

## From the Editor: The Cardiovascular Institute, the future of CMR

The future of CMR is intimately entwined with the future organization of the diagnosis and treatment of cardiovascular diseases into so called “focused factories” or cardiac institutes. Such institutes are gradually increasing in number. Heart institutes take the form of a portion of a hospital, an independent dedicated building or a heart hospital. Such facilities, dedicated to cardiovascular diseases are appearing with increasing frequency incorporating cardiovascular medicine and surgery (cardiac anesthesiology and radiology). All of these subspecialties are joining forces to generate more powerful enterprises utilizing a team approach to improve patient care and to enhance research activities. The classical multidisciplinary approach to the care of patients with cardiovascular disease provides improved efficiency and quality for the care of patients with cardiovascular diseases. This is similar to cancer institutes and the neurosciences many of which became focused years ago. Even cardiovascular imaging institutes are being created in view of the complexities of diagnosis of cardiovascular diseases.

Intelligent academic medical centers have seen the light. For example, the Ross Heart Hospital of the Ohio State University Medical Center is a free-standing heart hospital functioning as a semi-autonomous unit within an academic medical center. Even the Harvard University affiliated, Brigham and Woman’s Hospital, is planning to build an adjacent free-standing building as a functional heart hospital. In this way cardiovascular medicine including imaging and cardiovascular surgery will function as an independent facility within the general hospital system. Of course, the general hospital is essential to the non cardiovascular needs of the patient with primary CVD. Other approaches to the institute include segregating a portion of a general hospital so that it specializes in cardiovascular disease or building a structure that contains several institutes such as cardiovascular, liver, neurologic, etc. Again the adjacent general hospital provides the non subspecialty care as required.

An essential portion of such institutes is the diagnostic component largely consisting of the imaging facility. The most modern of such facilities would consist of state-of-the-art echocardiography, stand alone SPECT cameras. Sixty-four multislice x-ray CT scanners coupled with PET or SPECT systems, and of course, cardiovascular magnetic resonance systems. Why is all of this equipment needed? Perhaps it

isn’t! Echocardiographic equipment is needed for the quick evaluation. SPECT is needed to evaluate myocardial perfusion. PET and CT are especially useful for oncologic diagnosis, but can provide perfusion and viability evaluation coupled with coronary artery assessment. CMR can provide morphology, function, perfusion, viability, coronary artery and metabolic assessment. The development of CMR studies at 3T will provide improved signal to noise to improve imaging in general. At this time, the center that contains all of these for cardiovascular diagnosis will be more marketable. It will allow the choice of the patient, the generalist and the cardiovascular specialist. It will provide an ideal milieu for research to comparatively assess these modalities. It will allow the most comprehensive means of cardiovascular diagnosis. In the future, there should be little need for diagnostic catheter-based procedures. The catheter laboratory will be reserved for interventional procedures. Cardiovascular specialists and their patients will know the type and extent of their disease and the optimal procedures to treat it. In the setting of the cardiovascular institute, imaging and interventional cardiovascular specialists and cardiovascular surgeons will meet on a daily basis to review and discuss the optimal course of treatment for the patient. They will be able to review information more precisely and accurately. They will be able to evaluate disease that was never previously available to them. What is the state of the coronary artery plaque: stable or vulnerable? Is the myocardial tissue viable or not? What is the extent of vascular disease? How severe is the stenosis or regurgitation? What is the extent of myocardial ischemia?

This is a very exciting time for the cardiovascular specialist and clearly CMR is a major component of the future.

The present issue of the *Journal*, volume 7, number 3, contains nine manuscripts covering atrial structure and function, coronary flow, myocardial hypertrophy, myocardial perfusion, myocardial viability, ventricular function and valvular heart disease. Again, the breadth of these manuscripts demonstrates the versatility of CMR. Also noteworthy, is the appearance of a new course on CMR fully sponsored by the Society of Cardiovascular Magnetic Resonance, directed by Drs. Charles Higgins and Gerald Pohost. This course will take place on September 9–11 on the banks of the Pacific Ocean at Marina del Rey, in Los Angeles, California in the fall of this year.