
Preface

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Biographical notes: S.K. Srivatsa received his Bachelor's degree in electronics and telecommunication engineering from Jadavpur University, Calcutta, and Master's degree and PhD from the Indian Institute of Science, Bangalore, India. He is a life Fellow/Member in a number of professional bodies. He has authored well over 200 papers in reputed journals/conference proceedings. He is a recipient of various awards such as the IETE and AFJA awards. His current areas of interest include computer networks, broadband networks, mobile communication and error correcting codes. He is currently with St Joseph's College of Engineering, India as Senior Professor of Electronics Engineering.

V. Thulasi Bai is Professor of Electronics and Communication in the Engineering Department, Sri Sai Ram Engineering College, Chennai, India. She received her Bachelor's degree in electronics and communication engineering from Madurai Kamaraj University, Madurai, and Master's in electronics and control from Birla Institute of Technology and Science (BITS), Pilani, Rajasthan, India. Her professional interests include broadband networks, mobile communication and telemedicine. She is a Member of many professional societies and is currently a Research Scholar with Satyabama University, Chennai, India. She has authored well over 50 papers in reputed journals/conference proceedings. She is a life Fellow/Member of many professional societies such as IETE, IEEE, IsfTeH, BES and so on.

V. Murali is Deputy General Manager of the Tele-ophthalmology Project of Sankara Nethralaya, Chennai, India. He graduated from Madras University, Chennai in 1982 and since then he has been associated with Sankara Nethralaya, an Institution with a missionary spirit that is making a visible difference to the lives of millions of visually impaired people in India and abroad. He was instrumental in starting the Jagadguru Kanchi Sri Jayendra Saraswathi Swamigal Tele-ophthalmology Project in 2002 and for the successful functioning of the project till date. He is a Member of many professional societies. He has authored many papers in reputed journals and conference proceedings.

The promotion of telemedicine will contribute to the availability of high quality medical services to the needy, irrespective of socioeconomic and geographical disparity. With advances in technology, the delivery of healthcare to even remote locations has become feasible, through methods such as telemedicine interoperability and interconnection. Setting up a telemedicine centre is always a critical component of any telemedicine project. This special issue focuses on the positive and encouraging aspects of telemedicine.

Being dependent on the synergy of information technology, medical devices, connectivity, communication technology and medical personnel, the implementation and operational management can be complex and prone to failure, if not planned well. This issue touches upon the different systems and elements in the telemedicine network and considerations in their selection that affect the issues involved in telemedicine implementation.

The issue provides an overview of the different challenges and issues in the implementation of telemedicine systems and networks, which can be categorised under technical, managerial, ethical, legal and financial aspects and need to be addressed systematically for establishing a successful telemedicine network.

Jain et al. present a conceptual tele-rehabilitation model for the correction of clubfoot deformity in newborn babies. The non-surgical correction of this deformity will benefit millions of babies in the world and become a milestone in child and social development. Svoronos and Jillson assess the barriers to and facilitating factors for the absorption of TRACnet by various organisations (in Rwanda, Africa) that are involved in the country's HIV/AIDS response. Greater staff training, and the introduction of two-way communication pathways into the TRACnet interface, will result in a more dynamic system. Masella and Zanaboni present a complete assessment framework that links the main assessment dimensions to the phases of the assessment process. Their work enables the identification of the most useful and cost-effective criteria to design and assess a telemedicine application. Tounsi and Bassit propose Bluetooth-enabled smart phones with WAP technology for implementing an intelligent remote healthcare system. A rule-based expert system drastically reduces the number of patients visiting healthcare service providers.

Sood et al. have developed an online pharmacy incorporating an intelligent system for the prescription of drugs for trivial illness. They have defined and contrasted the two terms 'telepharmacy' and 'ePharmacy'. Indumathi and Uma propose a new variant of the random projection-based perturbation technique for mystifying the telehealthcare data of patients. This new technique, called the 'flustering approach', has been implemented, and the authors have evaluated its efficiency. Thulasi Bai and Srivatsa have designed and implemented a portable monitoring and alerting telemedicine system for cardiac patients. The prototype automatically sends an alerting SMS to the mobile phone of the physician, whenever an arrhythmia is detected. Beulah Devamalar et al. describe the design, development and implementation of a fully automated real-time webcentric expert system as an aid in the diagnosis of diabetes. The expert system KIOSK is similar to a bank ATM and is proactive. Murad has used a GIS (Geographical Information System) geostatistical technique to model the spread of diabetes patients in Jeddah City, Saudi Arabia. A direct link between diabetes location and population density has been found and, in addition, the spatial variation of diabetes can be predicted.