

# TELE-MEDICINE



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# DEFINITION - WHO

*“ The delivery of e-health services, where distance is a critical factor, by all e-health professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, and for the continuing education of health-care providers as well as research and evaluation, all in the interest of advancing the health of individuals and their communities”*



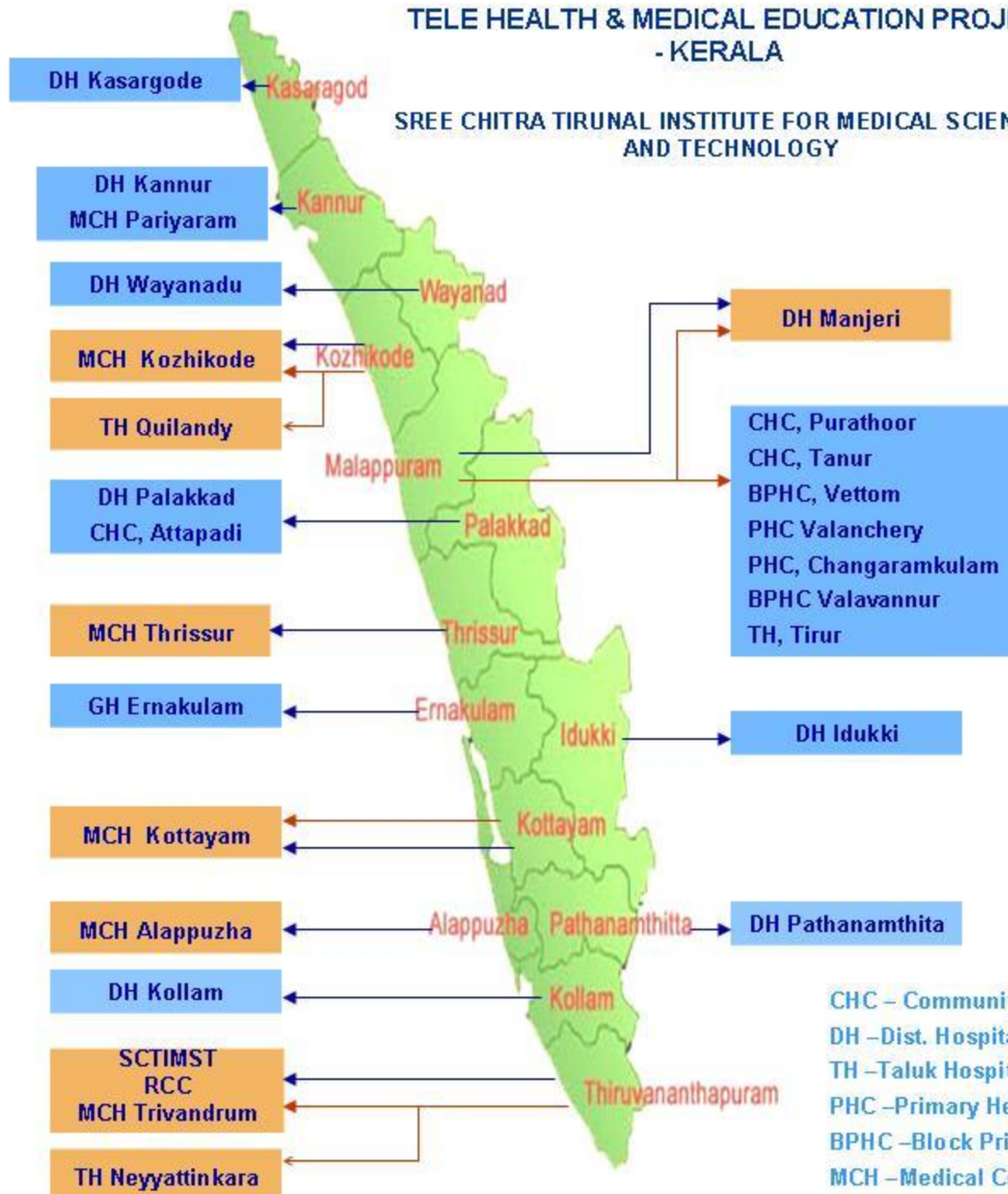


# TELE HEALTH & MEDICAL EDUCATION PROJECT - KERALA

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY

## Connectivity

VSAT - →  
KSWAN - →



CHC – Community Health Centre  
 DH –Dist. Hospital  
 TH –Taluk Hospital  
 PHC –Primary Health Centre  
 BPHC –Block Primary Health Centre  
 MCH –Medical College Hospital

# Types of Connectivity in Kerala

- VSAT
- ISDN
- Kerala State Wide Area Network  
(KSWAN) (Wireless)
- Leased Line



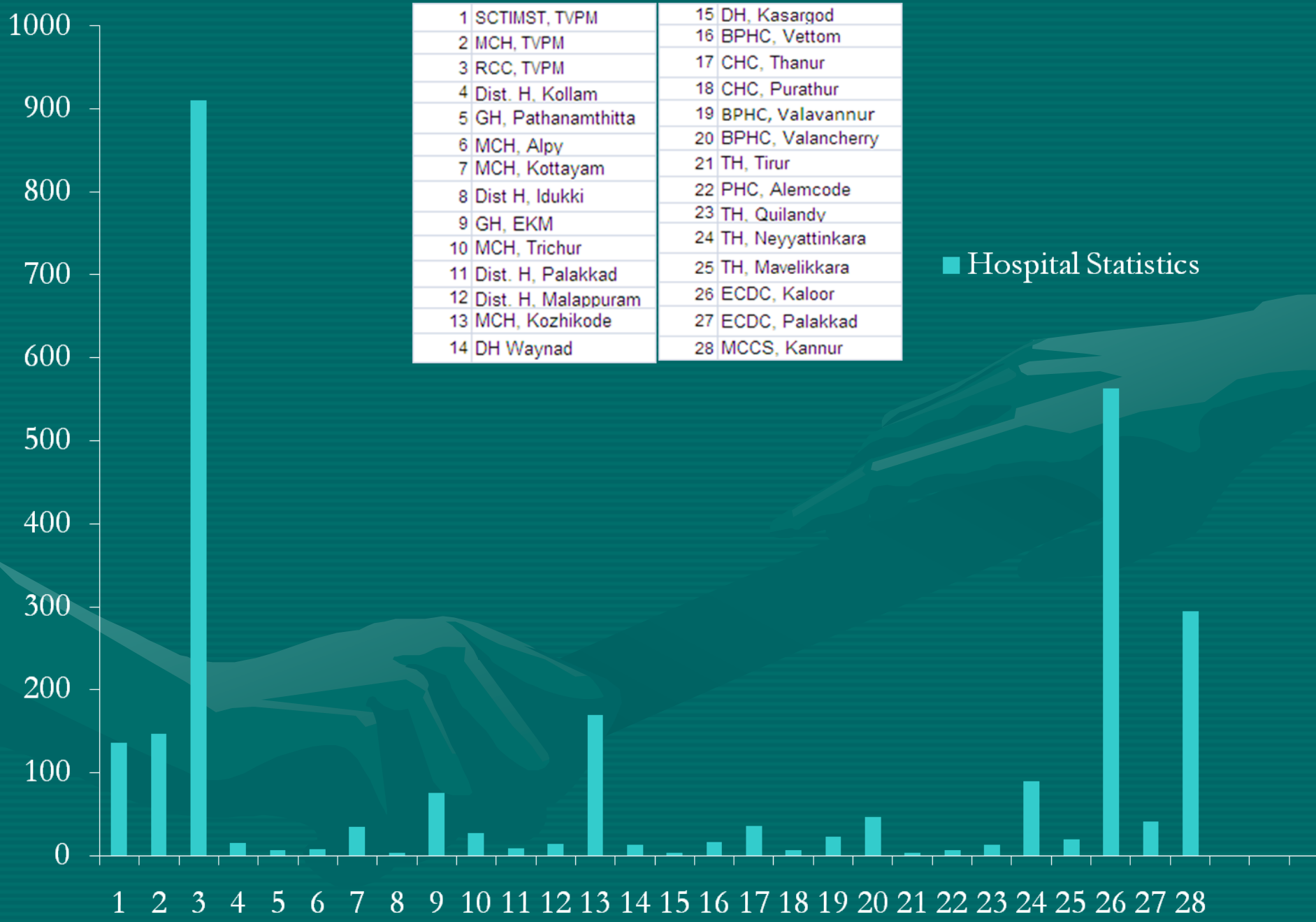
# TELE SPECIALIST CENTRES

1. Medical College Hospital Thiruvananthapuram
2. Medical College Hospital, Kottayam
3. Medical College Hospital, Kozhikode
4. Medical College Hospital, Pariyaram
5. Medical College Hospital, Thrissur
6. Medical College Hospital, Alappuzha
7. Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram
8. Regional Cancer Centre, Thiruvananthapuram

# TELE NODAL CENTRES

1. District Hospital, Kollam
2. District Hospital, Pathanamthitta
3. District Hospital, Idukki
4. General Hospital, Ernakulam
5. District Hospital, Manjeri ,Malappuram
6. District Hospital, Palakkad
7. District Hospital, Wayanad
8. District Hospital, Kannur
9. District Hospital, Kasargode
10. Community Health Centre, Attappady

# Telemedicine Usage Statistics –Hospital wise



# Types of Connectivity at SCTIMST

- VSAT
- ISDN
- Kerala State Wide Area Network  
(KSWAN) (Wireless)
- Leased Line



# Centre Connected through VSAT connectivity

- **Tele-Specialist Centres (TSC)**
  - Medical College Hospital Thiruvananthapuram
  - Medical College Hospital, Kottayam
  - Medical College Hospital, Kozhikode
  - Medical College Hospital, Pariyaram
  - Medical College Hospital, Thrissur
  - Medical College Hospital, Alappuzha
  - Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram
  - Regional Cancer Centre, Thiruvananthapuram

- **Tele – Nodal Centres (TNC)**
  - District Hospital, Kollam
  - District Hospital, Pathanamthitta
  - District Hospital, Idukki
  - General Hospital, Ernakulam
  - District Hospital, Manjeri ,Malappuram
  - District Hospital, Palakkad
  - District Hospital, Wayanad
  - District Hospital, Kannur
  - District Hospital, Kasargode
  - Community Health Centre, Attappady

# Centre Connected through ISDN connectivity

- **Tele-Specialist Centres (TSC)**
  - Medical College Hospital, Thiruvananthapuram
  - Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST), Thiruvananthapuram.
  - Regional Cancer Centre (RCC), Thiruvananthapuram
- **Tele-Nodal Centres (TNC)**
  - Taluk Hospital, Neyyattinkara
  - Taluk Hospital, Mavelikkara
  - Taluk Hospital, Quilandy
  - Taluk Hospital, Vythiri, Wayanad
  - Mental Health Centre, Thiruvananthapuram

# Centre Connected through KSWAN connectivity

- **Tele-Specialist Centres (TSC)**
  - MCH, Thiruvananthapuram
  - MCH, Kozhikode
  - SCTIMST, Thiruvananthapuram
  - RCC, Thiruvananthapuram
  - DH, Malappuram

- **Tele-Nodal Centres (TNC)**

- BPHC, Vettom
- BPHC, Valavannur
- CHC, Purathur
- CHC, Thanur
- PHC, Valanchery
- TH, Tirur
- PHC, Alemcode

BPHC - Block Panchayat Health Centre

CHC - Community Health Centre

PHC - Primary Health Centre

TH – Taluk Hospital

# This facility incorporates..

- Tele-medical Education
- Tele-consultation
- Virtual classroom teaching
- Connectivity to National & International Institutes
- Village Resource Centre Programme
- Telecasting seminars, conferences and workshops
- Live workshops of surgeries and procedures





## Telemedicine Consultation Schedule at SCT

Day	Department	Time
Monday	Neurology	2 P.M-3 P.M
Tuesday	Cardiology	2 P.M-3 P.M
Wednesday	Neurology	2 P.M-3 P.M
Thursday	Cardiology	2 P.M-3 P.M
Friday	IS & IR	2 P.M-3 P.M

# Telemedicine Usage Statistics

Type of Programme	Total Nos
<b>Tele consultations</b>	
Cardiology	58
Neurology	66
CVTS	5
Neurosurgery	16
Total	145
<b>Case Discussions</b>	209
<b>Tele education Programmes</b>	20

# Telemedicine Usage Statistics

Type of Programme	Topics	Total Nos
CME	<ul style="list-style-type: none"><li>• International Update on Neuro Interventions</li><li>• Inflammatory Mediators</li><li>• Pap Smear</li><li>• Immunological reactions in immunocompromised</li><li>• Advances in investigations of cancer, tumor marker and Immunocytochemistry</li><li>• Hypersensitivity Reactions</li></ul>	6

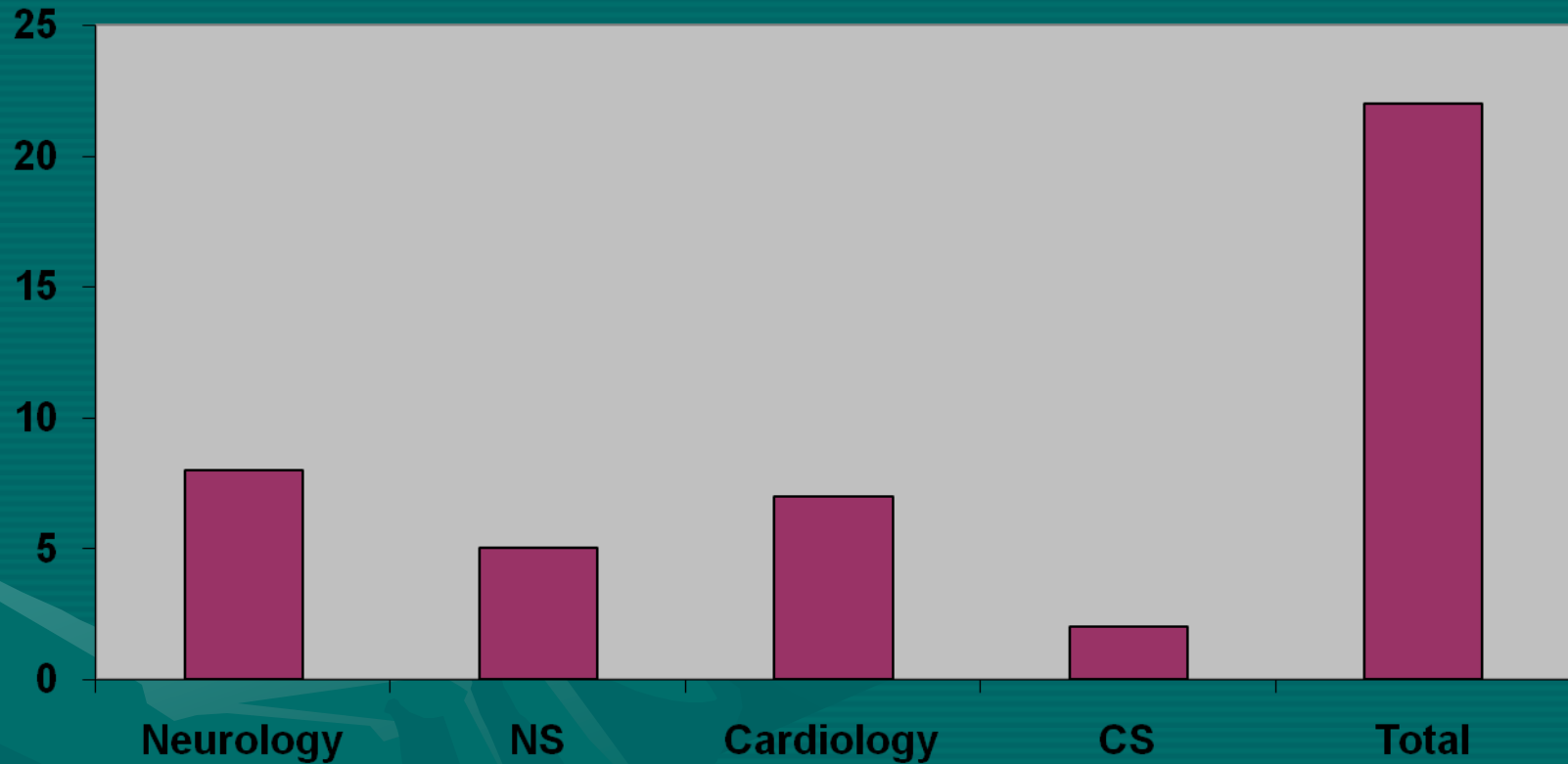
# Telemedicine Usage Statistics

Type of Programme	Topics	Total Nos
VRC Pgm	<ul style="list-style-type: none"><li>•Heart Attack</li><li>•Epilepsy</li><li>•Bypass Surgery</li><li>•Backache</li><li>•Blood –The Lifeline</li></ul>	5

# TELEMEDICINE STATISTICS 2009-10

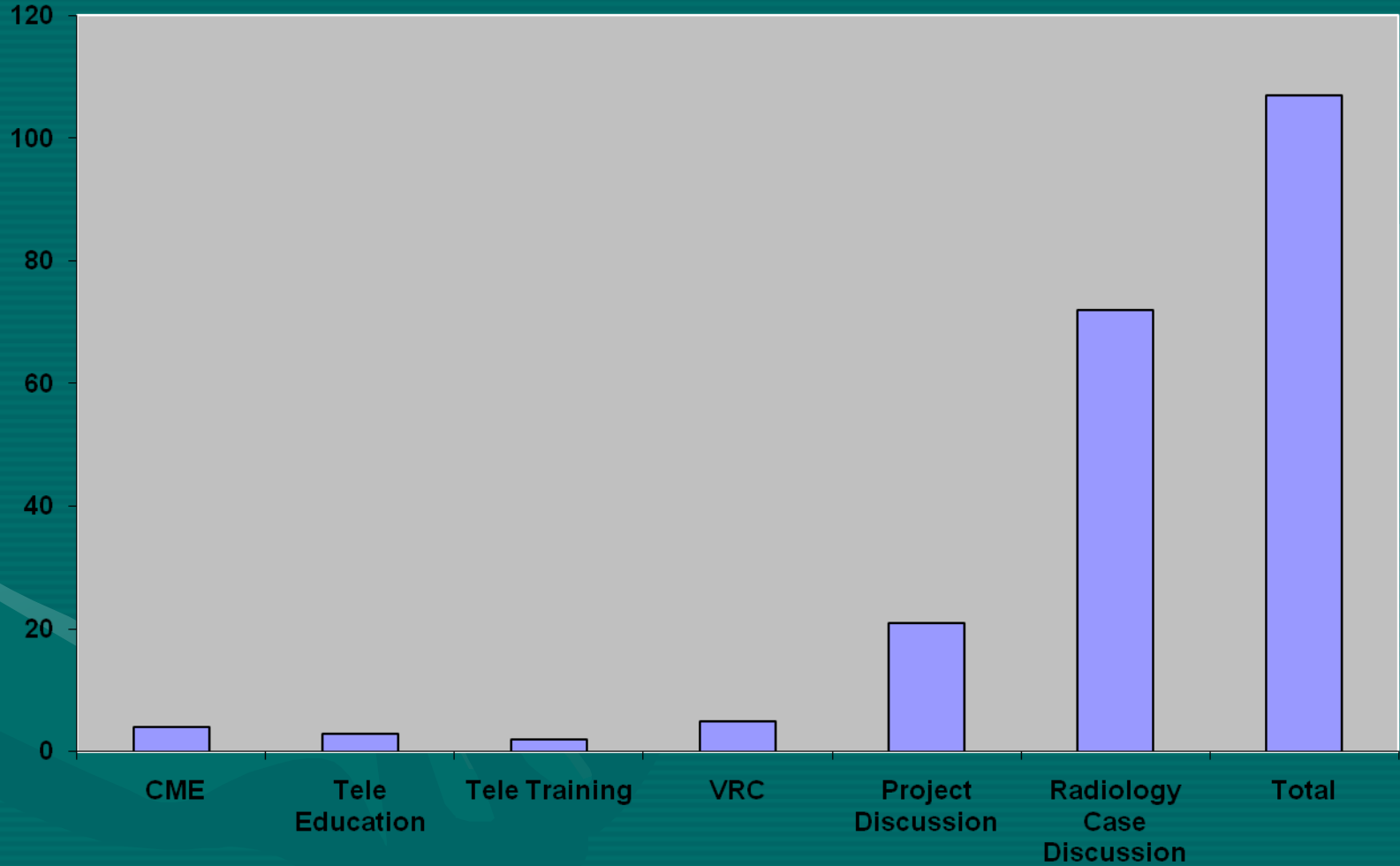
## Tele Consultations

Total Nos : 22

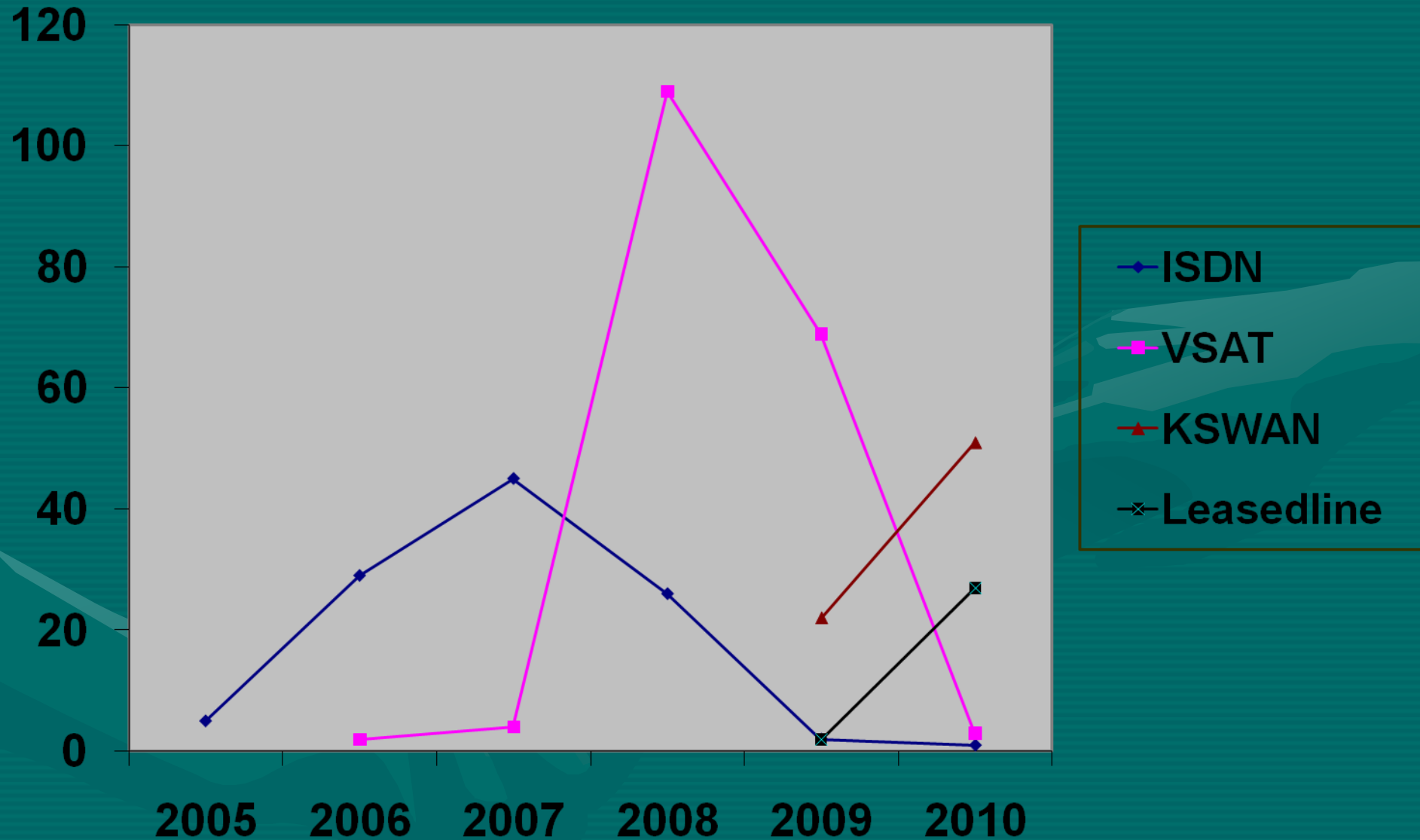


# CME, Tele Education , Tele Training, VRC & Project Discussion

**Total Nos : 107**



# Usage Statistics – Year wise



# Tele Education from USA



# Tele Education from USA

## EWARS - CHIK/Dengue

- Use PB and Chik items for search
- Validation with ground truth
- Effective combination of PB/Chik to ground truth
- Identify PB predictors for early warning
- Use PB/Chik to estimate seroprevalence of dengue
- Deploy public system to facilitate resource allocation



# Village Resource Centre Programme



# Village Resource Centre Programme



# Village Resource Centre Programme

Kerala VRC  
Manthawady -

JHARBIHAR KERALA

LML

KERALA - VRC

- Kerala VRC Jan 2010 Programme
- Bypass Surgery SCTIMST
  - Slide1
  - Slide2
  - Slide3
  - Slide4
  - Slide5
  - Slide6
  - Slide7
  - Slide8

AVPlayer Receiving data from "Kerala..."

Attendance for JHARBIHAR KERALA

First Name	Last Name
Kerala-VRC	Karunagapally
Kerala VRC	Manthawady
Kerala Vrc	Meppadl
Kerala VRC	Noolpuzha

VideoServer

Pause Stop

Right coronary artery

Aorta

Left main coronary artery

Left circumflex coronary artery

Left anterior descending coronary artery

Video Audio

Source Id: 34930186

start VideoServer AVPlayer - Receiving ... Teacher

# Conclusion

It is our dream that within the next few years there will be telemedicine kiosks throughout the length and breadth of suburban and rural India. No Indian should be deprived of a specialist consultation wherever he/she is. This is not impossible. What is required is not implementing better technology and getting funds but *changing the mind set* of the people involved.



Thank  
You



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