Advanced Heart Failure and Transplant Cardiology Fellowship

PROGRAM CURRICULUM
2023-2024 ACADEMIC YEAR

LOMA LINDA UNIVERSITY HEALTH MC (LLUH)
LOMA LINDA UNIVERSITY CHILDRENS HOSPITAL(LLUCH)

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INTRODUCTION

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2023-2024 ACADEMIC YEAR

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OUTLINE OF WEEKLY CONFERENCES

Monday	7:00 AM transplant committee
Tuesday	12:00 noon first Tuesday: Heart transplant /LVAD program update/ Journal club 12:00 noon last Tuesday: Heart Failure Program update and Journal club
Thursday	**7:00 AM:** CCU QI last Thursday of each month 7:00 AM: Cardiogenic shock meeting first Thursday of each month
Friday	**7:00 AM: Heart Failure Didactic Lecture** 12:00 noon: review of inpatient list and transplant/LVAD patients seen in clinic as well as update on patients transplanted within 1 year
Daily	**7:30-8:15 general cardiology lectures**

Attendance on time at all conferences is mandatory, except for clinical emergencies requiring immediate attention.

Fellow mandated to attend lectures related to advanced heart failure and transplant

Every last Thursday of the month fellow will review all biopsies performed as well as any other interesting cases with pathologist.

GENERAL INFORMATION

1. The Advanced Heart Failure/Transplant program at Loma Linda is a 12-month clinical training program will be divided roughly into 50% inpatient care and 50% spent developing clinical skills in the ambulatory setting including outpatient evaluation of patients with heart failure, cardiomyopathies, pulmonary hypertension, post-transplant cardiac allograft, and adult congenital heart disease. During this ambulatory time, invasive laboratory skills will be developed focusing on endomyocardial biopsies and invasive hemodynamic assessment of the heart failure patients. The primary purpose will be met by developing and enhancing the trainee's skills: 1) in the clinical assessment of the advanced heart failure patient and assessing candidacy for advanced heart failure therapeutics (including inotrope support, intraaortic balloon pump (IABP), extracorporeal membrane oxygenation (ECMO), ventricular assist device (VAD), and cardiac transplantation); 2) in the clinical assessment of pulmonary hypertension and use of pulmonary vasodilator therapy; 3) in communicating findings and diagnostic/therapeutic plans to the patient and family as well as the patient's primary care physician; and 4) in leadership and teaching of residents and general cardiology fellows that are otherwise caring for the patient or rotating through the Advanced Heart Failure/Transplant service.

2. No more than 1 week of vacation time is to be taken during any one rotation. No vacation allowed during CCU. Vacations must be scheduled at least 3 months before they are taken and approved by attending on a given rotation, and clinic days involved, as well as by Program Director. A completed vacation request must be turned into the fellowship coordinator for signature by the Program Director.

3. Punctual attendance is mandatory at all teaching conferences. Attendance will be recorded and >60% will be required.

4. Advanced HF trainee must provide timely completion of medical records and notes (within 24 hours of a procedure or discharge or sooner if mandated by hospital policy).

5. Advanced HF trainee must understand that acceptable performance is required for continuation in the program and eligibility for cardiology board examinations. Performance will be reviewed and evaluated periodically using the six competencies. Each cardiology trainee will be scheduled to meet with the Program Director twice a year to provide feedback on the program and receive verbal comments on the cardiology trainee's performance. Trainee is encouraged to make additional appointments to see the Program Director should any issue of concern relative to the fellowship arise.

6.The six general competencies are incorporated in each rotation with encouragement of excellent patient care, endless learning, improving interpersonal and communication skills, professionalism, practice-based learning, and system-based practice stimulating the ability to understand and utilize the hospital system. All these will allow the trainee to increase efficiency and help them survive in these complicated health care environments.

7. During CCU rotation there is home call requirement for the AHF/Tx fellow. During routine business hours, the AHF/Tx fellow can expect to receive calls from the hospital floors with questions about admitted patients and consult patients. In each instance, the fellow is "first call" but has complete backup from the attending advanced heart failure/transplant cardiologist that is also on call. The attending heart failure/transplant cardiologist call schedule is published and is available from the hospital operator or the Web-based Physician Portal (QGenda). The attending heart failure/transplant cardiologist is always available by pager or cell phone (if not physically present) to help the fellow with any questions. Weekend call duties will be required once per month while on CCU rotation. Trainee will round on the hospitalized patients, see new consultations with the on-call heart failure cardiologist.

Responsibilities of the Advanced Heart Failure/Transplant Fellow

The HF fellow is responsible for the evaluation and treatment of the advanced heart failure or transplant patients in collaboration with the attending faculty. They must be available throughout the working day by pager and must notify the Program Director and supervising faculty if they are unexpectedly required to be absent. HF fellow is expected to attend and actively participate in all clinical and research conferences, including the weekly post-transplant patient management conferences on Friday as well as weekly multidisciplinary transplant selection committee (Monday 7 AM), and monthly Heart Failure and Transplant meetings. Trainee should be prepared to participate in the conference discussions. During the Cardiac Catheterization Laboratory Experience, it is expected that the HF trainee will interview/examine patients before the procedure, performing an appropriate history/physical with review of the records. The fellow will demonstrate familiarity with the patients' medical history and the reason for either the endomyocardial biopsy or right heart catheterization procedure. The HF trainee will be involved in performing the procedure, with increasing degrees of involvement and independence as their experience and skill grows. They will be expected to check on the patients they performed procedures on – before leaving for the day and will be available during the regular workday to address any concerns that may arise during the post-procedure period. During the CCU/Consultation, HF fellow will be responsible for developing the treatment plan for hospitalized patients in collaboration with the attending physician. The HF fellow will also ensure that any involved internal medicine resident or mid-level practitioner/physician extender involved in the patients' medical care is updated on treatment and diagnostic plans after participating in the clinical (patient management) rounds with the faculty attending. During the Ambulatory Care Experience, the fellow will attend the ambulatory clinic with one of the attending heart failure/transplant cardiologists one week at a time except for Wednesday when fellow is doing endomyocardial biopsies. Fellow will be rotating in clinic with various HF cardiologists. In this way, fellow gains the additive value of experiencing different management patterns.

Duty Hours The duty hours for the HF fellow conform to the guidelines issued by the Graduate Medical Education committee at Loma Linda University Health and have the same restrictions regarding work or "moonlighting" outside of the Advanced Heart Failure/Transplant fellowship training program. The HF fellow does rarely takes home call. Fellow is expected to conduct weekend round once a month while on CCU rotation. In order to comply with training guidelines, the fellow will be asked to track their time in the hospital and days off on a time sheet that will be returned to the program director at the end of each month. Fellow is responsible for maintaining a log of supervised procedures. Copies of this log should be provided to the Advanced Heart Failure/Transplant Training Program Director for inclusion in the trainee's file. If these logs are not provided, it will be impossible for the Program Director to certify that the trainee has fulfilled the requirements of the Advanced Heart Failure/Transplant Fellowship

ANNUAL EDUCATIONAL ALLOWANCE

At the beginning of the academic year, each individual fellow is given an educational allowance in the amount of $1,500.00. This fund is not part of the salary, but rather a gift from the physicians of the cardiology medical group. The purpose of the fund is to promote further growth and knowledge in the area of cardiology by offsetting the cost associated with attending outside educational meetings (travel, registration, etc.) and the purchase of supplemental educational materials (i.e., medical books & software).

The funds will be granted on a reimbursement basis and purchases cannot be directly billed to the cardiology group. Initial payment must be rendered by the fellow. The fellow must submit a completed check request, supplemented by the original purchase receipts, and turned into the Fellowship Coordinator. A reimbursement check will be granted if the following conditions are met: 1) the request is in line with the purpose of the educational fund, and 2) all documentation is correctly submitted. The $1500.00 given at the beginning of the academic year must be spent during that academic year. Funds may not be "rolled over" into the next academic year.

CCU Heart failure Service

A. Goals and Objective:

A specific objective of this rotation is to make trainee knowledgeable in the management of acute cardiac illnesses requiring admission into the Coronary Care Unit. The six general competencies are incorporated in each rotation with encouragement of excellent patient care, endless learning, improving interpersonal and communication skills, professionalism, practice-based learning, and system-based practice stimulating the ability to understand and utilize the hospital system.

1. Patient Care: Discusses long-term prognosis and outcomes associated with guideline directed medical therapy, including basic data and risk assessment models to increase patient understanding/awareness Plans for patient-specific transitions of care to maintain outpatient follow up and prevent readmissions using all available resources Uses multidisciplinary team for early patient assessment; integrates program-specific guidelines to initiate evaluation for advanced therapies. Optimizes patient care by negotiating the complex care of patients on temporary mechanical support devices during the weaning process and recognizes futility of further treatment Manages end-of-life care for patients on durable mechanical circulatory devices.

2. Medical Knowledge: Demonstrates knowledge of the pillars of a successful mechanical circulatory support and transplant program, including outcomes and resource allocation. Advances knowledge in pathophysiology and treatment of heart failure and cardiogenic shock. Disseminates knowledge of challenging heart failure presentations and uncommon disorders. Advances knowledge in indications, contraindications, and appropriate use for advanced heart failure diagnostics. Advances knowledge in defining the role of advanced heart failure diagnostics. Demonstrate understanding of the of continuous flow VAD pumps, as well as familiarity amongst different pumps. Understand the importance of proper anticoagulation and thromboembolic prophylaxis. Recognize the signs of VAD pump malfunction such as increasing pump power requirements or decreasing flow rates. Recognize the signs and treatment of acute rejection. Demonstrate knowledge in managing patient immediate post-transplantation and post VAD implants. Recognize when patients who are managed as bridge-to-transplant are stable for transplant waitlist activation.

3. System-Based Practice: Patient Safety and Quality Improvement: Critically appraises and applies available, potentially conflicting evidence to guide care of an individual patient Develops initiatives to educate others to critically appraise and apply evidence for complex patients and/or participates in the development of guidelines

4. Accountability: Actively engages teams and processes to modify systems to prevent patient safety events. Role models or mentors others in the disclosure of patient safety events Creates, implements, and assesses quality improvement initiatives at the institutional or community level

5. Professionalism: Coaches others when their behavior fails to meet professional expectations Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution

6. Interpersonal and Communication Skills: Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed Facilitates regular health care team-based feedback in complex situations

B. CCU Team:

Two CCU/ward teams will provide care/teaching for the CCU and cardiology ward patients. Each team will include one attending cardiologist, one senior resident and one/two interns (PGY-1). The cardiology trainee will interact with all teams providing care for the CCU patients. CCU fellows will be assigned to do 2 weeks of Blue/green team and the other 2 weeks CCU Red/yellow team (Heart failure team)

C. Role:

The cardiology trainee will supervise and guide residents in the care of the CCU patients during and after the attending ward rounds. He/she will participate in the attending rounds for discussion regarding diagnostic and management decisions as well as in the special teaching rounds relating to CCU patients. He/she should call the cardiology attending whenever he/she needs supervision or guidance and be available to supervise, assist, and teach the internal medicine residents and interns whenever required. Fellows are expected to spearhead resident teaching. They should also supervise all the procedures in the CCU.

D. Duties: No vacation allowed.

The CCU cardiology trainee is expected to personally examine most admissions and formulate his/her own evaluation. The trainee should enter a succinct note outlining the evaluation and formulating management plans. The trainee will discuss these plans with the attending in charge of the case and with the residents. A second focused afternoon round is to be conducted focusing on the sickest patients. The cardiology trainees will be present during all CCU procedures and function in the supervisory capacity for some of the procedures once they have performed an adequate number of procedures supervised by the faculty cardiologist. The cardiology trainee will be required to be involved with the patients who are under the care of the faculty cardiologist.

E. Proposed Schedule:

8:15 AM: Rounds with attending and house-staff on all CCU patients (for 1st year and for 2nd and 3rd round without attendings). The cardiology trainee will add his own comments and evaluation of each patient as pertinent after presentation of the case by a resident and will actively contribute to the clinical case discussion during each case.

11:00 SIBR rounds preferable done by attendings with fellow

2:00-4:30 PM: The cardiology trainee will supervise procedures and discuss with residents the clinical management of sicker CCU patients or other patient care issues. He will provide the students and residents with appropriate literature relating to less common or newer CCU issues relevant to patient care

5:00 PM: Sign off list for the night flow fellow, with more details on sick cardiac patients.

All mandatory cardiology conferences have priority unless there is a cardiac emergency that the cardiology trainee must attend.

F. Evaluation:

After each CCU, the cardiology trainee will be evaluated using the ACGME subspecialty milestones by the faculty member seconded to the CCU.

G. Expectations and Responsibilities Related to Level of Training

Fellow expected to learn how to manage cardiogenic shock patients in multi-disciplinary team approach (shock team) as well as to learn the management of heart transplant patients admitted with acute rejection or infections. Fellow also expected to learn the management of durable LVAD and temporary percutaneous VAD. Fellow is also expected to learn the management of heart failure patients and how to collaborate with various consultative services to improve outcomes.

Supervision:

Heart failure fellow assigned to the Coronary Care Unit will have a supervisory role over medical interns, residents and cardiology fellow. At all times, a heart failure cardiologist will be assigned to assist. The heart failure cardiologist will make routine clinical Rounds with the fellows and house staff on a daily basis. The heart failure cardiologist will be available for consultation on a 24 hour basis while assigned to the Coronary Care Unit. Heart failure fellow will provide "back-up" support for the cardiology fellow in managing heart failure and heart transplant patients as well as patients on temporary and durable mechanical support devices.

Heart Failure /Transplant Consults

F. Objective:

A specific objective of this rotation is to make a cardiology trainee knowledgeable in the management of

consultative cardiology for in-hospital cardiac patients. Day team will see all the inpatient cardiology consults.

When heart failure fellow is on the consult service it is expected to perform rounds on all heart failure patients on the consult list. Patients should be evaluated, including a thorough review of the chart for any pertinent change in status. Rounds will then be performed with the heart failure cardiologist that will supervise the fellow's interpretation of data, medical decision making and plan of care. Appropriate feedback will be provided during rounds.

RESEARCH ROTATION

Research Training: a) To provide research training in Advanced Heart Failure and Transplant Cardiology. This will include instruction in study design, data collection and statistical analysis. b) To provide opportunities for trainees to conduct research under faculty supervision

Clinical and basic research will be an ongoing task throughout cardiology department. A monthly research rotation with protected time will be organized for all cardiology trainees. Drs Antoine Sakr, Dmitry Abramov, Liset Stoletniy, will organize and supervise this rotation. The goal of this rotation is to enable the cardiology trainee to master clinical research methodology and be able to formulate a research question, design a study of protocol with appropriate methodology, manage and analyze data, and write abstracts and manuscripts.

It is recommended that the protocol is discussed and ready before the research rotation starts for maximum benefit from this. The goal is to achieve an abstract and a manuscript from their work done during the rotation. Drs Antoine Sakr, Dmitry Abramov, Liset Stoletniy will supervise the various stages of the research protocol and designate a proctor for each cardiology trainee, according to the specific research topic chosen by the cardiology trainee. Trainee has the opportunity to pursue basic science research under the supervision of Drs. Sakr and Doycheva.

At the end of the research rotation, the attending working with fellow will evaluate the cardiology trainees' performance. It is anticipated that research proposals and projects in progress will be discussed on a regular basis in the cardiac research meeting. The monthly research meeting will be schedule during 7:30 fellows conference, to evaluate and plan different research opportunities. Evaluation and rotation are based on the six competencies (Appendix A).

ELECTROPHYSIOLOGY ROTATION

Know the indications for and roles of cardiac implantable electronic device therapy in patients with heart failure, including implantable cardioverter defibrillators, pacemakers, and cardiac resynchronization devices.

Know the role of implantable technology to facilitate remote hemodynamic and arrhythmia monitoring of patients with heart failure (e.g., pulmonary artery monitoring and cardiac implantable electronic devices, respectively). Fellows will perform more than 100 device interrogation and interpretation in patients with implanted cardioverter-defibrillators or implanted cardioverter-defibrillator-cardiac resynchronization therapy devices

Invasive CARDIAC CATHETERIZATION RV BIOPSY ROTATION

Preparation for Invasive Procedures: Fellows will be closely involved with attending physicians in preparing patients for invasive procedures, including endomyocardial biopsy, cardiac catheterization, implantation of wireless pulmonary artery pressure sensor, and insertion of temporary mechanical

support devices. Initial evaluation including focused history and above physical examination as well as obtainment of informed consent will be performed by the fellow, and where necessary, supervised by the attending physician. Performance of Invasive Procedures: Fellows will be a performing invasive procedure with attending heart failure cardiologists during the fellowship program. The level of involvement will vary based on their competence and level of training. It is expected that by the end of the fellowship fellow will be predominantly primary operator that will perform these procedures under direct supervision. Prior to participation in any invasive procedures, fellows must familiarize themselves with the patient's relevant data, including ECG, ambulatory telemetry, cardiac imaging, laboratory results, and especially results of prior studies. Fellows will be supervised on an ongoing basis to assess their knowledge of pertinent information prior to procedures. Fellows are responsible for completing procedure reports within 24 hours and sending them electronically to the attending for review and signature. The timeliness, as well as the content of these reports will be closely monitored by the attending physicians, and appropriate feedback will be provided. Post-procedure Follow-up: Fellows are expected to follow up on patients after the procedure to ensure that there are no complications or other issues related to the procedure. Evaluation of patients post procedure will also be supervised by attending physicians periodically. - - The fellow and nurses should be instructed in discharge planning, specifically with regard to patient medications, anticoagulation instructions and follow up appointments. Fellows expected to perform more than 150 endomyocardial biopsies.

Non-invasive Procedures

Preparation noninvasive Procedures: Fellows will be closely involved with attending physicians in preparing patients for noninvasive procedures include echo guided ramp studies for patients with LVAD as well as metabolic stress tests. Initial evaluation including focused history and above physical examination as well as obtainment of informed consent will be performed by the fellow, and where necessary, supervised by the attending physician.

Fellow will be weekly involved on learning cardiopulmonary stress testing and interpretation of the test

Electives:

INFECTIOUS DISEASE ROTATION

The fellow on the infectious disease rotation is taught how to perform high quality consultations with consideration for the potential expanded spectrum of infections and presentation of those infections in an immunosuppressed transplantation patient.

Goals and objectives

Fellow will participate doing transplant ID consult then follow by a thorough discussion and review, impressions and recommendations are formulated for the completed consultation. Continue follow up of consulted patients done by daily ID rounds. Rounds are geared not only for patient care but also towards teaching of transplantation related infectious disease

PULMONARY HYPERTENSION

Goals and objectives

Know the epidemiology, risk factors, prognostic factors, pathophysiology, and natural history of pulmonary hypertension.

Know the classification, etiologies, and appropriate treatment of each type of World Health Organization pulmonary hypertension.

Know the role of invasive hemodynamic assessment, including characterization of pre- and post- capillary components in patients with pulmonary hyper Know the indications to perform vasoreactivity1 testing in pulmonary arterial hypertension and pulmonary hypertension due to left heart disease undergoing transplant evaluations.

Know the role of provocative maneuvers (fluid loading and/or exercise), as needed, to assess and diagnose patients with pulmonary hypertension.

Know the classes of medications available to treat pulmonary hypertension and their use alone and in combination, including management of side effects.

Know the role of inhaled and intravenous agents in selected patients with pulmonary hypertension and acute right ventricular failure.

Know the roles of balloon atrial septostomy, balloon pulmonary angioplasty, thromboendarterectomy, and lung transplantation in patients with pulmonary arterial hypertension.

Know the roles of 6-minute walk and cardiopulmonary testing to assess and manage patients with pulmonary hypertension.

Know the indications for patient referral to a specialized pulmonary hypertension center.

Know the recommendations for contraceptive management, preconception evaluation, and pulmonary hypertension management in pregnancy in collaboration with specialists skilled in high-risk pregnancy

PALLIATIVE CARE ROTATION

Goals and Objectives

Fellow will rotate with palliative care team on the inpatient services as well as outpatient clinics. Fellow is expected to develop skills to initiate palliative and supportive care and to address symptoms and goals of care for patients with advanced heart failure across the care continuum

ADULT CONGENITAL HEART DISEASE ROTATION

Cardiology trainee will actively participate in the adult congenital clinic on Mondays and Thursdays, pediatric/adult Cath lab cases, echo lab, and wards on congenital pediatric/adults patients per day and is recommended to read extensively during this rotation on the different congenital defects that he/she sees during the day and review the literature. Fellow will participate with inpatient consults too. To strengthen the trainee's knowledge in congenital heart disease, monthly lectures are organized throughout the year. Evaluation is fully base on the six competencies.

Goals:

- Establish basic knowledge of the ACHD outpatient and inpatient clinical care.
- Interpretation of basic hemodynamics: shunt fractions, Qp, Qs, PVR ...etc
- Competency in performing and reading TTE for complex congenital heart diseases.
- Familiarity with the cross-sectional imaging (CT, MRI) for ACHD patients

Expectation:

- Two outpatient clinic (half day sessions) / week
- One day in the Cath lab for ACHD cases - Case discussion with the primary operator is expected before the case
- One day in the Echo lab (arranged with Dr. Bansal, or Dr. Kheiwa)
- One day CT - MRI (arranged with Dr. Parwani)
- Throughout the 4 clinical days in the week - availability for inpatient consultation.
- The fellow is expected to present one interesting case at the end of the rotation

The above noted schedule can be modified based on individual fellow interest e.g.: spending more time in the echo lab, or Cath lab. That will be decided in the pre-rotation orientation.

Evaluation and Supervision

The cardiology trainee will be evaluated by the pediatric cardiologist that the trainee chooses to work with. A specific evaluation in technical skills, interpretation, theoretical knowledge, attitude, punctuality and service-based practice will be made and specific areas of improvement discussed. Evaluation and rotation are based on the six competencies (Appendix A).

Cardiac MRI Rotation

Goals and Objective

Fellow will have the opportunity to learn about various cardiomyopathies using Cardiac MRI. This rotation is in combination with ACHD rotation and is supervised by Dr Parwani, level III trained cardiac MRI cardiologist.

Heart failure, transplant and LVAD Cardiology Clinic

Objectives:

The Outpatient Clinic at the Loma Linda International Heart institute cardiology trainee the opportunity for gaining experience in both outpatient evaluation and consultation, as well as, longitudinal follow-up of appropriate patients assigned to his clinic. The HF trainees will be assigned to the clinic rotation Monday to Friday. Monday HF clinic morning and afternoon, Tuesday AM heart transplant and PM HF clinic.
Wednesday Heart transplant in AM and HF PM. Thursday AM HF/LVAD and PM HF Friday HF/Tx and AM and HF PM

Fellows will also evaluate and review all pertinent data for patients seen on an outpatient basis, prior to presenting the cases to attending physicians. Supervision, and feedback for medical decision making will be provided by the attending physician for every patient. Evaluations: 360 degree evaluations are performed via MedHub. Fellows will be given instructions on using this platform that can also be found on the Loma Linda University GME website. All transplant and LVAD patients seen in clinic will be reviewed during the Friday noon meeting.

Ambulatory clinical duties: 8:30-11:30 AM clinic, 1-5 PM clinic: specialty clinic includes: 2 weeks of each: pulmonary hypertension clinic, palliative care clinic, electrophysiology clinic, cardio-oncology, adult congenital heart disease clinic and elective.

Core Curriculum Conferences – Appendix B

The core curriculum topics are designed to satisfy the ACGME, ACCF COCATS 3 Task Force 8 – Level 3 training in heart failure, and the 2010 ACCF/AHA/ACP/HFSA/ISHLT clinical competence recommendations.
Supplemental Guide: Advanced HF and Transplant Cardiology

1. Acute heart failure
2. Cardiogenic shock
3. Chronic heart failure
4. Specific Cardiomyopathies
5. Temporary MCS
6. Durable MCS
7. Heart transplantation patient selection and listing
8. Intra and perioperative complications
9. Immunosuppression and transplant immunology
10. Acute allograft rejection
11. Chronic allograft rejection
12. Post-transplant infection, malignancy
13. Palliative care
14. Pulmonary hypertension

Weekly didactics from ACCSAP TEST PREP

Didactics Schedule: July 2023 - June 2024

Acute Heart Failure (56 questions total):
1. July 10, 2023 - Questions 1-7
2. July 17, 2023 - Questions 8-15
3. July 24, 2023 - Questions 16-23
4. July 31, 2023 - Questions 24-31
5. August 7, 2023 - Questions 32-39
6. August 14, 2023 - Questions 40-47

7. August 21, 2023 - Questions 48-56

Pulmonary Hypertension (19 questions):
8. August 28, 2023 - Questions 1-7
9. September 4, 2023 - Questions 8-15
10. September 11, 2023 - Questions 16-19

Heart Failure with Reduced Ejection Fraction (30 questions):
11. September 22, 2023 - Questions 1-7
12. September 29, 2023 - Questions 8-15
13. October 6, 2023 - Questions 16-23
14. October 13, 2023 - Questions 24-30

Heart Failure with Preserved Ejection Fraction (100 questions):
15. November 17, 2023 - Questions 1-7
16. November 24, 2023 - Questions 8-15
17. December 1, 2023 - Questions 16-23
18. December 8, 2023 - Questions 24-31
19. December 15, 2023 - Questions 32-39
20. December 22, 2023 - Questions 40-47
21. December 29, 2023 - Questions 48-55
22. January 5, 2024 - Question 56 and ongoing

Mechanical Circulatory Support (74 questions):
23. March 15, 2024 - Questions 1-7
24. March 22, 2024 - Questions 8-15
25. March 29, 2024 - Questions 16-23
26. April 5, 2024 - Questions 24-31
27. April 12, 2024 - Questions 32-39
28. April 19, 2024 - Questions 40-47
29. April 26, 2024 - Questions 48-55
30. May 3, 2024 - Questions 56-63
31. May 10, 2024 - Questions 64-71
32. May 17, 2024 - Questions 72-74

Heart Transplantation (20 questions):
33. May 31, 2024 - Questions 1-7
34. June 7, 2024 - Questions 8-15
35. June 14, 2024 - Questions 16-20

Specific Etiologies of Heart Failure (70 questions):
36. June 28, 2024 - Questions 1-7
37. July 5, 2024 - Questions 8-15
38. July 12, 2024 - Questions 16-23
39. July 19, 2024 - Questions 24-30

RECOMMENDED TEXTBOOK AND JOURNAL READING

ACC **HFSAP** is available for the fellow
Bogar, Linda, and April Stempien-Otero, eds. Contemporary Heart Transplantation. Springer International Publishing, 2020
JACC, JACC HF, CIRCULATION-HF, ISHLT
PRACTICE GUIDELINES AND CONSENSUS DOCUMENTS:
https://ishlt.org/publications-resources/professional-resources/standards-guidelines/professional-guidelines-and-consensus-documents

APPENDIX A

1. **Medical Knowledge**. Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care. Residents are expected to: a. Demonstrate an investigatory and analytic thinking approach to clinical situations. b. Know and apply the basic and clinically supportive sciences which are appropriate to their discipline.
2. **Patient Care**. Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:
    a. communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
    b. gather essential and accurate information about their patients
    c. make informed decisions about diagnostic and therapeutic interventions based on patient information, preferences, up-to-date scientific evidence, and clinical judgment
    d. develop and carry out patient management plans
    e. counsel and educate patients and their families
    f. use information technology to support patient care decisions and patient education
    g. perform competently all medical and invasive procedures considered essential for the area of practice
    h. provide health care services aimed at preventing health problems or maintaining health
    i. work with health care professionals, including those from other disciplines, to provide patient-focused care
3. **Practice Based Learning and Improvement**. Residents must be able to investigate_and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Residents are expected to:
    a. analyze practice experience and perform practice-based improvement activities using a systematic methodology
    b. obtain and use information about their own population of patients and the larger population from which their patients are drawn
    c. locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
    d. apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
    e. use information technology to manage information, access on-line medical information; and support their own education
    f. facilitate the learning of students and other health care professionals
4. **Systems-Based Practice**. Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Residents are expected to:
    a. know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
    b. practice cost effective health care and resource allocation that do not compromise quality of care
    c. advocate for quality patient care and assist patients in dealing with system complexities
    d. partner with health care managers and health care providers to assess, coordinate
5. **Professionalism.** Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Residents are expected to:
    a. demonstrate respect, compassion and integrity
    b. demonstrate a commitment to ethical principles
    c. demonstrate sensitivity and responsiveness to patients' culture, age, gender and disabilities

6. **Interpersonal and Communication Skills**. Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patient's families, and professional associates. Residents are expected to:

a. create and sustain a therapeutic and ethically sound relationship with patients

b. use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills

c. work effectively with others as a member or leader of a health care team or other professional group

d. New ACGME subspecialty milestones can be found here:

i. https://www.acgme.org/globalassets/pdfs/milestones/cardiovasculardiseasemilestones.pdf

APPENDIX B

Sample of General Cardiology Conference Schedule:

Monday	Tuesday	Wednesday	Thursday	Friday
				1 Nuc and MMI case-based learning Dr. Silvet
4 **No lecture** 	5 Loma Linda History Dr. Hilliard **In-person**	6 Echo lecture Dr. Bansal **In-person**	7 Shock conference, 7 AM	8 Nuclear - non-coronary disease Dr. Priester
11 MI complications Dr. Swamy	12 Device interrogation **In-person** 7.30 AM	13 Echo lecture Dr. Bansal **In-person**	14 Cardiogenic shock lecture, 7 AM Dr. Sakr	15 Nuclear - Artifacts Dr. Samar **Virtual applicants**
18 HF conference, 7 AM	19 Fellows meeting **In-person**	20 Echo lecture Dr. Bansal **In-person**	21 Heart dissection, 6.30 AM **In-person** EP team	22 Nuc and MMI case-based learning Dr. Priester **Virtual applicants**
25 Nuclear physics Dr. Mamdani	26 Research meeting **In-person**	27 Echo lecture Dr. Bansal **In-person**	28 ACHD, 7 AM	29 RHC/hemodynamics Dr. Stoletniy **Virtual applicants**