

Experience in development of telemedicine in Remote and hard-to-reach areas of India

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Indian Demography

- Total Area 3 Million Sq. Mtr
- 29 Provinces & 6 Union Territories
- 6,700 Km Coastal Lines
- Diverse Geography (Inaccessible hilly regions, islands, desert, coast and tribal areas)
- More than 1 billion population (70% Rural)
- Medical Experts: 70% Urban



Mobile Internet Users in India

85 Million
URBAN

25 Million
RURAL



81%

of India uses a
Mobile Phone



10%

of India uses a
Smart Phone



9%

of India uses a
Multimedia Phone

12th Five Year Plan (2012-2017)

- Access to CME and skill up-gradation programmes, as well as back-up support on telemedicine
- Deployment of Countrywide HIMS
- The use of ICT in health education, public health status analysis and expansion of health related research
- All District hospitals linked by telemedicine channels to leading tertiary care centres
- M-Health, the use of mobile phones to speed up transmission

http://planningcommission.nic.in/aboutus/committee/strgrp12/str_health0203.pdf

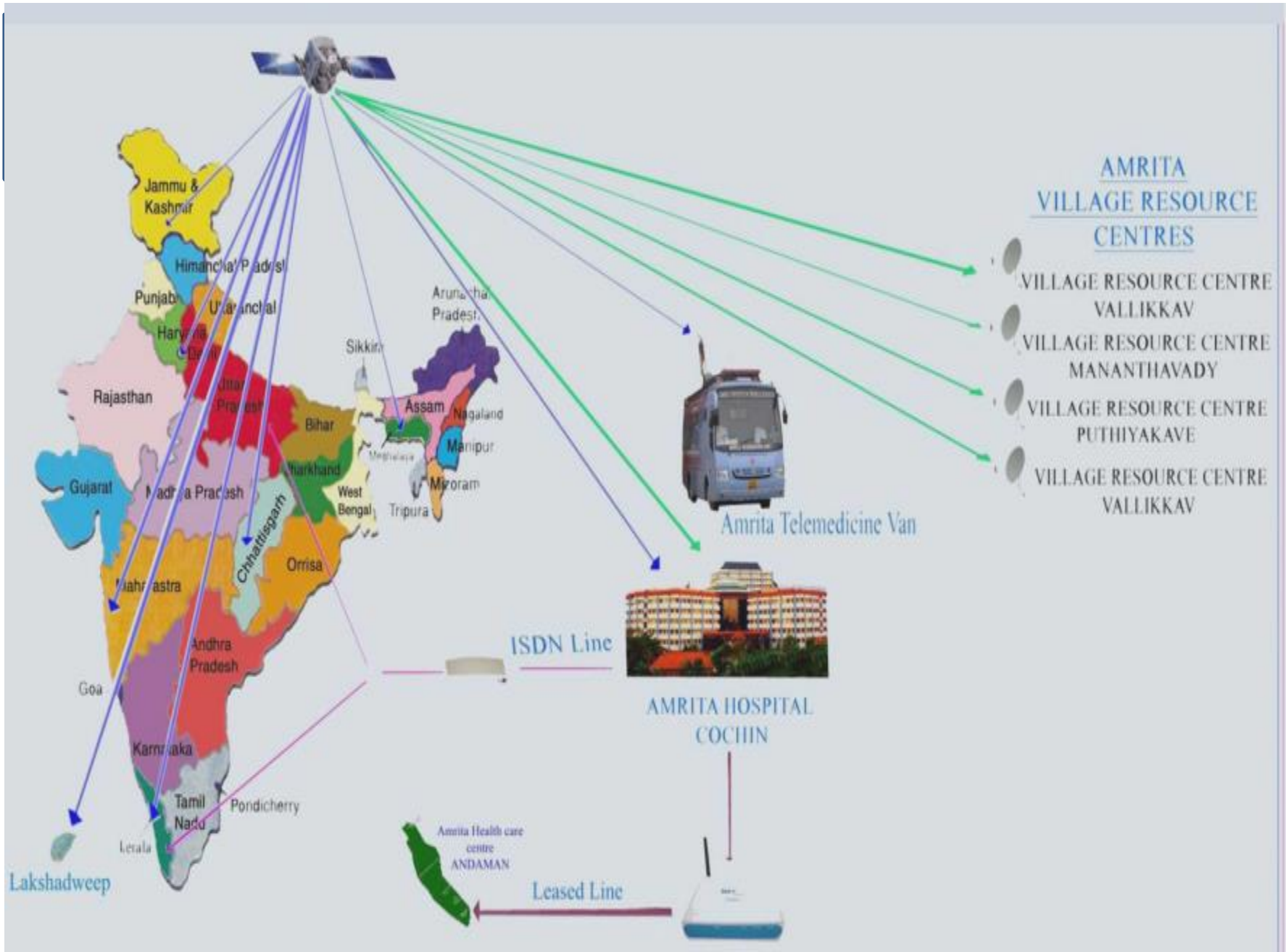
Case Study: I

Telemedicine deployment in Disasters

Amrita Institute of Medical Sciences(AIMS), Kerala, India

Disaster management and Proactive care in Tele-Health Network – Amrita Institute of Medical Sciences(AIMS), Kerala, India

- VSAT Connectivity 384 Kbps
- Collaborates with over 60 hospitals from near and far flung areas, such as the islands of Lakshadweep and Andaman, the hilly terrains of Kashmir.





<http://www.amritapuri.org/on/aims/page/3>

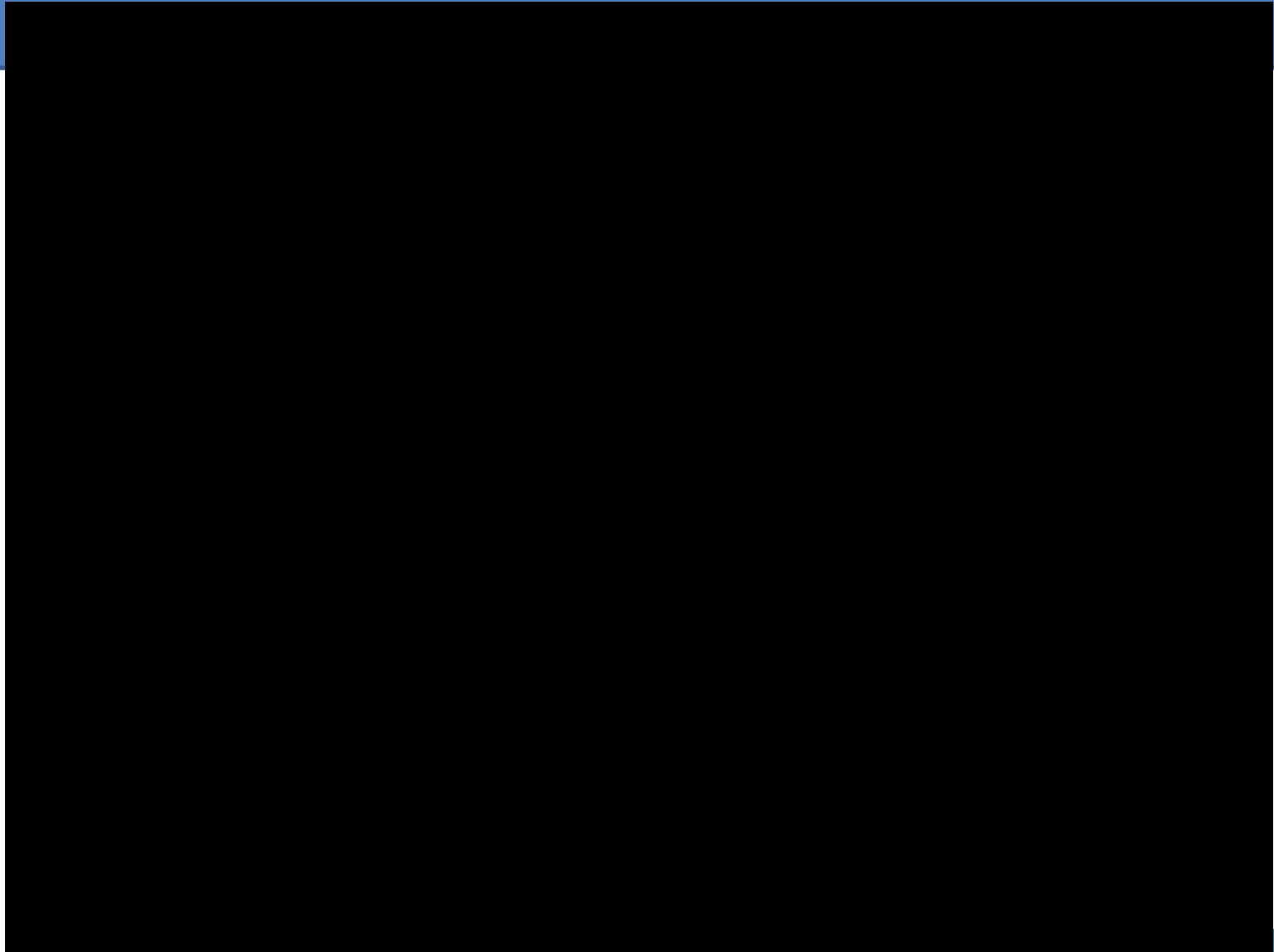
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Case Study: II

Festival Events with Large People Congregation in Rural Areas

Kumbh Mela, Ujjain (2016)



Case Study: III



North East Telemedicine Network
Indian Space Research Organization

North East Telemedicine Network

- 2004 - ISRO-NEC telemedicine project using satellite communication Network
72 Nodes
- 2008 - Army Telemedicine Network
06 Nodes

Tele-Consultancy through Army telemedicine network in NE

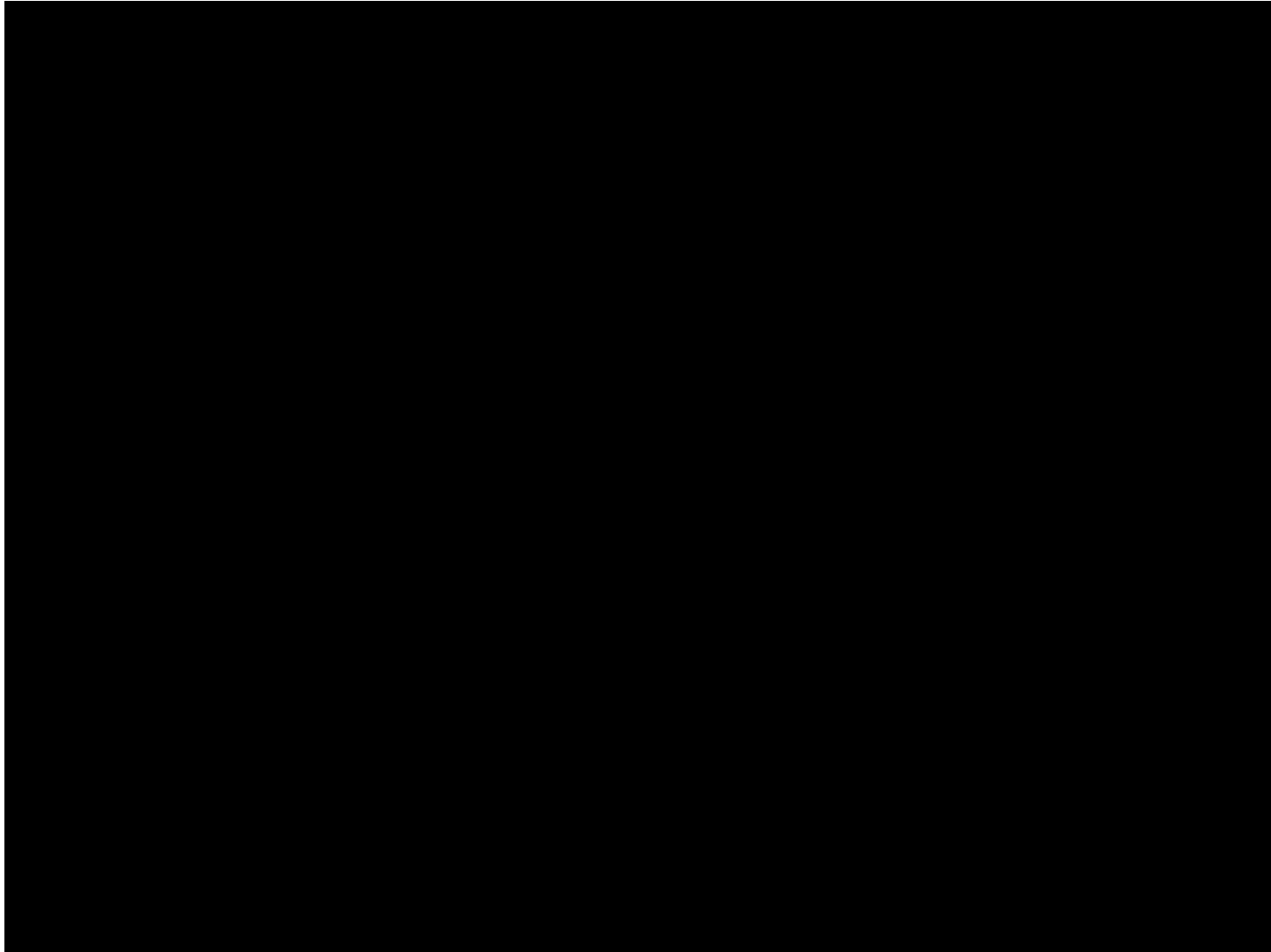


Tele-Consultancy between Civil Hospital, Kamalpur & AMCH, Dibrugarh



<http://nesac.gov.in/satcom-telemedicine.htm>

North East -Tripura Vision Center



Case Study: IV

Mobile Telemedicine System (BUS, Suitcase and Backpack System)

School of Telemedicine & Biomedical Informatics (STBMI)

Telemedicine on Wheel

School of Telemedicine & Biomedical Informatics, SGPGIMS



Portable System (Suitcase and Backpack)



Rural Healthcare at Door Step



Case Study: V

Andaman Nicobar Remote Island Telemedicine Network
Indian Space Research Organisation

ISRO-Andaman Island Telemedicine

Healing Touch...
...Through Space

Case Study: VI



Sub Himalayan Mountain States Jammu Kashmir & Himanchal Telemedicine Network

ISRO-Jammu Kashmir Telemedicine

ISRO Telemedicine
Pilot Projects

Telemedicine Deployment in Sub Himalayan Mountains

- Public Private Partnership (PPP) Model
- Apollo Tele Health services is providing 24/7, quality, affordable, remote health care, to 34,000 citizens of **Lahaul and Spiti** (height of 14,000 feet in the Himalayas) in **Himachal Pradesh**.
- People living there connected through satellite to specialists of Apollo Hospital sitting in New Delhi and Hyderabad.

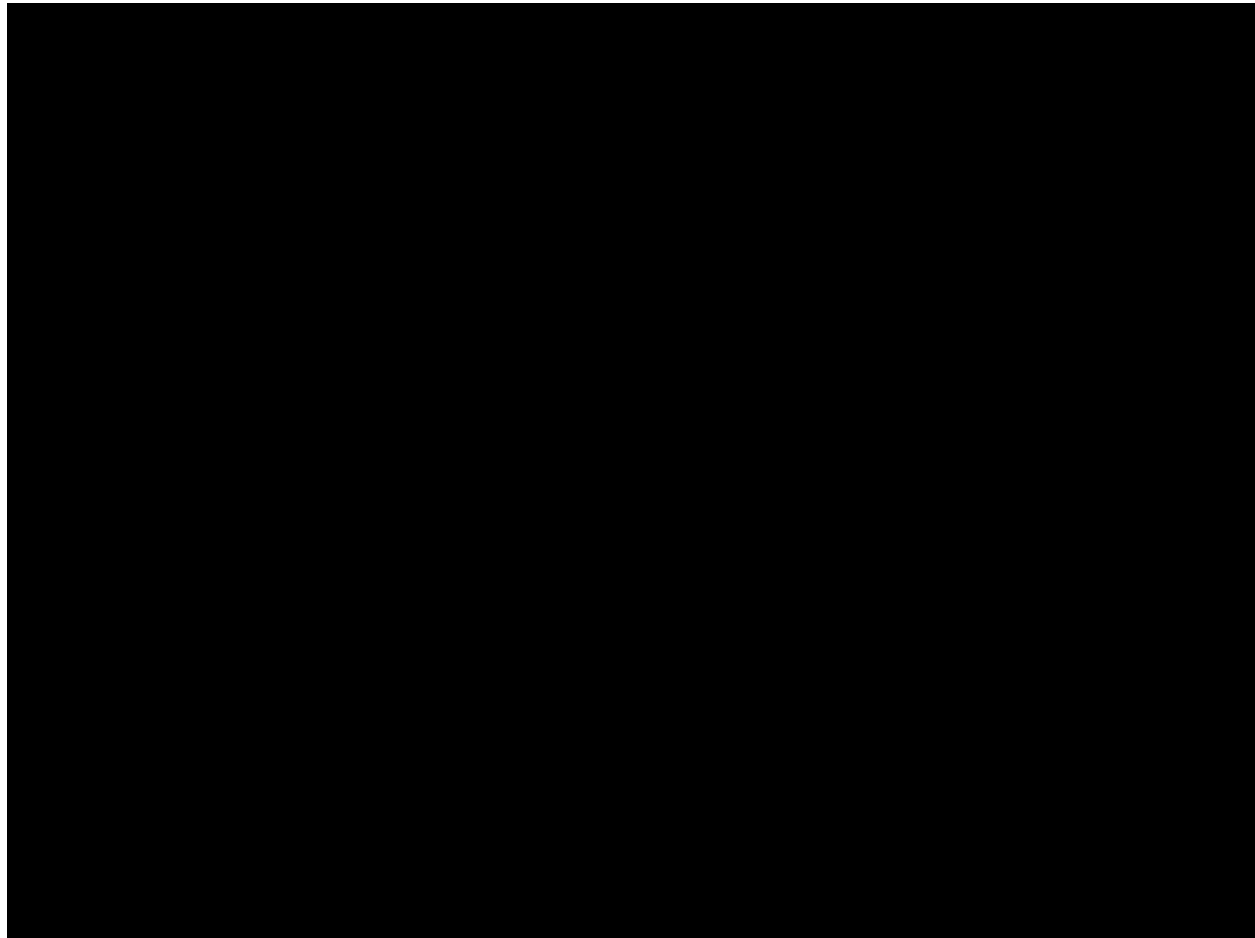
<http://caho.in/?p=3754>

Telemedicine in the Himalayas: Operational Challenges—A Preliminary Report

Ganapathy Krishnan, Chawdhry Vineet, Premanand Satgunam, Sarma Arunabh, Chandralekha Jothivaithilingam, Yogesh Kumar Kotte, Kumar Saroj, and Guleri Rajesh. *Telemedicine and e-Health*. May 2016, ahead of print.

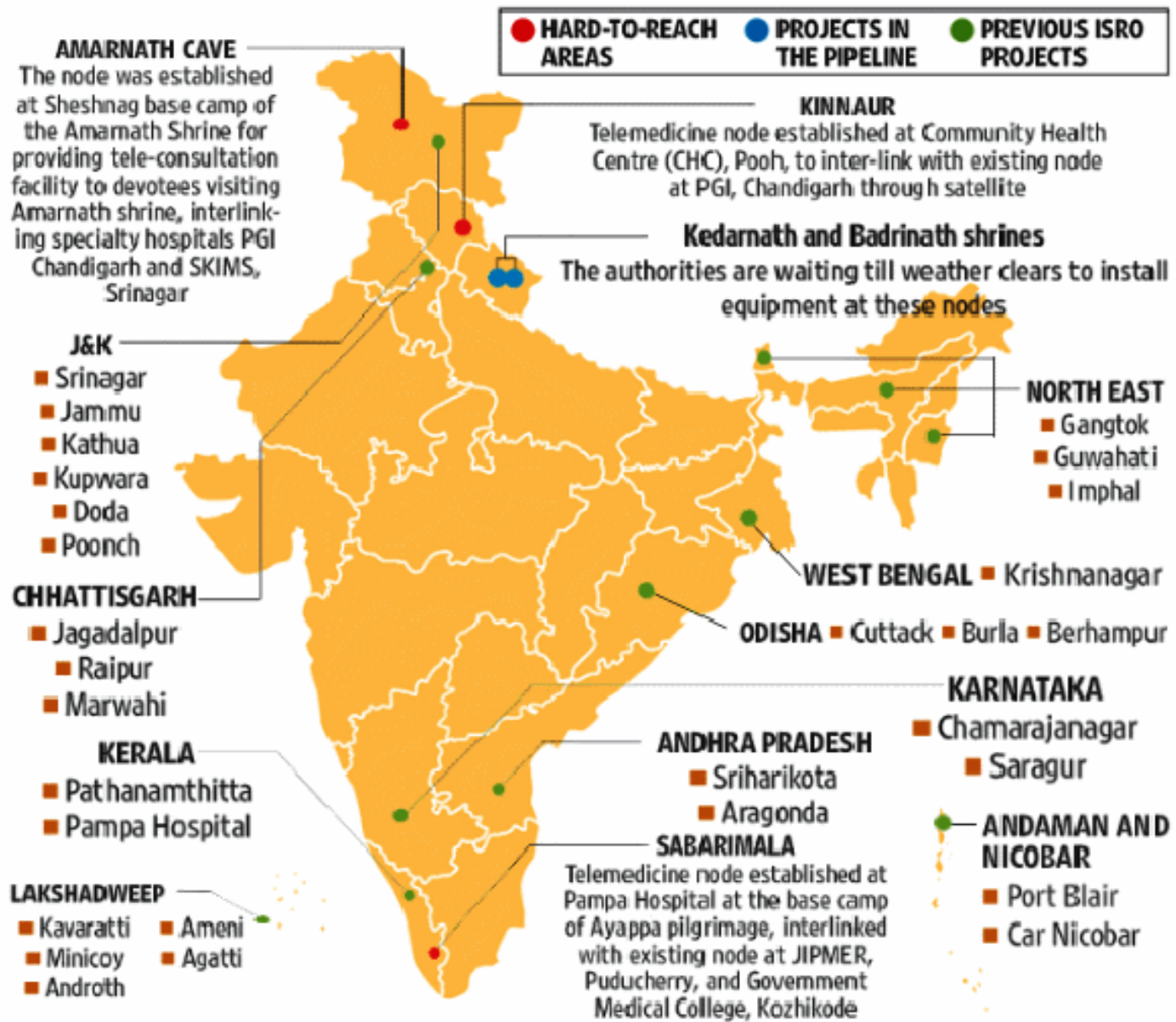
doi:10.1089/tmj.2015.0249

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TAKING HEALTHCARE SERVICES TO ALL

A look at the centres set up in hard-to-reach areas, projects in the pipeline and the previous projects where Isro provided satellite links to connect the centres to hospitals in cities



ISRO – MoH&FW (2016)

- To provide Healthcare at difficult terrains, geographically isolated area, mass gathering pilgrimage offshore isolated islands of Andaman, Nicobar and Lakshadweep, North-East & tribal regions and disaster prone areas using Space technology.
- Seven (07) new telemedicine nodes at Chardhams, Kailash Mansarovar, Amarnath & Ayyappa pilgrimage places are being set up.
- 8 new telemedicine nodes covering one district each in Himachal Pradesh, Odisha, Arunachal Pradesh and Meghalaya are planned for set up in current year.

<http://www.mohfw.nic.in/WriteReadData/l892s/25901373661443608134.pdf>

http://www.isro.gov.in/sites/default/files/article-files/right-to-information/annual_report-15-16.pdf

ISRO enables Telemedicine service enroute Amarnath

- Ministry of Health & Family Welfare (MoH&FW), Govt. of India & Development and Educational Communication Unit (DECU) of ISRO Signs MoU
- It is to deliver healthcare services to residents and pilgrims who pass through remote areas near the Holy Amarnath caves, ISRO-MoH&FW and J&K Ministry of Health joined hands to set-up a Satellite based Telemedicine facility at **Sheshnag, Amarnath (Jammu & Kashmir)** (13,000 feet above from Sea) in the Kashmir valley.
- Tele-consultation through PGIMER (Chandigarh), SKIIMS (Srinagar), AIIMS (Bhopal), JIPMER (Puducherry).

<http://www.isro.gov.in/isro-enables-telemedicine-service-enroute-amarnath>

INDIA



Map not to Scale
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(Updated on 27th November 2014)



Thanks

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