

***e* – Health in Tripura**

15th September 2016

Guwahati

The use of information and communication technologies (ICT) for health in Tripura is being used since 2003.

Sl	Name of the Project	Number of Units	Year of Commencement
1	Tele – medicine Phase I (2 Nodal Units at IGMH & AGMC, GBPH)	05	2002
	Tele – medicine Phase II	6	2007
	Tele – medicine Phase III	6	2009
	Tele – medicine with support from NHM	7	2013
2	Computerized Registration System	01	2003
3	Tele – ophthalmology (IGMH)	44	2007
4	Birth & Death Registration through Uniform Civil Registration System		2016
	In pipeline		
5	Tele – Radiology		
6	e – Hospital		
7	AADHAR/ Finger Print based HIV screening		

Application of IT has immensely helped the State in effectively tackling the problem of shortage of Specialists.

Better real-time advanced medical help could be dispensed almost at the door steps at no cost to the beneficiary.

The sustained connectivity has also helped health administrators in better supervision and monitoring of functioning of health Institutions in rural areas particularly.

TELEMEDICINE



Inauguration of Telemedicine Unit at G.B.Pant. Hospital on 4th Oct. 2002 by
Hon'ble HE President of India Dr. A.P.J. Abdul Kalam



TRIPURA



Total Population : 36,73,917



Urban population : 26 %



Rural population : 74 %

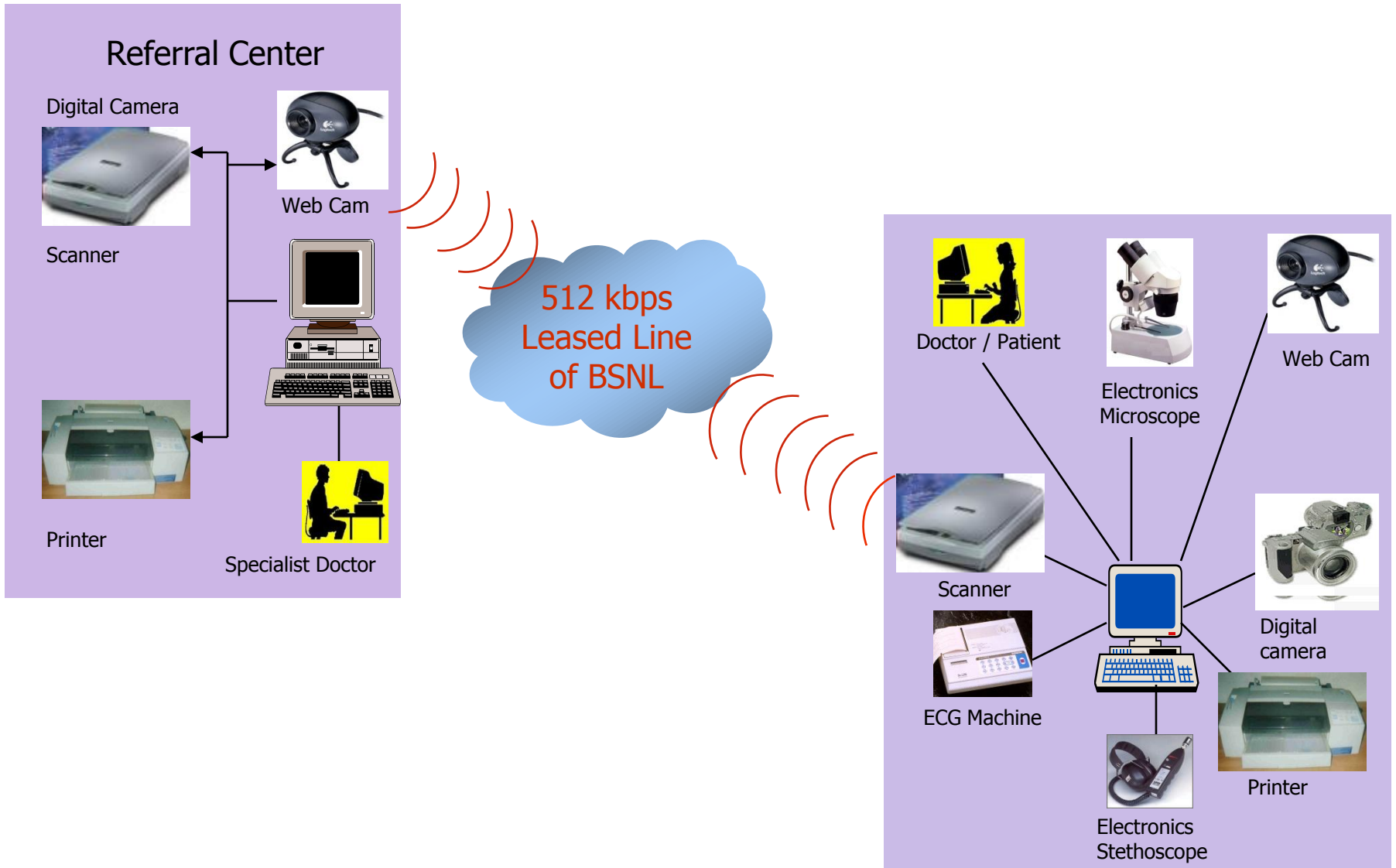


Specialists in Urban & Semi urban areas : 98 %



Specialists in Rural Areas : < 2 %

Technology Behind Telemedicine



Telemedicine centers in Tripura during 1st 3 Phases:



(Phase - I)
June 2004 to March 2009



(Phase - II)
April 2006 to March 2010

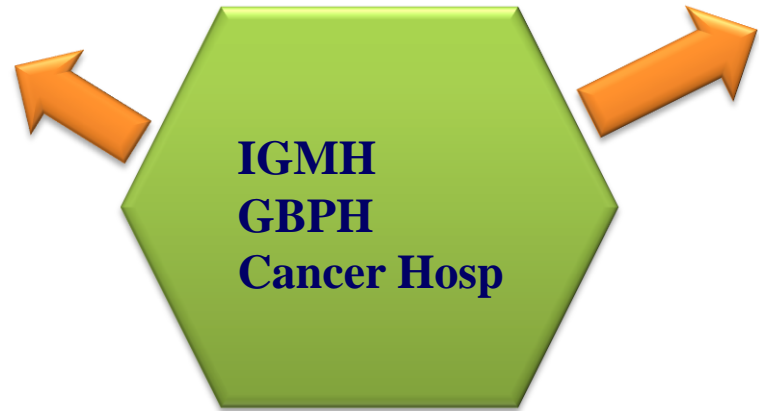


(Phase - III)
Feb 2009 to Jan 2013

Initiative under NHM

Dharnamagar DH
Unakoti DH
Kamalpur SDH

(Phase - IV)
Oct 2010 to Sept 2013

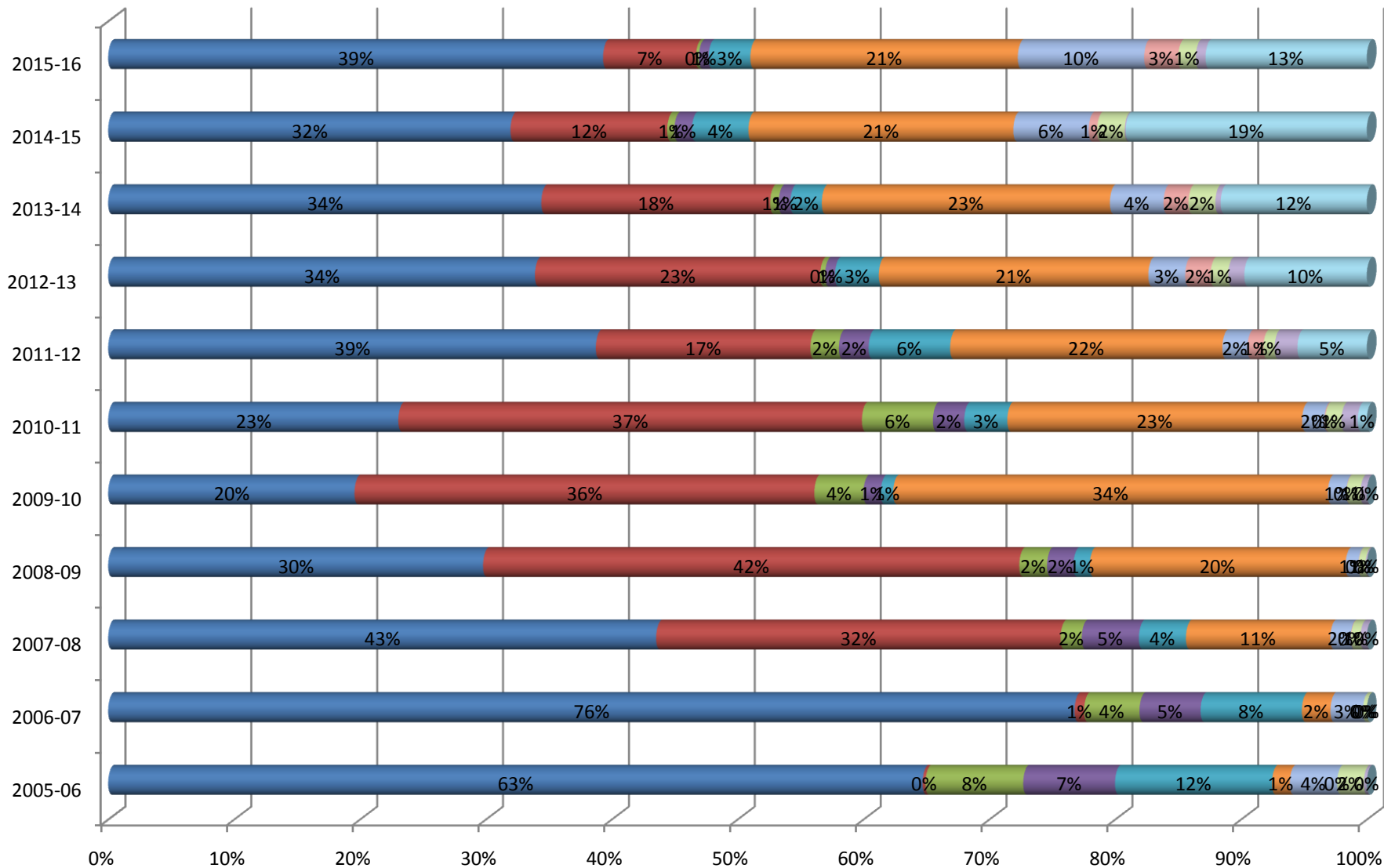


Teliamura CHC
Panisagar CHC
Jumpai PHC
Microsapara PHC

(Phase -V)
Nov 2012 to Oct 2015

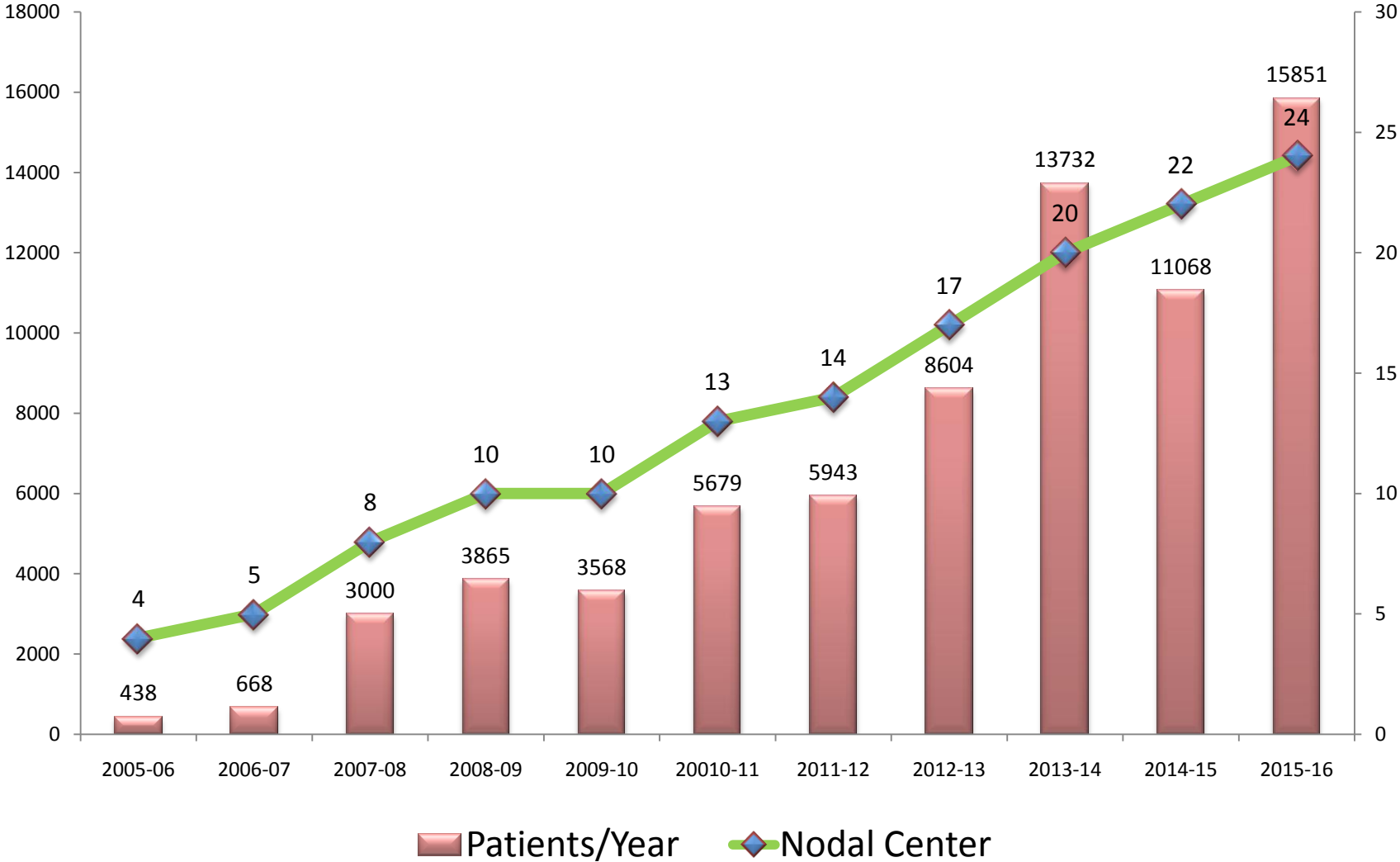
Manubazar CHC
Bajendranagar PHC
Manubankul CHC
Anandabazar PHC

(Phase -VI)
Feb 2016 to Jan 2019



- GENERAL MEDICINE
- RADIOLOGY
- SURGICAL
- GYNECOLOGY
- PEADIATRICS
- ORTHOPEADICS
- DERMATOLOGY
- DENTAL
- ENT
- ONCOLOGY
- TB & CHEST

Specialty wise utilization



Online Sonography





Pre Treatment



Post Treatment

Pre Treatment



Post Treatment



Electronic Registration System

1. Introduced in 2003.
2. Initially for OPD Registration.
3. Then IPD Registration and to generate Test Requisition.
4. Many other Hospitals in India have introduced this system adopting our Software generated by the NIC, Tripura.

5. Advantage:

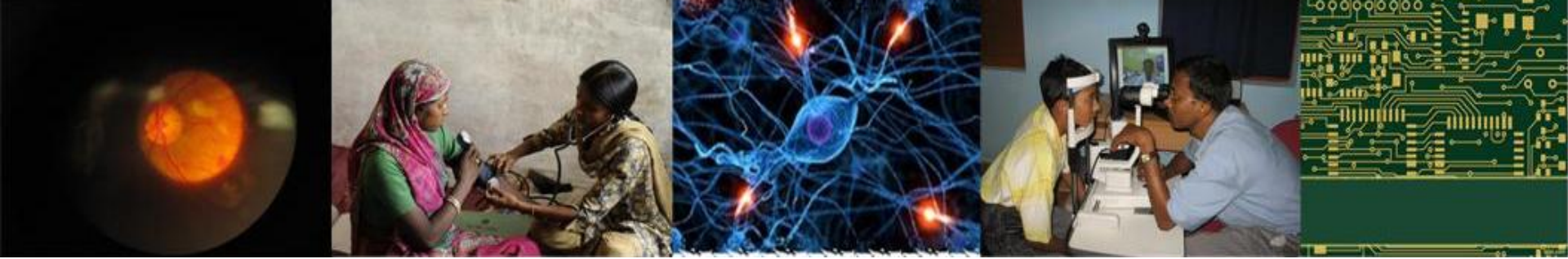
- a. Data compilation for OPD attendance and IPD admission in total and in each discipline has become time saving.
- b. Retrieval of OPD and IPD information for any day has become easy and time saving.
- c. Searching and locating any patient for administrative purpose as well as information to relatives of a missing person has become easy and time saving.
- d. Day to day or month to month comparison of patient data has become easy.
- e. Billing for user charges for any tests has become easy by using ID number.
- f. The patients have been facilitated with online booking of appointments, online viewing of lab reports, checking of blood availability status and making payments for registration fee through this portal.

6. Future Expansion:

- a. Linking of Laboratories and Radiology Department with all end users for retrieval of data of any patient in OPD or IPD to save time as well as possibility of misplacement of hard copy data.
- b. Linking of Radiology Department with Surgical Departments for Digital transmission of Images to save time.
- c. Improvement in data analysis by upgrading the existing software.

Online Registration System (ORS)

- Online Registration System (ORS) is a framework to link various hospitals across the country for Aadhaar based online registration and appointment system, where counter based OPD registration and appointment system through Hospital Management Information System (HMIS) has been digitalized.
- The application has been hosted on the cloud services of NIC. Portal facilitates online appointments with various departments of different Hospitals using e-KYC data of Aadhaar number, if patient's mobile number is registered with UIDAI. And in case mobile number is not registered with UIDAI it uses patient's name.
- New Patient will get appointment as well as **Unique Health Identification (UHID) number**. If Aadhaar number is already linked with UHID number, then appointment number will be given and UHID will remain same.
- As of now, five hospitals (**AIIMS, New Delhi, Dr RML Hospital, New Delhi and Sports Injury Centre (SIC), New Delhi, NIMHANS, Bangalore and Agartala Government Medical College, Tripura**).



Tripura Vision Centre Project (Tele-Ophthalmology)

Problem Statement of Tripura

1. Acute shortage of Ophthalmologists. By 2020, the estimated number of in – services Ophthalmologists may come down to 10.
2. Even though the treatment is subsidized in Public Health Institutions, but ‘Out of Pocket’ expenditure towards accommodation, food, transportation and layoff from work is high.
3. In most of the cases of diminished vision, the patients feel that they can still manage coping with their life.
4. Fear of surgery.

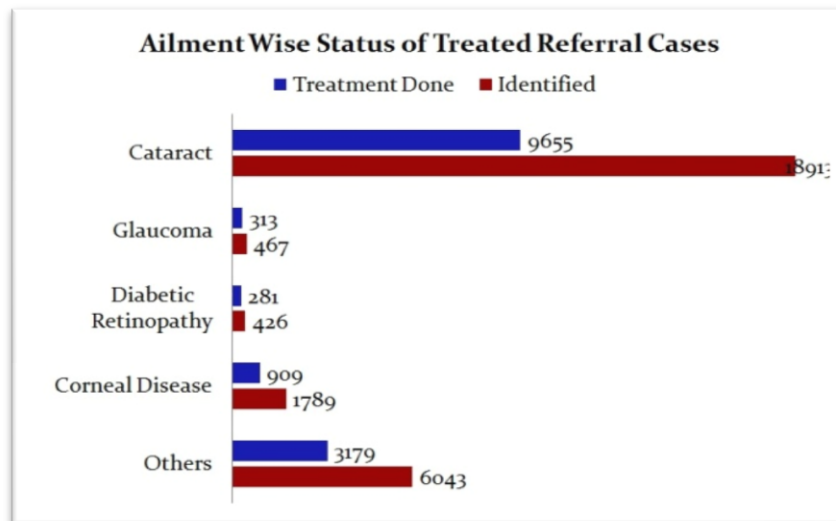
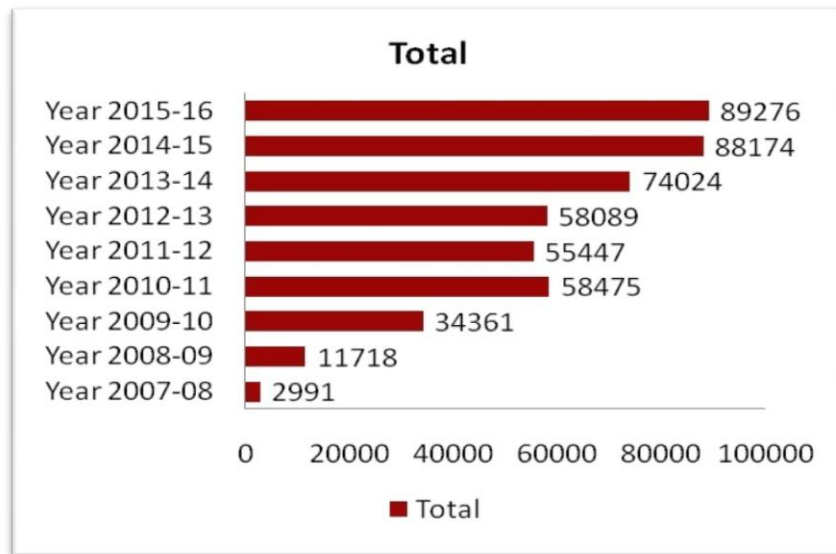
Tripura Vision Centre Project Commissioned in 2007.

1. Tripura Vision Centre Project is a pioneering initiative in delivering eye care services to the previously un-reached rural citizens in the state.
2. The project is conceived and designed by the collaborative effort of the Ophthalmology Department, **Indira Gandhi Memorial (IGM) Hospital, IL&FS ETS and Aravind Eye Care System.**
3. The project aims at offering **Primary and Preventive eye care services to rural citizens of Tripura** adopting advances in medical sciences, and its convergence with Information and Communication Technology.

1. The project currently serves a rural population approx. size of 28.0 lakhs people in remote areas covering **44/58 blocks of 8 districts**.
2. The Tripura Vision Centre is **a comprehensive model for providing primary and preventive eye care in a decentralized manner using the benefits of Information and communication technologies (ICT) integrated with the medical eye care solutions**.
3. The model empowered trained Ophthalmic Assistants/Optometrists to provide eye care services at the grass root level.
4. The basic aim is to meet the gap between the rural and urban areas with a huge consideration towards **reducing the logistics cost and 'Out of Pocket expenditure'**.
- 5. The program has led to:**
 - a. This initiative has overcome all geographical, economic, social barriers earlier faced by rural citizens
 - b. The project serves a rural population size of approx 28.0 Lakhs in remote areas

Performance Analysis

- Till March 2016, the project has screened **4.72 lakh patients** across all the 44 Vision Centres.
- **55% were males and rest 45% were females.**
- The trend shows that higher number of women are accessing the services of the VCs as compared to earlier years due to improved accessibility to the services with flexi hours of operation.
- **Only 5.84% of the total patients screened were referred** to the IGM Hospital, Agartala.
- Majority of the eye problems were diagnosed and treated at the Vision Centres after tele-consultation.
- **Spectacles** have been prescribed for about **1.30 Lakhs** patients till date, reducing the needless blindness due to refractive error in the State.
- Thus the presence of Vision Centres has played a major role in contributing to the productive Human Capital of the State.



Add On Services

1. **Diabetes Check-up:** The lifestyle diseases in India are on the rise and diabetes leads to **diabetic retinopathy (DR)** if the same is not diagnosed on time.
2. DR is also coming up as a significant contributor to the preventable blindness with the increased focus on early identification and cure of DR.
3. As a pilot initiative it has been proposed to undertake Blood Sugar check up of all patients of 40+ years.
4. Those who will be identified with Diabetes will be asked to undergo DR test at two Vision Centers at Matabari and Kumarghat centers, which are going to be equipped with fundus cameras.

With the limited eye care facilities in the State, the ICT enabled 44 Vision Centres are a comprehensive model for providing primary and preventive eye care services.

Registration of Birth & Deaths Act, 1969

Registration of Birth & Deaths
Act, 1969

Number of of Registration Unit

- Health Institutions – 135
- Agt. Municipal Corporation - 1
- Municipal Council – 13
- Nagar Panchayet – 6
- Gram Panchayet – 603 (under Non- TTAADC)
- ADC Village – 588 (under TTAADC)
- Total **1346** number of units are functioning as Registration units of Births & Deaths .

New Uniform CRS software for online registration

- Govt. of India has developed a uniform Civil Registration System (CRS) software for online registration of Births & Deaths and reporting & monitoring of institutional events throughout the country .
- From **8th April 2016 new uniform CRS software has been launched and implemented at AGMC & GPB Hospital , as well as in all the health institutions on the same day for online registration of every events of births & deaths.**
- From 1st July 2016 it was started at Agt. Municipal Corporation/ all the MC and NP .
- From 1st September 2016 it will be started at all the G.P and ADC Villages under respective blocks of TTAADC and Non-TTAADC .

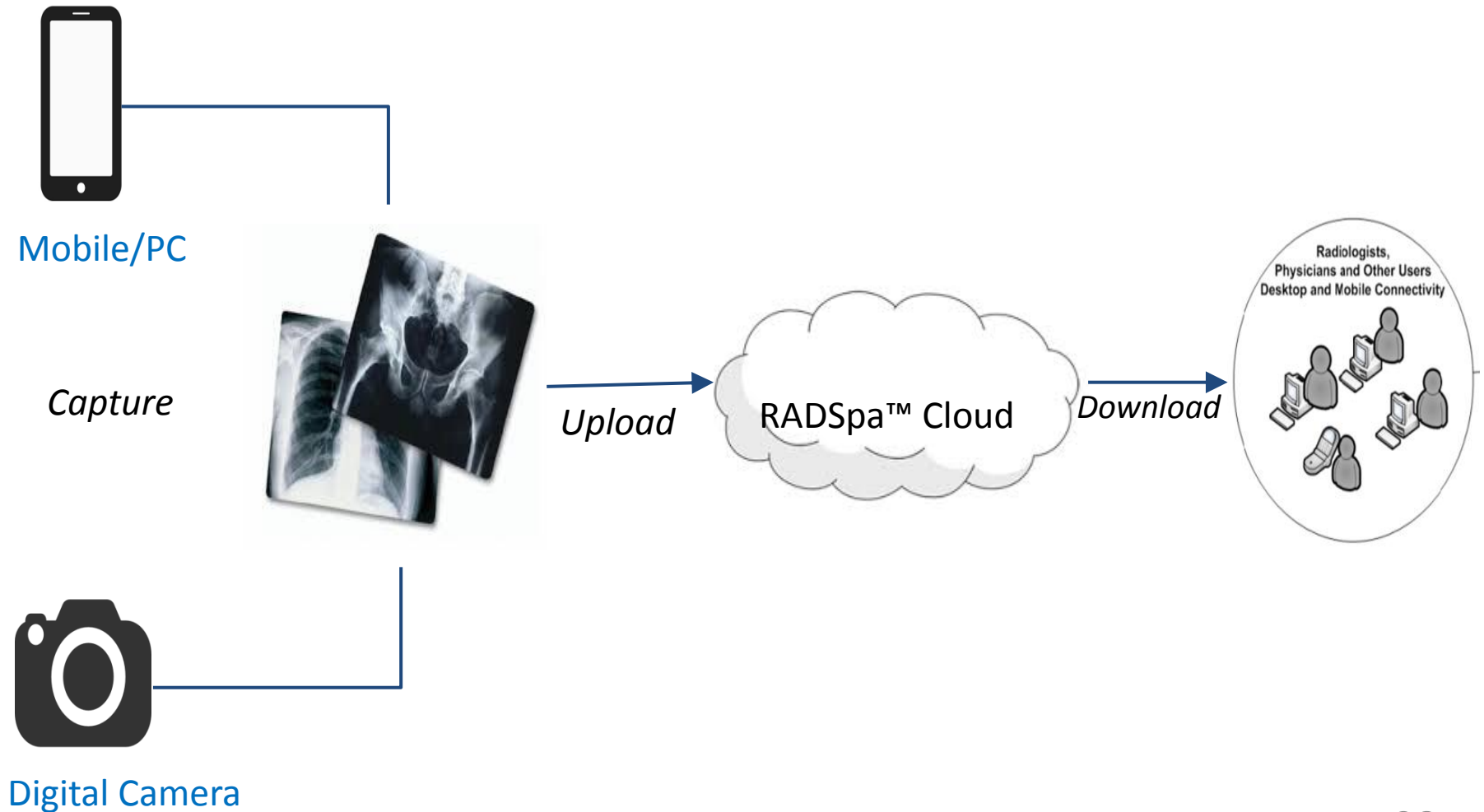
- **Tele – Radiology**
- **Improvement in Online Registration System (ORS)**
- **e – Hospital**
- **AADHAR/ Finger Print based HIV screening**

In coming days.....

Workflow Summary

- 1) Technician places the film on the view box
- 2) Captures the image using mobile application, from a pre-defined distance
- 3) Image is automatically uploaded to the server
- 4) The image is converted into a DICOM at the server.
- 5) Radiologist opens the DICOM study in the FDA/CE certified Diagnostic viewer.
- 6) Radiologist provides the interpretation.
- 7) Reports are accessed via the mobile application
- 8) Printing of report happens from the mobile application.
- 9) Report is handed to the patient.

Mobile Upload Workflow



Tele – Radiology

A. Technology Overview:

1. RADSpa™ platform's architecture is driven by proactive performance, quality and security requirements.
2. The architecture is conceived for a SaaS model (pay-per-use) and several platform features including the GUI, workflow and rules are highly customizable per-tenant.
3. Supports easy integration with other systems on open standards like DICOM, HL7 and SOAP web services

B. RADSpa™ Viewer:

- i. FDA approved
- ii. Integrated with workflow
- iii. Efficient Downloads
- iv. Extensive diagnostic review feature set
- v. Hanging Protocols
- vi. MPR/MIP/3D
- vii. Enables e-Learning

Hospitals for Tele-Radiology (20)

Name of District	Type of Facility	Name of Facility Equipment name
DHALAI	SDH	BIMAL SINHA MEMORIAL
	DH	KULAI
	CHC	MANU
Gomati	SDH	Amarpur
	DH	Gomati
	CHC	Natunbazar
	CHC	Ompinagar
	SDH	Tripura Sundari
Khowai	DH	Khowai

Name of District	Type of Facility	Name of Facility Equipment name
North Tripura	DH	DHARMANAGAR
	SDH	KANCHANPUR
Sepahijala	SDH	Melaghar
	CHC	Sonamura
South Tripura	DH	Belonia
	SDH	SABROOM
	DH	Santirbazar
UNAKOTI	CHC	Kumarghat
	SDH	Rajiv Gandhi Memorial Hospital
	SH	IGM HOSPITAL
	CHC	Jirania

e – Hospital & Improvement in **Online Registration System (ORS)**

- **A system to establish interoperable Electronic Health Records (EHRs) of every citizens to be created, made available and accessible nationwide with objectives to:-**
 - facilitate continuity of care,
 - better affordability and better health outcome
 - better decision support system
- **List of Facilities proposed for consideration during Phase-I is 21:**
[GBPH, IGMH, Cancer Hospital, Modern Psychiatric Hospital, All 6 DHs & all 11 SDHs].
- **Requirements:-**
 - Computerization of healthcare facilities by provisioning of requisite computer work-stations.
 - Peripherals & Local Area Network (LAN) along with implementation of EHR standards compliant Hospital Information System (HIS).
 - Medical records of patients are created & handled in digital form at each point of care.

AADHAR/ Finger Print based HIV screening

Thank YOU.....

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