

**Setting-up of Mobile Telemedicine Unit in Kumbh Mela 2016 at
Ujjain, Madhya Pradesh**

Ministry of Health & Family Welfare, Govt. of India

Project Completion Report

Duration: 22nd April to 21st May 2016

Project Collaborators:

**National Resource Center (NRC) at School of Telemedicine &
Biomedical Informatics, SGPGIMS, Lucknow**

Indian Space Research Organization (ISRO), DECU, Ahmadabad

Department of Public Health & Welfare, Govt. of Madhya Pradesh

All India Institute of Medical Sciences (AIIMS), Bhopal

Implemented by:

**National Resource Center, Telemedicine Division, MOHFW, Govt. of India
School of Telemedicine & Biomedical Informatics
Sanjay Gandhi Post Graduate Institute of Medical Sciences (SGPGIMS)
Raibareli Road, Lucknow, U.P.**

Background

Mass gatherings pose challenges to healthcare systems anywhere in the world for illustration the Kumbh Mela of 2013 at Allahabad (Prayag), India was the largest gathering of humanity in the history mankind, and facing many exciting challenge in term of provision of healthcare services upon huge mass gathering level. At the finale of the Mela, it was estimated that about 120 million pilgrims had visited the site. For Equitable geospatial allotment of adhoc health care facilities it is very necessary to also create a standard template with integrated solution of medical service with higher institution like AIIMS Bhopal and incorporated the role of telemedicine integration is very important to provide in- supportive balance to health management services and deliver the services with connected live by the use of electronic signal to transfer the medical data from one side to another side via internet, satellite or video conferencing in order to improve the access of health care service during the **Simhasth Kumbh Mahaparv** of Ujjain. This health care services proposal serves across geographic distance, time, social and cultural and level of variants.

Introduction

“Simhasth Kumbh Mahaparv” Ujjain is one of the four **“Kumbh Melas”** celebrated by largest spiritual gathering on Planet Earth. Simhasth Kumbh Mahaparv is rejoiced by holy dip in the sacred river Kshipra in ancient and religious city **Ujjain** (Madhya Pradesh). Simhasth Kumbh Maha Parva is based on the **celestial line-up of Planets and the Signs of the Zodiac**, which occurs every 12 years. This time **Simhasth Kumbh Mahaparv** taken place from **April 22nd to May 21st 2016**. The holy dip in river Kshipra is taken on the auspicious day with believes that taking a dip in river Kshipra on this occasion purifies the soul and overcomes all the sins. Around approx. 3 Crore (30 Millions) pilgrims from all walks of life came to join and take holy dip.

The ‘Kumbh’ Mela may be the largest gathering of sentient beings anywhere in the world. A ‘mass gathering’ (MG) is usually defined as more than a specified number of persons at a specific location for a specific purpose for a defined period of time. During the 2013 Maha Kumbh Mela at Allahabad, reportedly over 120 million pilgrims visited the holy site during its 55 day course. The challenge faced in planning healthcare for an anticipated influx and providing of super specialty health care service to millions of pilgrims, to a region of India with relatively underdeveloped permanent healthcare infrastructure, was to ensure optimal resource deployment with assurance of a minimum desired level of healthcare which was both accessible and affordable.

In the 2013, Kumbh Mela, there were fourteen allopathic zonal hospitals and one central hospital set up in the Mela area. 243 allopathic doctors including 50 specialist doctors were deployed with proper staff to these hospitals. One hundred First Aid Posts were sited along the main axes of pilgrim movement.

To cater for alternative forms of medicine, twelve Homoeopathy hospitals and twelve Ayurvedic hospitals were also established. 120 ambulances with wireless radio communication were deployed at all major junctions in the area and deployed **Mobile Telemedicine system** at Kumbh mela for the benefits of pilgrims which consist of four sections, one for driver and passenger seat, second for ICT section equipped with video conferencing system for visual communication with doctors in remote places and a public address system was also used for mass awareness among rural population using projection system and external tuning with projectors. Third section had X-ray units and operation table to perform minor surgical operation and live transmission with higher centers for specialist consultation and fourth section has with laboratory equipped with devices used for capturing vital parameters and ophthalmic imaging and for laboratory tests with fully independent unit equipped with generators and UPS, apart from regular source of power having with multiple connectivity option linkage and connect to any of the telemedicine enabled medical hospital and super-specialty hospital for expert opinion and follow up of patients from Kumbh Mela region. Using tele-medicine services in kumbh mela for vision merely to enhance the medical services and balance the medical consultation requirement for huge mass gathering involving the role of telemedicine.

Objective of the Project

- To improve the physical and mental well-being of pilgrims of Kumbh mela and other citizens.
- To synchronize the provision of health and its knowledge and provide consultation with higher institutions of the states.
- To provide specialized health care consultation to patients in Kumbh mela remote locations.
- To facilitate video-conferencing among health care experts for better treatment & care.
- To improve pilgrim's health security.
- To reduce health inequalities.
- To generate and disseminate health information and knowledge.
- To provides second consultation and opinion.
- To connect with specialty hospital as per the medical requirements.
- To cater the load with temporary hospitals which residing in Kumbh mela area.
- To provides the availability of specialist doctors with in region with Telemedicine to apex institutions.
- To Promoting health, including the reduction in health inequalities.
- To provide opportunities for continuing education of health care personnel.

Relevance of Telemedicine in “Simhasth Kumbh Mahaparv”, Ujjain

- Inadequate infrastructure in rural/district hospitals
- Large number of indoor/outdoor patients requiring referral for specialized care
- Low-availability of Health Experts in district/remote hospitals
- Dearth of adequate opportunities for training or continuing Medical Education for Doctors in Rural/Remote Health facilities.

Benefits of Telemedicine Services in “Simhasth Kumbh Mahaparv”, Ujjain Benefits to Patient

- Reduce the inconvenience and price of patient transfers to super specialist hospital
- Access to specialized health care services to under-served area of Kumbh mela and other remote areas of the regions.
- Access to expertise of Medical Specialists to a larger population without physical referral.
- Reduced visits to specialty hospitals for long term follow-up care for the aged and terminally ill patients.
- Improved diagnosis and better treatment management
- Access to computerized, comprehensive data (text, voice, images etc.) of patients – offline as well as real time
- Quick and timely follow-up of patients discharged after palliative care
- Continuing education or training through video conferencing periodically
- Cut back in essential period of time for health professionals.
- Remove distance barriers and improve access to quality health services.
- Facilitate patients and Kumbh mela health practitioner’s access to specialist health services and support.
- Cut back isolation of kumbh mela pilgrims to follow by upgrading their information, information through Tele-education or Tele-information.
- It should additionally cowl playing surgery and operations victimization remote controlled and processed devices in close to future on wide scale.

Benefits to Hospitals at Kumbh Mela Location

- Significant reduction in unnecessary visits & hospitalization for specialized care at tertiary hospitals
- Earlier discharge of patients leading to shorter length of stay in hospitals,
- Increase in the scope of services without creating physical infrastructure in remote hospitals

Methodology adopted for deployment of the project at Kumbh Mela site

In compliance with the directive of Telemedicine Division, Ministry of Health & Family Welfare, Govt. of India for setting up the Mobile Telemedicine Van in Kumbh Mela at Ujjain, National Resource Center, SGPGI, Lucknow took steps to implement this project in collaboration with Development Education Communication Unit (DECU), Indian Space Research Organization (ISRO), Ahmadabad. Shri Jitendra Arora, Director, Telemedicine Division, MOHFW facilitated all the way to get the sanction of administrative and financial approval for this initiative. A team from DECU visited NRC, SGPGI, Lucknow from 11th to 13th April 2016 to test the feasibility of the satellite connectivity and telemedicine software interoperability between Mobile Telemedicine van, AIIMS, Bhopal and NRC. Detail deliberation and planning was carried out with Nodal Officer, Telemedicine, AIIMS, Bhopal to organize the Telemedicine platform functionality, technical manpower and provision of medical professional for offering Tele-health services for the pilgrims of Kumbh mela at Ujjain. All the required formalities were completed in coordination with Shri Jitendra Arora, Director, Telemedicine Division, MOHFW and planning was carried out to depute manpower and organize logistics at mela site. All NRC staff members were divided in three groups to carry out the project at Mela site. Manager-Administration, NRC, SGPGI was given overall responsibility for managing this project. The first batch of the team proceeded to Ujjain along with the Van on 18th April 2016. Road permit and other requisite desired were provided by Telemedicine Division, MOHFW. On 20th April night Mobile van reached in Ujjain. Since activities were supported by the MOHFW, Govt. of India, the name of the Ministry was pasted on the van in form of banner in front, both side and inside the van. Photographs of banners are place below;

Fig.1: Mobile telemedicine Van at Simhastha Kumbh Mela at Ujjain



Dr. K.L. Sahu, Director, Health Services, Government of Madhya Pradesh facilitated the deployment of the Mobile telemedicine van along with satellite antenna in the mela complex in coordination with Zonal Magistrate. Finally, the Mobile Telemedicine Van was stationed at Bhukhi Mata Sector, Dutta Akhara area of Simhashta Kumbh near the temporarily established Government Hospital. NRC team visited all sector hospital and created awareness about the potential & services of Telemedicine among the doctors and staff in coordination with Dr. K.C. Parmar, Zonal Health Officer, Dutta Akhara zone. Meeting held with Simhashta Mela Officer to get support & better coordination from the local authorities and he assured NRC to team provides all possible support as and when required.

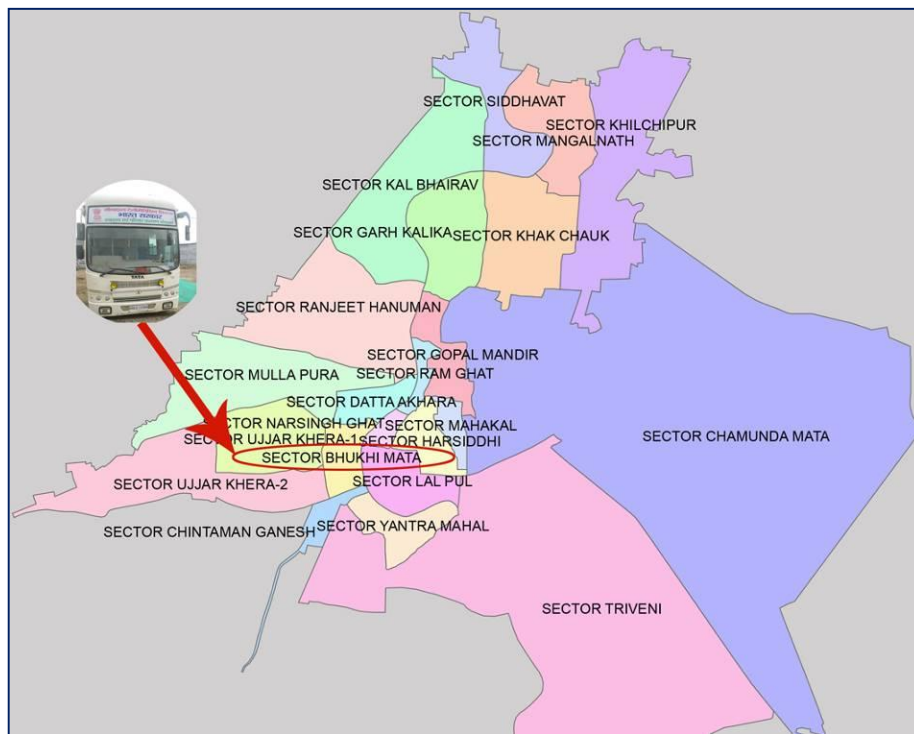


Fig1: Sector where Mobile Telemedicine Van was stationed

A team of ISRO empanelled vendor installed the satellite antenna at identified location on the 21st April night and tested link with ISRO hub and SGPGI, Lucknow. AIIMS, Bhopal ISRO network was not in order and this site was identified for giving primary consultation to the devotees, NRC requested ISRO team to rectify the AIIMS, Bhopal problem and make this site up. ISRO team visited AIIMS, Bhopal made site operational on 21st April. A technical testing with AIIMS, Bhopal, SGPGI, Lucknow and Mobile Telemedicine van was carried out successfully. An information flyer in Hindi language was prepared to distribute among the devotees for creating awareness. Sample is placed in Fig.2



On 22nd April, 2016, the tele-health services made operational for the devotees.

The first batch of the team left the mela complex on 26th April after handing over the system to the next batch in rotation with respective schedule.

Activities under taken during the period:

- Mobile Telemedicine Van was made operational on 22nd April' 16.
- First awareness activities were taken place. Audio visual contents over LCD projector were displayed on rotation basis and physical interaction among the public were carried out.



Fig.3: Mobile Telemedicine Van at Simhastha Kumbh Mela at Ujjain



Fig.-3; Interaction with visitors

- Tele-consultation services is being provided from AIIMS, Bhopal and SGPGI, Lucknow doctors from 9.30 a.m. to 6.00 p.m. Electronic Medical Record (EMR) using Telemedicine software including vital parameters of the patient like NIBP, Spo2, Spirometry, Blood sugar (diabetes), height & weight etc is being taken for all the patient visited in Mobile van. A total of **437** patients got benefitted till 21st May 2016 from both the centers. Three patient required X-ray exposure out of ninety four patients.



- Live demonstration of the process Telemedicine process explained among the visitor during the day time. Schools of Telemedicine & Biomedical Informatics (STBMI), SGPGI, Lucknow do connect daily for showing the visitor the process. In the evening audio visual contents were displayed using LCD project.
- All the visitors filled up the proforma prepared by the STBM for getting knowledge about the profile of the visitors. More than a **thousand** people visited the van so far and got benefitted on the basic health concerned as well as telemedicine technology.
- Media awareness was carried out by inviting the media professionals to visit the Mobile Telemedicine van and providing them written documents on the benefit of telemedicine technology in health & public health education. News paper items place in the annexure-I

Team Members involved in the deployment of project;

Name	Designation
Shri Jitendra Arora	Director, Telemedicine, MOHFW, Govt. of India
Prof. S.K. Mishra	Nodal Officer, National Resource Center (NRC), SGPGIMS, Lucknow
Dr. Surya Bali	Nodal Officer, Telemedicine Center, AIIMS, Bhopal
Mr. Indra Pratap Singh	Manager- Administration, (Project Manager- Kumbh Mela) NRC, NMCN, SGPGIMS, Lucknow
Shri Arvind Tyagi	Head, Telemedicine, DECU, ISRO, Ahmadabad
Mr. Repu Daman	Manager-Telemedicine Network (Group Leader for third group) NRC, NMCN, SGPGIMS, Lucknow
Mr. K.P. Pathak	Engineer-Pan Africa Project (Group Leader for second group) NRC, NMCN, SGPGIMS, Lucknow
Mr. Amit Mohan	Content Developer, NRC, NMCN, SGPGIMS, Lucknow
Mr. Arvind Kumar	Web Designer NRC, NMCN, SGPGIMS, Lucknow
Mr. Dabeer Warsi	Content Developer, NRC, NMCN, SGPGIMS, Lucknow
Mr. A.R. Thomas	Radiology Technician Mobile Tele-Oncology project
Ms. Shushma Singh	Radiology Technician Mobile Tele-Oncology project
Mr. Sandeep Singh	Telemedicine Technician NRC, NMCN, SGPGIMS, Lucknow
Mr. Arun Kumar	Telemedicine Technician NRC, NMCN, SGPGIMS, Lucknow
Mr. Dheeraj Kumar	Telemedicine Technician NRC, NMCN, SGPGIMS, Lucknow
Mr. Vijay Yadav	Telemedicine Technician NRC, NMCN, SGPGIMS, Lucknow
Mr. Asif Khan	Technical Assistant, Telemedicine Center, AIIMS, Bhopal
Mr. Ashok Kashyap	Telephone Attendant
Mr. Lalit Mishra	Attendant NRC, NMCN, SGPGIMS, Lucknow
Mr. Rajesh Maurya	Attendant NRC, NMCN, SGPGIMS, Lucknow
Mr. Awadhesh Pandey	Driver NRC, NMCN, SGPGIMS, Lucknow
Mr. Manish Dubey	Driver Mobile Tele-oncology Project

Simhastha sick bay: Get telemedicine treatment

Jamal Ayub @timesgroup.com

In a first for telemedicine services in the city, doctors from All India Institute of Medical Sciences (AIIMS) Bhopal would provide clinical healthcare at a distance for devotees at Ujjain Simhastha.

A team of 8 paramedical and technical members has been deployed in Ujjain. Using telemedicine technology, executives will transfer patient information from Ujjain to AIIMS Bhopal for specialist consultation. Union ministry of health and family welfare (MoHFW) is providing financial support for the facility. SGPFI



Lucknow has provided their telemedicine van while the state government has provided infrastructure at Kumbh Mela. AIIMS Bho-

pal, working at physicians' end and providing healthcare, is connected with ISRO's satellite integrated telemedicine van, said AIIMS Bhopal telemedicine expert Dr Surya Bali. "Best benefit of telemedicine service is attained when connected with expert telehealth specialists," he added.

AIIMS Bhopal has long been equipped with telemedicine software and attached with medical diagnostic accessories such as microscope, electronic ECG ultrasound and X-ray digitiser. Experts suggest that depending on the bandwidth of telecommunication, online or offline telemedicine services can be provided remotely.



SATELLITE-INTEGRATED TELEMEDICINE VAN STATIONED AT SITE

Visitors to Simhastha can avail telemedicine facility

AIIMS Bhopal, Lucknow hospital jointly begin operations

M.Poornima @dbpostnews

Bhopal: In a unique initiative, the All India Institute of Medical Sciences (AIIMS), Bhopal, along with Sanjay Gandhi Post Graduate Institute of Medical Sciences (SGPGI), Lucknow, started telemedicine facility for visitors of Simhastha on Thursday.

An Indian Space Research Organisation satellite integrated telemedicine van has been stationed at Simhastha site to provide healthcare facility to pilgrims during the entire event. The van has been specially provided by SGPFI, Lucknow, for Simhastha.

"It is a fully equipped van with telemedicine software. It contains all the essential medical diagnostic accessories such as microscope, electronic ECG machine, ultrasound, X-Ray digitiser etc. A patient coming to our telemedicine will be able to interact with



our expert doctors sitting here in AIIMS directly through video calling" said, in charge of Telemedicine Centre, AIIMS, Bhopal Dr Surya Bali.

He said they were using telecommunication technology to exchange patient related information between telemedicine van at Simhastha and telemedicine centre at AIIMS Bhopal. The centre will provide healthcare both online as well as offline depending on the bandwidth of the telecommunication, he added. A team of eight paramedical and technical staff will be available at Simhastha venue for providing health

care support using Telemedicine technology. The team will also help in transferring all health records of patients visiting telemedicine centre during Simhastha. It will transfer it to specialists of AIIMS Bhopal for consultation.

Union ministry of health and family welfare has provided financial support to establish entire system during the mega event. State government has also helped in providing infrastructural support to AIIMS Bhopal. The centre will provide tele-follow up facility to patients who underwent initial treatment at other hospitals and centres at Simhastha site.

स्वास्थ्य सेवा पत्रिका

सिंहस्थ में मोबाइल टेली मेडिसिन शुरू

उज्जैन सिंहस्थ में आने वाले साधु-संतों तथा श्रद्धालुओं के इलाज के लिए स्वास्थ्य मंत्रालय की ओर से मोबाइल टेलीमेडिसिन सुविधा उपलब्ध कराई गई है। इस मोबाइल टेलीमेडिसिन वैन में ब्लड प्रेशर, डायबिटीज, ईसीजी, एसपीओ.2, डर्मेटोलॉजी टेस्ट, ऑर्थोमीलॉजी टेस्ट, एक्स-रे आदि सुविधाएं उपलब्ध हैं। एम्स भोपाल तथा एसपीजीआई लखनऊ के डॉक्टर हर समय उपलब्ध रहते हैं। यह एक स्वास्थ्य देखभाल प्रणाली है, जो आईटी पर आधारित है। इसमें रोगी का उपचार दूरस्थ स्थानों पर स्थित चिकित्सकों से परामर्श प्राप्त कर किया जाता है। वीडियो कॉन्फ्रेंसिंग तकनीक के माध्यम से रोगी तथा चिकित्सक संवाद कर सकते हैं। यह वैन भूखी माला सेक्टर ऑफिस के पास अस्पताल में रहेगी।

एम्स के डॉक्टर देंगे संतों-श्रद्धालुओं को ऑनलाइन परामर्श

उज्जैन में तैनात की अत्याधुनिक वैन

मेघल @ पीक

सिंहस्थ महकूम के दौरान उज्जैन पहुंचने वाले श्रद्धालुओं-संतों का इलाज अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) के चिकित्सक करेंगे। गुरुवार से यह सेवा शुरू हो गई है। इसके लिए एम्स के टेलीमेडिसिन विभाग ने उज्जैन में एक अत्याधुनिक मोबाइल वैन तैनात की है। इसमें एक डॉक्टर के साथ पैरामेडिकल टीम रहेगी। लखनऊ स्थित संजय गांधी पीजी इन्स्टीट्यूट (एसपीजीआई) की इस वैन के अंदर बनी ओपीडी में मरीजों को जांच के बाद एम्स-भोपाल के टेलीमेडिसिन सेंटर में बड़े डॉक्टरों से संधे बात होगी। डॉक्टरों द्वारा कबल गईं वारंट आसपास की सकारात्मक फरमेंसों से निःशुल्क ले सकेंगे। एम्स भोपाल को इस काम के लिए इसरो ने तकनीकी सहायता दिया है। वहीं केंद्रीय स्वास्थ्य एवं परिवार कल्याण मंत्रालय द्वारा फंड उपलब्ध करवाया गया है। एम्स के मुताबिक, वैन में मरीजों का आठ कर्मचारियों को तैनात किया

Glimpses of Simhasth Kumbh 2016

