

Technology and Medical Diagnostics – Dr. Th. Dhabali Singh

The concept of medical diagnostics in India took considerable time to gain widespread acceptance and it was only during the late 1970s and towards the early 80s that this discipline became popular among medical practitioners and patients in general. For a geographically remote region like the Northeast, the situation was even worse because of its relative isolation from mainland India and the virtually non-existent healthcare sector. There were times when even for the most basic laboratory tests, the samples had to be sent to laboratories in distant metropolitan cities and the reports took days to actually reach the clinicians. The situation is unthinkable in today's world and we have seen how the science of medical diagnostics has evolved over the years and how cutting-edge technology has become such an integral component of healthcare service.

TECHNOLOGY IN MEDICAL DIAGNOSTICS

Nowadays, healthcare is driven more by technologies than ever before and there is automation in almost all spheres of laboratory activities whereby the chances of human errors are minimized significantly. In India, there is a great deal of research going on in the healthcare sector and with the kind of population growth witnessed in the last three decades, it is apparent that India will soon emerge as the biggest medical diagnostics market in Asia. Technology has also revolutionized the way we look at imaging in diagnostics. The digital technology in radiology has undergone sea change with faster and more powerful X-ray, CT scan, MRI, Mammography or DEXA equipment. The Picture Archiving and Communication System (PACS) allows for economical storage of, and convenient access to multiple sources. Combined with the emerging web technology, PACS has the ability to deliver timely and efficient access to images, interpretations and relevant data over distances.

CHANGE IN OUTLOOK

The paradigm shift in people's perception and attitude toward diagnostics in the past few decades is encouraging. People have realized that accuracy and promptness of test results are more crucial in the diagnosis and treatment of diseases. This is where the significance of quality assurance, accreditation, and of maintaining turnaround time attain prominence in laboratory service. Accreditation makes it mandatory for the lab to be particular about adhering to quality assurance and proficiency standards as per ISO 15189 and as laid down by NABL. In the recent years, with growth in technology and automation, there has been an increased demand for accurate and prompt diagnostics test reports. The veracity of these reports is what the clinicians depend upon before implementing any approach for treatment of an illness.

INFORMATION TECHNOLOGY AND DIAGNOSTICS

With more innovations in medical equipment and technology, the trend of increase in demand for quality and prompt reports will only increase. In today's fast-paced world, one cannot imagine of a situation without laboratory information system (LIS) and the machine-LIS interface. Also, providing good laboratory service without Information Technology (IT) is literally not possible. A modern laboratory uses LIS in dispensing with its data including facilities for report downloads from the Internet by the customers. All these were unthinkable some years back.

THE FUTURE

Although there has been significant advancement in medical technology in the recent years, we have seen that the high cost of diagnostic equipment is an impediment of lowering of rates of diagnostic tests and investigations. In an economically poor country like India, this factor has in a fair manner held back the development of research producing affordable equipment and technology to experience the expected growth of the diagnostics sector. However, an area that is poised to emerge in the coming years is the point-of-care consumer diagnostics that uses advanced sensing technologies, wireless monitoring, smartphones, big data, and affordable point-of-care biochemical processes. Driven by the convergence of these technologies and healthcare cost pressures, a new direct-to-consumer healthcare sector is emerging; in which people demand new technology that empowers them and mitigates healthcare costs.

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