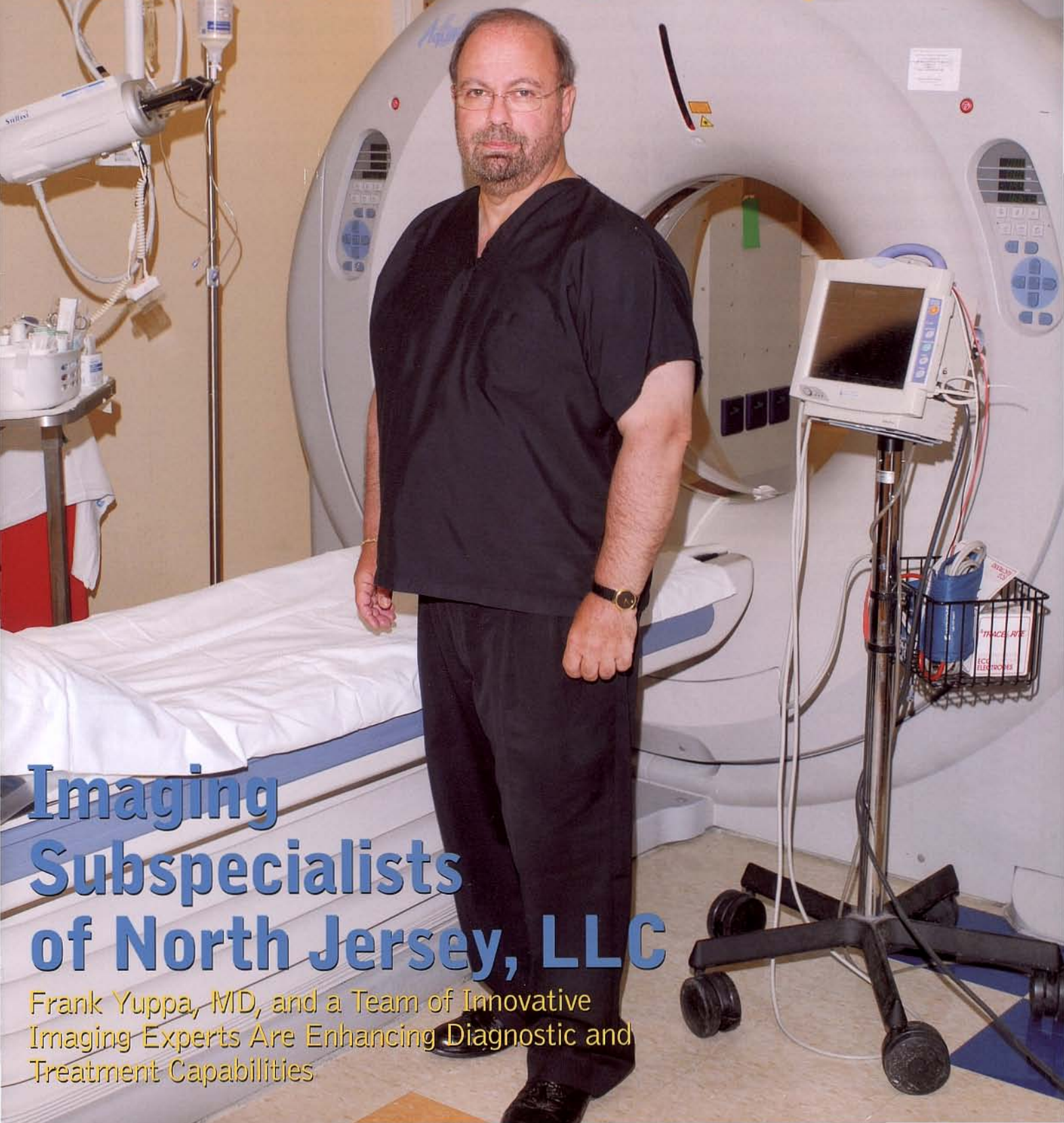


M.D. NEWS

A BUSINESS AND LIFESTYLE MAGAZINE FOR PHYSICIANS



Imaging Subspecialists of North Jersey, LLC

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Treatment Capabilities

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By Iris Goldberg

In light of this month's editorial focus on diagnostic and therapeutic advances in imaging technologies, we are pleased to share the invaluable contributions of Frank Yuppa, MD, RVT and his colleagues at Imaging Subspecialists of North Jersey, LLC (ISNJ), which is one of the largest radiology practices of its kind in our area. Dr. Yuppa, who is President of ISNJ, is Chairman of Radiology at St. Joseph's Regional Medical Center and Mountainside Hospital.

Specializing in cardiovascular computed tomography (CCT), oncological radiology and interventional radiology, Dr. Yuppa is board-certified in diagnostic radiology, neuroradiology and vascular technology. Additionally, he is Level III, board-certified in cardiovascular CT and holds certifications in body, neurologic and orthopaedic magnetic resonance imaging (MRI) and in mammography.

Along with Dr. Yuppa, ISNJ is comprised of a diverse group of highly trained and sub-specialized radiologists who perform imaging studies at St. Joseph's Regional Medical Center in Paterson, Mountainside Hospital in Montclair and St. Joseph's Ambulatory Imaging Center. ISNJ is also located at Wayne Valley Imaging, a primarily orthopaedic MRI and digital x-ray facility in Wayne.

Among the physicians on staff at Imaging Subspecialists of North Jersey are four interventional radiologists, four neuro-radiologists, one pediatric radiologist, three musculoskeletal radiologists, two nuclear radiologists and two dedicated breast

Dr. Frank Yuppa uses ultrasound to view a patient's carotid artery.



Imaging Subspecialists of North Jersey, LLC

Frank R. Yuppa, MD

President of ISNJ and Chairman of the Department Of Radiology, Saint Joseph's Regional Medical Center And Mountainside Hospital, Director Saint Joseph's Ambulatory Imaging Center

Edward Milman, MD

Director of MRI, Medical Director, Wayne Valley Imaging

Prashant Parashurama, MD

Neuroradiology, Associate Director Mountainside Hospital

Bhanu Aluri, MD

Neuroradiology

Matthew Forte, MD

Director of Interventional Services, Director Saint Joseph's Vascular Access Center

Steven Kwon, MD

Interventional Radiology

Madelyn Danoff, MD

Director of Breast and Women's Imaging

Kalavarthy Balakumar, MD

Breast and Women's Imaging, Nuclear Medicine, PET

Orestes Sanchez, MD

Interventional Radiology

David Thierman, MD

Abdominal Imaging

Vidor Berstein, MD

Ultrasound

Patrick Conte, MD

Nuclear Medicine, PET

Vijay Hiremath, MD

General Radiology

Robin Frank Gerzberg, MD

Director of Pediatric Imaging

Warren Freitag, MD

Chest, Neuro and Abdominal Imaging

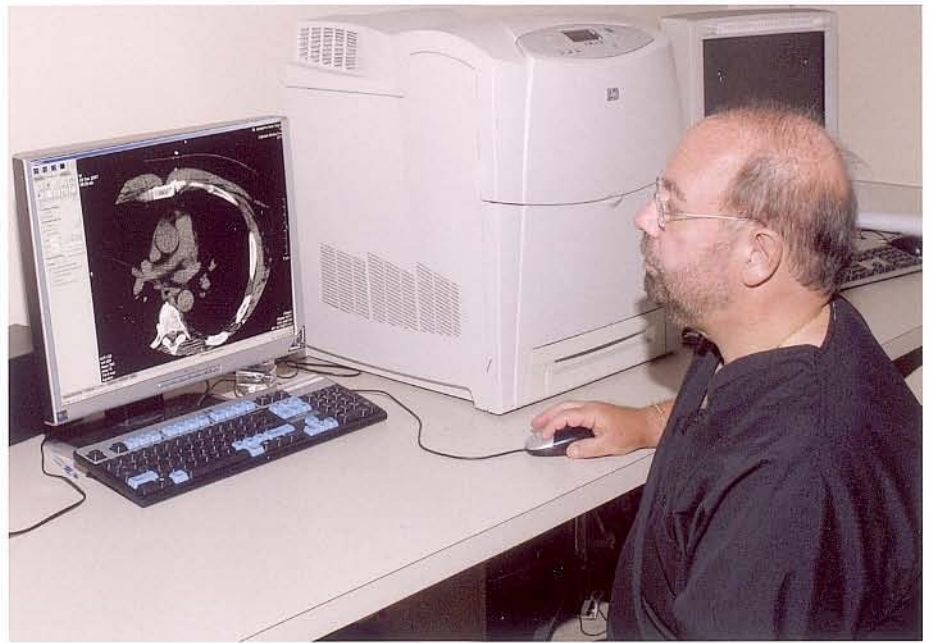
radiologists within a group of seven who are certified mammogram readers. ISNJ radiologist, Edward Milman, MD, who is Director of MRI Services at St. Joseph's and Medical Director of Wayne Valley Imaging, is also Level III board-certified in cardiovascular CT, making ISNJ unique in having the availability of two board-certified Level III cardiac CT interpreters.

At each location, the physicians have the highest level of technologically advanced, state-of-the-art equipment at their disposal. For example, at both St. Joseph's Medical Center and Mountainside Hospital, cardiac CT machines are quite up to date, with the newest 128 slice cardiac CT scanner now available at Mountainside. Both facilities also utilize the most current PET scan (positron emission tomography) technology as well. At Wayne Valley Imaging a new 1.5T MRI machine reduces 95% of noise and has a wider bore to accommodate larger or claustrophobic patients.

No matter which facility each of the specialized imagers is at any time or even if they are at home, the sophisticated *Infinite* PACs (Picture Archiving & Communications) system keeps them all networked and capable of consulting with one another at all times, ensuring that every study has the benefit of being evaluated by the radiologist with the most expertise in that particular discipline. With approximately 400,000 imaging studies done collectively by ISNJ on a yearly basis, this level of subspecialty care is quite impressive.

Dr. Yuppa discusses some of the distinguishing characteristics that he feels set ISNJ apart. "The last seven people we've hired have had between six and nine post-doctoral years of training," he relates, emphasizing the level of sub-specialized expertise contained within the group. Dr. Yuppa elaborates on the importance of this capability. He points to the advances in technology that continually emerge within the field of radiology. "The technology today is outstripping us so that you really do need to give people subspecialty readings in order not to miss something that could possibly be deadly," he states forcefully. "We cross-consult all day," Dr. Yuppa adds, reiterating the tremendous benefits of having experts from each specialty area available when needed.

One of ISNJ's ongoing endeavors that Dr. Yuppa is most proud to share is the cardiac CT scanning program that has been undertaken at St. Joseph's Ambulatory Imaging Center to provide early screening for firefighters, who, as confirmed by the *Harvard Study* done in the summer of 2008, have a death rate that is 100 times greater than the average population, with a significant number of those dying at a young age. This is one of the first programs of its



Coronary artery calcium scoring is done with a high speed cardiac CT to detect calcium deposits along the walls of arteries.

PHOTO BY KEN ALSWANG, AT HOME STUDIOS

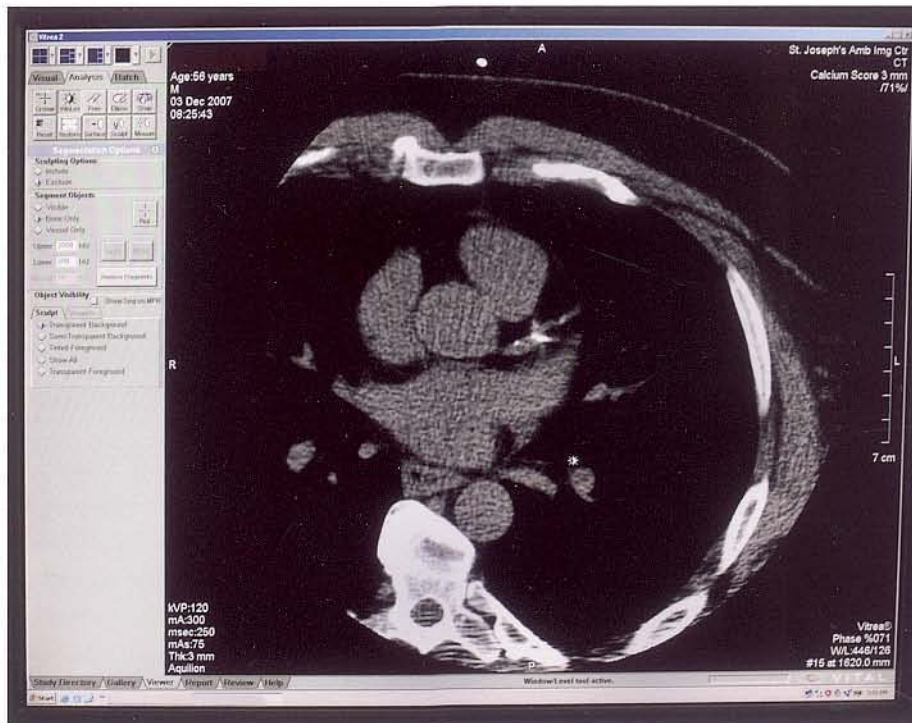
kind in the nation and certainly the first in the eastern half of the United States.

Contrary to what many might believe, heart attack is the leading cause of death amongst firefighters. The U.S. Fire Administration reported that 44 percent of all on-duty firefighter fatalities that occurred between 1999 and 2000 were, in fact, caused by heart attacks. A similar finding was reported in a 2007 *New England Journal of Medicine* study which attributed 45 percent of on-duty firefighter deaths between 1994 and 2004 to heart disease.

Since his house was struck by lightning and burned back in 1995, Dr. Yuppa has been committed to give something back to firefighters who risk their own lives everyday to save the lives of others. He had seen the various news reports of firefighters in their 30's, 40's and 50's dying suddenly, while on duty fighting a fire. After investigating the literature, which confirmed the disproportionate death rate among firefighters, Dr. Yuppa became convinced that more could be done to accurately identify those at risk and reduce the number of heart-related fatalities among this courageous group of individuals.

"With firefighters there are some confounding issues," says Dr. Yuppa. "Many are out of shape and many volunteer firemen are weekend warriors," he explains. "They rush to a fire and their blood pressure and adrenalin goes off the charts. They're breathing in carbon monoxide and carrying a 60 pound pack. A fatty plaque ruptures and they have an acute heart attack," Dr. Yuppa relates. "Every year in New Jersey we're losing young firemen," he sadly reports.

With the effective medical treatment for heart disease that is available today, especially the amazing benefits derived from the use of statin drugs, it is without question that early detection is the key to stopping the progression of the disease and preventing



In this patient's calcium scoring, the white area demonstrates asymptomatic coronary artery disease in the left anterior descending artery.

deadly heart attacks. Until recently, the predominant screening procedure utilized to predict whether a New Jersey firefighter was at increased risk was a free stress test offered by The Buscio Foundation, established to honor the Jersey City fire captain who died of a heart attack while fighting a fire at the age of 39. Dr. Yuppa explains why this technology does not go far enough. "Stress tests simply do not pick sub-clinical early coronary disease when intervention can be life saving," he says. "Stress tests are falsely positive nearly 25 percent of the time and falsely negative at least 15 percent of the time and the major issue is that most people who die of heart attacks have less than 50 percent narrowing in their arteries. A stress test is not going to pick that up," he states emphatically.

Calcification in the coronary arteries is the earliest indicator of heart disease. Coronary artery calcium scoring (CACS) is done with the noninvasive, high speed cardiac CT scanner to detect calcium deposits along the walls of arteries and compare them to age-matched controls. The amount of calcified plaque correlates linearly with the amount of soft plaque. It is the soft plaque that can be deadly. This painless exam which takes five minutes detects early signs of disease years before symptoms are apparent and has 99 percent sensitivity in identifying those people who are at risk for an acute coronary event if not medically treated.

Coronary CT Angiography (CTA) is 98 percent accurate in excluding clinically significant coronary artery disease when performed for appropriate indications. This exam, which directly images the arteries in great detail after the patient has been injected with a small amount of intravenous contrast, is not a screening test but rather used to evaluate patients who, for

example, have had atypical chest pain, an inconclusive stress test or one of many other concerning indications.

Since most heart attacks are due to fatty plaque rupture, rather than the gradual narrowing and occurs 50 percent of the time without previous symptoms, calcium scoring is able to raise a red flag when stress tests appear normal. Also, when comparing coronary CTA to cardiac catheterization, the latter is five to ten times more expensive than CTA. In addition, catheterization will often miss significant plaque in the wall of the artery that may be at risk for rupture. It is also important to note that 40 to 50 percent of elective catheterizations show no evidence of obstructive disease.

Unfortunately, despite countless studies that support the tremendous potential for saving lives through the use of calcium scoring with cardiac CT scanning, not everyone is on board. Because it is a

screening examination, most New Jersey insurers do not cover calcium scoring, even for those such as firefighters who, because of the physiologic stress their jobs subject them to, most especially need to know the calcium levels within their arteries sooner rather than later. At St. Joseph's Ambulatory Imaging Center, where Dr. Yuppa and Dr. Milman perform cardiac CT scanning, firefighters and first responders are given substantial discounts so that they can be screened.

Dr. Yuppa and the program for firefighters offered at St. Joseph's Ambulatory Imaging Center have received much media attention. Most recently Dr. Yuppa was featured on a follow-up NJN television presentation to report on the positive results achieved by this program since its inception. Dr. Yuppa is eager to share the encouraging findings. "So far we have screened 900 firefighters," Dr. Yuppa informs. "Forty-two percent were found to have coronary artery disease." The implications of this in terms of the potential to save lives and incidentally, healthcare costs, are much too important to overlook.

When a firefighter or first responder screened at St. Joseph's Ambulatory Imaging Center does test positive for having early signs of coronary artery disease, he or she is referred back to the primary physician or to a cardiologist for appropriate medical management. More than 90 percent of people with an abnormal calcium score can be treated with medical management and lifestyle modification.

Dr. Yuppa and his team at St. Joseph's Ambulatory Imaging Center travel to fire houses throughout the state in order to inform firefighters about detecting heart disease before it is too late. Recently, they were invited to attend the New Jersey State Firemen's Mutual Benevolent Association's Convention in Atlantic City, where

Dr. Yuppa addressed approximately 850 fire fighters, urging them to protect themselves by having a calcium scoring performed. Usually, Dr. Yuppa begins his talk by telling his audience, "You *can* alter the expression of your genetics."

Another group of individuals for whom the radiologists at Imaging Subspecialists of North Jersey are actively involved in identifying disease as early as possible, is women who are at risk for developing breast cancer. Under the direction of ISNJ radiologist, Madelyn Danoff, MD, this effort, of course, includes vigilantly screening those who test positive for the BRCA gene but in light of the fact that most women who are diagnosed with breast cancer do not have significant family history, it must be assumed that all women are potentially at risk.

Dr. Yuppa refers to the work ISNJ is doing at the brand new Breast and Women's Center at Mountainside Hospital which is fully digitized and which has been designed to provide a comfortable and attractive environment in which women can be cared for by a supportive team. As Mountainside's Chairman of Radiology, Dr. Yuppa is pleased to share the high level of breast imaging available there. He specifically points to the superior imaging digital mammography produces for those with dense breast tissue which is the case for most young women.

Through ISNJ's affiliation with both St. Joseph's Medical Center and Mountainside Hospital, Dr. Yuppa and his team strive to utilize the most current imaging technologies available. When discussing enhanced breast imaging for women with increased risk or those with abnormal mammograms - in addition to breast MRI, which changes the management of breast cancer patients 27 percent of the time through its increased sensitivity in detecting the extent of the cancer, as well as multi-focal and synchronous cancers - Dr. Yuppa describes emerging technologies that are now being utilized as well.

For example, radionuclide imaging, which has been available for awhile, now involves the use of nuclear cameras that have been refined, so that an isotope that has been injected into a vein can be detected lodging in the cancer. Digital tomosynthesis is another newer technique and is now in clinical trials. It allows for a mammogram to be sliced into thin sections, eliminating breast tissue above and below the area of interest, providing greater accuracy at the same radiation dose.

Dr. Yuppa is also happy to report that soon at Mountainside Hospital, one of only a few to have a separate tumor board dedicated to breast cancer, women will be able to receive MRI-guided breast biopsies. When speaking of cancer care in general at Mountainside Hospital and the role played by ISNJ, Dr. Yuppa says, "We're proud to be part of a state-of-the-art, multidisciplinary team of outstanding oncologists, surgeons and support staff under the direction of Dr. Robert Zager at the Mountainside Cancer Center."

In addition to saving lives of New Jersey firefighters through early detection of heart disease and utilizing advanced technology to identify early breast cancers, Dr. Yuppa and the radiologists at

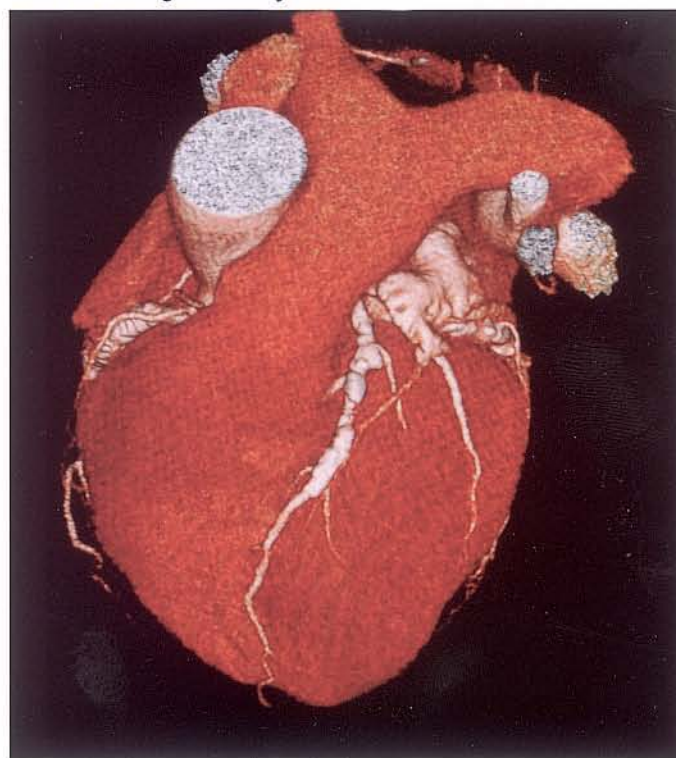
Imaging Subspecialists of North Jersey are involved in innovative imaging programs that facilitate advanced diagnostic and therapeutic capabilities within every medical discipline. While it would be impossible to mention them all, it is worthwhile to highlight a few of the areas in which ISNJ is at the forefront.

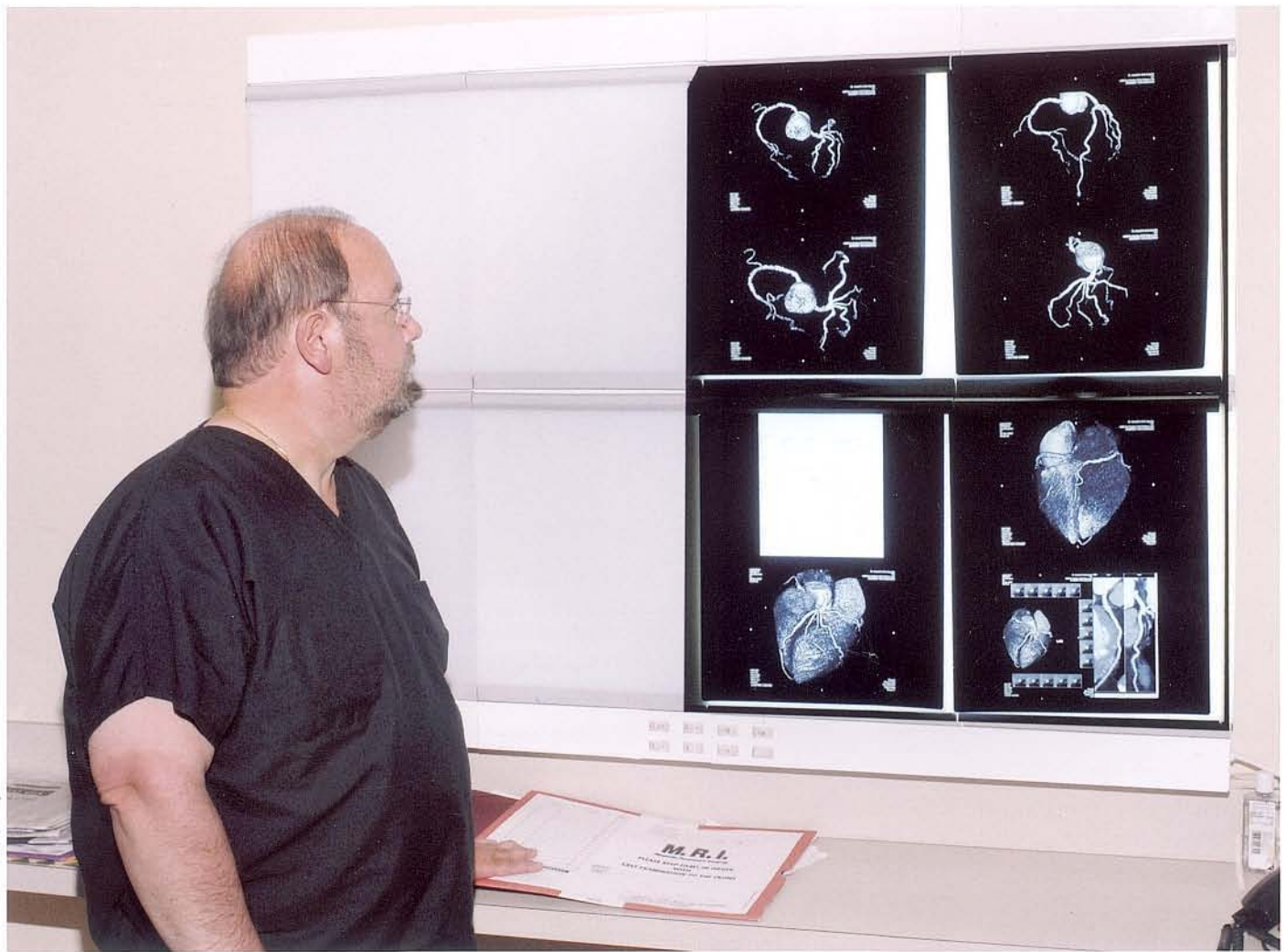
Under the supervision of ISNJ interventional radiologist, Matthew Forte, MD, Director of St. Joseph's Vascular Access Center, which is located in the dialysis unit, patients who are having difficulty with their dialysis access can be treated with an appropriate venous interventional procedure on the same day as their treatment. This allows their dialysis to resume immediately after the procedure to correct the problem has been completed.

ISNJ is also the only radiology group in its North Jersey area that has the technology to perform non-Gadolinium imaging for patients at risk for developing NSF (nephrogenic systemic fibrosis) from the dye. At the Wayne Valley Imaging facility patients who are being investigated for renal artery stenosis or vascular stenosis can have MRA testing without the need for Gadolinium. Dr. Edward Milman, who is the Director of Wayne Valley Imaging, reports that nephrologists, hypertension specialists and internists refer many patients with renal disease for this study.

Wayne Valley Imaging is predominantly dedicated to the performance of musculoskeletal MRI. Dr. Milman's considerable skills are sought by many orthopaedists who refer patients for evaluation and for certain interventional procedures. For example, Dr. Milman has performed approximately 1,000 MR arthrograms within the past year, one of the most in the tri-state area. Additionally, Dr. Milman who is also Director of MRI Services at St. Joe's,

A 3-D image of the heart shows diffuse coronary disease in the LAD with LAD and right coronary stent.





Dr. Yuppa reviews a firefighter's scans, including 2-D and 3-D images to make a determination of the patient's cardiac health.

administers therapeutic, x-ray guided pain management injections and performs other interventional procedures such as tumor biopsies at St. Joseph's Regional Medical Center.

Dr. Yuppa, who has guided the evolution of ISNJ into one of the most respected radiology practices in the state, is still looking ahead to see what might be accomplished in the future. He sees many promising developments on the horizon. Perhaps foremost in his mind is improving the quality of life for those who suffer from mental disorders and what the future holds for the imaging of mental illness.

Dr. Yuppa is especially concerned about the countless number of people who suffer from disabling anxiety and/or depression and who do not receive the appropriate medication regimen because the nature of their disorder has not been properly diagnosed. "So many people suffer from mood disorders. They're living a seemingly normal life but they're miserable all of the time, jumping from one anti-depressant or one anti-anxiety drug to the other with no real improvement," Dr. Yuppa relates.

Functional Brain Imaging including PET and MRI using BOLD (blood-oxygen-level dependent) technology is able to address this problem by determining which parts of the brain are activated in

individuals who are suffering from mental disease. Depending upon the type of depression or anxiety disorder a person has, certain parts of the brain will be activated due to increased oxygen levels and other parts will be non-activated. Using this information, psychiatrists can more accurately prescribe medications and hopefully more patients will derive maximum benefit from taking them.

In the near future this technology will also be employed at St. Joe's in pre-op mapping for brain tumors, determining prognosis for stroke patients and in its new traumatic brain injury unit. "During the final third of my career I want to really get this technology on the map," Dr. Yuppa passionately states. Judging by past performance, Dr. Yuppa and his colleagues at Imaging Subspecialists of North Jersey will do that and so much more.

For more information about Imaging Subspecialists of North Jersey, LLC or to schedule an appointment at one of its facilities, please refer to the following:

- St. Joseph's Regional Medical Center: 973-754-2000, x2645
- Mountainside Hospital: 973-429-6100
- St. Joseph's Ambulatory Imaging Center: 973-569-6300
- Wayne Valley imaging: 973-317-5780
- St. Joseph's Vascular Access Center: 973-754-2999 ■