

Vision for the Future

"I conclude... with the benediction that in the years to come all people should lead healthy and ideal lives."

– Sri Sathya Sai Baba, February 7, 1993

Impact of Telehealth on Healthcare

Sri Sathya Sai Baba, has given us the model for ideal healthcare. He has established two general hospitals and two super specialty hospitals to serve as a model for the rest of the world as to how hospitals should function: free of charge without any bias regarding race, status, or wealth, providing excellent universal healthcare with love and compassion. However, only a small fraction of the patient population is able to access healthcare for various reasons, including distance and expense. Conversely, there are many physicians and other healthcare professionals that would like to serve, especially in Sri Sathya Sai Baba's ideal healthcare mission, but find it difficult for various reasons, including conflicting work schedules and travel issues.

It would be wonderful if those who need healthcare had easy access to free healthcare and those medical professionals seeking to serve were easily accessible to help. We have the technological capability to address both of these issues. This article will focus on how technological advances are utilised, not only in patient care but also in physician education and training. At the centre of this teleconsulting and tele-education network is the Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS). The clinical component currently includes satellite-based consulting (teleconsulting) for preliminary diagnosis, presurgical and postsurgical follow-up, scheduling appointments for hospital visits, expert opinion, and patient counselling. The educational component involves participation in continuing medical education (CME), training of DNB students (physicians in residency training), and exchange of state-of-the-art practices and expertise between participating institutions. This telehealth initiative would facilitate support for rural health initiatives by increasing access to Sri Sathya Sai ideal healthcare for the rural populace.

The Sri Sathya Sai telehealth project was initiated to extend the reach of the free, high-quality healthcare provided by Sri Sathya Sai Baba's medical institutions. The Sri Sathya Sai Medical Trust (SSSMT) established by Sri Sathya Sai Baba operates two super specialty hospitals, two general hospitals, and a mobile hospital. These institutions provide free healthcare to patients from all over India and even adjacent countries such as Nepal, Sri Lanka, and Bangladesh.

Phase 1 of the telehealth project was established at SSSIHMS-Whitefield, SSSIHMS-Prasanthigram, and Sri Sathya Sai Seva Kendra, Barrackpore Cantonment, West Bengal, in association with the Indian Space Research Organisation (ISRO). ISRO is well known for its pioneering role in supporting telehealth services in India, whereby rural health centres are linked with super specialty hospitals via satellite. ISRO provided the software, hardware, communication equipment, and satellite bandwidth and helped link all

three sites. The whole process of equipment transfer, installation, testing, and staff training was completed in a record span of only 24 days! Routine teleconsultations from SSSIHMS-Whitefield to the Barrackpore site began in September 2007 for neurosurgery, and cardiac teleconsultations began in June 2008. Phase 2 of the project was established in May 2009 with routine teleconsultations between Sri Sathya Sai Seva Samiti, Kharvel Nagar, Bhubaneswar, Orissa, and SSSIHMS-Whitefield commencing in June 2009.

A well-trained local physician (trained by SSSIHMS) is available at the remote site. Using a local physician helps ensure proper communication and transfer of information. The observations and progress notes of the local physician are recorded into an electronic medical record (EMR). Medical reports are scanned into the system. Diagnostic images are uploaded into the system, if needed. This completes the registration process for the teleconsultation. The consultants at SSSIHMS can then review the uploaded file. The patient and the local physician from the remote site come online, and a televideo conference takes place with live interaction with SSSIHMS. While the videoconference is occurring, the consultant has all the pertinent information simultaneously on the EMR. The consultant can also review previous SSSIHMS records from earlier patient visits (physically in the hospital or virtually through telemedicine) on the hospital information system (HIS). The consultation that is then rendered is entered into the EMR and is available to the remote site to be printed and given to the local physician and patient. The SSSIHMS records are also electronically updated to reflect the encounter.



The majority of telemedicine patients at present are patients from SSSIHMS-Whitefield, and the patient information (previous visit details, laboratory test results, radiology, pathology, discharge summary, etc.) is available in the HIS. This information is accessible and will soon be integrated into the picture archiving and communication system (PACS) so that the radiology images will also be accessible to the consultant on demand.

Since implementation of the telehealth services in September 2007, SSSIHMS-Whitefield has offered 1,783 teleconsultations in 249 sessions (1,326 neurosurgery; 457 cardiac) as of August 31, 2009. There has been a significant impact on these patients and their families, with a significant reduction in cost of travel, less inconvenience for the patient, and less stress for these patients and their families/attendant. Communication has also been improved by using local well-trained physicians. It is well known that better communication results in fewer medical errors and improved patient care. As part of the next phase of the telehealth project, the videoconferencing infrastructure of the telemedicine centre at SSSIHMS-Prasanthigram will be upgraded to enable the site to also participate in teleconsultation services with the states of West Bengal and Orissa.

The second important role of telemedicine is physician education. Physician education includes CME and resident education. An example of tele-education CME at SSSIHMS-Prasanthigram is the ophthalmology teleconference from Sankara Nethralaya, a respected eye hospital in Chennai. Nearly 270 such conferences, roughly 2 to 3 classes per week, have taken place as of August 31, 2009. The urology department is planning to have tele-CME conferences every week with another hospital from South India. The ophthalmology department at SSSIHMS-Prasanthigram attended live international ophthalmology conferences via the telemedicine link in January 2008 and in January 2009.

A tele-CME conference on diabetes-related complications will be conducted by Dr. Mohan's Diabetes Specialities Centre, Chennai, for DNB residents in orthopaedics, urology, ophthalmology, cardiology, and anaesthesiology at SSSIHMS-Prasanthigram. The DNB residents (family medicine) from the gen-



eral hospital, Prasanthigram, will also participate in this programme via the telemedicine facility. The schedule for various topics is being finalised now, and the programme will begin in September 2009.

Many physicians travel from various parts of India and from many countries to serve at Sri Sathya Sai Baba's institutions. These physicians have been coming for many years for the opportunity to serve in Sri Sathya Sai Baba's healthcare mission at the general and super specialty hospitals in teaching and clinical roles. This process has been beneficial for the residents and staff at Sri Sathya Sai Baba's medical institutions and the visiting doctors. The radiology department at SSSIHMS-Whitefield and Prasanthigram has been using Internet-based teleconferences for several years. Improvements in bandwidth and software have facilitated videoconferences and online meetings. Using inexpensive commercially available software, Web-based teaching conferences are now held almost daily. The ability to share a desktop makes it possible to give Powerpoint presentations to multiple locations and to instantaneously look up articles online and share them with the residents and staff. This powerful teaching method also suits radiology well because this specialty is inherently technology based and the residents are comfortable with the Internet and online teaching experience. Online teaching sessions include didactic Powerpoint lectures, case presentations, and oral boards review case sessions simulating the oral board examinations. Currently experienced radiologists from the UK and USA are participating in these tele-education conferences. Typically the conferences include the radiology residents at SSSIHMS-Prasanthigram and SSSIHMS-Whitefield and the instructing physician in a three-way conference that lasts 60 to 90 minutes.

Consulting radiologists primarily from the USA and UK with subspecialty expertise, especially in neuroradiology and musculoskeletal radiology, have also helped in patient care. Difficult cases are presented to the consulting radiologist. The clinical problem and diagnostic imaging are discussed. The treatment plan and follow-up are reviewed using the aforementioned PACS system at the SSSIHMS-Prasanthigram and Whitefield. In the future, the general hospitals may also be linked with this system, allowing for efficient use of experienced radiologists to provide timely, accurate interpretations and facilitate patient care. This system also facilitates image retrieval and improves the ability of the residents to show cases for discussion.

The pathology department has also been looking into use of telemedicine for difficult cases and second opinions. At SSSIHMS-Whitefield digital images of pathology slides have been sent to an expert in the USA for a second opinion. However, with the new HTML-based PACS system, it should be possible in the near future to upload histopathology images into the PACS system for remote viewing. This type of remote viewing of information will allow the PACS/HIS to be shared by approved experts for consultations in various fields, including radiology and pathology. This system should allow for a robust communication that will help in patient care, CME, and resident education.

In summary, technological advances are useful not only for providing the highest quality, free medical care, but also for expansion of Sri Sathya Sai ideal healthcare. This includes expansion of healthcare to rural/remote areas so patients can be served in the future. Also, this service will reduce the cost of travel and inconvenience for the patient. Furthermore, well-trained physicians from around the globe will be able to participate in the practice of Sri Sathya Sai ideal healthcare via telehealth initiatives. They will not need to travel to India or remote locations and will become an integral part of the Sri Sathya Sai ideal healthcare mission and receive immense spiritual and professional benefit. In addition, the telemedicine initiatives will continue to aid resident education and CME.

Mobile Clinics

There are many communities where access to basic medical care is not available. The purpose of mobile clinics is to provide healthcare to these areas and help promote healthy living. Because of limited resources, these individuals cannot afford to travel to clinics or hospitals far from their communities to access routine and sometimes urgent health care. This is a grassroots organisation where volunteers working in the mobile hospitals and clinics work side by side with community leaders and volunteers to care for those in need. The broad areas of services include (i) primary care, (ii) acute care, and (iii) preventive medical care.

The Sathya Sai Mobile Hospital under the guidance of Sri Sathya Sai Baba serves with the noble mission of bringing healthcare to the rural doorstep. The mobile clinic with its team of doctors and volunteers visit several villages around Puttaparthi, India each month and offers diagnostic and therapeutic medical, dental, and surgical services to the people in these villages. Additionally, patients who need urgent care, advanced medical needs, and/or further follow-up are promptly referred to the local Sri Sathya Sai hospitals for continued treatment. The purpose of the Mobile Hospital is also to help foster awareness on preventive medicine and emphasise the importance of spirituality in one's health.



The medical voids served by these mobile clinics are not unique to underdeveloped areas of the world but is evident in communities everywhere. For example, in developed countries such as the United States there are designated medically underserved areas and health professional shortage areas that are federally designated geographic areas with a scarcity of primary healthcare services. It is in these medically underserved areas and in rural and remote areas throughout the world that the services provided by the mobile clinics are essential and serve as models of ideal healthcare.

India

Gujarat

In order to provide medical facilities to villagers of interior areas, a mobile medical van with general medicine, cardiogram, laboratory, eye department, and mother and child care facilities has been procured by Sri Sathya Sai Service Organisation, Bhavnagar. On the occasion of its inauguration, a heart checkup camp was also conducted with the help of Sri Sathya Sai Heart Hospital, Rajkot. In the camp, about 250 patients were checked, 19 patients were given dates for surgery, and 62 patients were advised to undergo angiography.

Kerala

For effective implementation of Sri Sathya Sai Village Integrated Programme, the Sri Sathya Sai Mobile Clinic was inaugurated in Thiruvananthapuram district on November 17, 2007. All facilities for various types of medical checkups, laboratory tests, etc., are arranged as part of this mobile clinic. Now this mobile clinic is going to the interior parts of the district and taking care of patients who are immobile.

The Sri Sathya Sai Mobile Clinic for the Ernakulam District was started on February 22, 2008. This was the second mobile clinic of the Sathya Sai Organisation of Kerala.

Sri Sathya Sai Mobile Hospital

Sri Sathya Sai Mobile Hospital is a unique free rural outreach health service which was launched by Sri Sathya Sai Baba on March 3, 2006. The service operates from the 1st to 12th day of every month at 12 nodal points (base villages) and each of these serve 6 surrounding villages. Seventy two villages are thus currently being serviced by the Mobile Hospital, although in practice, patients are drawn from nearly 400 villages in the region.

The Mobile Hospital is managed on an entirely voluntary basis. About 500 doctors from the state of Andhra Pradesh belonging to 12 specialties dedicate their skills and they come in rotation to serve on an ongoing basis. Some of the unique features of the Mobile Hospital include diagnostic facilities such as an ultra-sonogram, an x-ray plant with automatic processor and a laboratory, which can do most of the routine pathological and bio-chemical investigations. The presence of this diagnostic support ensures quality and credibility to the services provided.

Since this is an outreach programme, the theme of the Mobile Hospital has included three main aspects of service consisting of (i) Curative drive (ii) Preventive focus and (iii) Spiritual base.

The curative drive owes its strength to the presence of doctors belonging to nine specialties on any particular day including medicine, surgery, paediatrics, orthopedics, ENT, dentistry, ophthalmology, gynaecology, and radiology. These specialists work under a common roof integrating their efforts to solve many of the intricate problem people present with. About 600 to 700 patients are seen every day at each of the nodal points. On the diagnostic front, for tests which cannot be done in the bus, blood samples are collected and are delivered to the laboratories in the Sathya Sai Institute of Higher Medical Sciences, Puttaparthi for testing and reporting, thus ensuring that everyone is being provided a loving door-step service. The curative work is further strengthened by a strong pharmacy which ensures that patients with chronic ailments like diabetes, hypertension, heart disease, asthma, epilepsy, etc., are all provided with



continuous and uninterrupted supply of medicines (one month supply till the next month's visit).

Patients requiring follow-up treatment like surgical intervention are referred to the Sri Sathya Sai hospitals and their medical conditions are monitored till the logical solutions are addressed.

The preventive work consists of health education, which is extensive and detailed covering several aspects of keeping good health. Five major health-related topics are discussed: cleanliness (environmental, home and individual), nutrition, healthy air and water, harmful effects of smoking and alcoholism, proper physical exercise and mind relaxation. Education on these subjects is done at the individual, family, and community levels using a variety of tools that includes audiovisual presentations, demonstrative sessions,

interactive meetings, photo exhibition and is further reinforced by showing these presentations regularly in the local cable television.

The spiritual base of the service involves telling and motivating the villagers on the importance of positive thinking, human values, prayer and meditation, all of which foster positive health. A variety of programmes that focus on these values are conducted.

Comprehensive healthcare is provided to these communities through preventive healthcare and diagnosis and treatment of common minor and chronic ailments. Only problems requiring major surgical intervention are referred to the tertiary-care hospitals.

The impact of the Mobile Hospital services has been tremendous. On the curative front, it has given a sense of great security to people living in nearly 100 villages around Puttaparthi. It is a boon for patients with chronic ailments who can never dream of buying medicines on a continuous basis. The preventive services have created a huge wave of awareness on major health issues, which is slowly getting translated into changing habits, for the better. The spiritual component of the service has strengthened the community bonds and has reminded people that spirituality is the way of life and practicing human values leads to positive health and happiness. The Mobile Hospital is thus acting as a silent vehicle for providing comprehensive healthcare and is also becoming an instrument for dissemination of the ideals of healthcare which Sri Sathya Sai Baba has set for all. It is not only a state-of-the-art rural outreach service but also a state-of-the-heart caring and loving service. ☺

