

# Nuclear Medicine in Latin America



**Santiago, Chile, site of  
the 2002 World Congress of Nuclear Medicine.**

**F**rom the provinces of Buenos Aires to bustling Mexico City, nuclear medicine is gaining a foothold in Latin America. "Our personnel are well trained, many have completed post-graduate studies abroad, we have good quality facilities, and we are proud of our system," said Dr. Jaime Ahumada of the Palermo Clinic in Bogotá.

While not every doctor in Latin America can paint such a rosy picture, Latin America is far from a forgotten backwater of scant resources and antiquated procedures. The specialty has grown and prospered over the past few decades, weathering the ups and downs of a volatile Latin American economy, only to be met at the end of the millennium with a challenge facing many of its North American counterparts: the rise of the HMO.

The first nuclear medicine facilities appeared in the mid-1970s and early 1980s in South America, primarily in Argentina, Brazil, and Chile, the economic leaders of the Southern Cone. Today there are over 750 nuclear medicine specialists scattered through the region, including 300 in Argentina and 260 in Brazil. Statistics are hard to come by, but Argentina has the most cameras of any single country, approximately 420, of which 120 are SPECT and one is PET. There are about 160 nuclear medicine facilities in Brazil, 52 in Colombia, 33 in Chile, and eight

in Uruguay. These resources are often concentrated in major urban centers. With some notable exceptions, private institutions here enjoy greater funding and better equipment than public ones.

Other countries in Latin America have few if any nuclear medicine facilities, or have their nascent programs crippled by economic or political pressures. In Mexico, for example, corruption and economic woes eclipse other strengths, such as a cadre of 100 nuclear medicine physicians and a strong Mexican Society of Nuclear Medicine.

On the whole, nuclear medicine comprises a specialty of its own, independent from radiology in the majority of countries, with some variation from institution to institution. Referrals by non-nuclear medicine physicians have increased as education about nuclear medicine spreads and clearer reports offer doctors a more user-friendly diagnostic tool. Bone and heart studies are the most commonly undertaken, followed by thyroid and renal studies. The decision to use a nuclear procedure is too often determined by economic factors, however. In Brazil, for example, where an MRI is half as expensive as a SPECT brain scan, the MRI often wins out.

## Technological Advancement

In the most developed centers of Chile, Brazil, Argentina, and Colombia, physicians often complete postgraduate work abroad and are well educated in the latest technologies. Matching their know-how with current equipment is a different story. Both scintillation and SPECT cameras are widely used in Latin America, but for most, investment in a PET camera is a distant dream.

The one country that has recently acquired and begun to use PET is Argentina. Doctors are now completing one PET study a day at the Nuclear Medicine School Foundation, a diagnostic center that straddles the public and private sectors. At a distance of 1300 km from Buenos Aires in the province of Mendoza, the Foundation is isolated from its big city counterparts but nevertheless represents an important step in Argentina's technological advancement. Members of the Chilean Society of Nuclear Medicine expect to follow suit with the collective purchase and operation of a PET camera in Santiago within the next year.

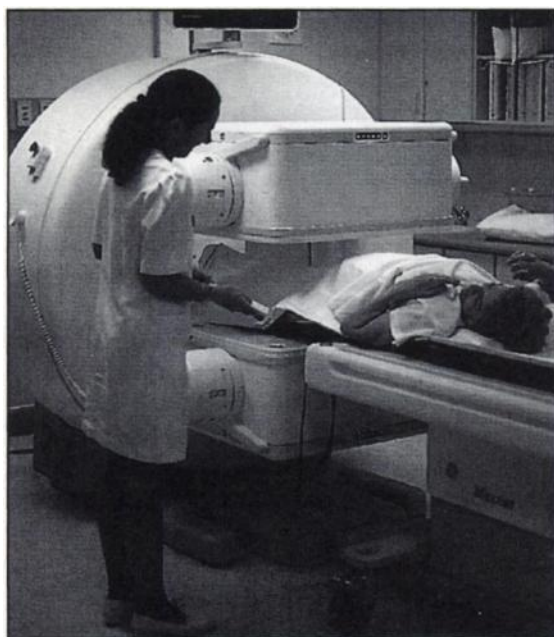
Another example of a PET acquisition emphasizes that technology alone does not a strong program make. The National Autonomous University of Mexico purchased its first PET camera this July, but to date the camera has not been installed. Carlos Duncker, MD, one of only four Mexicans to study modern nuclear medicine tech-

niques abroad, is skeptical that this investment will be put to good use. With an educational system so neglected that "people learn nuclear medicine from photocopies of articles; [and] students never even see an original copy of *The Journal of Nuclear Medicine*," the Mexican medical system is hardly prepared to make take advantage of state-of-the-art equipment.

### The Economy

The greatest challenges plaguing nuclear medical are economic. Although Brazil, Chile, and Mexico can boast active nuclear reactors and thus a domestic source for radiopharmaceuticals and radioisotopes, no country is completely self-sufficient. Beyond the frustration of occasionally losing a half life in line at customs, or waiting two weeks for a replacement part for a camera, most of the equipment, isotopes and pharmaceuticals come with a daunting price tag. This is exacerbated in times of crisis: high prices and falling exchange rates have often decimated the purchasing power of Latin American countries. This is especially true today in Colombia, where economic recession is forcing hospitals to shut down and lay off staff.

According to regional authorities, however, the single most troubling influence on the practice of nuclear medicine is the HMO. Large managed health care companies have taken Latin America by storm in the last five years, reducing the choices patients and doctors can make about tests and treatment, and dictating low prices for procedures. Jairo Wagner, MD, of Brazil, and Patricio González, MD, of Chile, both cite cases in which studies costing \$1000 in the U.S. can fetch only a third of the price in their respective countries. Vic-



Although training in nuclear medicine is good in much of Latin America, there is a shortage of current equipment.



Symposium on Pediatric Nuclear Medicine held at the Hospital Infantil de Mexico Federico Gomez. (From left to right) Buck Rhodes, MD, Sam Sostre, MD, Chaid Civeletz, MD, Carlos Martinez-Duncker, MD.

tor Sporn, MD, of Argentina says that worse than the rift in U.S. and Latin American prices is the fact that the local prices themselves keep falling.

As the costs of equipment and materials rise, a decline in procedure price makes it harder for nuclear medicine centers to keep afloat. In Campinas, Brazil, Edwaldo Camargo, MD, performs approximately 60 studies per day, but in spite of this pace he faces a backlog of four to five months. In Brazil and Chile, it is not uncommon for a doctor to work in multiple facilities and keep hours that stretch from 7:00 in the morning to 9:00 at night.

According to Sporn, doctors in Argentina have faced the opposite problem in the last five years. Between low prices for their work and a glut of equipment in Buenos Aires, there is a low demand for nuclear medicine services, and new medical students opt to pursue radiology and other more lucrative specialties. Cameras now outnumber nuclear medicine physicians by over 30% in that country. These conditions threaten the viability of nuclear medicine in Latin America, discouraging new investment and exhausting the most dedicated professionals.

### The Brighter Side

The panorama for nuclear medicine in Latin America is promising, however. The quality of educational programs is often quite high. In Brazil and Argentina, medical students undergo an intensive program including several months of nuclear medicine basics, then either a two-year residency in nuclear medicine or a three-year residency in a broader field, and finally, Board certification. The Colombian system consists of two years' study of internal medicine followed by two years in nuclear medicine. Two Chilean universities offer nuclear medicine specialization courses. The good quality of these programs has increased the profile of nuclear medicine in the region and kept morale and scholarship high among the specialists themselves.

The training of technologists is much less consistent. Only in Chile and Uruguay do there exist systematic training programs. In Uruguay the technologist course lasts three years; in Chile it is four years, a year longer than the program for nuclear medicine physicians there. Other countries offer courses sporadically, if at all. Technologists are usually



The nuclear medicine team at Albert Einstein Hospital, Sao Paulo, Brazil: (from left) Anneliese F. Thom, MD, Jairo Wagner, MD, Lillian Yamaga, MD.

trained by the institutions that hire them, and the quality of their work varies by institution and country.

The establishment of parameters for technologist training programs is one of the items on the agenda for the Latin American Congress of Nuclear Medicine and Biology, scheduled for October 24-28 in Buenos Aires. This conference is being hosted by the Argentinean Association of Nuclear Medicine and Biology (AABYMN), for members of the Latin American Association of Societies of Biology and Nuclear Medicine. "We have invited 35 foreigners [from outside the region] and will be presenting around 300 scientific papers. This is a very exciting conference, as it will be the last one of the century," said Silvia Vázquez, MD, president of the AABYMN.

A larger conference is slated for Santiago, Chile, after the start of the 21st century. The World Congress of Nuclear Medicine will take place there in 2002, and preparations are already under way to host the 2,500 invitees. This five-day event will offer scientific discussion, stress the importance of medical education, and provide social and tourist activities, according to Horacio Amaral, MD, president of the World Foundation of Biology and Nuclear Medicine (see June 1999 *Newsline*, "WFNMB Announces Santiago Meeting 2002").

This conference will also highlight the fact that Chile and its neighbors have risen above many of the obstacles placed in their paths. Yet despite frequent economic disadvantage, Chile, Brazil, Argentina, and Colombia have distinguished themselves with high technical achievement and strong nuclear medicine programs, laying solid groundwork for progress in the 21st century.

— Katherine M. Bailey

## Shop Online For SNM Books

Society of  
Nuclear  
Medicine's  
Online  
Bookstore  
is Open

Log onto our online bookstore at [www.snm.org/about/catalog.html](http://www.snm.org/about/catalog.html) and browse through our book catalog for specialized and definitive titles in the field of nuclear medicine. Here, you'll find pictures of the newest SNM books, detailed descriptions, authors, editors and prices. Just click on the price of the book and add it to your shopping cart. It's that easy!

The online bookstore offers quick and easy access to any of our self-study topic booklets in cardiology and oncology. Publications range from Nuclear Regulatory Commission (NRC) guidelines to Medical Internal Radiation Dose (MIRD) data. And SNM educational books and study guides set the gold standard for proficiency in key areas of the discipline. In addition, the Society offers highly regarded introductions to the field, both for patients as well as medical students. Because the Society publishes only clearly focused research on areas of broad importance, as well as on the most advanced findings in the field, its books offer information available nowhere else.

For all of your clinical and educational needs, the SNM online bookstore is for you.

[www.snm.org/about/catalog.html](http://www.snm.org/about/catalog.html)



## Nuclear Medicine Bone Imaging

As a clinician, you know nuclear medicine procedures are safe and effective. But you also know that patients are sometimes uneasy about them. Give your patients peace of mind by providing them with concise and thorough information.

Since bone scans are used to detect arthritis, osteoporosis, fractures and sports injuries, as well as unexplained bone pain, bone imaging is one of the most commonly performed nuclear medicine tests. The *Nuclear Medicine Bone Imaging* pamphlet prepares patients for the test, explains exam procedures and informs patients what needs to be done after the test.

To order, simply contact SNM's book distributor, Matthews Medical Books, at their toll free number (800) 633-2665 (non-U.S. 314-432-1401), or Fax: (314) 432-7044. Check SNM's on-line book catalog ([www.snm.org](http://www.snm.org)) for future patient pamphlets and books.

**SNM Patient Pamphlets Offer the Reassurance  
Your Patients Need.**