

Challenges Addressed in India and Portugal

.....

Radiological departments all over the world are struggling to meet demands for better quality, lower dose, more interdisciplinary engagement, and closer patient contact. In theory, all this is more than welcomed by radiologists, but it can be hard to make ends meet when patient numbers are rising and qualified staff are difficult to find.

Text: Philipp Grätzel von Grätz, Swati Prasad, Manuel Meyer | Photos: Arush Mayank and João Pedro Marnoto

Two radiologists. Two medical institutions some 9,000 kilometers apart. Two totally different sets of challenges. Isabel Ramos, Head of Radiology at Centro Hospitalar São João in Porto in Northern Portugal, is trying to cope with the legacy of the financial crisis that has hit Portugal – and its healthcare system – more profoundly than other places in aging Europe. Far away, in Madurai, India, K.G. Srinivasan, Managing Director of KGS Scan Centre, is trying to keep pace with the imaging needs of a fast-growing country with a demography that is heavily skewed toward the young, and with a rapidly-expanding healthcare system. According to projections by the India Brand Equity Foundation, the Indian healthcare system will need about 700,000 new hospital beds within the next few years.[1]

Interestingly enough, different as India and Portugal might be on the macro level, differences tend to diminish on the micro level of a radiological department. In Portugal, where healthcare expenditure per capita according to OECD figures has barely risen between 2005 and 2014,[2] it has become very difficult for department heads like Isabel Ramos to find qualified technicians and radiologists to take care of

the patients. Patient numbers might not be rising overall but, thanks to austerity politics, they are rising for individual institutions. In India, with its massively increasing patient numbers, radiologists and technicians are available, but they tend to cluster in the metropolises. Colleagues like K.G. Srinivasan in Madurai, which is a Tier II city, on the other hand, struggle to cope with their patient load.

Both institutions needed equipment to help them do their jobs. And they found it. These days, Centro Hospitalar São João in Porto can do up to 50 instead of ten to 12 examinations per day. And KGS Scan Centre in Madurai is now completing eight to ten cases an hour, nearly twice as many than before. While K.G. Srinivasan is investing the time gained into expanding his business with more teleradiology and more CT-guided interventions for instance, the hospital-based radiologists in Porto are happy to have more time for interdisciplinary work and to save contrast agent and radiation dose. In short: Challenges are being addressed. ●

Philipp Grätzel von Grätz,
medical writer based in Berlin, Germany



The KGS Scan Centre led by K.G. Srinivasan, MD (left), in Madurai is open nearly 16 hours a day and provides scans for over 200 patients.

Scanning India

With the advent of faster and more efficient diagnostic methods, imaging centers in India are playing a crucial role in both diagnosis and treatment.

It's midnight in Madurai, a bustling city in South India. Just as K.G. Srinivasan, MD, and managing director of the renowned KGS Scan Centre, warms up for our interview, a 35-year woman is brought into the imaging room. Given the heavy demand, emergency patients prefer to come in late. The two KGS centers in Madurai are open nearly 16 hours a day and provide scans for over 200 patients.

Srinivasan excuses himself to attend to the patient, suspected to be suffering from pyelonephritis, a condition where the kidney is inflamed due to a bacterial infection. The scan shows enlargement around the kidneys. Srinivasan diagnoses lobar nephronia, an intermediate stage between acute pyelonephritis and renal abscess, and the patient is put on antibiotics by her urologist.

As Srinivasan gets back to the interview, he explains the changing role of radiology: "Due to the advent of advanced systems, radiology centers

have become the new emergency rooms," he says.

Burgeoning patient load

For its population of over 1.3 billion, India lags behind in primary health-care. As a result, most people in rural India come to cities for diagnosis and treatment. Furthermore, India faces challenges like a low doctor-patient ratio. According to the Medical Council of India (MCI), India has a doctor-patient ratio of 1:1,674 against the WHO norm of 1:1,000.[1]

To make matters worse, health insurance covers only around 30 percent of India's population.[3] And in 2014, India had 0.5 beds per 1,000 population – amongst the lowest in the world.[4] The corresponding figures for China, the U.S., and Germany were 3.6, 2.8 and 8.2 respectively.

Rising incomes and changing lifestyles are increasing the incidence of lifestyle diseases like diabetes, heart diseases, and cancer. Speedier, more affordable, and accurate diagnosis has therefore become vital in saving precious lives.

The scan center in Madurai was amongst the first in the world to purchase a SOMATOM go.Now 32-slice CT scanner. "This new system scans a lot faster," says Srinivasan. Since it enables a mobile workflow via tablet, the staff do not have to shuttle between the control room and the scanner, and can stay with the patient. The shorter gantry may help to reduce claustrophobia, while the advanced iterative reconstruction delivers good image quality at very low doses.

Faster scans, faster workflow

Since the new workhorse at KGS is nearly 30 percent faster than its predecessor, Srinivasan has more time

at hand, which he devotes to teleradiology and CT-guided interventions.

“In one hour, we are able to complete eight to ten cases, as against five to six cases previously,” says Srinivasan.

Since there is a shortage of trained staff, the automated postprocessing function helps a great deal. “You get the same quality, irrespective of who is doing the scan,” explains Srinivasan.

Using CT for guided interventions

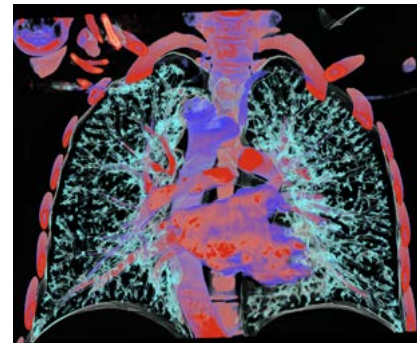
While people from all economic classes come to KGS, around 90 percent of patients pay out-of-pocket. Given this scenario, a minimally invasive CT image-guided intervention by radiologists comes as a blessing. The patient

saves the expense of stay and surgery at a hospital, and gets treated in a single day.

Today, nearly 100 doctors spread across Madurai refer their patients to Srinivasan for biopsies and guided interventions. The latter often involve areas around vital organs, and Srinivasan is amongst the few radiologists in India who attempt such interventions.

While CT-guided interventions of this nature are yet to catch on, Srinivasan feels advanced machines have changed the very role of a radiologist. “Today, many medical students want to take up radiology,” he adds. ●

Swati Prasad is an independent business journalist based in Delhi. She reports for several publications overseas and has worked for The Economic Times, Business Standard, The Indian Express, and Business Today.



A VRT image shows a right-sided aortic arch with the thoracic aorta descending along the right side of the spine, and an aberrant left subclavian artery rising from the Kommerell's diverticulum – please read the details in the case report on page 54. Courtesy of KGS Advanced CT and MRI Scan Centre, Madurai, Tamil Nadu, India

The statements by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.

A Sure Way out of the Crisis in Portugal

Even after the economic crisis, Portugal's hospitals continue to struggle with budget cuts and staff shortages. Still, the radiology unit at São João University Hospital has managed to improve the quality of the medical care it provides.



Carla Pinto goes toward the waiting room of the radiology unit Centro Hospitalar São João in Porto. The name of the next patient appears automatically on the X-ray technician's tablet, which is networked with the CT scanner.

There's hardly a free seat left in the waiting room. The university hospital in the north of Portugal is one of the best-known medical establishments in the whole country. But in recent years that has become a problem. Portugal

The radiology team of Centro Hospitalar São João loves their SOMATOM go.Up as it helped them to gain access to high-performance technology.

is recovering from the severe economic downturn only slowly. And its health-care system still bears the scars left by the crisis and the government's radical austerity measures.

The university hospital's radiology unit has had to save money, too. Its scanning equipment was last renewed in 2005. There's also a lack of radiologists, says Isabel Ramos, head of department. But patients don't really notice this shortage.

CT radiographer Carla Pinto explains why: "Our new scanner platform does image postprocessing with Recon&GO automatically. This gives me time to prepare for the next patient's examination without having to rush."

Faster, simpler, and more efficient

She says she gains a huge amount of time this way: "Postprocessing used to take me up to fifteen minutes. With the new system the workflows are much quicker, more automated, and straightforward. While I used to get through 12 examinations a day, now I can scan up to 50 patients," says Pinto.

Accelerated, more efficient workflows were precisely what the radiology unit was hoping for when it acquired the innovative SOMATOM go.Up CT scanner at the end of 2016. Isabel Ramos explains: "Our patient numbers are increasing by ten percent a year. Last year alone we did 370,000 examinations. With the old equipment and limited personnel, that was almost impossible to manage without a detrimental effect on the comfort of staff and patients."

Safe, economical, and high quality

The new scanner platform has also enabled the radiology unit to boost quality in medical terms. "The diag-



Thanks to fast image post-processing with Recon&GO, Carla Pinto can now scan more patients.
.....

nostic quality of the new CT scanner is fantastic," says radiologist Rui Cunha. Another advantage: "The new platform saves us radiologists a huge amount of time. Because the automated scan protocol includes all scan areas as standard, we no longer have to explain to the technicians in advance precisely what images we're going to need."

Radiologist Antonio Madureira adds: "With the new scanner's Stellar detector, low tube voltages, and Tin Filters, we can work at very low doses and still get high-quality images. As well as boosting the medical quality and the safety of patients and staff, this saves us costs as we use less contrast medium."

Close to patients

Carla Pinto emphasizes the completely new way of working that is made possible thanks to the new technology, saying that this benefits patients in particular. What impresses her most besides the innovative single room concept is the system's tablet control.

"I used to be permanently flitting between the scanner and control rooms. Now that I can carry the tablet with me to access scan functions, I move around much more freely and spend more time with the patient," explains Pinto. She says this is particularly important with children and others who are anxious.

"The fact that I'm right there with them is comforting for patients. They feel

more at ease, which means they don't move around as much and the images turn out better." ●

Manuel Meyer reports from Spain and Portugal for the German medical newspaper *ÄrzteZeitung*.



A coronal MPR image in lung window depicts the predominance of nodules in the upper and posterior zones of lungs, coalescing to form masses – read more in the case report on page 52.
Courtesy of Centro Hospitalar de S. João, Porto, Portugal
.....

References

- [1] <https://www.ibef.org/download/Health-care-June-2017.pdf>
- [2] <https://www.oecd.org/els/health-systems/Health-at-a-Glance-Europe-2016-CHARTSET.pdf>
- [3] <https://www.ibef.org/industry/insurance-sector-india.aspx>
- [4] <https://data.oecd.org/healthqt/hospital-beds.htm>

The statements by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.