Second Global eHealth Survey

Report

30th December 2009

Department of Social Science
National Institute of Health and Family Welfare
New Delhi 110067
Second Global eHealth Survey

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A Collaborative Activity of

Ministry of Health and Family Welfare, Govt. of India

National Institute of Health and Family Welfare

and

World Health Organization, Country Office for India

Department of Social Science
National Institute of Health and Family Welfare
New Delhi 110067
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Preface

The government of India has been investing continuous efforts to redress the inequitable gap in mortality indicators across the social groups and regions. This is quite evident from the 11th Five Year Plan goals. National Rural Health Mission (NRHM) has launched several initiatives to improve accessibility of quality health care in rural India. Despite the progress in NRHM, coverage in terms of health services availability to the socially and spatially excluded communities is well below the Millennium Development Goals. The health services and infrastructure in the rural, remote and backward areas, by and large, is still inadequate and therefore requires a new thrust and momentum. In order to promote health equity by improving the distribution of outcome and opportunities, it was prudent to revisit current strategies and evolve new ones. One such opportunity is the effective use of technology for health can help in achieving these goals with low cost.

Inclusions of e-health initiatives in India have been limited to certain field of e-health services. With focus on promotion and implementation, eHealth strategies intended to use information technology to provide better effectiveness, efficiency, and quality in health care system. Anecdotal evidence and specific case studies suggests that partnering with medical technology industry can significantly improve health indicators like IMR, and MMR; and also provide diagnostic services with limited doctors. These models have proven to be successful for the health providers as well as for seekers. Effective and strategic use of modern information and communication technologies (ICTs) are revolutionizing heathcare systems, by overcoming gaps in health professionals, service delivery and care management. Penetration of ICT deep into the rural India can now be possible to redress health inequalities. Currently the scale of e-health services in India has been limited to telemedicine, health awareness through portals and hospital management system using internet. Limited systematic research has been carried out to inform eHealth policy, practice and country uptake of eHealth solutions.

The impact of eHealth is far reaching, and diverse. Though challenges are many, nevertheless e-Health policy and initiatives have been significant steps forward to provide tools and solution to improve eHealth system, services and utilizing efficiently human, financial and other resources.

This report provides a benchmark of county activities that has been achieved till this year end on various sections of eHealth. The report has an essential survey based tools for presenting an overview of eHealth uptake in the country and the current eHealth situation. It also underlines the initiatives taken by various states and share’s perspectives and plans of the government and private stakeholders towards the effective use of eHealth.

Deoki Nandan
Director, NIHFW
# List of Abbreviations

- **ICT**: Information and Communication Technology.
- **NeGP**: National e-Governance Plan
- **VRCs**: Village Resource Centers
- **ISRO**: Indian Space Research Organization.
- **NRTN**: National Rural Telemedicine Network
- **NRHM**: National Rural Health Mission
- **ERMED**: National Medical Library’s Electronic Resources in Medicine
- **DGHS**: Director General of Health Services
- **ICMR**: Indian Council of Medical Research.
- **AIIMS**: All India Institute of Medical Sciences
- **MoHFW**: Ministry of Health and Family Welfare
- **SAARC**: South Asian Association of Regional Cooperation
- **OPAC**: Online Public Access Catalogue
- **GOG**: Government of Gujarat
- **PPP**: Public Private Partnership
- **OTTET**: Orissa Trust of Technical Education & Training
- **SGPGIMS**: Sanjay Gandhi Post graduate Institute of Medical Sciences
- **PDAs**: Personal Digital Assistants
- **EMRI**: Emergency Management and Research Institute
- **DSS**: Decision Support Systems
- **EMR/HER**: Electronic Medical Records/ Electronic Health Records
- **IDSP**: Integrated Disease Surveillance Project
- **URL**: Uniform Resource Locator
- **DCMI**: Dublin Core Metadata Initiative
DDI - Data Documentation Initiative

ICD - International Classification of Diseases

SNOMED CT - Systematized Nomenclature of Medicine - Clinical Terms

ITIH - Information Technology Infrastructure for Health

DIT - Department of Information Technology

NTFT - National Task Force on Telemedicine
Introduction

There have been several welcome developments in extending the welfare net to rural India, who for a long time remained as a neglected segment within the civil society. Yet much needs to be done in making public health care accessible to them and henceforth utilize in a better way. Nonetheless, penetration of Information and Communication Technology (ICT) deep into the rural India, can now be possible to address the concern of rural community for health care and support. However, the scale of e-health services in India has been limited to telemedicine, health awareness through portals and hospital management system using internet etc. Despite, the use of information and communication technologies (ICT) for health, is one of the most rapidly growing areas in health today, limited systematic research has been carried out to inform eHealth policy, practice and country uptake of eHealth solutions.

The World Health Organization (WHO), through its Global Observatory for eHealth (GOe), periodically conducts a eHealth survey to gather evidence on trends and uptake of the use of ICT for health. The second such survey was conducted in India on 30 December 2009.

Objective of the Survey:

Key objectives for the second global eHealth survey are to identify and analyze trends in:

- uptake of eHealth foundation policies and strategies
- deployment of mHealth initiatives in countries
- use of telemedicine solutions
- adoption of eLearning for health professionals and students
- collection, processing and transfer of patient information
- legal and ethical frameworks for EMR/EHR
- action concerning online child safety, internet pharmacies, health information on the internet, and spam
- governance and organization of eHealth in countries.
Content

The following topics were covered under the survey meeting:

- National eGovernment policy or strategy
  - Public-private partnerships
  - Multilingualism and multiculturalism in eHealth
  - Regional, national or district level eHealth surveys
- mHealth
  - Country Overview of mHealth Initiatives
  - Health monitoring and surveillance
  - Inter-sectoral communication
  - Barriers to implementing mHealth initiatives
- Telemedicine
  - National telemedicine policy or strategy
  - Scientific research
  - Barriers to telemedicine projects
- eLearning in health sciences
- Management of patient information
- Legal and ethical frameworks for eHealth
- Organization and support for eHealth

Participants to the Workshop

Sixteen participants who attended the workshop representing the following groups:

- Policy makers and senior officials from Ministry of Health and Family Welfare.
- Academic institutions & NGOs from Delhi like CDAC, Ehealth Online Magazine, SAS, NIC, Office of RGI, IIHMR and National Institute of Health and Family Welfare.
- Representative from WHO

For details see Annexure-I.

Outcome

- Develop a comprehensive survey report
- Identify the greatest areas of need for country support to enable further development through the deployment of eHealth tools and services.
Proceedings of the Workshop

30th December 2009

The meeting held under the chairmanship of Shri Pravin Shrivastava, Deputy DG Statistics MoHFW on 30.12.2009 in committee room, Nirman Bhawan, New Delhi. The meeting started with a welcome address and discussed various issues on the survey in the areas of:

- Uptake of eHealth foundation policies and strategies,
- Deployment of mhealth in counties,
- Use of telemedicine solutions,
- Adoption of e-learning for health professionals and students,
- Collection, processing and transfer of patient information,
- Legal and ethical frameworks for EMR/HER,
- Action concerning online child safety, internet pharmacies, health information on the internet and
- Governance organization of eHealth in countries.

The meeting discussed various issues regarding the responses of the sections of the questionnaire. Each and every questions of the seven section of the questionnaire was discussed in detail and appropriate responses were highlighted. During the process there were a lot of discussions on initiatives on the eHealth at the national and state level. Instances were made on initiatives taken up by DGHS, MoHFW ISRO, National Rural Telemedicine Network, Tele-opthalmology, National OptcoNET etc. Mr. Ranjan Dwevedi mentioned about the progress made in states of West Bengal, Tripura, Tamil Nadu, Kerala, Punjab, Himachal Pradesh on Telemedicine network. Along the line the inroads made by Shankar Netralaya, Arvind Eye Hopital, Apollo Hospital, Amritha Anandaya etc. were highlighted.

However, regarding the use of multilingual production of health materials, Dr. Tarun Seem made a caution that India has about 30 major regional languages and multiple numbers of dialects. To take up a task of putting in multilingual is at present not in practice but it is intended to have multilingual materials on health concerns.

There was a discussion on imparting knowledge through the use of ICT among health professional for continuing education. It also discussed on the mobile health service which is emerging in the international arena. It includes the services given for medical emergency such as dialing 104, 108 and mobile SMS along with the importance of evaluation of these services. An emerging issue was the existence of telemedicine which is provided under IDS P,
NRTN, ISRO etc. This highlights that at the national level India have telemedicine policy and its evaluation.

eLearning in health science is becoming popular but not very much in practice in India among the college and higher level medical students so also among the health professional in practice. Some of the major barriers highlighted were availability of eLearning course, low level of demand, lack of policy and recognition of the programmes already being offered.

In the meeting the sharing of patient information was discussed and it observed that the individual level data is not shared at all level and they are kept as confidential under the legal system and medical ethics. At the lower and mid level of functional hierarchy the patient data is passed through the paper and at the national level the use of paper reduces and most of the data are processed and stored as digital format. Praveen Srivastava commented that at the national level individual level data is not required since it is aggregated.

The use of ICD, HL7Messaging DCMI and UNAIDS are some of the important coding system followed in the country for coding health problems. Legal and ethical frameworks for eHealth was also discussed and here also it was iterated that individual level information is kept in confidence and some of the organization follow the record keeping of EMR or HER in digital format but sharing of these information between health service providers is not in practice. There is no legislation as such for online procurement of medical products in India and mention was also made that only prescribed medicine need to be taken subject to the condition of clearance from the customs law. One of the agenda was on correct use of electronic media for children and India has an organization for regulating it.

Finally national a eHealth governance was discussed and it mentioned that India have professional association for leadership in eHealth for support and advocacy as well as governance and guidance on various issues like advisory board to evaluation.

All the seven issues were discussed in detail with the expert group in the survey meeting. The information which had received online from other experts was collated.

The details survey is Annexed at -II.

The meeting, thus, ended with a note of thanks by the Shri Pravin Shrivastava, Deputy DG Stats MoHFW.
## Participant’s list

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World Health Organization
Global Observatory for eHealth

Second Global eHealth Survey
2009
Section 1 - eHealth Foundation Actions

eHealth

The World Health Organization broadly defines eHealth as the use of information and communication technologies (ICT) for health. One of the most dynamic fields in health care today, eHealth has the potential to address inequities in health systems and services in developing and developed countries.

Its applications span across a wide range of areas such as the use of ICT to:

- store, process and transmit patient information
- manage the diverse clinical, administrative and financial information generated in hospitals
- provide mechanisms for diagnostics and treatment between health professionals separated by distance
- build capacity by offering health sciences training and continuing education courses online to students and health professionals
- profit from the growth of mobile devices to offer innovative approaches for health care
- make highly complex biomedical research achievable through distributed computing or Grids

Foundation actions

eHealth foundation actions include mechanisms which help build an enabling environment for the successful use of ICT for health. These can include a supportive eHealth policy framework; attention to rationale infrastructure development; a cohesive and cost-effective approach to procurement; adequate funding in line with country program objectives; building enduring partnerships; and training the health workforce.

National eGovernment policy or strategy

A National eGovernment policy or strategy lays out the vision and objectives for the use of information and communication technologies (ICT) to exchange information, provide services and communicate with citizens, businesses, and other sectors. Note, it is a government-wide approach for the many arms of government to the use of ICT in conducting its operations.

1.1 Does your country have a national e-Government policy or strategy?

- Yes
- No
- Do not know

1.2 Has it been implemented?

- Yes
- Partly implemented
- No
- Do not know
1.3 What year did it come into force?

Do not know

2009
2008
2007
2006, May
2005
2004
2003
2002
2001
2000
Before 2000

1.4 If NO, when do you expect your country to take this action?

Do not know

2009
2010
2011
2012
2013
2014
2015

1.5 Please attach an electronic copy of country's most recent policy or strategy.

OR

1.6 Provide the URL for its location on the internet.


Enabling provisions for delivery enabled services in the revised IT Act 2009 – Notification attached
National eHealth policy or strategy

A National eHealth policy or strategy lays out the vision and objectives to promote the use of ICT for the health sector.

1.7 Does your country have a national eHealth policy or strategy?
- Yes
- No
- Do not know

1.8 Has it been implemented?
- Yes
- Partly implemented (RD-Partly Implemented)
- No
- Do not know

1.9 What year did it come into force?
Do not know
- 2009
- 2008
- 2007
- 2006
- 2005
- 2004
- 2003
- 2002
- 2001
- 2000
- Before 2000

---

3 The URL for National e-Governance Plan (NeGP):
- http://www.mit.gov.in/

1.10 If NO, when do you expect your country to take this action?

Do not know
2009
2010
2011
2012
2013
2014
2015

1.11 Please attach an electronic copy of your country’s most recent policy or strategy.

OR copy of 11 plan document section on telemedicine


1.12 Provide the URL for its location on the internet.

http://planningcommission.nic.in/plans/planrel/11thf.htm


Procurement policies or strategies

An ICT for health procurement policy or strategy establishes the principles for the acquisition of software, hardware and content for the health sector.

1.13 Does your country have a specific national ICT procurement policy or strategy for the health sector?

- No
- Do not know

1.14 Has it been implemented?

- Yes
- Partly implemented
- No
- Do not know
1.15 What year did it come into force?

Do not know

2009
2008
2007
2006
2005
2004
2003
2002
2001
2000
Before 2000

1.16 If NO, when do you expect your country to take this action?

Do not know

2009
2010
2011
2012
2013
2014
2015

Funding

Funding for eHealth can come from a number, and any combination of, sources including: public funding, private funding, donor/nonpublic funding, or public-private partnerships.

Public funding

Public funding is support through financial resources provided by government and can come from national, regional or district level government.
1.17 Does your government provide public funding for eHealth programmes which address national health priorities?

- Yes
- No
- Do not know

1.18 In what ways has public funding supported eHealth in your country? (Mark as many as apply)

For:

- ICT equipment Yes
- Software Yes
- skills training in eHealth Yes
- scholarships for formal education in eHealth
- initiation of pilot projects Yes
- ongoing support for eHealth programs Yes
- other Yes

A large number of initiatives have been rolled out

**E-Health Initiatives**

- Village Resourse Centers: Government of India has launched Village Resource Centers (VRCs) using communication and remote sensing satellite provided by Indian Space Research Organisation (ISRO) to give essential and intelligent services to 600,000 villages. The villagers will get information on agriculture, health, education, natural resources through VRCs.
- National Rural Telemedicine Network (NRTN) Project under National Rural Health Mission (NRHM) is under planning phase. Four Regional Workshops for NRTN are planned in four different regions of the country to educate the state functionaries and finalize the state project proposals.
- National Medical Library’s Electronic Resources in Medicine (ERMED) Consortium is an initiative taken by Director General of Health Services (DGHS) to develop nation wide electronic information resources in the field of medicine. Thirty Nine centrally funded Government Institutions including 10 under DGHS, 28 laboratories of Indian Council of Medical Research and AIIMS libraries are selected at the initial stage as its core members. The MoH&FW aims to provide fund required for the purchase of electronic journals under this consortium project.
- Hellinet consortium for e-journals and books for 400 life science institutions under Rajiv Gandhi University of Health Sciences, Karnataka.
- MoH& FW has approved tele-ophthalmology project to provide eye care specialty services to the patients of rural and remote areas of Punjab, Uttar Pradesh, West Bengal states of India through tele-ophthalmology mobile van
- National OncoNET Project: Under National Cancer Control Programme, 27 Regional Cancer Centers will be linked with 100 peripheral centers for primary prevention, early detection, treatment and rehabilitation of cancer patients
- The South Asian Association of Regional Cooperation, (SAARC), created as an expression of the region’s collective decision to evolve a regional cooperative framework received a major impetus during the 14th SAARC Summit held in New Delhi in April 2007. The preparatory work for a pilot project connecting one/two hospitals in each of the SAARC countries with 3 -4 Super Specialty hospitals in India by the end of this year has started. The Super Speciality hospitals in India include the AIIMS, New Delhi; SGPGIMS, Lucknow; PGIMER Chandigarh and the CARE Hospital, Hyderabad. It is being developed as an exemplary model for implementing projects at the regional level. It has immense potential to expand the scope of regional cooperation to other ICT enabled areas such as education, business process outsourcing and mass communication
Telemedicine network in the states of Tripura, Tamil Nadu, Kerala, Punjab, Himachal Pradesh have been supported by the Ministry of Communication. Some States have wide area network connecting health facilities. ISRO provided satellite based connectivity along with access infrastructure telemedicine to more than 300 facilities. Use of GIS and GPS for planning and delivery of health services.

Data collection and disease surveillance programmes

- Development and implementation of Health MIS – enabling collection of health statistics from over 600 districts
- Development and implementation of IDSP – enabling monitoring disease outbreaks on an on going basis at 800 locations.
- Development and implementation of NAMIS – which is an application to monitor the implementation of the TB control programme and tracking outbreaks in the country

Others

- Procurement of Tally, an accounting package that could be used by health societies in the States
- Computerisation of CGHS 3.2 million beneficiaries
- Online CME
- Digitised submission of thesis and dissertations at Rajiv Gandhi University of Health Sciences Bangalore (RGUHS).
- Web based OPACS of several prominent medical and health libraries.
- Several govt. hospitals successfully running computerized management information system for administration and patient care.
- Several decentralized initiatives for data collection and empowering of peripheral health workers using mobile devices.
- National Health Information Collaboration (www.nhicindia.org) : The portal hosted by NIHFW and supported by Ministry of Health and WHO Country Office for India, serves as a platform for aggregating relevant and authentic health information on all topics and systems of medicine in one place.
- Architecture and Design of e-health projects in two states: Assam (Central Government – National Rural Health Mission funding) and Andhra Pradesh (State Government Funding)

1.19 If "Other", please list ways of how the public funding has supported eHealth in your country:

(As listed above)

Wide use of ICTS in medical education and resources

Private funding

Private funding is support through financial or in-kind resources provided by the private or commercial sector.

1.20 Does your country receive private funding support for eHealth programs?

- Yes
- No
- Do not know
1.21 In what ways have private funds supported eHealth in your country? (Mark as many as apply)

For:

- ICT equipment
- software
- skills training in eHealth
- scholarships for formal education in eHealth
- initiation of pilot projects
- ongoing support for eHealth programs
- other

1.22 If "Other", please list ways of how the private sector has supported eHealth in your country:

**Donor / Non-public funding**

Donor/non-public funding is support through financial or in-kind resources provided by development agencies, banks, foundations or other non-public funding bodies. These can be international, regional or national bodies.

1.23 Does your country receive donor/non-public support for eHealth programs?

- Yes
- No
- Do not know

1.24 In what ways have donor/non-public funds supported eHealth in your country? (Mark as many as apply)

For:

- ICT equipment
- Software
- skills training in eHealth
- scholarships for formal education in eHealth
- initiation of pilot projects
- ongoing support for eHealth programs
- other

1.25 If "Other", please list ways of how the public sector has supported eHealth in your country:

**Public-private partnerships**

Public-private partnerships are joint ventures between public organizations and private sector companies to work together to achieve a common goal.

1.26 Are there any public-private partnerships in your country which support eHealth programs?

- Yes
- No
- Do not know
1.27 In what ways have public-private partnerships supported eHealth in your country? (Mark as many as apply)

For:
- ICT equipment
- software
- skills training in eHealth
- scholarships for formal education in eHealth
- initiation of pilot projects
- ongoing support for eHealth programs
- other

Funding ranking

1.28 Please rank the sources of funding support for eHealth in your country from 1 - 4 (with 1 being the greatest source of funding and 4 the smallest source of funding)

- Public funding – 1
- Private funding – 3
- Donor / non-public funding 4
- Public-private partnerships - 2

Country case studies

eHealth public-private partnerships: Example 1-3

We would like to collect more information about eHealth public-private partnerships which your country considers to have been successful. Please describe up to three examples of partnerships which have produced positive and long lasting results. Examples may be cited in the GOe 2009 report to illustrate the scope and impact of these partnerships.

Please describe the public private partnership in up to 500 characters including:

1.29 Example 1

Name of eHealth project: Aragonda Telemedicine Project

More example to be added – Shankar Netralay, Arvind Eye Hospital, Amritha ,, and more than several partnerships through MoI&T, and ISRO. Names of the public and private partners: Apollo Group of Hospitals and Indian Space Research Organisation

Project objectives: To provide specialized health care consultation to patients in remote locations

Target group(s): People living in rural area

Brief project description: Aragonda is a remote village in the Chittoor district of Andhra Pradesh with minimal healthcare facilities. Registered Medical Practitioners supported the Primary Health Center, catering to the adjoining villages. With the introduction of Apollo Telemedicine, Aragonda became India’s first model telemedicine village. Apollo Hospitals set up a 50 bed secondary care center with state of the art equipment Telemedicine Center and other facilities including CT Scan, Ultrasound, X-ray. The hospital is staffed by
qualified and dedicated healthcare professionals and supported by doctors from across the Apollo Hospital Group via telemedicine with ISDN and VSAT lines. The Indian Space Research Organisation helped to set up — the village was connected to the Apollo hospitals in Hyderabad and Chennai, bringing tertiary care virtually to the doorsteps of the villagers. www.telemedicineindia.com/KeyProjects.htm

1.29 Example 1

Name of eHealth project: Andhra Pradesh Health Management Information System (APHMIS)

Names of the public and private partners: Yet to be decided

Project objectives:

Target group(s):

Brief project description:

✓ Enclosed as Annexure I

1.29 Example 1

Name of eHealth project: Mobile Telemedicine Project, Gujarat

Names of the public and private partners: Govt. of Gujarat & Apollo Hospitals

Project objectives:

To provide telemedicine services in remote areas of Gujarat

Target group(s):

Rural population in Gujarat

Brief project description:

Government of Gujarat and Apollo Telemedicine Networking Foundation started Mobile Telemedicine project at various locations in Gujarat. GOG initiated this project keeping in the mind the natural calamities which struck Gujarat and loss of lives mainly due to lack of medical support. The project includes 1 remote center, 3 specialist centers and 1 mobile telemedicine unit equipped with a basic X-Ray and pathology unit. All the telemedicine units are connected through Ku Band Satellite connectivity provided by ISRO. The telemedicine facility connects the district hospitals/health centers with super specialty hospitals for providing expert consultation to the under-served population. The mobile telemedicine unit came across as the effective solution for saving lives by providing initial medical care (first aid) and shifting the patient to specialty centre or treating the patients on site with the help of super specialist made available through telemedicine. Apollo Hospitals, Ahmadabad is the regional hub for Gujarat Govt. Telemedicine project, and all the bandwidth allocation and patient data management activity is carried out in this location.
1.29 Example 1

Name of eHealth project:
National Health Information Collaboration

Names of the public and private partners:

Project objectives:
To develop an understanding of the online National Health Information Repository National Health Information Collaboration as a one-point source for authentic and vital health information.

Target group(s):
Health service providers, researchers and policy makers

Brief project description:
The National Health Information Collaboration (NHIC) is a National Health Information Repository, designed to serve as a one-point source for authentic and relevant health information on all health topics. The portal has been facilitated by WHO which jointly with Indian Council of Medical Research holds the copyright of the application software. The portal is hosted at www.nhicindia.org and is being administered by the Collaboration Manager, National Institute of Health and Family Welfare, New Delhi. The need for a National portal on Health as a source of authentic information cannot be overemphasized. Even the Knowledge commission stressed the importance of subject gateways to serve as clearing house for information. NHIC is a collaborative model, information being entered by several institutions of authorized and personnel trained for the purpose. It has several built-in checks to ensure quality. NHIC is very user friendly, both to populate and to use. Institutions of repute are authorized to upload content on the portal. An institutional NHIC Administrator can further authorize content providers within the institution. Each record uploaded bears the name of the content provider, along with the name of the institution and date of upload, with a context sensitive provision feedback to the content provider by the users.

1.30 Is the partnership ongoing?
- Yes
- No
- Do not know

1.31 Has there been a formal evaluation?
- Yes
- No
- Do not know

1.32 Please attach an electronic copy of the evaluation report

OR

1.33 Provide the URL for its location on the internet
1.34 Example 2

**Name of eHealth project:** Integrated Tele-Cardiology & Tele-health Project

**Names of the public and private partners:**

i. Govt. facilities covered - Bakura Sammilani Medical College Hospital (BSMCH), Bankura & Siliguri Sub-divisional District Hospital, Silliguri

ii. Private Partnerships - Asia Heart Foundation & RN Tagore International Institute of Cardiac Sciences, Kolkata

**Project objectives:** Referral & Tele-consultation from Asia Heart Foundation & RN Tagore International Institute of Cardiac Sciences, Kolkata

**Target group(s):** People living in sub-urban areas

**Brief project description:** BSMCH & Siliguri SDH in partnership with Asia Heart Foundation & RN Tagore International Institute of Cardiac Sciences, Kolkata are connected through through POTS & ISDN lines. The main services provided by these private hospitals are Treatment of Acute Heart Attack cases as evidenced by history and ECG, treatment by “Thrombolysis” and referral & tele-consultation & video conferencing with RN Tagore International Institute of Cardiac Sciences, Kolkata.

[link to project document]

darpg.nic.in/arpg-website/bestpracticesingovt/telemedicine.ppt

1.34 Example 2

**Name of eHealth project:** Assam e-Health

**Names of the public and private partners:** Not yet decided

**Project objectives:** Design of an e-health System for State of Assam.

**Target group(s):** Citizen and Businesses of Assam and Employees of State Government

**Brief project description:**

Assam e-Health project has been envisaged with the vision to “An integrated program to allow the exchange of health-related information among healthcare and related organizations to support the continuity of care to the citizen of Assam”

The primary functionality of this project is

- To introduce systems that simplify administrative processes of healthcare & improve effectiveness
- To enhance the quality of healthcare services to patients
- To enhance the efficiency of healthcare service delivery units.
- To provide e greater access to health care in a cost-effective manner. To ensure the security & privacy of citizen health records
1.34 Example 2

**Name of eHealth project:**

GE-Govt of Gujarat PPP Initiative

**Names of the public and private partners:**

Govt. of Gujarat & General Electric Corporation

**Project objectives:**

To provide low cost, high tech healthcare diagnostic services

**Target group(s):**

BPL and poor population of Gujarat

**Brief project description:**

Unutilized physical space in government hospitals are used by private service partners to install advanced MRI and CT machines from GE, without any financial obligation on the government. Patients are charged at discounted rates (30-50% lower than market) pre-approved by authorities. It makes sense for private providers as they get assured patient volume and opportunity for optimum asset utilisation. In addition, students at teaching hospitals get to train themselves on such advanced equipments.

1.39 Example 3

**Name of eHealth project:** Telehealth services on PPP Model

**Names of the public and private partners:**

Indian Space Research Organization with Corporate Hospitals, Trust managed hospitals

**Project objectives:** To provide Specialty medical consultation on free of cost

**Target group(s):** Patients from peripheral hospitals located in small towns and cities

**Brief project description:** Since the inception of first Satcom based Telemedicine project implementation in the year 2001 by Indian Space Research Organization (ISRO) has been working on PPP model in partnership with Major Corporate hospitals to provide telemedicine technology enabled teleconsultation services. Under this model ISRO is providing Satcom based telemedicine infrastructure to these hospitals along with free bandwidth and Annual maintenance of the infrastructure. These hospitals are Apollo Hospital group located in Chennai, Hyderabad and Delhi, Narayana Hrudayalaya, Bangalore, R.N.Tagore Hospital, Kolkata, Sir Gangaram Hospital, New Delhi, Sri Ramachandra Medical College, Chennai, Amrita Institute of Medical Sciences, Kochi. Under the South to South to collaboration Policy of Govt. of India, Ministry of External Affairs has implemented e-Africa Project for tele-education and Tele-health services in which major corporate hospitals like Care Hospitals, Hyderabad, Apollo group, Fortis hospital, New Delhi are providing Tele-health services under pay for service model. All the infrastructure and maintenance including bandwidth is provided free of charge by the Implementing agency of Govt. of India.
1.35 Is the partnership ongoing?

- Yes
- No
- Do not know

1.36 Has there been a formal evaluation?

- Yes
- No
- Do not know

1.37 Please attach an electronic copy of the evaluation report

OR

1.38 Provide the URL for its location on the internet

1.39 Example 3

**Name of eHealth project:** Telemedicine enabled specialty healthcare access for health emergencies during Lord Jagannath Rath Yatra at Puri – A proof of Concept Study”

**Names of the public and private partners:**

**Public Partners:** School of Telemedicine & Biomedical Informatics, Sanjay Gandhi Postgraduate Institute of medical Sciences, Lucknow and Government of Orissa State

**Private Partners:** Orissa Trust of Technical Education & Training (OTTET), Bhubaneswar, Orissa

**Project objectives:** To study the feasibilities of low cost portable platform over mobile internet and telemedicine technology in getting access to specialty consultations for emergency health care

**Target group(s):** Pilgrims at Chariot Festival of Lord Jagannath Ji Rath Yatra, Puri, Orissa

**Brief project description:** The study was aimed at designing low cost portable telemedicine solution using wireless broadband network for application in yet another extreme environment of mass gathering i.e. Rath Yatra at Puri where approx. 10 lacs people gather in a single day. With the approval of Government of Orissa, OTTET implemented the project using the technical solution designed by STBMI from 23rd June till 2nd July 2009. An enterprise based telemedicine network was set up connecting specialty hospitals at Bhubaneswar and Cuttack using wireless IP network to exchange E.C.G. and carry out videoconference for teleconsultation.

1.40 Is the partnership ongoing?

- Yes
- No
- Do not know
1.41 Has there been a formal evaluation?

- Yes
- No
- Do not know

1.42 Please attach an electronic copy of the evaluation report

OR

1.43 Provide the URL for its location on the internet
Multilingualism and multiculturalism in eHealth

Multilingualism / multiculturalism policy or strategy

A national multilingualism / multiculturalism policy or strategy sets out the vision and objectives to promote and respect linguistic diversity, cultural identity, traditions and religions within cultures. Its scope should include the provision of health information respectful of cultures and in relevant community languages. For the purpose of this survey the information must be made available in digital format.

1.44 Does your country have a national policy or strategy that promotes the production of electronic health information in a manner that is multicultural sensitive and is available in your main languages?

- Yes
- No
- Do not know

1.45 Has it been implemented?

- Yes
- Partly implemented
- No
- Do not know

1.46 What year did it come into force?

Do not know

2009
2008
2007
2006
2005
2004
2003
2002
2001
2000
Before 2000
1.47 If NO, when do you expect your country to take this action?

Do not know

2009

2010

2011

2012

2013

2014

2015

Capacity Building - Human resources knowledge and skills

ICT skills and knowledge are key elements in developing the information society. They contribute to building capacity through their inclusion in education and training.

- Ministry of Health & Family Welfare, Government of India is setting up a Tele-training Center at the National Institute of Health & Family Welfare, New Delhi to create facility towards tele-training of public health professionals across the country through various e-learning modules to switch over to more efficient electronic mode from currently practiced on-site training module. This initiative would boost capacity building in public health as has been envisaged under National Rural Health Mission.
- SGPGIMS, Lucknow in collaboration with the Uttar Pradesh State government and DIT has taken up the initiative to set up a School of Telemedicine and Biomedical Informatics in its campus. It will house different laboratories in the field of e health such as Telemedicine, Hospital Information System, Biomedical Informatics, Medical Multimedia and Image Management, Medical Knowledge Management, Artificial Intelligence, Virtual Reality and Robotics. The objectives of the School are creation of various resource facilities, conduct structured training programmes, research and development, providing consultancy to government and private healthcare organizations in collaboration with technological and medical universities in the country and abroad.
- Apollo Telemedicine Network Foundation in collaboration with Anna University, Chennai has started a 15 days certificate course in Telehealth Technology which is a blend of technical, medical and managerial skills.

ICT training for health sciences students

1.48 Do tertiary institutions (universities or technical colleges) in your country offer ICT training for students of health sciences?

- Yes
- No
- Do not know

1.49 If NO, when do you expect your country to take this action?

Do not know

2009
1.50 What proportion of tertiary institutions (including public and private) offer these courses?

- None
- Low - less than 25%
- Medium - more than 25% less than 50%
- High - more than 50% - less than 75%
- Very high - more than 75%

Continuing education in ICT for health professionals

Courses or programs for health professionals (not necessarily for formal accreditation) that bring participants up-to-date with ICT knowledge or skills for health settings.

1.51 Do any institutions or organizations in your country offer continuing education in ICT for health as part of the ongoing training of health professionals?

- Yes
- No
- Do not know

1.52 If NO, when do you expect your country to take this action?

Do not know

2009
2010
2011
2012
2013
2014
2015
1.53 Please indicate which professional groups are offered this form of continuing education:

- Medical
- Nursing
- Dentistry
- Pharmacy
- Public Health
- Other

1.54 If "Other", please list other professional groups:

Regional, national or district level eHealth surveys

eHealth surveys

eHealth surveys are conducted each year, however, their results are sometimes not widely circulated. The sharing of survey results can help other countries with their eHealth planning and implementation. The GOe aims to facilitate this process by offering survey publications on its web site.

1.55 Have any eHealth surveys been conducted in your country since 2006?

- Yes
- No
- Do not know

1.56 If Yes, are the results publically available?

- Yes
- No
- Do not know

1.57 If Yes, please attach an electronic copy of your document

1.58 Document 2

1.59 Document 3

OR

1.60 Provide the URL for its location on the internet

1.61.URL

1.62 URL

Additional Comments

1.63 If you have further comments about any of the issues covered in Section 1, please include below:
Section 2 - mHealth

mHealth(also written as m-health or sometimes mobile health) is an emerging term for medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, Personal Digital Assistants (PDAs), and other wireless devices. mHealth applications include the use of mobile devices in collecting community and clinical health data, delivery of healthcare information to practitioners, researchers, and patients, real-time monitoring of patient vital signs, and direct provision of care.

Reference:


2.1 Are any mHealth initiatives being conducted in your country?

- Yes
- No
- Do not know

Country Overview of mHealth Initiatives

The table below lists a range of mHealth initiatives currently being conducted around the world. Please complete the templates below for those initiatives which apply most closely to your country situation.

Description of mHealth initiatives

- **Name of the initiative:** Data collection using mobile technologies in to the District Health Information System developed through National Health Systems Resource Center, pilot in Gujarat for data collection and alerts for health service delivery by ANMs.

- **Objectives:** Data collection and alerts for health service delivery by ANMs

- **Target group:** ANMs
- **mHealth technology(ies) used:** Mobile phones and SMS used for data aggregation and alerts for service delivery- the interface is in Gujarati (Local language of the state)

**Informal** - not a part of an organized health program but involves the use of mobile technology for health-related reasons

- **Pilot** - testing and evaluating the use of mHealth for a health-related issue: It is at a pilot stage
- **Established** - an ongoing health-related program using mHealth
Types of mHealth Initiatives

Communication between individuals and health services

Health call centres / health care telephone helpline - Health care advice and triage services by trained health professionals on the telephone

2.2 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters): In the state of Maharashtra in India, BPL Mobile has launched the Value Added Service to provide a virtual channel that will give subscribers instant access to quality medical assistance, real-time interaction with doctors anytime anywhere. http://www.ehealthonline.org/news/news-details.asp?News=Doctor-on-Call’-on-your-BPL-Mobile-now-in-India&NewsID=15756

2.3 Type of Initiative

- Informal
- Pilot
- Established

Emergency toll-free telephone services - Free telephone hot lines for medical emergencies (can be staffed by health professionals or staff trained in dealing with the particular emergency service)

i. Central Govt of India designate 108 as the national emergency contact number for Police, Medical and Fire emergencies. It is already being used as the toll free emergency number in Indian states such as Gujarat, Andhra Pradesh, and Uttarakhand. states like Rajasthan, Madhya Pradesh and Tamil Nadu have inked MoU with the Emergency Management and Research Institute (EMRI) for availing this service. Indian states like Jammu and Kashmir, Assam and Kerala too are charting plans for fixing the number 108 for all emergency purposes.

ii. Central Govt of India designate 104 as the Andhra Pradesh state health advice emergency contact number for Medical emergencies.

2.4 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters): Every time a caller dials 108, his or her call will be received by a 24 hour call centre which will take down all important information from the caller. After this, the call centre will locate an ambulance, fire vehicle or the police vehicle depending on the type of emergency through GPRS technology and dispatch it to where the help is needed. http://www.india-server.com/news/dial-108-for-emergency-in-india-1805.html

2.5 Type of Initiative

- Informal
- Pilot
- Established
Communication between health services and individuals

**Treatment compliance** - Reminder messages provided by health services to patients aimed at achieving medication compliance (e.g., diabetes, HIV/AIDS, TB). Message can be voice or text.

Initiative in the state of Gujarat, UP, Haryana, Kerala, etc.

2.6 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters):

2.7 Type of Initiative

- Informal
- Pilot
- Established

**Reminder to attend appointments** - Messages provided as a health service to patients to make or attend an appointment. Message can be voice or text.

2.8 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.9 Type of Initiative

- Informal
- Pilot
- Established

**Community mobilization / health promotion campaigns** - Use of text messaging for health promotion or to alert target groups of health campaigns. Can be used for example in immunization campaigns or HIV testing.

2.10 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.11 Type of Initiative

- Informal
- Pilot
- Established

**Awareness raising** - Use of health information products, games or quiz programs for awareness raising in health topics such as HIV/AIDS. Available for download onto mobile devices.
2.12 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.13 Type of Initiative

- Informal
- Pilot
- Established

Consultation between health care professionals

Mobile telemedicine - Communication or consultation between health practitioners about patients using voice, text or images via mobile devices.

2.14 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.15 Type of Initiative

- Informal
- Pilot
- Established

Inter-sectoral communication in emergencies

Emergencies - Use of mobile devices to respond to, and manage, emergency and disaster situations such as natural disasters, disease outbreaks, and conflict.

2.16 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

For surveillance

2.17 Type of Initiative

- Informal
- Pilot
- Established

Health monitoring and surveillance
Health surveys - Use of mobile devices for health-related data collection and reporting such as health surveys. May involve any combination of networked mobile devices.

2.18 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

Use of mobile by ANMs/HW/GATS, IDSP?,

2.19 Type of Initiative
- Informal
- Pilot
- Established

Surveillance - Use of mobile devices for surveillance programs such as meningitis, HIV/AIDS management, or nutrition. May involve any combination of networked mobile devices.

2.20 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.21 Type of Initiative
- Informal
- Pilot
- Established

Patient monitoring - Remote patient monitoring (such as in diabetes management or cardiac care). Remote sensor or imaging devices are used to capture patient data which is then transmitted via a mobile device to the health service provider.

2.22 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.23 Type of Initiative
- Informal
- Pilot
- Established

Access to information for health care professionals at point of care
Information - Access to health science publications or databases at point of care using mobile devices.

2.24 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters): Mobile phones with internet can give access to online medical journals, pubmed and scientific data bases.

2.25 Type of Initiative
- Informal
- Pilot
- Established

Decision Support Systems - Access to decision support systems (DSS) at point of care using mobile devices.

2.26 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.27 Type of Initiative
- Informal
- Pilot
- Established

Patient records - Access to patient Electronic Medical Records/ Electronic Health Records (EMR/EHR) at point of care using mobile devices.

2.28 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.29 Type of Initiative
- Informal
- Pilot
- Established

Other scenarios in your country:
Please provide other examples here if the initiatives above do not adequately cover activities in your country.
Scenario 1

2.30 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.31 Type of Initiative

- Informal
- Pilot
- Established

Scenario 2

2.32 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.33 Type of Initiative

- Informal
- Pilot
- Established

Scenario 3

2.34 Briefly describe the objectives of the initiative, the target group(s) and the mHealth technology used (Maximum 500 characters)

2.35 Type of Initiative

- Informal
- Pilot
- Established
Evaluation

2.36 Have any of these initiatives been formally evaluated and/or published?

- Yes
- No
- Do not know

However, some of the project initiatives have been evaluated. The details URL are given below:

2.37 If Yes, please attach an electronic copy of the evaluation:

2.38 Document 2

2.39 Document 3

OR

2.40 Provide the URL for its location on the internet

2.41 http://www.iimahd.ernet.in/egov/ifip/jun2003/article4.htm

2.43 http://pubs.media.mit.edu/pubs/papers/02.00.anantraman.dyd.pdf


Possible barriers to implementing mHealth initiatives

2.46 Please select the four most important barriers that apply to your country situation.

- Cost effectiveness - of these initiatives is unknown
- Demand - health professionals and/or general public are not demanding mHealth
- Infrastructure - underdeveloped infrastructure such as unreliable cellular network
- Knowledge - lack of knowledge concerning the possible applications of mHealth and public health outcomes
- Legal - lack of legal policies or guidelines on privacy and confidentiality
- Operating cost - such as voice communication, data transfer, and electricity costs perceived as high
- Policy - Country or regional eHealth policy or strategy does not include mHealth as an approach to health-related issues
- Priorities - competing health system priorities
- Technical expertise - lack of technical support for mHealth hardware or software
- Other

2.47 If "Other", please list other important barriers that apply to your country situation.

Additional Comments

2.48 If you have further comments about any of the issues covered in Section 2, please add below:
Section 3 - Telemedicine

Telemedicine (also known as telehealth) falls under the broader term of eHealth and involves the delivery of health care services, where distance is a critical factor. The telemedicine approach uses information and communication technologies for the exchange of information for diagnosis, treatment and prevention of diseases and injuries, research and evaluation, and for the continuing education of healthcare providers.

Some of the more established fields of telemedicine include, teleradiology, teledermatology, telepathology, and telepsychiatry.

Telemedicine

3.1 Does your country have a national agency for the development and promotion of telemedicine and its applications?

- Yes
- No
- Do not know

3.2 If Yes, please provide the agency name:

3.2.1 Department of Information Technology, Ministry of Communication and IT, Govt of India

3.2.2 Ministry of Health and Family Welfare, Govt. of India (Integrated Disease Surveillance Project (IDSP), National Rural Telemedicine Network Project)

3.2.3 Indian Space Research Organisation

3.2.4 Ministry of External Affairs (SAARC Telemedicine network Project and PAN African Network Project)

3.2.5 National Informatics Center, Govt. of India (OncoNet India)

3.3 Please provide the agency's website URL:


3.2.2 www.mohfw.nic.in, www.idsp.nic.in,

www.mohfw.nic.in/National%20Rural%20Telemedicine%20Network%20for%20India

3.2.3 www.isro.org/scripts/telemedicine.aspx

3.2.4 www.meaindia.nic.in and ttp://tcil-india.com/new/html/PAN%20Africa.html

3.2.5 http://nicsi.nic.in/Docs/tdocu_nicsi_eoi_ts_2008_08.pdf
National telemedicine policy or strategy

A national telemedicine policy or strategy lays out the vision and objectives for the application, provision, control, standards, and ethics related to the national and international use of telemedicine solutions.

3.4 Does your country have a national telemedicine policy or strategy?

- Yes
- No
- Do not know

3.5 Has it been implemented?

- Yes
- Partially implemented
- No
- Do not know

3.6 If NO, when do you expect your country to take this action?

Do not know
2009
2010
2011
2012
2013
2014
2015

3.7 Please attach an electronic copy of your national telemedicine policy or strategy

OR

3.8 Provide the URL for its location on the internet

Scientific research

3.9 Are scientific institutions involved in the development of telemedicine solutions in your country?

- Yes
- No
- Do not know

Please list three of the most active scientific institutions in the development of telemedicine in your country:

3.10 Name of Institution – School of Telemedicine & Biomedical Informatics, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh
3.11 URL – http://www.sgpgi-telemedicine.org/research.htm

3.12 Name of Institution – Postgraduate Institute for Medical Education and Research, Chandigarh

3.14 Name of Institution - All India Institute of Medical Sciences (AIIMS), New Delhi
3.15 URL - http://www.aiims.edu/aiims/tel-med/tm-inauguration5.htm/

IIT KHadakpur - http://www.telemedik.iitkgp.ernet.in/

Country overview of telemedicine services

Please indicate which of the following telemedicine services are offered in your country.

Indicate whether they are:

- Informal - not a part of an organized telemedicine program but involve the use of telemedicine services
- Pilot - testing and evaluating the use of telemedicine in a given situation
- Established - an ongoing telemedicine service supported through funds by government or other sources

Teleradiology is a field of telemedicine involving the use of ICT to transmit digital radiological images (e.g. x-ray) from one location to another for the purpose of interpretation and/or consultation.
3.16 **Name of service:** Offsite Teleradiology services and training

3.17 **Name of lead institution:** Teleradiology Solutions - Rad Gurukul, Bangalore (www.telediagnosys.com)

3.18 **Type of initiative**
- Informal
- Pilot
  - **Established**

(Complete list given later)

Teledermatology is a field of telemedicine involving the use of ICT to transmit medical information concerning skin conditions and tumours of the skin for the purpose of interpretation and/or consultation.

3.19 **Name of service:** Telemedicine for tropical Diseases

3.20 **Name of lead institution:** School of Tropical Medicine Kolkata and two district hospitals.

3.21 **Type of initiative**
- Informal
- Pilot
  - **Established**

Telepathology is a field of telemedicine involving the use of ICT to transmit digitized pathological results, such as microscopic images of cells, for the purpose of interpretation and/or consultation.

3.22 **Name of service:** Internet based free consultancy services and distance learning in pathology / Onconet Kerala (RCC Trivandrum)

3.23 **Name of lead institution:** Telepathology India, (www.telepathology.org.in/) RCC Trivandrum

3.24 **Type of initiative**
- Informal
- Pilot
  - **Established**

Telepsychiatry is a field of telemedicine involving the use of ICT for psychiatric evaluations and/or consultation via video and voice.

3.25 **Name of service:** Providing training and creating awareness

3.26 **Name of lead institution:** Schizophrenia Research Foundation (SCARF), Chennai, (www.scarfindia.org)

*To Check*

3.27 **Type of initiative**
- Informal
- Pilot
  - **Established**
Other Telemedicine Services

Additional telemedicine services may be offered in your country (e.g. telemammography, teleultrasound, teleCT, teleNMR, teleEKG, or telesurgery). If so, please list up to five others below.

Telemedicine service 1 : Telemammography

3.28 Name of service: Screening of breast cancer
3.29 Name of lead institution: Sir Ganga Ram Hospital (www.sgrh.com)
3.30 Type of initiative
  - Informal
  - Pilot
  - Established

Telemedicine service 2 : Telesurgery

3.31 Name of service: Education of health professionals, consultation and follow up of surgical patients
3.32 Name of lead institution: School of telemedicine & Biomedical Informatics, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow (http://www.sgpgi-telemedicine.org/research.htm)
3.33 Type of initiative
  - Informal
  - Pilot
  - Established

Telemedicine service 3 : Tele-ophthalmology

3.34 Name of service: Screening of diabetic retinopathy, education and training
3.35 Name of lead institution: Aravind Eye Hospital (www.aravind.org/Telemedicine/va.htm)
3.36 Type of initiative
  - Informal
  - Pilot
  - Established

Tripura to be added

Telemedicine service 4 : Tele-radiotherapy network

3.37 Name of service: Educational activity to knowledge skills among the radiation oncologists, medical physicists and radiation technologists of Uttar Pradesh State (www.stbmi.ac.in/.../Setting%20up%20a%20teleradiotherapy%20network%20at%20SGPGI.pdf)
3.38 **Name of lead institution:** Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow

3.39 **Type of initiative**
- Informal
- Pilot
- Established

**Telemedicine service 5 – Tele-oncology**

3.40 **Name of service:** Cancer awareness program and monthly follow-up and consultation to the cancer patients

3.41 **Name of lead institution:** Regional Cancer Center, Trivandrum, Kerala
(www.mit.gov.in/default.aspx?id=709-)

3.42 **Type of initiative**
- Informal
- Pilot
- Established

**Evaluation**

3.43 **Have any evaluation reports or review studies been published on the use of telemedicine services in your country since 2006?**
- Yes
- No
- Do not know

3.44 **If Yes, please attach an electronic copy of the report**

3.45 Document 2

3.46 Document 3

**OR**

3.47 **Provide the URL for its location on the internet**

3.48 **URL**

3.48 **URL**
Possible barriers to telemedicine projects

3.49 The following is a list of possible barriers to the implementation of telemedicine solutions in countries. Please select the four most important barriers that apply to your country situation.

- **Cost** - costs of telemedicine perceived to be high
- **Demand** - health professionals are not demanding telemedicine solutions
- **Infrastructure** - underdeveloped infrastructure
- **Knowledge of applications** - lack of knowledge concerning the possible applications and outcomes on patient treatment of telemedicine
- **Legal** - lack of legal policies or guidelines on privacy and confidentiality in the use of clinical information and referral (in the context of telemedicine)
- **Organizational culture** - organizations are not accustomed to sharing knowledge and skills with remote professionals and patients through ICT
- **Policy** - Country policy or strategy does not include telemedicine as an approach to health-related issues
- **Priorities** - competing health system priorities
- **Standards** - lack of nationally adopted standards (e.g. DICOM, HL7, SNOMED)
- **Technological expertise** - lack of technical support for telemedicine hardware or software
- **Other**

3.50 If "Other", please list possible barriers here:

Information needs

3.51 What information is most needed in your country to support the development of telemedicine? Please select the four most important areas that apply to your country situation.

- **Clinical possibilities** - information about the clinical use
- **Cost** - information about the costs and cost-effectiveness of telemedicine solutions
- **Evaluation** - research publications evaluating the effects of telemedicine on quality of services
- **Infrastructure** - information about the necessary infrastructure to implement telemedicine solutions
- **Labour** - information about the effect of telemedicine on the use of human resources in the health care sector
- **Legal** - information about the legal and ethical aspects of telemedicine
- **Perception** - information about patients' perception of, or satisfaction with, telemedicine
- **Other**

3.52 If "Other", please list information needs here: Ethical issues

Additional comments

3.53 If you have further comments about any of the issues covered in Section 3, please add below:
Section 4 - eLearning in health sciences

eLearning refers to the use of ICT for learning. It can be used to improve the quality of education, to increase accessibility for geographically isolated persons or those who have poor local learning facilities, and to make new and innovative forms of education potentially available to all. It is increasingly used for training health sciences students and for the ongoing development of health professionals.

The following questions look at the application of eLearning for two main target groups including health sciences students and health care professionals.

Please note that these questions refer to the use of ICT for learning and should not be confused with those in Section 1 which are about the training of health sciences students and professionals in the use of ICT in health.

Health sciences students

4.1 Is eLearning used to help teach health sciences in your country?
- Yes
- No
- Do not know

4.2 Which best describes the level of use of eLearning programs by health sciences teaching institutions in your country?
- None
- Low - less than 25%
- Medium - more than 25% less than 50%
- High - more than 50% - less than 75%
- Very high - more than 75%

4.3 Which of the following target groups use eLearning as part of their training?
- Medical
- Nursing
- Dentistry
- Pharmacy
- Public Health
- Other

4.4 If "Other", please list other groups that use eLearning:
4.5 eLearning programs used in your country are:

- Created locally (in country)
- Created abroad
- Both

4.6 Have any eLearning programs for health sciences in your country been formally evaluated?

- Yes
- No
- Do not know

4.7 If Yes, please attach an electronic copy of the evaluation report

4.8 Document 2

4.9 Document 3

OR

4.10 Provide the URL for its location on the internet

4.11 URL

4.12 URL

Health care professionals

4.13 Is eLearning used by professional development programs in the ongoing training of health professionals in your country?

- Yes
- No
- Do not know

4.14 Which best describes the overall level of use of eLearning by professional development programs for health care professionals in your country?

- None
- Low - less than 25%
- Medium - more than 25% less than 50%
- High - more than 50% - less than 75%
- Very high - more than 75%
4.15 Which of the following target groups are using eLearning for their ongoing training?

- Physicians
- Nurses
- Dentists
- Pharmacists
- Public health professionals
- Other

4.16 If "Other", please list other groups that use eLearning:

4.16.1 Dietician, Lab Technician and Physiotherapist

4.17 eLearning programs used in your country for health professionals are:

- Created locally (in country)
- Created abroad
- Both

4.18 Have any eLearning programs for health professionals in your country been formally evaluated?

- Yes
- No
- Do not know

4.19 If Yes, please attach an electronic copy of the evaluation report

4.20 Document 2

4.21 Document 3

OR

4.22 Provide the URL for its location on the Internet

4.23 URL

4.24 URL
Possible barriers to eLearning

4.25 The following is a list of possible barriers to the use of eLearning in countries. Please select the four most important barriers that apply to your country situation.

- **Availability** - unable to find suitable eLearning courses for use (for instance due to content, language or cultural issues)
- **Capacity** - lack of skilled professionals to develop in-country eLearning courses
- **Demand** - no perceived need for eLearning courses
- **Infrastructure** - underdeveloped infrastructure within educational institutions or health facilities to offer eLearning
- **Knowledge** - lack of knowledge concerning the successful application of eLearning programs
- **Operating cost** - such as voice communication, data transfer, and electricity costs perceived as high
- **Policy** - educational institutions do not include eLearning as an approach to teaching health sciences
- **Other**: Recognition of the programmes already being offered.

4.26 If "Other", please list other barriers to the use of eLearning in your country:

Additional Comments

4.27 If you have further comments about any of the issues covered in this section, please add below:
Section 5 - Management of Patient Information

Access to patient information plays a vital role in the provision of effective clinical care by health professionals. Diagnosis and treatment can be improved if health professionals have easy access to accurate and comprehensive medical records of patients.

However, some countries are unable to routinely collect and store patient information due to lack of staff resources and time. Others create paper records which can be difficult to manage and are not portable. Many countries are now introducing Electronic Medical Records / Electronic Health Records (EMR / EHR)* to improve the management of patient information, enhance health care services, and allow for rapid communications between health care providers. One of the critical factors for success of EMR/EHR is interoperability. Interoperability is the ability of different information systems and applications to communicate, exchange data accurately, effectively, and consistently, and to process the information that has been exchanged.

* Electronic Medical Records / Electronic Health Records (EMR/EHR) are often referred to interchangeably and will be interchangeable for the purpose of this survey. An EMR/EHR is a real-time longitudinal electronic record of an individual patient's health information that can assist health professionals with decision-making and treatment. Data found in a record may include patient demographics, past medical history, vital signs, examination and progress notes, medications, allergies, immunizations, laboratory test results, radiology reports, living wills, and a health power of attorney. It can be made rapidly available through ICT to authorized personnel providing patient care in different locations including across national boundaries. It can also support the collection of data for other uses such as billing, quality management, public health disease surveillance and reporting.

The following questions aim to identify in what forms individual and aggregate patient information are stored and managed in your country as well as what advances are being made towards systems' interoperability at the local, regional and national levels.

Patient Information Formats

For the purposes of this survey three formats are included for the processing of patient information:
1. Paper –
2. Computerized data –
3. Computerized data plus the ability to transmit electronically

Health Service Administration

The management of patient information is grouped under the following three geographic or administrative boundaries:
1. Local health service administration
2. District or regional health service administration
3. National health service administration
Extent of Use

The extent of use of the patient information formats is measured by:

- None
- Low - less than 25%
- Medium - more than 25% less than 50%
- High - more than 50% - less than 75%
- Very high - more than 75%

1. *Jhaji to provide the evidence -*

cbhidghs.nic.in/writereaddata/linkimages/Combined107166151888.pdf

Local health care facilities

Local health care facilities include primary care facilities, clinics and hospitals. They are any facilities where direct patient care is provided.

Individual Patient Information is a record or history of an individual’s health status.

In what format(s) are individual patient records created, processed, stored, and transmitted by local health care facilities in your country? Please indicate the extent of use of each form at.

<table>
<thead>
<tr>
<th>Individual patient information formats</th>
<th>Extent of use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.1 Paper</strong></td>
<td>None</td>
</tr>
<tr>
<td>ICT is not used to collect, process or transmit patient information. (e.g. paper patient records, paper-based mail to communicate results)</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td><strong>Very high</strong></td>
</tr>
<tr>
<td><strong>5.2 Computerized data</strong></td>
<td>None</td>
</tr>
<tr>
<td>ICT is used to collect and process patient information. Internet is not available to transmit the data to other centres.</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td><strong>Very high</strong></td>
</tr>
<tr>
<td><strong>5.3 Computerized data plus the ability to transmit electronically</strong></td>
<td>None</td>
</tr>
<tr>
<td>ICT is used to collect and process patient information and data can be transmitted to other centres using the Internet</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td><strong>Very high</strong></td>
</tr>
</tbody>
</table>
The scenario above will vary from country-to-country and the model used may not describe your country situation adequately. If you would like to provide additional information please do so here. (500 characters or less)

5.4 Additional information on formats and processing of individual patient information by local health care facilities.

*National personal unique identifier are being put in place in India in the next few years. This is expected to give a fillip to standard EHR and its transmission for enhanced patient care.*

Aggregate patient information is a collection of individual patient records which can be used to monitor, evaluate and plan health services.

In what format(s) is aggregate patient information created, processed, stored, and transmitted by local health care facilities in your country? Please indicate the extent of use of each format?

<table>
<thead>
<tr>
<th>Aggregate patient information</th>
<th>Extent of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.5 Paper</td>
<td>None</td>
</tr>
<tr>
<td>ICT is not used to collect, process or transmit aggregate patient information. (e.g. paper patient records, paper-based mail to communicate results)</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td><strong>Very high</strong></td>
</tr>
<tr>
<td>5.6 Computerized data</td>
<td>None</td>
</tr>
<tr>
<td>ICT is used to collect and process aggregate patient information. Internet is not available to transmit the data to other centres.</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td><strong>Very high</strong></td>
</tr>
<tr>
<td>5.7 Computerized data plus the ability to transmit electronically</td>
<td>None</td>
</tr>
<tr>
<td>ICT is used to collect and process aggregate patient information and data can be transmitted to other centres using the Internet</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td><strong>Very high</strong></td>
</tr>
</tbody>
</table>

The scenario above will vary from country-to-country and the model used may not describe your country situation adequately. If you would like to provide additional information please do so here. (500 characters or less)
5.8 Additional information on formats and processing of aggregate patient information by local health care facilities.

**Regional/District Administration**

Regional/District Administration refers to the health administrative, management, and planning functions needed to manage the operations of local health care facilities. The specific roles of regional / district health administrative bodies vary from country-to-country.

In what format(s) are individual patient records created, processed, stored, and transmitted by regional / district health administrations in your country? Please indicate the extent of use of each format?

<table>
<thead>
<tr>
<th>Individual Patient Information</th>
<th>Extent of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.9 Paper</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Very high</td>
</tr>
<tr>
<td>5.10 Computerized data</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Very high</td>
</tr>
<tr>
<td>5.11 Computerized data plus the ability to transmit data electronically</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Very high</td>
</tr>
</tbody>
</table>

The scenario above will vary from country-to-country and the model used may not describe your country situation adequately. If you would like to provide additional information please do so here. (500 characters or less)
5.12 Additional information on formats and processing of individual patient information by regional or district health care administrations.

In what format(s) is aggregate patient information created, processed, stored, and transmitted by regional / district health administration in your country? Please indicate the extent of use of each format?

<table>
<thead>
<tr>
<th>Aggregate Patient Information</th>
<th>Extent of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.13 Paper only</td>
<td>None, Low, Medium, High, Very high</td>
</tr>
<tr>
<td>5.14 Computerized data</td>
<td>None, Low, Medium, High, Very high</td>
</tr>
<tr>
<td>5.15 Computerized data plus the ability to transmit data electronically</td>
<td>None, Low, Medium, High, Very high</td>
</tr>
</tbody>
</table>

The scenario above will vary from country-to-country and the model used may not describe your country situation adequately. If you would like to provide additional information please do so here. (500 characters or less)
5.16 Additional information on formats and processing of aggregate patient information by regional or district health care administrations.

**National Administration**

National administration of the health system refers to the health administrative, management, policy, planning and functions needed to manage a country's health system and services. The specific roles of national health administrative bodies vary from country-to-country.

In what format(s) are individual patient records created, processed, stored, and transmitted by the national health administration in your country? Please indicate the extent of use of each format?

<table>
<thead>
<tr>
<th>Individual Patient Information</th>
<th>Extent of use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.17 Paper only</strong></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
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<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Very high</td>
</tr>
<tr>
<td><strong>5.18 Computerized data</strong></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
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<td>High</td>
</tr>
<tr>
<td></td>
<td>Very high</td>
</tr>
<tr>
<td><strong>5.19 Computerized data plus the ability to transmit data electronically</strong></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Low</td>
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<tr>
<td></td>
<td>Medium</td>
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<td>High</td>
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<tr>
<td></td>
<td>Very high</td>
</tr>
</tbody>
</table>
The scenario above will vary from country-to-country and the model used may not describe your country situation adequately. If you would like to provide additional information please do so here. (500 characters or less)

5.20 Additional information on formats and processing of individual patient information by the national health administration.

Individual patient data is not aggregated at the national level.

In what format(s) is aggregate patient information created, processed, stored, and transmitted by the national health administration in your country? Please indicate the extent of use of each format?

<table>
<thead>
<tr>
<th>Aggregate Patient Information</th>
<th>Extent of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.21 Paper only</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
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<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Very high</td>
</tr>
<tr>
<td>5.22 Computerized data</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Low</td>
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<td></td>
<td>Medium</td>
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<td></td>
<td>High</td>
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<tr>
<td></td>
<td>Very high</td>
</tr>
<tr>
<td>5.23 Computerized data plus the ability to transmit data electronically</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Low</td>
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<tr>
<td></td>
<td>Medium</td>
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<tr>
<td></td>
<td>High</td>
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<tr>
<td></td>
<td>Very high</td>
</tr>
</tbody>
</table>

The scenario above will vary from country-to-country and the model used may not describe your country situation adequately. If you would like to provide additional information please do so here. (500 characters or less)

5.24 Additional information on formats and processing of aggregate patient information by the national health administration.
Standards for eHealth

The development and adoption of eHealth standards is critical to the implementation of health care information systems. The adoption of standards promotes interoperability among systems and allows for the effective, consistent, and accurate exchange of data and its processing. Standards can be national or international, and address technical, communications or terminology issues.

International standards adoption

5.25. Which of the following international standards are being used in your country? (check as many as apply)

- GFATM Monitoring & Evaluation Toolkit
- UNAIDS/USG Confidentiality and Security Guidelines
- DCMI (Dublin Core Metadata Initiative)
- HL7 Messaging (Health Level 7)
- IXF Messaging (UN Indicator Transmission Format)
- SDMX (Statistical Data and Metadata Exchange)
- LOINC (Logical Observation Identifiers Names and Codes)
- ICD (International Classification of Diseases)
- SNOMED CT (Systematized Nomenclature of Medicine -Clinical Terms)
- CEN/TC 251 published standards
- DDI (Data Documentation Initiative)
- Other

5.26. If "Other", please list other international standards being used in your country

National standards adoption

5.27 Which of the following categories of standards have been developed and adopted by your country? (check as many as apply)

- Guidelines documents
- Survey metadata standards
- Messaging standards
- Individual patient data standards
- Patient identifiers
- Indicators
- Vocabularies
- Other

5.28 If "Other", please list other categories of standards that have been developed and adopted by your country
5.29 If you have further comments about any of the issues covered in this section, please add below:

1. The document “Recommended Guidelines & Standards for Practice of Telemedicine in India is prepared by Dept of Information Technology, Ministry of Communication & IT, Govt of India and was submitted to committee for Standardization of Digital Information to Facilitate Implementation of Telemedicine Systems using Information Technology enabled services. The url of this document is written below


2. The framework for Information Technology Infrastructure for Health (ITIH): The Department of Information Technology (DIT) had taken up the initiative for defining the Standards for Telemedicine Systems in India, through the deliberations of the committee on "Standardization of digital information to facilitate implementation of Telemedicine system using IT enabled services" under the chairmanship of the Secretary, DIT. Simultaneously, DIT undertook another initiative, in a project mode, for defining "The framework for Information Technology Infrastructure for Health (ITIH)" to efficiently address information needs of different stakeholders in the healthcare sector.


3. National Task Force on Telemedicine: In September 2005, Ministry of Health and Family Welfare (MoH&FW), Government of India has taken initiative to constitute National Task Force on telemedicine under the chairmanship of Secretary, Union Ministry of Health and Family Welfare, incorporating members from various concerned ministries of union government e.g. Health, Communication & Information Technology and Space; technical agencies e.g. Indian Space Research Organization, Indian Council of Medical Research, Medical Council of India, Center for Development of Advanced Computing; academic medical institutions and corporate hospitals practicing telemedicine actively.

www.mohfw.nic.in/NRHM/Presentations/India_eHealth_status.p
Section 6 -

Legal and ethical frameworks for eHealth

An increasingly connected world poses enormous possibilities in the way we work and live, and in the nature and quality of services we receive. With these opportunities, however, come serious challenges that will need to be addressed if personal and health-related data are to remain secure. A number of recent national incidents involving digitized patient information show how easily abuse or errors can occur. Many countries are putting in place the necessary legal and ethical frameworks to ensure that individuals and communities can feel safe knowing that their data are well protected and will not be abused.

Personal and health-related data

The privacy and security of personal and health-related data of all individuals is protected in most countries by specific data protection legislation. Legislation generally applies to data irrespective of whether it is held on paper or in electronic format. This section of the survey explores the development of specific legislation to cover the storage and transfer of an individual's medical / health information contained in Electronic Medical Records / Electronic Health Records (EMR/EHR) which have been created and managed by a health care entity. (The questions do not apply to Personal Health Records which are created by companies or individuals and held on a web site or on their own personal computer.)

6.1 Does your country have legislation to ensure privacy of personally identifiable data* of individuals irrespective of whether it is in analog or digital format?

- Yes
- No
- Do not know

6.2 If NO, when do you expect your country to take this action?

Do not know

2009

2010

* Personal identifiable data is information which can specifically identify an individual. This can include, but is not limited to, names, date of birth, addresses, telephone numbers, occupations, photographs, fingerprints - regardless of the format or medium in which it is held.
6.3 Does your country have specific legislation to protect privacy of individuals’ health-related data\(^2\) held in digitized format in an EMR or EHR?

- Yes
- No
- Do not know

6.4 If NO, when do you expect your country to take this action?

**Do not know**

2009
2010
2011
2012
2013
2014
2015

\(^2\) Health-related data is information recorded about an individual including their illnesses, and prescribed treatments. It generally includes details of prescribed medication, and any medical or surgical procedures undertaken as well as treatments received from other health care providers.
Electronic Medical Records / Electronic Health Records (EMR/EHR)

Electronic Medical Records / Electronic Health Records (EMR/EHR) are often referred to interchangeably and will be for the purpose of this survey. An EMR/EHR is a real-time longitudinal electronic record of an individual patient's health information that can assist health professionals with decision-making and treatment. Data found in a record may include patient demographics, past medical history, vital signs, examination and progress notes, medications, allergies, immunizations, laboratory test results, radiology reports, living wills, and a health power of attorney. It can be made rapidly available through ICT to authorized personnel providing patient care in different locations including across national boundaries. It can also support the collection of data for other uses such as billing, quality management, public health disease surveillance and reporting.

Does your country have legislation which provides for the sharing of health-related data between health care staff through an EMR or EHR:

6.5 Within the same health care entity and its associated network of care providers?
- Yes
- No
- Do not know

6.6 With different health care entities in your country?
- Yes
- No
- Do not know

6.7 With health care entities in other countries?
- Yes
- No
- Do not know

6.8 Does your country have legislation which grants the right of access by individuals of their health-related data when held in an EMR/EHR?
- Yes Under Right to Information Act (RTIA)
- No
- Do not know

6.9 Does your country have legislation which allows individuals to demand their health-related data corrected when held in an EMR/EHR if they know it is inaccurate?
- Yes
- No
- Do not know
6.10 Does your country have legislation which allows individuals to demand the deletion of personal data and/or health-related data from their EMR/EHR?

- Yes
- No
- Do not know

6.11 If YES, will the deletion of data leave a trace on the EMR/EHR which will be visible to health care professionals treating that person in the future?

- Yes
- No
- Do not know

6.12 Do individuals have the legal right to specify which health-related data from their EMR/EHR can be shared with health provider(s) of their choice?

- Yes
- No
- Do not know

6.13 Does your country have legislation which allows for the transmission and sharing of research data containing personal and health-related data between research entities in different countries?

- Yes
- No
- Do not know

Online pharmacies

The proliferation of sites on the internet selling pharmaceuticals and related products is improving access to medications, often at lower cost to consumers and providers. At the same time, it is leading to concerns about the quality of medicines and the security and legitimacy of services offered. This includes the possibility of exposure to fraud, identity theft, and purchase of counterfeit medications. Some countries have introduced legislation on internet pharmacies, towards protecting consumers and preserving trust in legitimate pharmacy services. Legislation may cover privacy, security of prescription orders, adherence to quality assurance policies, and the requirement for consultation between patients and health care providers or pharmacists.

6.14 Does your country have legislation that either allows or prohibits internet pharmacy operations?

- Yes - Allows
- Yes - Prohibits
- No
- Do not know
6.15 Does your country regulate, accredit or certify internet pharmacy sites?

- Yes
- No
- Do not know

6.16 Does your country have legislation that allows or prohibits internet pharmacy sales purchased online from other countries?

- Yes - Allows
- Yes - Prohibits
- No legislation
- Do not know

6.17 If your country prohibits online ordering of pharmaceuticals from other countries, are there consequences for breach of the law?

- No
- Seizure of goods
- Consumer fine or prosecution
- Do not know
- Other

6.18 If "Other", please list other consequences for breach of the law:
Online safety for children

The online environment provides new opportunities as well as risks, as citizens increasingly communicate, collaborate and learn in a networked world. For children, these risks include inappropriate contact (such as for fraud or criminal activity), conduct (such as hacking or creating a virus, bullying), or content (e.g. pornography). While there are many stakeholders with responsibilities in this area, the following questions relate to government efforts in your country to protect children in the online environment.

6.19 Are there government sponsored websites or official initiatives to provide appropriate information and education about internet safety and literacy?

- Yes
- No
- Do not know

6.20 Are any of these efforts aimed specifically to protect children?

- Yes
- No
- Do not know

6.21 Are safety tools and security technologies required by law for schools, libraries and other public places with internet facilities used by children?

- Yes
- No
- Do not know

Internet health information quality

The quality of health information on the internet has been the subject of debate for a decade. Surveys, research and anecdotes paint a picture of dubious information quality, widespread practice of fraud, potentially dangerous claims and risk of exposure to harm.

6.22 What approaches to ensuring quality of health-related content on the Internet are being taken in your country? Check all that apply.

- Voluntary compliance - by content providers or website owners to quality criteria for health-related sites
- Government intervention - laws, regulations, quality directives or guidelines
- Technology - filters and controls
- Education programs - for consumers and professionals
- Official approval - certification, accreditation, seals of approval, or quality seals
- Other

6.23 If "Other", please list approaches that are being taken in your country

Development of Sites where the processes ensure quality of information e.g. www.nhicindia.org;

IT law laid down by Department of Information Technology, Ministry of Communication IT, Govt. of India
Spam

Preservation of "trust" online is an important element as eHealth matures. The problem of unsolicited messages sent to email and mobile devices, or spam, is growing exponentially and threatens to undermine this trust. In recent years spam has evolved from disruptive and malicious messages and advertising/sale of counterfeit products into a global business which also includes crime, fraud and identity theft.

6.24 What actions are being taken in your country to reduce spam? Check all that apply.

- **Government intervention** - laws or regulations to combat spam
- **Technology** - filters at Internet Service Provider (ISP) level to combat spam
- **Technology, local** - filters at organizational, business level(s) to combat spam
- **Education programs** - for consumers and professionals
- **Report** - Mechanisms to report abuse
- **Other**

6.25 If "Other", please list approaches that are being taken in your country

Additional Comments

6.26 If you have further comments about any of the issues covered in Section 6, please add below.

[www.cert-in.org](http://www.cert-in.org) is the prime initiative in this regard.
Section 7 - Organization and support for eHealth

The Global Observatory for eHealth is developing a database of key organizations and professionals to facilitate international communication, networking and sharing of knowledge in eHealth. Please help us make this a valuable resource by providing the following contact information for your country.

eHealth support and advocacy

7.1 Does your country have any professional associations or industry-related groups which provide leadership in eHealth?

- Yes
- No
- Do not know

If Yes, please provide details of up to three of the most prominent associations below:

Details of professional association

7.2 Name of association: Telemedicine Society of India (www.tsi.org.in)
7.3 Name of contact person: Mr. Bhaskaranarayana
7.4 Email: bhaskaranarayana@yahoo.com
7.5 Telephone: +91 9845141705
7.6 Specialist area: Telehealth applications, Satcom based telemedicine, Capacity building, Standardization, Policy, and advocacy

7.7 Name of association: Indian Association of Medical Informatics (www.iami.org.in)
7.8 Name of contact person: Dr. Suman B. Bhattacharyya
7.9 Email: contact@iami.org.in / sbbhattacharyya@gmail.com
7.10 Telephone:
7.11 Specialist area: Electronic Medical Record, Hospital Information Management System

7.12 Name of association: Medical Computer Society of India
7.13 Name of contact person: Dr. Sunil Shroff
7.14 Email: mcsi@medindia.net
7.15 Telephone: +91 44 26263378 / 262 63379
7.16 Specialist area: Awareness on ICT application in health among Medical Professionals
7.17 Name of Organisation: National Institute for Smart Government
7.18 Name of contact person: Mr. Bhudeb Chakravarti
7.19 Email: bhudebc@nisg.org
7.20 Telephone: +91-40-30285696
7.21 Specialist area: Conceptualisation, Architecture, Design and Business Model for e-Health Project. Strategic and Project Consulting in e-Health including HIS, HMIS and Packaged Solution (ERP)

**eHealth national governance and guidance**

7.22 Does your country have an eHealth task force, advisory board, or similar bodies responsible for providing advice and guidance in areas such as policy/strategy, program implementation, legal issues, and evaluation in eHealth?

- Yes
- No
- Do not know

If Yes, please provide details of up to three of the most prominent bodies below:

**Details of country eHealth task force or advisory board 1-3**

7.23 Name of entity: National Taskforce on Telemedicine & eHealth
7.24 Name of contact person: Ministry of Health & Family Welfare, Govt. of India / Dr. S.k.Mishra
7.25 Email: skmishra@sgpgi.ac.in
7.26 Telephone: +91-522-2668777
7.27 Specialist area: Dissemination of information in the Medical Informatics Domain

7.28 Name of entity: Guidelines on IT infrastructure of Health
7.29 Name of contact person: Department of Information Technology, Ministry of Communication & IT, Govt. of India/ Mr B S Bedi
7.30 Email: bedi11@yahoo.com
7.31 Telephone: 9868243335
7.32 Specialist area: Defining guidelines for IT infrastructure for health including Standardization
7.33 Name of entity: National Rural Telemedicine Network and National Cancer Network

7.34 Name of contact person: Ministry of Health & Family Welfare, Govt. of India

7.35 Email:

7.36 Telephone:

7.37 Specialist area: Guidelines for national rural telemedicine network and cancer network

7.38 Name of entity: National Knowledge Commission of India

7.39 Name of contact person: Mr. Sam Pitroda /Ms. Sukhman Randhawa

7.40 Email: s.pitroda@nic.in/s.randhwa@nic.in

7.41 Telephone: +91-11-23061661

7.42 Specialist area:

7.43 Name of entity: e-Governance committee at MoHFW

7.44 Name of contact person: Ms. Aruna Chaba

7.45 Email: egov.standards@nic.in/chaba@nic.in

7.46 Telephone: +91-11-23061647

7.47 Specialist area:

7.48 Name of entity: Standards development under the DIT, Government of India – lot of work done with respect to Data standards in the Telemedicine space.

7.49 Name of contact person: / Mr B S Bedi

7.50 Email: bedi11@yahoo.com

7.51 Telephone: 9868243335

7.52 Specialist area: Development of Standards under the DIT, Government of India

THIS IS THE END OF THE SURVEY.

The World Health Organization, and its Global Observatory for eHealth, wish to thank you for your efforts and input as a National Expert Group in completing this work. We trust that your contribution will not only help eHealth progress in your own country but will also contribute to the advancement of eHealth worldwide.