

■ Mobile PET: A Delivery System for Better Patient Care

The emergence of positron emission tomography (PET) is a central point in the evolution and future of nuclear medicine practice. Widely acclaimed for its unprecedented ability to depict physiologic and metabolic activity of the brain and heart, PET's enormous cost puts it out of reach for most hospitals and medical institutions. One solution to this dilemma forwarded by PET advocates and hospital administrators is the establishment of mobile PET units that would serve several hospitals and clinics in a limited geographical region. In such a system, the hospitals served would share the cost, be spared the burdensome expenditure of installing their own PET centers, and still have access to PET technology.

"The concept of mobilizing medical equipment permits several hospitals to utilize and share the service of high technology equipment installed in specially built vehicles," says Douglas Gainer, Art Director, Calumet Coach Co., Calumet City, IL, a leading manufacturer of mobile medical units, "thereby, providing state-of-the-art diagnostic and treatment equipment without the high cost of each hospital having to erect an expensive fixed site facility. Mobilizing this equipment provides an economic incentive to reduce health care costs at each hospital while providing the latest health care services to its patients."

According to Jean Neesely, Manager of Marketing, Positron Corporation, Houston, TX—another firm that is entering the mobile PET market—a mobile PET would cost about \$3 million, the PET equipment itself would cost about \$2.4 million, while the transport unit would range between \$400,000 and \$600,000. The mobile unit that houses the Positron Posicam Imaging System is manufactured by the Calumet Coach Co., Calumet City, IL. "We've been working with the leading manufacturers of PET equipment to develop the world's first

Examination Dates The Nuclear Medicine Technology Certification Board

1991-1992

Year	Exam Date	Application Deadline
1991	June 22	April 20
1991	September 28	July 20
1992	June 27	April 18
1992	September 26	July 18

For more information or to request an application, contact:

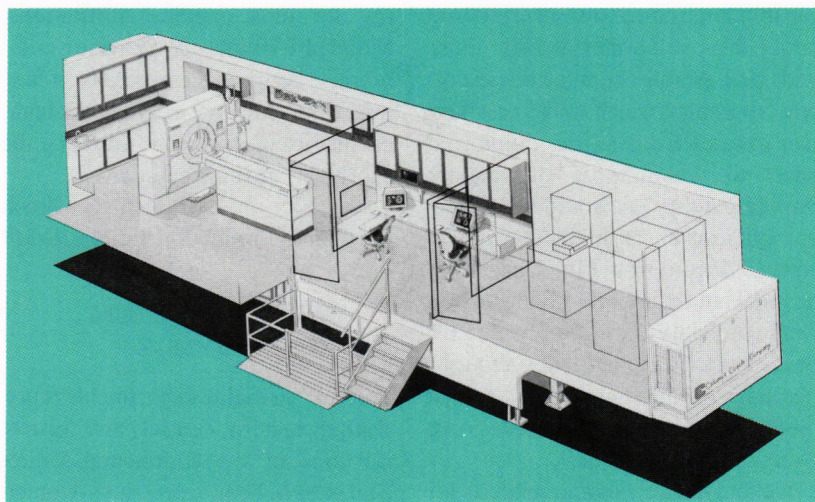
NMTCB
2970 Clairmont Rd, Suite 610
Atlanta, GA 30329-1634

(404) 315-1739
FAX: (404) 315-6502

mobile PET scanner for Shared Health Care Service Programs," says Mr. Gainer. "The unit's dimensions are 8 feet by 48 feet and the interior of the coach unit is divided into four areas—the scan area, control area, physician's area, and dedicated computer room." Mr. Gainer further explained that "each unit also includes two large power-operated slide-out sections which are deployed at the operating site. The purpose of these slide-outs is to expand the usable interior space immediately adjacent to the scanner in order to facilitate patient transfer. The

unit also has a powered patient lift to elevate the patients from the site level to the floor to provide safety and comfort for the patient. The entire unit also has air conditioning, heating, and humidification systems."

While mobile single-photon emission computed tomography (SPECT) units have been operating in this country for a few years, "mobile PET is an entirely new thing," says Judy Chatterton, Marketing Manager for Medical Imaging Centers of America (MICA) Technology Services, Inc., Buffalo Grove, IL, a company that plans to lease mobile PET units in the near future. "Radiopharmaceuticals used in SPECT studies have longer half-lives, and, as a result, it was easier and more feasible to operate them. Since PET agents have very short half-lives, the problem of providing quick access to those radiotracers was one of the major obstacles to establishing mobile PET." Mrs. Chatterton explains that while mobile PET units could not contain a cyclotron, the unit would have "an on-site rubidium-82 generator and would have to have convenient access to a regional cyclotron." Indeed, according to the Institute for Clinical PET (ICP), Washington, DC, centralized radiopharmacies and distribution centers specializing in PET radionuclides are a growth market that some major radiopharmaceutical manufacturers are considering. Adds Mr. Gainer, "at the moment the



A mobile PET unit. (Figure provided courtesy of the Calumet Coach Co., Calumet City, IL.)

technology is not there to miniaturize a cyclotron, but perhaps in the future, a mobile cyclotron may be possible. But, today as a typical cyclotron weighs about 6 tons, it would be impossible to have one on a mobile unit."

According to Mrs. Chatterton, staffing of a mobile PET unit is an issue that also needs to be addressed. "The staff members of a mobile PET unit would have to consist of at minimum a physician, a technologist, and a nurse. Perhaps this personnel would come from local hospitals and work on a rotational basis, or perhaps the staff would be hired by us." The schedule that a mobile PET unit follows is, once again, "an issue that would be limited by the availability of the radioisotopes. Scans would, in general, have to be scheduled in advance. The presence of an on-site rubidium generator would make many cardiac imaging studies relatively easy to perform without much advance notice." (Rubidium studies are particularly useful in the detection of coronary artery disease, and delayed rubidium scans have been shown to detect the viability of myocardium.) "However, studies that require other agents like FDG," says Mrs. Chatterton, "would have to be scheduled well ahead of time."

"There are basically two types of medical institutions that seek the services of a mobile PET unit," says Mrs. Chatterton. "Small community hospitals which otherwise could not justify the purchase of their own on-site PET center in their facility, but need PET capabilities. There is also interest from larger hospitals (particularly those with well-established nuclear cardiology programs), which want to get their feet wet in PET, and use it on a trial basis to determine if the patient throughput they get would warrant an outright investment [in] their own PET center." According to Mrs. Chatterton, hospitals in the mobile PET program would probably "pay for only the PET procedures they specifically request, instead of paying some kind of straight monthly fee. This would be a more equitable arrangement."

Although inquiries and requests for mobile PET units have come in from

all parts of the country, Mrs. Chatterton explained that there are currently plans to establish only one mobile PET unit in the Miami area. "We've discussed plans with Mercy Hospital in Miami, FL, to establish a mobile PET that would also serve three or four other medical institutions in the vicinity." The Miami project, however, has been delayed due to lack of sufficient funding from state sources. According to a source at Mercy Hospital, "the state was going to pay for 50% of the total cost of operating a mobile PET in the Miami area. These appropriations had been approved, but were rescinded when the state of Florida elected a new governor last year and installed a new administration. Now, the program is in doubt, and we don't know if or when a mobile PET will be started up here. Since Mercy Hospital is a Catholic foundation that participates in caring for the indigent, state and federal funding was absolutely imperative in establishing a local PET center." Initially scheduled for an April 1991 start-up date, the mobile PET program for Miami is on hold indefinitely.

As PET's role in clinical nuclear medicine widens, its cost should decrease. PET instrumentation manufacturers are currently seeking ways to reduce the cost of their product, for example, by designing lower-energy cyclotrons, simplifying circuitry, and reducing the number of equipment parts. Still, PET is substantially expensive and remains an out-of-reach luxury for most medical institutions. Mobile PET units may provide a compromise between the necessity of having PET technology to assure the highest quality of diagnostic care and the exorbitant cost it demands.

Palash R. Ghosh

Associate Production Editor, *JNMT*

1990 Media Stars Contest Winners

Nuclear medicine departments representing eastern, central, and western portions of the continental United States have been selected as winners of the 1990 GE Media Stars Nuclear

1990 Media Stars Contest Winners

Region 1

1st Place:

Prince George's Hospital Center, Cheverly, MD, Louis N. Morgan, Administrative Director

Region 2

1st Place:

Children's Memorial Hospital, Chicago, IL, Susan Weiss, CNMT

Region 3

1st Place:

St. Mary's Regional Medical Center, Reno, NV, Melissa Bridges, CNMT

Medicine Week (NMW) contest. The winners and their institutions will be recognized for their assistance in educating the public and other medical professionals about nuclear medicine at the Annual Meeting of the Society of Nuclear Medicine, June 11-14, in Cincinnati, OH.

Yoshiaki Fujimori, General Manager of Nuclear Marketing at GE Medical Systems, will present the awards, a \$250 honorarium to the individual and a \$1,000 donation to the individual's institution, during the Society of Nuclear Medicine Technologist Section (SNM-TS) business meeting to the following individuals: Louis N. Morgan, Administrative Director, Prince George's Hospital Center, Cheverly, MD; Susan Weiss, CNMT, Children's Memorial Hospital, Chicago, IL; and Melissa Bridges, CNMT, St. Mary's Regional Medical Center, Reno, NV.

In addition to the awards ceremony, the NMW activities of this year's winners will be on display in the SNM booth at the Cincinnati Convention Center. A NMW "Network Directory," listing the activities of the departments who completed and returned the NMW survey, will also be available at the SNM booth as well as the GE Technical Exhibits booth.

This year's winners were selected based upon the information provided

(continued on p. 107)

(continued from p. 62)

on the NMW survey. Of the more than 40 surveys returned, 13 were selected as semi-finalists; the forms were then returned to the participants for additional information. The regional finalists were then submitted to the regional judges, comprised of representatives from the SNM-TS and from GE Medical Systems, who sponsors the contest.

The NMW winners adopted a variety of innovative approaches to educate the general public and health care professionals about the diagnostic and treatment capabilities of nuclear medicine.

The entry for the western regional winner, St. Mary's Regional Medical Center, a 367-bed, nonprofit community hospital in Reno, NV, included a 10-part photo display entitled, "Gumby Gets a Scan," taken during the hospital's NMW activities. The display shows a lifesize blow-up doll of the green children's television character checking in for his nuclear medicine exam, being administered a

radiopharmaceutical injection, walking on a treadmill, and sitting through several scans, before a computer examines the results.

"We just decided that we needed some sort of a mascot for the week and Gumby seemed like a good idea," said Melissa Bridges, CNMT, St. Mary's Regional Medical Center. "I think when people saw Gumby they weren't as frightened by our nuclear medicine department. There was a little fun. There was a little humor. It made our nuclear medicine procedures seem more relaxed, not quite so stressful."

St. Mary's Regional Medical Center was a western region finalist in last year's NMW contest, so the first place recognition this year was especially rewarding, said Bridges, who added that the nuclear medicine department redoubled its efforts to educate the community and health care professionals about nuclear medicine.

The hospital's other activities included nuclear medicine inservices for seventh and eighth graders from area schools, news releases and radio an-

nouncements to the local media, and posters displayed prominently throughout main areas of the hospital.

Prince George's Hospital Center in Cheverly, MD, a 444-bed acute care and trauma facility, is a repeat winner in the eastern region category. Their winning entry included involvement in a summer training program, "Business Institute for Educators," which offered graduate school credit to educators in the Washington, DC metropolitan area interested in nuclear medicine. During the course, Louis W. Morgan, Administrative Director of Nuclear Medicine at Prince George's, made a presentation that focused on the professional opportunities available in nuclear medicine at Prince George's and the way(s) in which a nuclear medicine department interacts with the hospital's other departments.

Morgan attributed the success of his nuclear medicine department to the personnel's 18-year average length of service. "Everyone within our nuclear medicine department takes pride in the programs we offer patients and physi-