

IN A hospital half-way across the globe, an emergency scan is carried out which is then transmitted to a radiologists' hub in India. The experts here read the scan, prepare a report and send it back to the hospital or clinic - within about 30 minutes. That's tele-radiology for you. Hospitals in the West are making good use of outsourcing part of their radiology services while it also helps them to get around the problem of shortage of qualified radiologists.

Tele-radiology is a component of telemedicine by which radiologic images are digitally transmitted from one point to another. The technology allows such images to be sent from one hospital to another, and to hospitals in another part of the world. The image transfer could be done over telephone lines, a local area network or a wide area network.

The Pluses

Tele-radiology services in India catering to US hospitals usually handle the hospital's excess work, weekends, and night-time workflow. "In the hospital, the radiologist sits in the next room and analyses scans. In teleradiology, the only difference is that the next room is half way across the globe," sums up Dr Uday Patil, who heads the teleradiology arm of the Manipal Group.

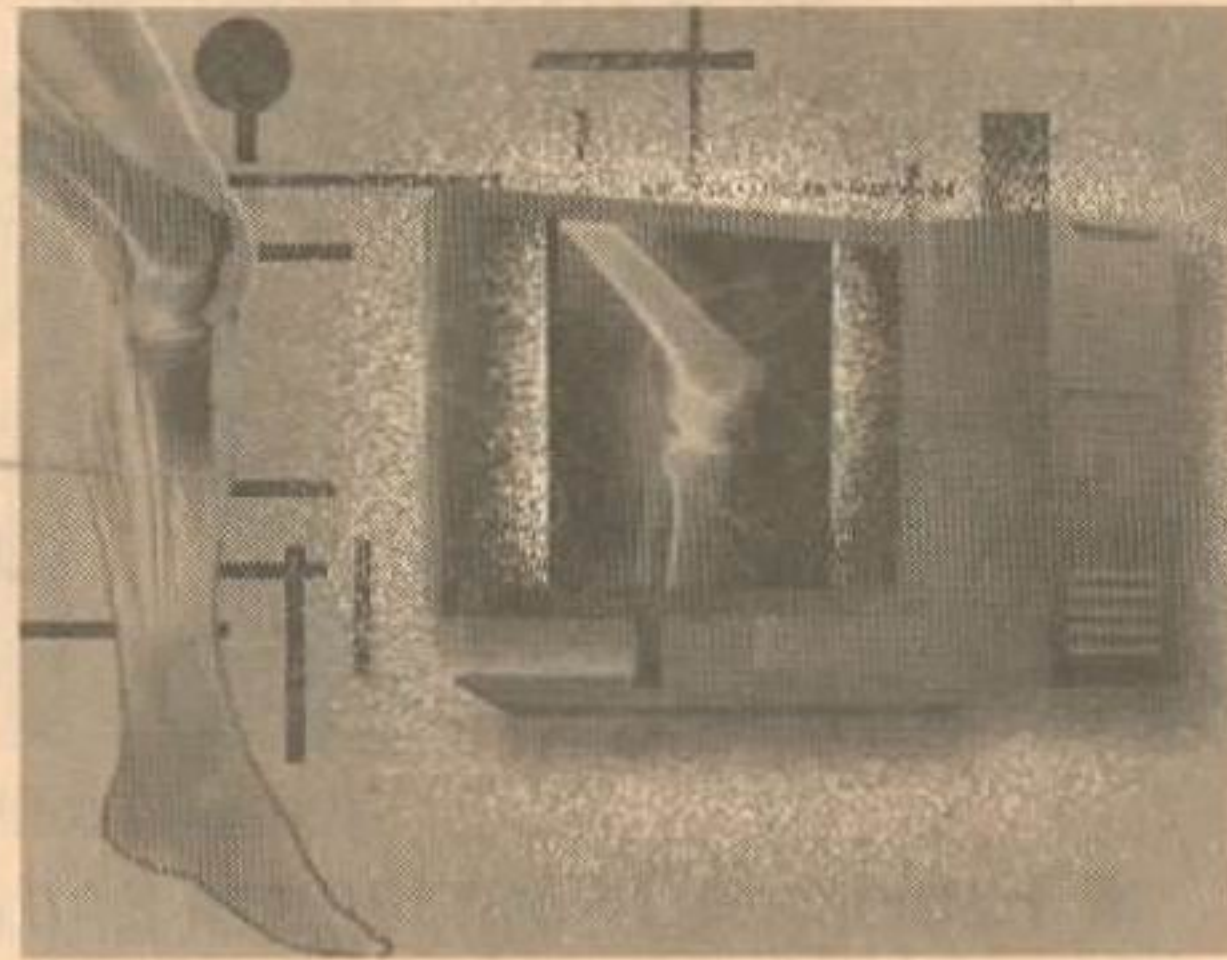
Manipal's teleradiology services include image interpretation and reporting, 3D modelling services by which a

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Savitha V Spells Out The Pluses Of Tele-radiology

two-dimensional scan is converted into a three-dimensional image, and research interpretation, both industrial and for institutions. Dr Patil says that the team works with hospitals in the US, the UK and certain South-East Asian countries like Singapore and Malaysia. He adds that the group is also running some pilot projects on radiation therapy. Dr Patil says the requirements for setting up a teleradiology service are a link of sufficient bandwidth, adequate security, and imaging software that is readily available.

Bangalore-based Teleradiology Solutions, for one, caters to about 50 hospitals and clinics in the US, Singapore and India. The radiologists at their hub read an average of 600 radiologic examinations per day. Dr Arjun Kalyanpur, CEO of Teleradiology Solutions, explains that the technology used by the company in-



volves a web-based Picture Archival and Communication System (PACS) server to which the hospitals or clinics transmit the images. At the reading centre, the radiologists access the images on the server over a secure broadband connection.

"After review by our radiologists, the reports are generated and distributed to the hospitals through a Radiology Information System. We also use voice connectivity for communicating with the hospitals and clinics," Dr Kalyanpur says.

The Tech

Technology used in tele-radiology has been evolving through the years. Dr Kalyanpur says, "Adoption of the DICOM (Digital Imaging and Communications in Medicine) standard ensures that all imaging equipment is compatible with the corresponding teleradiology applications." DICOM is an application-level standard specified in the framework for medical-imaging communication.

It was developed by the American College of Radiology - National Electronic Manufacturers Association (ACR-NEMA). Along with this, the advances in broadband technology and digital telecommunication permit the rapid trans-

fer of large volumes of image data. The use of compression technology further facilitates speedy image throughput.

Security of the data and confidentiality of patient records are among the top priorities of teleradiology service-providers. "Security measures such as firewalls and encryption, as mandated by the Health Information Portability and Accountability Act guidelines of the US Federal government, allow for preservation of patient confidentiality at all times," Dr Kalyanpur says.