62(16):e147-239. PMID: 23747642. Circulation. 2013 Oct 15;128(16):e240-327. PMID: 23741058 <http://circ.ahajournals.org/content/128/16/e240.long>
  + Yancy CW, et al. 2017 ACC/AHA/HFSA Focused Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America. Circulation. 2017 Aug 8;136(6):e137-e161. PMID: 28455343. <http://circ.ahajournals.org/content/136/6/e137.long> J Am Coll Cardiol. 2017 Aug 8;70(6):776-803. PMID: 28455343. J Card Fail. 2017 Aug;23(8):628-651. PMID: 28461259
  + Ponikowski P, et al. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: The Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC). Developed with the special contribution of the Heart Failure Association (HFA) of the ESC. Eur J Heart Fail. 2016 Aug;18(8):891-975. PMID: 27207191 <http://onlinelibrary.wiley.com/doi/10.1002/ejhf.592/abstract>
  + Galie N, et al. 2015 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension: The Joint Task Force for the Diagnosis and Treatment of Pulmonary Hypertension of the European Society of Cardiology (ESC) and the European Respiratory Society (ERS): Endorsed by: Association for European Paediatric and Congenital Cardiology (AEPC), International Society for Heart and Lung Transplantation (ISHLT). Eur Heart J. 2016 Jan 1;37(1):67-119. PMID 26320113 <https://academic.oup.com/eurheartj/article/37/1/67/2887599>
  + Katz JN, Waters SB, Hollis IB, Chang PP. Advanced therapies for end-stage heart failure. Curr Cardiol Rev. 2015;11(1):63-72. PMID: 24251460 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4347211/>
  + Fang JC et al, Advanced (Stage D) Heart Failure: A Statement From the Heart Failure Society of America Guidelines Committee. J Card Fail 2015;21(6):519-534. PMID: 25953697 <https://www.onlinejcf.com/article/S1071-9164(15)00115-3/fulltext>
  + UNC Living with Heart Failure booklet (patient education): <http://news.unchealthcare.org/som-vital-signs/attachments/2016/living-with-heart-failure-patient-booklet>

LVAD

* + “VAD 101” handout (also available on the Internal Medicine Resident website, <https://www.med.unc.edu/medicine/education/residency/residents/resident-links>.
  + DeVore AD, Patel PA, Patel CB. Medical Management of Patients With a Left Ventricular Assist Device for the Non-Left Ventricular Assist Device Specialist. JACC Heart Fail. 2017 Sep;5(9):621-631. doi: 10.1016/j.jchf.2017.06.012. Epub 2017 Aug 16. PMID: 28822743 <https://www.sciencedirect.com/science/article/pii/S2213177917304122?via%3Dihub>
  + Feldman D, et al, The 2013 International Society for Heart and Lung Transplantation Guidelines for mechanical circulatory support: executive summary. J Heart Lung Transplant. 2013 Feb;32(2):157-87. PMID: 23352391 <https://www.sciencedirect.com/science/article/pii/S1053249812012946?via%3Dihub>
  + Slaughter MS, et al. Clinical management of continuous-flow left ventricular assist devices in advanced heart failure. J Heart Lung Transplant. 2010 Apr;29(4 Suppl):S1-39. PMID: 20181499 <https://www.sciencedirect.com/science/article/pii/S1053249810000434?via%3Dihub>
  + Baughman KL, Jarcho JA. Bridge to life--cardiac mechanical support. N Engl J Med. 2007 Aug 30;357(9):846-9. PMID: 17761589 <http://www.nejm.org/doi/full/10.1056/NEJMp078131>

Transplant

* + Costanzo MR, et al, The International Society of Heart and Lung Transplantation Guidelines for the care of heart transplant recipients. J Heart Lung Transplant. 2010 Aug;29(8):914-56. PMID: 20643330 <https://www.sciencedirect.com/science/article/pii/S105324981000358X?via%3Dihub>
  + Mehra MR, et al, The 2016 International Society for Heart Lung Transplantation listing criteria for heart transplantation: A 10-year update. J Heart Lung Transplant. 2016 Jan;35(1):1-23. PMID: 26776864 <https://www.sciencedirect.com/science/article/pii/S1053249815014849?via%3Dihub> (update on Mehra MR et al, Listing criteria for heart transplantation: International Society for Heart and Lung Transplantation guidelines for the care of cardiac transplant candidates--2006. J Heart Lung Transplant. 2006 Sep;25(9):1024-42. PMID: 16962464)
  + Lindenfeld J, et al. Drug therapy in the heart transplant recipient: part I: cardiac rejection and immunosuppressive drugs. Circulation. 2004 Dec 14;110(24):3734‐40. PMID: 15596559 <http://circ.ahajournals.org/cgi/reprint/110/24/3734.pdf>
  + Lindenfeld J, et al. Drug therapy in the heart transplant recipient: part II: immunosuppressive drugs. Circulation. 2004 Dec 21;110(25):3858‐65. PMID: 15611389 <http://circ.ahajournals.org/cgi/reprint/110/25/3858.pdf>
  + Lindenfeld J, et al. Drug therapy in the heart transplant recipient: Part III: common medical problems. Circulation. 2005 Jan 4;111(1):113‐7. PMID: 15630040 <http://circ.ahajournals.org/cgi/reprint/111/1/113.pdf>
  + Page RL 2nd, Miller GG, Lindenfeld J. Drug therapy in the heart transplant recipient: Part IV: drug‐drug interactions. Circulation. 2005 Jan 18;111(2):230‐9. PMID: 15657387 <http://circ.ahajournals.org/cgi/reprint/111/2/230.pdf>

Looking forward to your time with our group,

Patty Chang, MD