



Cardiology

Los Angeles Medical Center

The Kaiser Permanente Los Angeles Medical Center (LAMC) serves as the tertiary referral center for 4 million Kaiser Permanente members throughout Southern California. It is the major referral center for services including cardiac catheterization, cardiac surgery, electrophysiology, bone marrow transplantation, apheresis, radiation oncology, neurosurgery, and specialized urologic surgery. The Medical Center also maintains active teaching programs in all major medical and surgical subspecialty services.

LAMC is one of the affiliated teaching hospitals of the David Geffen School of Medicine of the University of California in Los Angeles (UCLA). Students and residents from UCLA, as well as many other national and international medical schools rotate through the internal medicine and subspecialty services. Many members of our medical faculty hold faculty appointments from UCLA. LAMC will also serve as one of the flagship hospitals for the new Kaiser Permanente School of Medicine.

Kaiser Permanente is among the nation's largest and most highly regarded accountable care organizations. As a member of our Fellowship program, you will learn to practice cost effective yet caring medicine — an approach indispensable to providing quality health care in all medical settings in which you will practice in the future.

The Program

The clinical curriculum is designed to meet COCATS 4 recommendations by the American College of Cardiology for both procedural volume and training time for competency in cardiovascular disease.

The fellowship program provides Fellows with broad exposure to all aspects of clinical cardiology, with the goal of developing well-rounded clinicians capable of independent clinical practice to provide state-of-the-art, evidence-based care. Complete cardiac catheterization and cardiac

surgical services as well as all modalities in cardiac imaging and patient management are available at LAMC. A brief description of the major cardiac services present in our program is provided below

Our 32-bed Coronary Care Unit (CCU) is the largest in the city of Los Angeles and admits ~2,500 patients every year. The CCU is divided into 4 modules staffed by two physician teams equipped to provide intensive critical care, invasive monitoring, and step-down care. The CCU supports the training requirements of the Departments of Internal Medicine in addition to Cardiology.

The Regional Cardiac Catheterization Laboratory is located at LAMC and consists of five fluoroscopy suites. The Cath Lab performs >6,000 diagnostic, and >2,000 interventional procedures every year. In addition, the cath lab has an active and expanding structural heart disease program performing ASD/PFO closures, TAVR, Mitraclip, Mitral Valvuloplasty, alcohol septal ablation for HOCM, thoracic aortic aneurysm repair, and congenital heart disease interventions. Each Fellow rotates for 6-8 months in the Cath Lab over the course of 3 years. Our 12-month ACGME-approved Interventional Cardiology Fellowship trains three PGY7 fellows each year.

The Regional Clinical Cardiac Electrophysiology (CCEP) Service, also located at LAMC, performs >500 ICD/CRT implantations and >1,000 electrophysiology procedures every year. Fellows are exposed to radiofrequency ablation procedures, intracardiac echocardiography, transeptal catheterization, three-dimensional mapping using the Navix and Carto-merge mapping systems, epicardial ablations and stereotaxis for remote mapping/ablation, cryoballoon ablation, and left atrial appendage occlusion devices. Each Fellow spends 2-4 months on this rotation. Our 24-month ACGME-approved CCEP Fellowship trains two PGY7 fellows each year.

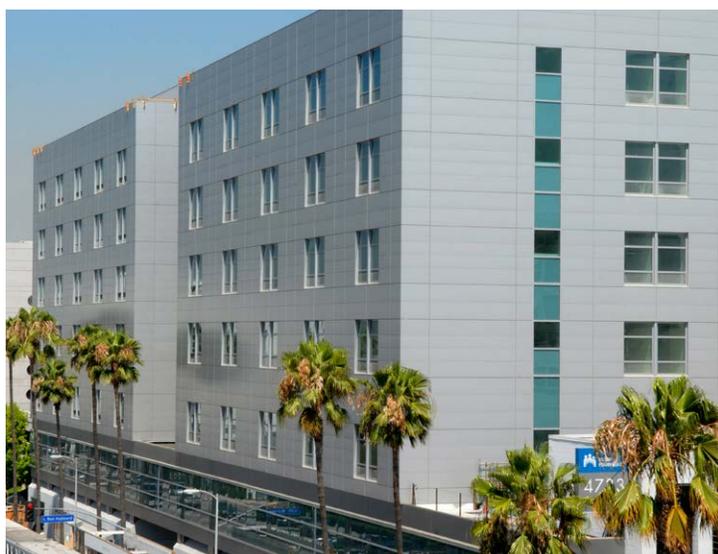


The Cardiac Surgical Department performs ~2,000 surgeries every year, including a full spectrum of cases (ischemic, valvular, congenital heart diseases, aortic diseases, etc.). It is one of the three largest cardiac surgical programs in the State of California. LAMC is a comprehensive thoracic aortic care center performing all facets of aortic repair including complex hybrid surgical-endovascular thoracic aortic aneurysm and aortic dissection repair.

All CVD fellowship rotations take place at LAMC except for a 4-week block of Cardiac Computerized Tomography (CCT) training at the Harbor UCLA Medical Center under Dr. Matthew Budoff; and a 4-week block of Heart Transplant and Mechanical Circulatory Support training at the Cedars Sinai Medical Center under Dr. Jon Kobashigawa.

Conferences and Seminars

- **Fellows Core Curriculum:** This conference is held daily at noon over lunch. Invited faculty from general cardiology, interventional cardiology, electrophysiology as well as other departments present didactic lectures on topics related to the diagnosis and treatment of cardiovascular diseases.
- **Cath lab conference:** This conference is led by the interventional cardiologists and is held every Friday. The most interesting cases of the week are presented. Angiographic findings, interventional procedures, hemodynamics, correlation with other imaging modalities, and outcomes are reviewed.
- **ECG conference:** This conference is part of the core curriculum and is organized by the Electrophysiology faculty. This is a case-based teaching conference where ECGs and intracardiac electrograms are reviewed.
- **CCU conference:** This is a weekly case-based conference where clinical fellows present cases from the CCU and lead a focused discussion of topics centered around clinical cases.
- **Journal Club:** These meetings are held monthly. Recent journal articles are discussed by faculty and fellows with a focus on statistical methods and applicability to clinical practice.



- **Electrophysiology conference:** The electrophysiology staff meet daily to review cases of the day, discuss literature support for management decisions, and review EKG's, telemetry strips, intra-cardiac tracings, and device strips. This is a working conference with a focus on patient management.
- **Heart team conference:** Fellows participate in daily heart team multidisciplinary conferences with interventional cardiology and cardiac surgery. Cases are discussed with regards to different approaches and combined decisions are made.

The three-year program includes the following principal rotations:

Coronary Care Unit (CCU)

Fellows spend eight months in the CCU, which provide training in a broad spectrum of acute and tertiary-care level cardiac illnesses. The CCU is staffed by two faculty, two cardiac Fellows, and a number of residents, interns, and medical students. Teaching rounds are conducted daily with faculty members. The program is structured to allow for a balance between faculty supervision and fellow autonomy.

Catheterization Laboratory

Each trainee will have performed 500-600 catheterizations as principal operator by graduation. The fellow will be competent in performing right and left heart cath, shunt runs, grafts, and valve cases. Congenital heart disease cases are also performed. A supervising faculty member is present during all studies.

Echocardiography

The echocardiography laboratory provides comprehensive training in echocardiography, including transthoracic, transesophageal and stress echocardiography. While on the rotation, fellows perform 2-6 TEEs daily and perform / interpret > 20 TTEs daily. All of our graduates meet the requirements for echo board certification upon graduation.



Noninvasive Rotation

Training in ECG interpretation, exercise testing, Holter monitoring, pacemaker follow-up, and nuclear cardiology is provided during four months of Noninvasive Cardiology rotations. In addition, each fellow spends four weeks training in cardiac CT at the Los Angeles Biomedical Research Institute (LA Biomed) and Harbor-UCLA Medical Center with Dr. Matthew Budoff.

Research

Clinical research is an integral part of the Fellowship program. Fellows have access to a large comprehensive population-based database maintained by Kaiser Permanente. This provides an exceptional opportunity to enable research studies related to epidemiology, prevention, diagnosis and treatment of cardiovascular diseases. The Department of Research and Evaluation provides support with study design, programming, and statistics. Fellows present their research findings at national conferences and publish in peer-reviewed journals. The impact of research at Kaiser goes beyond conference presentation and scholarly publications. Findings from our research are translated into clinical practice to improve the quality of clinical care delivered.

Outpatient clinic

Each cardiac fellow conducts an outpatient clinic one afternoon a week throughout the entire training period. The patients, once assigned, remain under the trainee's care. This provides longitudinal experience in ambulatory management.

Electrophysiology

The trainee will spend two to four months in our Electrophysiology Laboratory, depending on future aspirations. Emphasis is directed to understanding the fundamentals of intracardiac recording, diagnosis of dysrhythmias, the performance of in-patient EP consults, and selection of antiarrhythmic strategies.

Other Rotations

Substantial exposure to cardiac transplantation, post-cardiac surgery care, ambulatory cardiac rehabilitation and in-patient cardiology consultation occurs throughout the training period.



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