

IT in Health Care Workshop for Senior Executives 03 November 2003

Under the auspices of the annual IT.COM event held at Bangalore, IBAB arranged a one day workshop for senior executives covering various aspects of information technology that has improved the reach and quality of health care in the country.

The inaugural address was given by Bangalore's prominent heart surgeon Dr. Devi Prasad Shetty, CM Hrudayalaya. A pioneer in the area of cardiac surgery, Dr. Shetty spoke to the audience on yet another ground-breaking tele-medicine. This novel idea reaches hospitals in remote areas and patients can get expert advice sitting in healthcare centres. Indeed, the hospital has made full use of Bangalore's biggest asset-IT, in making heart treatment and technologically viable.

Closely related to the idea of tele-medicine and when applied to the speciality of radiology is the concept of tele-radiology. The second speaker, Dr. Arjun Kalyanpur, Assistant Clinical Professor, Yale University and CEO, Teleradiology Services, spoke about the applications of teleradiology. He said that teleradiology can be a boon to medically underserved areas without on-site radiologist support and in areas without subspecialty trained radiologists. The advantages teleradiology has to offer to emerge as a forerunner of the telemedicine revolution is that radiologic images are digital files; moreover based software exists for image transfer; and radiology departments typically have a strong IT base (PACS) explained about the "nighthawk" concept employed by his company, where one radiologist covers several hospitals across States. If night call is a drudgery for fatigued radiologists at hospitals in US, it can be a satisfying work for an alert radiologist via the Internet and a broadband connection in India.

The next speaker Dr. Narges Mahalaxmivala, Executive Director (head, clinical operations), Quintiles India, debated the Factor in Clinical Trials of drugs- whether it added value or just increased the complexity. Since 1996 there has been a leap in the field of drug development. From 2853 drugs in 1996, the number has gone up to 5387 in 2002, due to high throughput screening, molecular modeling and genomics. Clinical trials of all these drugs would take months if conventional techniques were used. With the coming of sophisticated electronic data capture (EDC) methods, the processes have been reshaped. Dr. Mahalaxmivala concluded that technology's real value is not its ability to provide information but to transform it into something meaningful and then use it to make better informed decisions, which can be done at a higher speed and with greater accuracy.

Dr. C. Om Prakash, Manager, Regulatory and Data Management, Clinigene International Pvt. Ltd., in the first afternoon session spoke about the role of IT in regulating clinical trials. Regulation is of paramount importance as it would have to communicate correct information; this would promote and protect public health by ensuring that safe drugs are available and safeguard consumer interests. Information technology has taken a central role in clinical trials as consistent systems and practices can be adopted; data is globally accepted and is available in real time; there is fast response to adverse events; hence safety measures are taken adequately. All this reduces cost and promotes faster time to market is also towards electronic regulatory submissions. This has augured well for India as regulators are more favourable and a major clinical trial development centre. Dr. Om Prakash also highlighted that Clinigene was a house solution towards globally accepted data.

Dr. M. K. Narasimha, from Strand Genomics spoke on the role of IT in Clinical Data Analysis and Strand Genomics in this area. Clinical data is basically data about a set of patients, which can be relevant to either medical practice or to researchers. Quite often the size of such data is humungous, as the number of parameters run in thousands. The human body has thousands of parameters, which are governed by as many compounds. These compounds are in equilibrium in a healthy individual and a change in this equilibrium manifests in a diseased condition. Dr. Narasimha spoke about the presence of biological markers which are useful in detecting a diseased condition even before it manifests. Strand Genomics is developing technology tools to detect diseased conditions. In particular, Strand Genomics with Clinigene has found a set of parameters and a trained machine (a mathematical model) that can predict which patient can get kidney complications in the future.

The evening session saw Prof. Y. Venkatesh, Dean Engineering Sciences, IISc speak about Aspects of Computer Recognition of Patterns. The talk discussed some basic concepts in vision. Basically a pattern in the physical world is on an array of the order of 100 million receptors in the retina in each eye. The electrical signals emitted from the receptors are transmitted onto specific parts of the brain through the optical pathway. The final result is the recognition of the pattern. The question in the discussion was whether a machine can be created to imitate the pattern recognition of the human visual system. Prof. Venkatesh spoke about Artificial Neural Networks (ANN's) which constitute an important class of computational models for automatic recognition of patterns. An ANN is a system of interconnected processors "neurons" of the brain. In an attempt to exploit the retinal structure of mammalian vision, efficient methods to be used have been proposed.

From artificial intelligence, the topic progressed to IT-Enabled Continuing Medical Education. This was discussed by Nair, Managing Director, Indegene Lifesystems Pvt. Ltd. He emphasised the fact that continuous learning is a practice of medicine. However, there are few formal processes to ensure that doctors keep up-to-date in a rapidly changing field. This is where the use of information technology can be effectively harnessed. While conferences and workshops are updating doctors, the scale however, remains small. This can be scaled up by recording events on CD's and making them available to a larger section. Dr. Nair spoke about Indegene's role in digitising information for doctors, and mentioned that it has more than 300,000 CDs incorporating conferences, seminars and workshops across India. Satellite based "virtual linking" between several cities and continents are also gaining popularity. Doctors can scan journals online and also Indegene via the Internet where a panel of specialists are available to answer them.

The last speaker of the one day workshop was Mr. D.A. Prasanna, Executive Chairman MEMG & CEO Manipal Education and Medical Group. He discussed various strategies for IT in healthcare. The talk effectively summarised the day's discussions on hospital information systems, continuing medical education, telemedicine etc and how the Manipal Education and Medical Group has successfully incorporated these concepts.

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