The great technological divide

Whereas some hospitals and medical schools are introducing telemedicine networks and computer assisted learning, health clinics elsewhere do not even have the facilities to carry out a caesarean section. **Ganapati Mudur** sees a digital divide opening up in South Asia

An infant girl, barely 72 hours old after a premature birth and still struggling for life in a Mumbai hospital, needed Rh negative blood. The hospital had exhausted its stock, and the parents had failed to find a suitable donor.

Someone suggested a blood bank in an eastern suburb of the city. There, a technician searched a database of nearly 2000 potential blood donors. In an hour, three donors had turned up at the hospital. "There was some scepticism even among medical colleagues when we launched the database six years ago," says Dr Ajit Chitre, medical director of the bank. "They asked us why we were collecting addresses, rather than blood. But it's gone now."

The database of blood donors in Mumbai is a vivid illustration of how information technology—computers and communication—is transforming healthcare delivery in South Asia. Telemedicine networks have sprung up to deliver health care to remote locations, and patients now have the option of consulting some doctors online.

For the medical community, the introduction of information technology has meant easier and faster access to peer reviewed journals, new avenues for continuing medical education, and, as one doctor in New Delhi put it, "better informed patients who might come up with surprising demands."

But health watchdog groups say the impact of information technology on health care in the South Asian region is uneven. "We can see a great digital divide here," says Dr Thiagarajan Sundararaman, director of the State Health Resources Centre in the central Indian state of Chattisgarh. "Information technology initiatives are largely concentrated in the private, corporate health sector. And they are sometimes driven by the information technology industry."

Industry officials say the healthcare informatics market in India is worth $60m (£33m; €50m), and is growing at 25% a year. Hospitals as well as doctors are investing in computers, networks, and software. "The impact is beginning to show now," says Dr Dilip Panikar, a neurosurgeon at the Amrita Institute of Medical Sciences in the southern state of Kerala, and coordinator of its telemedicine programme. "The young generation of doctors, particularly those who've graduated since the early 1990s, have adapted well to this technology," Dr Panikar said.

The website of endocrinologist Ambrish Mithal, who is based in New Delhi, fields questions from as far afield as Bangladesh and Nepal

Consultant endocrinologist Ambrish Mithal in New Delhi has his own website and sometimes answers medical queries from patients across India—and at least once from Bangladesh and Nepal. "Patients with chronic conditions seem to do significant reading on the net and surprise us with demands for treatment," Dr Mithal said. A three year old website designed for the public, doctorndtv.com, gets 65 to 100 questions a day, each answered by a panel of doctors, says Dr Samiran Nundy, a senior gastrointestinal surgeon in New Delhi who is the website's editor in chief.

"It's widely accepted now that connectivity will help promote evidence based medicine," says Dr Chandrika Wijeyaratne, secretary of the Sri Lanka Medical Association. Sri Lanka has identified health as an area where information technology should be used to boost efficiency and service quality. At least three of the island nation's seven state funded medical schools have introduced computer assisted learning. In Nepal too, doctors are now accessing peer reviewed journals online. "In the old days, we used to get print versions of just three journals on dermatology," says Dr Anil Jha, head of dermatology at the Tribhuvan University Teaching Hospital in Kathmandu, Nepal. Now, he says, doctors can get the feeling that they are keeping abreast of the latest in their fields.

In India, the government and the private sector have both invested in telemedicine projects. India's space department has made available a domestic satellite for telemedicine, and India's largest corporate hospital group, Apollo, has connected its hub hospitals in Chennai, Hyderabad, and New Delhi to more than 45 telemedicine centres across India. Apollo officials estimate that several thousand patients have benefited from telemedicine over the past two years. The Amrita Institute has also set up telemedicine links with 20 clinics, some in remote locations, including the northern mountain region of Ladakh.

Doctors at the Amrita Institute cite an example of some emergency surgery on a pilgrim who was trekking through a dense forest, which was conducted by doctors at a telemedicine centre located on the pilgrimage route. "The network gets used for patient consultation and treatment as well as for continuing medical education," said Dr Panikar, telemedicine coordinator at the Amrita Institute. However, one doctor involved in telemedicine projects says that, although the networks are in place, doctors as well as patients are yet to make full use of such wired clinics.

Just as the internet has helped doctors in South Asia to get access to western medical journals, information technology is also helping the flow of medical expertise from South Asia to the West. Last September, Dr Ashok Seth, chief of interventional cardiology at the Escorts Heart Institute and Research Centre, New Delhi, was invited to demonstrate angioplasty procedures live via a satellite link to an annual meeting of heart surgeons in Washington, DC. "We see a relatively large number of patients in India with coronary artery disease marked by diffuse or multiple blockages, or vein graft disease, any of which can make the procedure complicated," said Dr Seth.

Escorts dubbed the live demonstration an example of "the East teaching the West." After a similar transmission to a cardiology conference in Italy a few months ago, the hospital now plans to install a permanent camera and equipment in the angioplasty room for periodic telecast to surgeons or even medical students in India. "It's an investment to raise the quality of patient care," said Dr Seth.

But the investments in information technology to boost healthcare services may be bypassing many patients. "We've nothing against information technology, but it can never be a substitute for basic infrastructure, equipment, or doctors," says Dr Sundararaman. In Chattisgarh, for example, he says, fewer than 10 of the 146 community health centres, each of which is intended to cater to a population of 100 000, have the facilities or the surgical staff to do a caesarean section. □

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