Application of Telemedicine in Plastic Surgery & Health Practices



Prof. Dr Ravi Kumar Chittoria

MBBS, MS, MCh, DNB, MNAMS, MBA, PhD (Plastic Surgery)
PGDTM (Telemedicine), PDCR (Clinical Research), PGDMLS (Medico Legal Systems)

Registrar (Academic) JIPMER

Head of IT Wing & Telemedicine
Nodal Officer NKN Project (NIC)
Nodal Officer Telemedicine NMCN Project (MOHFW)
Nodal Officer Telemedicine ISRO Project

Author of Textbook: 'Telemedicine For Books'

Member Telemedicine Society of India (TSI)
Member Indian Society of Tele Dermatology (INSTED)

Introduction

- Telemedicine is derived from Greek word ‘Tele’ means ‘Distance’ and Latin word ‘Mederi’ means ‘To heal’.

- Telemedicine is an application of Information Technology Tools in practice of Medicine.

- Telemedicine is useful for all the branches of medicine, like a computer is useful for everyone.

- Plastic Surgery is one of the earliest branch of medicine which started using Telemedicine in Health practice.

- Telemedicine is useful for developing country like India where more than 70% of the population is in rural remote area with no access to Doctors.

Types

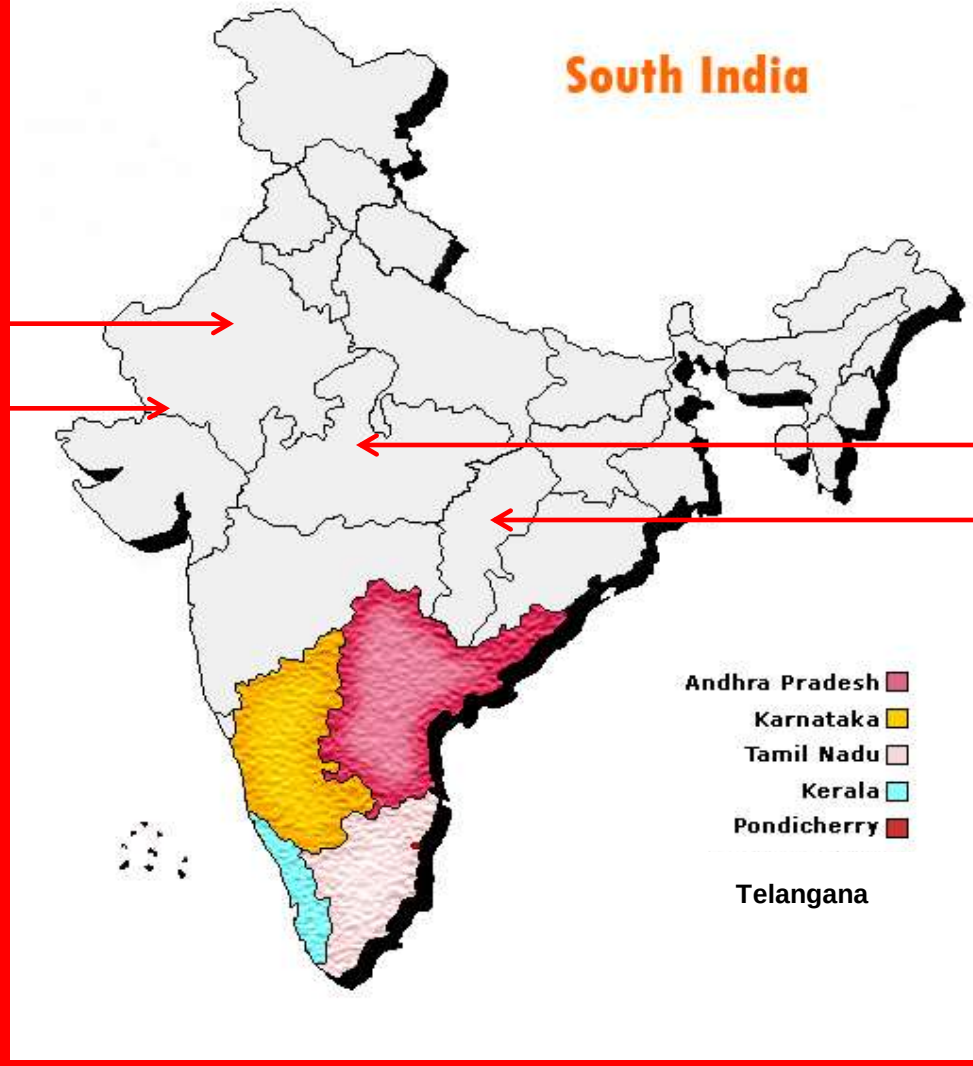
- Telephonic TM
- Store & Forward (SAF)/Asynchronous/Pre-Recorded TM
- Real Time (RT)/Videoconferencing/Synchronous TM
- Hybrid/Combination TM
- Mobile or Cellular TM
- Integrated TM

MOHFW Govt of India

(In 2013 Identified JIPMER as Regional Resource Centre For Telemedicine > 160 Medical Colleges of 6 South Indian States and Other INIs)

PGIMER Dr RML Hospital Delhi

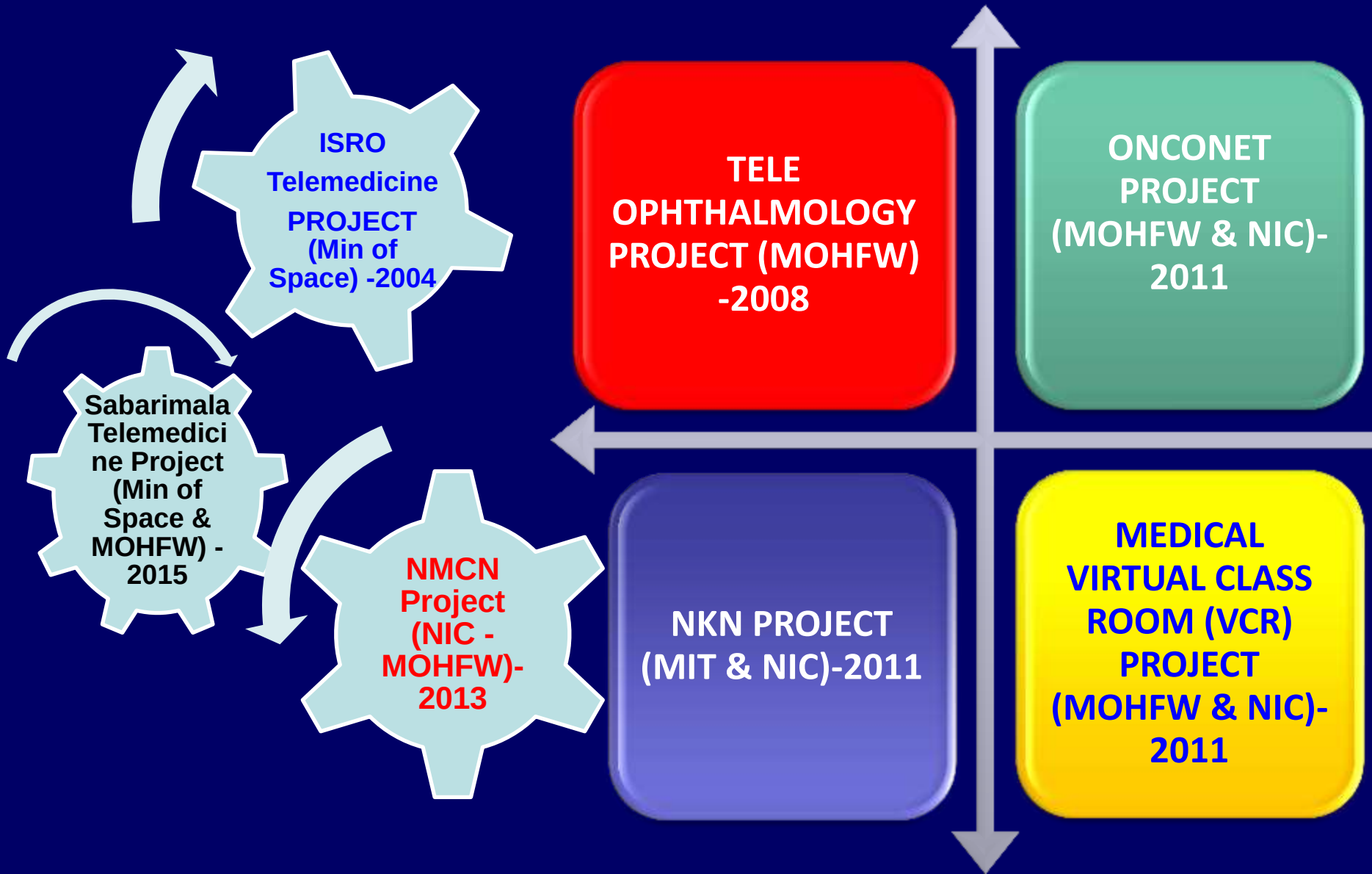
AIIMS Jodhpur



AIIMS Bhopal

AIIMS Raipur

Various Telemedicine Projects in JIPMER Pondicherry



Overview of Applications of Telemedicine Practices

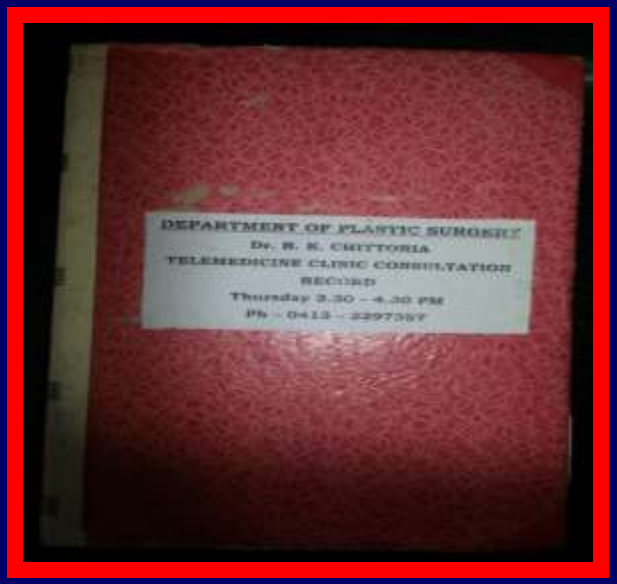


Tele-Medicine Clinic

(To Save Patient Time & Money and Avoid Overcrowding in OPD)









Chittoria R K. Utility of Telemedicine in Saving patient's Time & Money. NIJS; 2018.

Tele-OPD

(For OPD Consultations)



Tele-ICU

(For ICU Consultations)



Tele-Ward

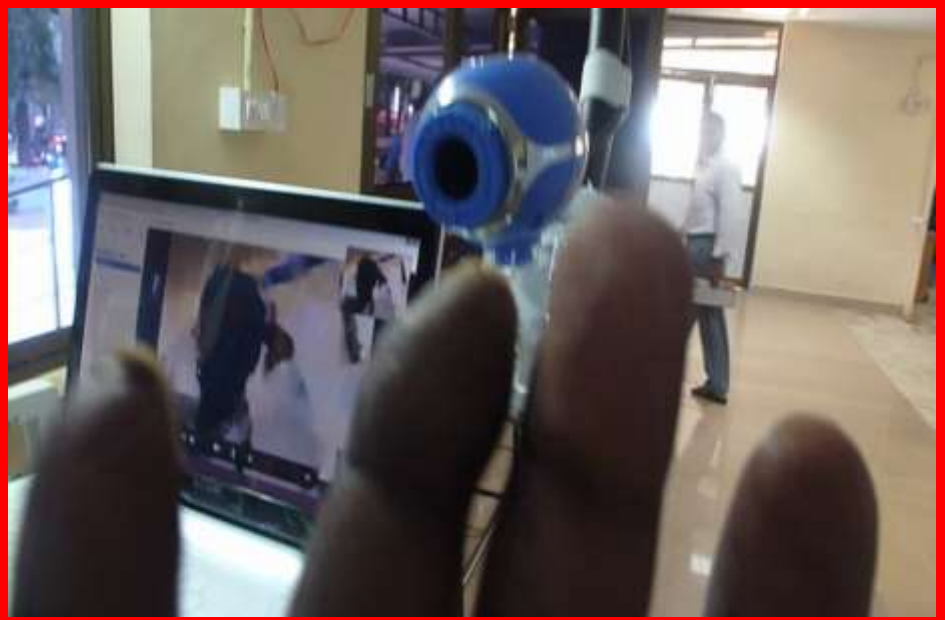
(For Ward Consultations)



Tele-Emergency

(For Emergency Consultations)





Tele-Patient-Attendant Interaction

(For Patient-Attendant Interactions)





Tele-Barrier Nursing
(For Preventing Infection in ICUs)





May 30, 2016

Subject : Article acceptance letter,

Title of the journal : New Indian Journal of Surgery
Reference Number : NIJS_3390_2016
Article Type : Letter to Editor
Article Title : Role of Tele Barrier Nursing in Improvement of Burn Wound Healing

Dear Author,

Thank you very much for your submission to our journal. We are pleased to inform you that your paper has been reviewed, and accepted for publication. In case you have not submitted copyright form, please send scanned copy shortly.

Thank you for making the journal a vehicle for your research interests.

Best wishes,

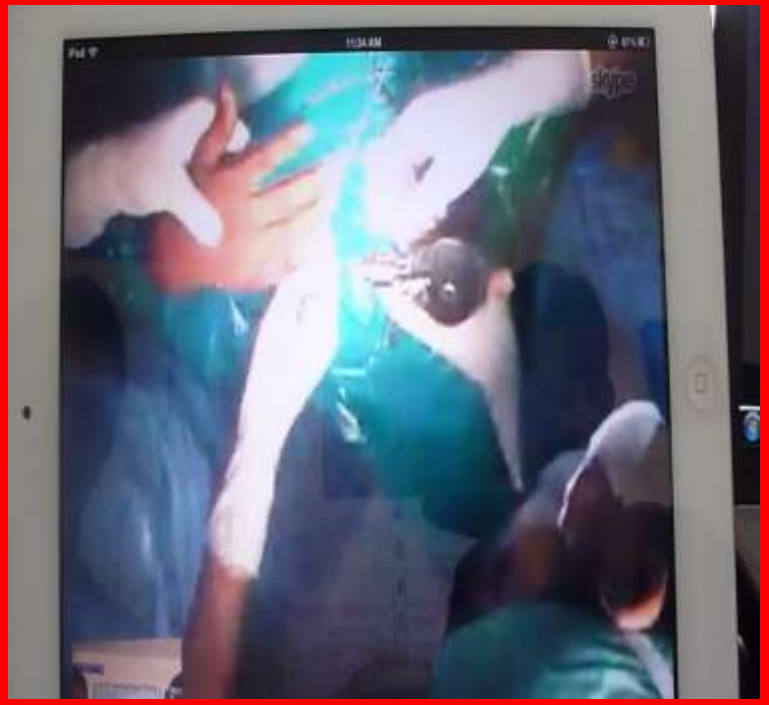
Editor-in-Chief

Tele-OT

(For OT Consultations)







Tele-Education

(For Sharing Lectures)





Live Telecast

(For Live Telecast of Scientific Sessions)



Journal Name:**New Indian Journal of Surgery**
Article Title:**Live Telecast of Scientific Sessions - JIPMER Experience**
Reference No:**NIJS_5205_2017**
Message:**Thank you very much for submitting article. We are pleased to inform you that your article has been received for publication. Your article will undergo the normal review process of the Journal. The publication suitability of your article(s) will be communicated only on receipt of reviewer's comments, which takes around 30 days. Please send scanned copy of declaration form through author@rfppl.co.in**

Tele-Monitoring
(For Monitoring of Sick Patients)

IP Camera





Jan 27, 2017

Subject : Article acceptance letter.

Title of the journal : New Indian Journal of Surgery
Reference Number : NIJS_3390_2016
Article Type : Letter to Editor
Article Title : Role of Tele Barrier Nursing in Improvement of Burn Wound Healing

Dear Author,

Thank you very much for your submission to our journal. We are pleased to inform you that your paper has been reviewed, and accepted for publication. In case you have not submitted copyright form please send scanned copy shortly.

Thank you for making the journal a vehicle for your research interests.

Best wishes,

Editor-in-Chief

Tele-Recording

(For Recording of Surgeries)







Tele-Dial JIPMER Service

(For 24 x 7 Emergency Consultations)



Indian Journal of Medical & Health Sciences

Volume 4 Number 2
July - December 2017

Contents

Original Articles

Dial-JIPMER Service (24x7): Our Experience

Elankumar S., Chittoria R.K., Mohamed Ishaq Z.

Tele-Health Camps

(For Consultations to Doctors Attending Health Camps)









Jul 14, 2016

Subject : Article acceptance letter.

Title of the journal : New Indian Journal of Surgery
Reference Number : NIJS_3661_2016
Article Type : Original Article
Article Title : Utility of Tele Camp in Plastic Surgery - Provision of Health Care Facilities in Remote Areas

Dear Author,

Thank you very much for your submission to our journal. We are pleased to inform you that your paper has been reviewed, and accepted for publication. In case you have not submitted copyright form, please send scanned copy shortly.

Thank you for making the journal a vehicle for your research interests.

Best wishes,

Editor-in-Chief

Tele-Video Conferencing Sessions

(For Video Conferencing Session between JIPMER and Other Centre)



Tele-Evidence

(For Attending Courts Online by Doctors)



schedule for publication

Publication of Telemedicine Article

---- Forwarded Message ----
From: Editor IJCDR <submit@ijcdr.net>
To: Dr R K Chittoria <drchittoria@yahoo.com>
Sent: Thursday, April 5, 2018, 10:19:38 AM GMT+5:30
Subject: schedule for publication

Dear Sir,
Kindly go through the schedule for publication of your articles and request you to co operate.

1. Application of Tele-Evidence in medical practice will be published in May - June 2018 issue, which has been already discussed with you

With warm regards

Editorial board
IJCDR

Tele-Radiology

(For Consultations By Radiologists Using CollabDDS Software)



Tele-Sabarimala Project

(For Consultations to Sabarimala Pilgrims)



Tele-Mobile Unit

(For Tele-Ophthalmology Consultations)



Medical Virtual Class Room

(For Lectures Between JIPMER & Other Medical Colleges)



e-Learning Centre

(For Online Learning For Students)



Digital Library

(For e-Journals for Students)



Online Registration System (ORS)

(For Online OPD Registrations, Lab Reports, Imaging, Discharge Summaries, e-Billing, e-Blood Bank, e-Procurement)

ORS Link on JIPMER Website



Video Conferencing Meetings

(For Meeting Between JIPMER & Govt of India Officials)







NMCN Workshop-2013

(For Sensitization & Awareness of NMCN Project)



MOOC

(For Online Courses between JIPMER and Harvard & John Hopkins University USA)



m-Health

(For Consultations Using Smartphones)



Innovations

(Mobile Telemedicine Console and Tablet Trolley)





Wi-Fi Campus

(For providing Connectivity Across Campus)





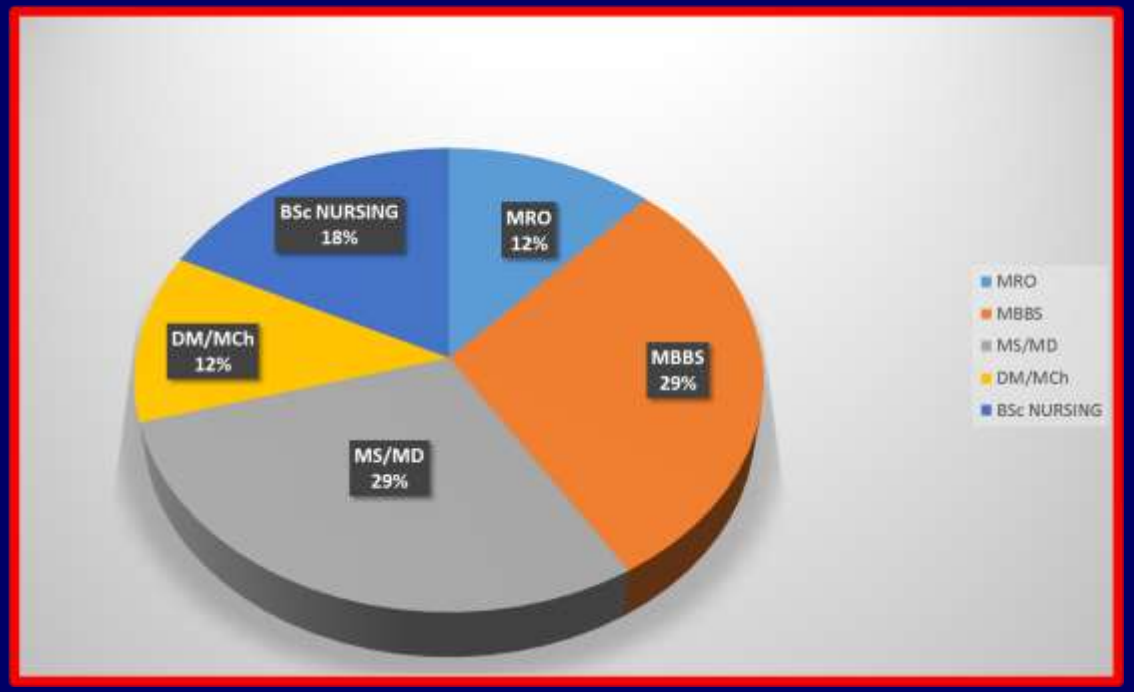






NMCN Project

For Knowledge Sharing with Medical Colleges of South India



NKN Utilization Graph



NKN Utilization Statistics (2016 -17)

- Telemedicine Clinic Consultations - 3100
- Tele-OPD Consultations - 2003
- Tele-Ward/ICU/OT Consultations – 3400
- VC Sessions – 74
- Live Telecast – 56

International Collaborations

(With JAPAN, USA, UK, Korea, Afganistan, Nepal, Bangladesh & Srilanka)





International Collaborations

(JTBN for Nepal, Bangladesh, Srilanka, Thailand, Bhutan and Myanmar)



International Collaborations

(MOU Signed between JIPMER and Mohamed VI University Hospital, Marrakech, Morocco)









National Collaborations

(MOU Signed between JIPMER and District Hospital, Lawngtlai, Mizoram)





Network Support

- ISRO – Satellite Connectivity

- NIC – NKN Fiber Optic Connectivity (1 GB Bandwidth)

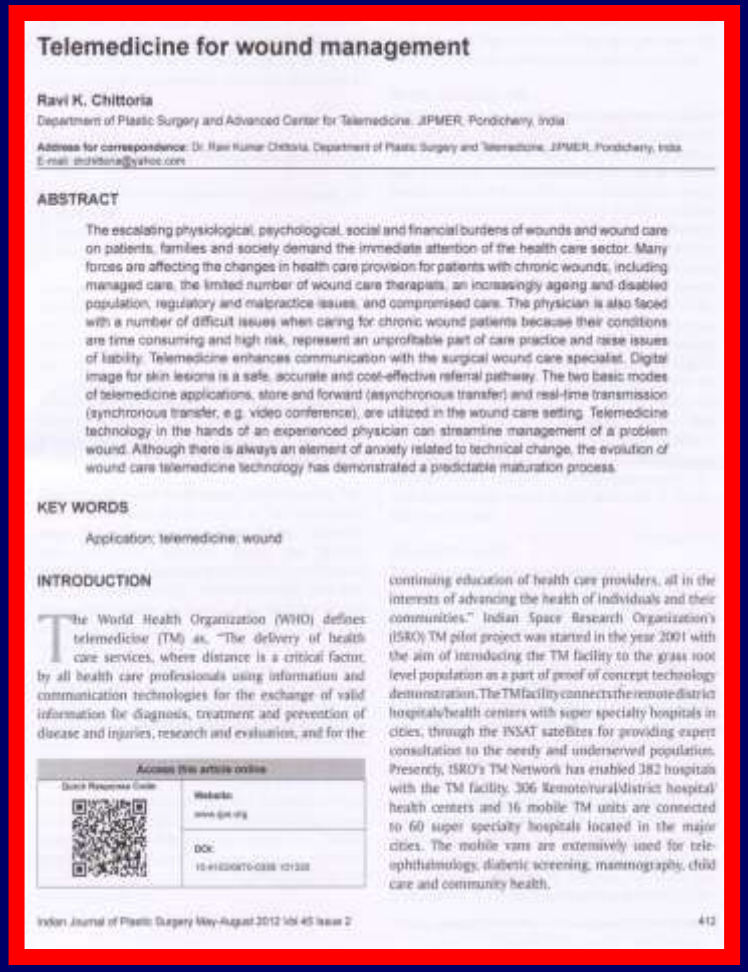
- BSNL - Fiber Optic Connectivity (10 Mbps Bandwidth)

- APAN – Asia Pacific Advanced Network (Fiber Optic)

- TEIN – Trans-Eurasia Information Network

-SAARC – South Asian Association for Regional Cooperation (SAARC) Network

Telemedicine Research & Publications



Telemedicine for wound management

Ravi K. Chittoria

Department of Plastic Surgery and Advanced Center for Telemedicine, JIPMER, Pondicherry, India

Address for correspondence: Dr. Ravi Kumar Chittoria, Department of Plastic Surgery and Telemedicine, JIPMER, Pondicherry, India
E-mail: drchittoria@yahoo.com

ABSTRACT

The escalating physiological, psychological, social and financial burdens of wounds and wound care on patients, families and society demand the immediate attention of the health care sector. Many forces are affecting the changes in health care provision for patients with chronic wounds, including managed care, the limited number of wound care therapists, an increasingly ageing and disabled population, regulatory and malpractice issues, and compromised care. The physician is also faced with a number of difficult issues when caring for chronic wound patients because their conditions are time consuming and high risk, represent an unprofitable part of care practice and raise issues of liability. Telemedicine enhances communication with the surgical wound care specialist. Digital image for skin lesions is a safe, accurate and cost-effective referral pathway. The two basic modes of telemedicine applications, store and forward (asynchronous transfer) and real-time transmission (synchronous transfer, e.g. video conference), are utilized in the wound care setting. Telemedicine technology in the hands of an experienced physician can streamline management of a problem wound. Although there is always an element of anxiety related to technical change, the evolution of wound care telemedicine technology has demonstrated a predictable maturation process.

KEY WORDS

Application; telemedicine; wound

INTRODUCTION

The World Health Organization (WHO) defines telemedicine (TM) as, "The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities." Indian Space Research Organization's (ISRO) TM pilot project was started in the year 2001 with the aim of introducing the TM facility to the grass root level population as a part of proof of concept technology demonstration. The TM facility connects the remote district hospitals/health centers with super specialty hospitals in cities, through the INSAT satellites for providing expert consultation to the needy and underserved population. Presently, ISRO's TM Network has enabled 382 hospitals with the TM facility. 306 Remote/rural/district hospital/ health centers and 16 mobile TM units are connected to 60 super specialty hospitals located in the major cities. The mobile vans are extensively used for tele-ophthalmology, diabetic screening, mammography, child care and community health.

Access this article online

Quick Response Code

Website:

DOI:

Telemedicine Conference Attended/Paper Presented



Jawaharlal Institute of Post Graduate Medical Education & Research (JIPMER), Puducherry
Department Of Plastic Surgery

Continuing Medical Education (CME)
On 'Wound Update'

6th Feb, 2013

This is to Certify that Dr. Ravi Kumar Chittoria has participated as Delegate/Faculty/Chaired Scientific Session and Delivered Lecture "TELEMEDICINE BASED WOUND CARE"

Dr.T.S.Ravikumar, Director | Dr.K.S.Reddy, Dean | Dr. Ravi Kumar Chittoria, Organising Chairman



National Seminar on Telemedicine
Organized by
Telemedicine Society of India (TSI)
School of Telemedicine & Biomedical Informatics,SGPGIMS, Lucknow
23 March 2013

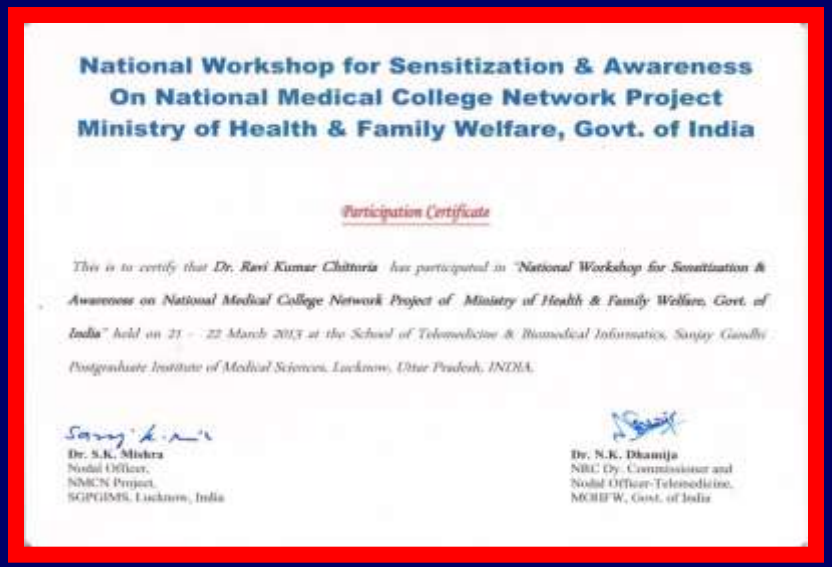
Certificate

This is to certify that Dr. Ravi Kumar Chittoria participated in the 1st National Seminar on Telemedicine organized by Telemedicine Society of India (TSI) at School of Telemedicine & Biomedical Informatics, SGPGIMS, Lucknow on 23 March 2013.

He/She _____ chaired a session/delivered a lecture on topic _____

(B.N. Mohanty)
Hony. Secretary
Telemedicine Society of India

(S.K. Mishra)
President
Telemedicine Society of India



National Workshop for Sensitization & Awareness
On National Medical College Network Project
Ministry of Health & Family Welfare, Govt. of India

Participation Certificate

This is to certify that Dr. Ravi Kumar Chittoria has participated in "National Workshop for Sensitization & Awareness on National Medical College Network Project of Ministry of Health & Family Welfare, Govt. of India" held on 21 - 22 March 2013 at the School of Telemedicine & Biomedical Informatics, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, INDIA.

Dr. S.K. Mishra
Nodal Officer,
NMCN Project,
SGPGIMS, Lucknow, India

Dr. N.K. Dhamija
NRC Dy. Commissioner and
Nodal Officer-Telemedicine,
MOHFW, Govt. of India

JIPMER Telemedicine
Received BMJ Award in 2014



JIPMER Telemedicine Received ISO Award in 2015



Certificate

Breakthrough Management Quality Registrar (BMQR)

JIPMER
DEPARTMENT OF PLASTIC SURGERY
Jipmer, Puducherry - 605 009. India.

ISO 9001:2008

OUT PATIENT (OPD), IN PATIENT (WARD), OPERATION THEATRE (OT), INTENSIVE CARE UNIT (ICU), EMERGENCY AND TRAUMA CARE, SPEECH THERAPY, MICROVASCULAR, LASER, SMILE TRAIN CLEFT PROJECT, TELEMEDICINE, TEACHING AND ACADEMIC, RESEARCH, OFFICE, SOCIAL WORKER, STORE KEEPER SERVICES OF DEPARTMENT OF PLASTIC SURGERY, JIPMER, PUDUCHERRY, INDIA.

Surveillance Audit

BMQR

AIAD-BMR QMS ACCREDITED USA

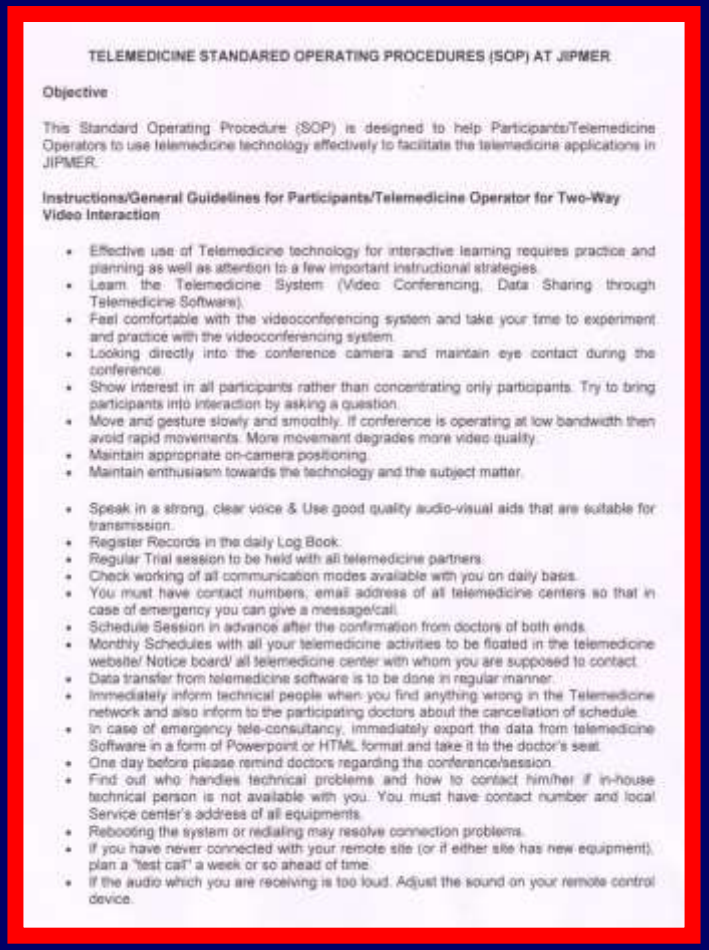
JIPMER Telemedicine
Received Hall of Fame Award in 2016



JIPMER Telemedicine
Received SKOCH Smart Governance Award in 2017



Telemedicine SOP



TELEMEDICINE STANDARED OPERATING PROCEDURES (SOP) AT JIPMER

Objective

This Standard Operating Procedure (SOP) is designed to help Participants/Telemedicine Operators to use telemedicine technology effectively to facilitate the telemedicine applications in JIPMER.

Instructions/General Guidelines for Participants/Telemedicine Operator for Two-Way Video Interaction

- Effective use of Telemedicine technology for interactive learning requires practice and planning as well as attention to a few important instructional strategies.
- Learn the Telemedicine System (Video Conferencing, Data Sharing through Telemedicine Software).
- Feel comfortable with the videoconferencing system and take your time to experiment and practice with the videoconferencing system.
- Looking directly into the conference camera and maintain eye contact during the conference.
- Show interest in all participants rather than concentrating only participants. Try to bring participants into interaction by asking a question.
- Move and gesture slowly and smoothly. If conference is operating at low bandwidth then avoid rapid movements. More movement degrades more video quality.
- Maintain appropriate on-camera positioning.
- Maintain enthusiasm towards the technology and the subject matter.

- Speak in a strong, clear voice & Use good quality audio-visual aids that are suitable for transmission.
- Register Records in the daily Log Book.
- Regular Trial session to be held with all telemedicine partners.
- Check working of all communication modes available with you on daily basis.
- You must have contact numbers, email address of all telemedicine centers so that in case of emergency you can give a message/call.
- Schedule Session in advance after the confirmation from doctors of both ends.
- Monthly Schedules with all your telemedicine activities to be floated in the telemedicine website/ Notice board/ all telemedicine center with whom you are supposed to contact.
- Data transfer from telemedicine software is to be done in regular manner.
- Immediately inform technical people when you find anything wrong in the Telemedicine network and also inform to the participating doctors about the cancellation of schedule.
- In case of emergency tele-consultancy, immediately export the data from telemedicine Software in a form of Powerpoint or HTML format and take it to the doctor's seat.
- One day before please remind doctors regarding the conference/session.
- Find out who handles technical problems and how to contact him/her if in-house technical person is not available with you. You must have contact number and local Service center's address of all equipments.
- Rebooting the system or redialing may resolve connection problems.
- If you have never connected with your remote site (or if either site has new equipment), plan a "test call" a week or so ahead of time.
- If the audio which you are receiving is too loud. Adjust the sound on your remote control device.

Telemedicine Consent Form

Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER)
Puducherry
(An Institute of National Importance Under Ministry of Health and Family Welfare, Govt. of India)

Telemedicine Consent Form

NAME	AGE / SEX	HOSPITAL NUMBER	TELEMEDICINE NUMBER	DATE OF CONSENT
CONSULTANT	ADDRESS & CONTACT DETAILS			

Introduction

Telemedicine involves the use of electronic communications to enable health care providers at different locations to share individual patient medical information for the purpose of improving patient care. Providers may include primary care practitioners, specialists, and/or subspecialists. The information may be used for diagnosis, therapy, follow-up and/or education, and may include any of the following:

- Patient medical records
- Medical images
- Live two-way audio and video
- Output data from medical devices and sound and video files

Electronic systems used will incorporate network and software security protocols to protect the confidentiality of patient identification and imaging data and will include measures to safeguard the data and to ensure its integrity against intentional or unintentional corruption.

Expected Benefits:

- Improved access to medical care by enabling a Patient to remain in his/her House / Office (or at a remote site) while the Physician/Healthcare Personnel gives Consultations from Hospital / Distant / Other sites.
- More efficient medical evaluation and management.
- Obtaining expertise of a distant specialist.

Possible Risks:

As with any medical procedure, there are potential risks associated with the use of telemedicine. These risks include, but may not be limited to:

- In rare cases, information transmitted may not be sufficient (e.g. poor resolution of images) to allow for appropriate medical decision making by the physician and consultant(s);
- Delays in medical evaluation and treatment could occur due to deficiencies or failures of the equipment;
- In very rare instances, security protocols could fail, causing a breach of privacy of personal medical information;
- In rare cases, a lack of access to complete medical records may result in adverse drug interactions or allergic reactions or other judgment errors.

Please initial after reading this page: _____

By signing this form, I understand the following:

1. I understand that the laws that protect privacy and the confidentiality of medical information also apply to telemedicine, and that no information obtained in the use of telemedicine which identifies me will be disclosed to researchers or other entities without my consent.
2. I understand that I have the right to withhold or withdraw my consent to the use of telemedicine in the course of my care at any time, without affecting my right to future care or treatment.
3. I understand that I have the right to inspect all information obtained and recorded in the course of a telemedicine interaction, and may receive copies of this information at my cost.
4. I understand that a variety of alternative methods of medical care may be available to me, and that I may choose one or more of these at any time. My Consultant/Physician / Healthcare Personnel has explained the alternatives to my satisfaction.
5. I understand that telemedicine may involve electronic communication of my personal medical information to other medical practitioners who may be located in other areas, including out of state.
6. I understand that it is my duty to inform my Consultant/Physician / Healthcare Personnel of electronic interactions regarding my care that I may have with other healthcare providers.
7. I understand that I may expect the anticipated benefits from the use of telemedicine in my care, but that no results can be guaranteed or assured.

Patient Consent To Use Telemedicine

I have read and understand the information provided above regarding telemedicine, have discussed it with my Consultant / Physician or Healthcare Personnel as may be designated, and all of my questions have been answered to my satisfaction. I hereby give my informed consent for the use of telemedicine in my medical care.

I hereby authorize _____ *(Name of Consultant/Physician/Healthcare Personnel)* to use Telemedicine in the course of my diagnosis and treatment.

*Signature of Patient*_____

Future

- Cyber Clinics

- Tele-Air Ambulance

- Tele-Robotic Surgery

Conclusion

- ‘Distance’ is a critical factor between ‘Patient’ & ‘Doctor’.

- Telemedicine means ‘Death of Distance’.

- ‘Telemedicine’ helps in connecting Patients, Students, Doctors and Institutions across the World.

Thank You

- MOH&FW
- MOEA
- NIC
- DeiTy
- ISRO

