



**PES**  
UNIVERSITY

CELEBRATING 50 YEARS

## ENVIRONMENTAL STUDIES & LIFE SCIENCES

---

**Dr. Sasmita Sabat**  
Department of Biotechnology

# ENVIRONMENTAL STUDIES & LIFE SCIENCES

---

## Introduction to Telemedicine

**Dr. Sasmita Sabat**  
Department of Biotechnology

### TELEMEDICINE

*World Health Organization defines telemedicine as*

‘The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities.’

## **TELEHEALTH**

‘The delivery and facilitation of health and health-related services including medical care, provider and patient education, health information services, and self-care via telecommunications and digital communication technologies.’

Who can be associated with Telemedicine system ?

### REGISTERED MEDICAL PRACTITIONER

‘A Registered Medical Practitioner [RMP] is a person who is enrolled in the State Medical Register or the Indian Medical Register under the Indian Medical Council Act 1956.’ [IMC Act, 1956].

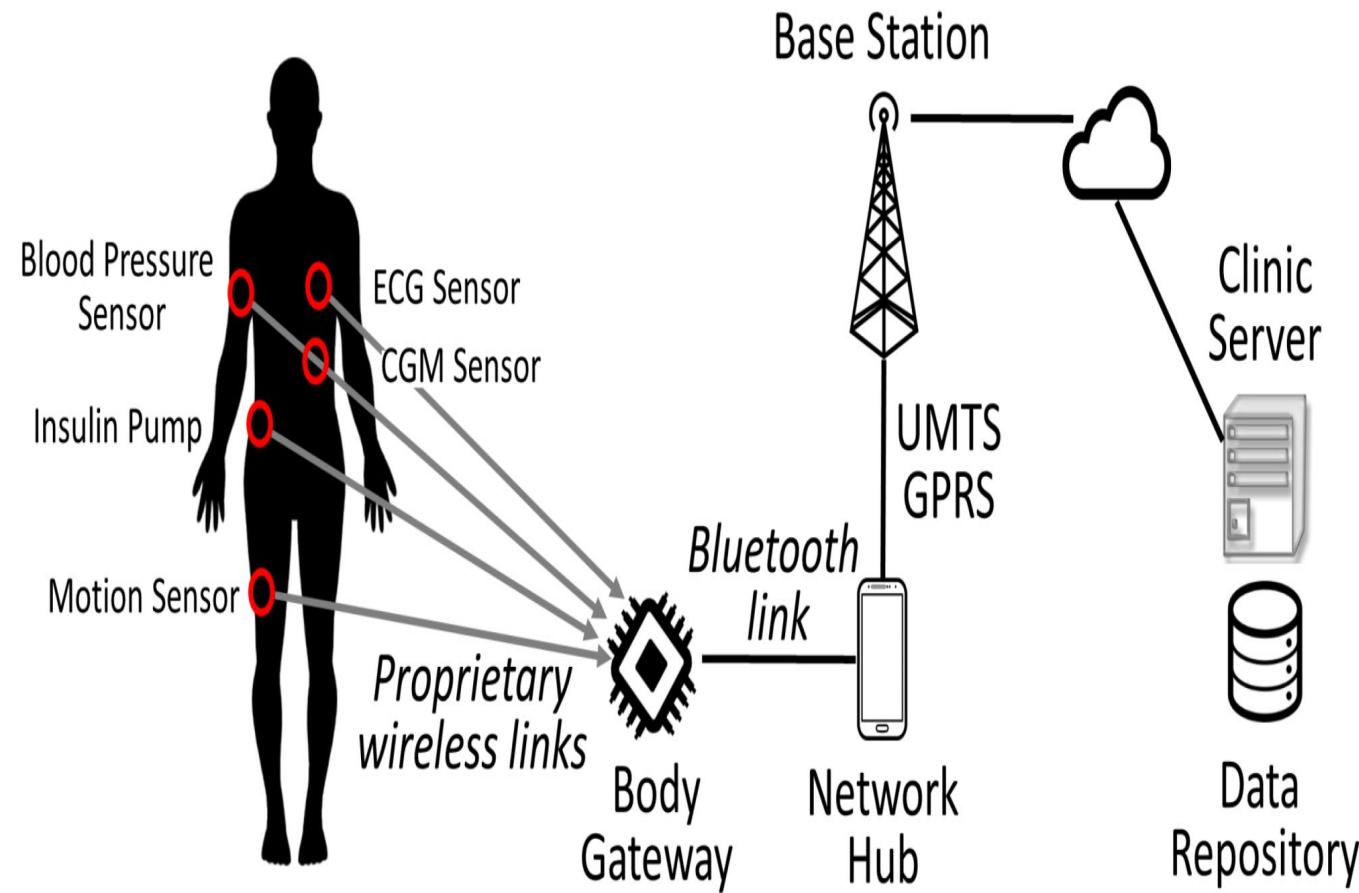
- Patient management approach combining various information technologies for monitoring patients at distance.
- Information technology application domains in health care include telemedicine and home telecare.

- Chronic health conditions such as *pulmonary conditions, diabetes, hypertension, and cardiovascular diseases, which are preventable or highly treatable.*
- These individuals account for the vast majority of all healthcare spending — funds that could be saved with better preventative care and disease management .
- *Telepsychiatry, teleradiology, teledermatology, and teleophthalmology.*
- Provides specialist consultation to distant communities, *rather than to provide a tool for self-management of chronic disease.*

- Home telecare- focused on providing care in a home setting with the primary intent of supporting the patient rather than the health professionals.
- Home telemonitoring is used in a more restrictive sense and encompasses the use of audio, video, and other telecommunication technologies to monitor patient status at a distance

## Tools for Telemedicine

Telephone, video, devices connected over LAN, WAN, Internet, mobile or landline phones, Chat Platforms like WhatsApp, Facebook Messenger etc., or Mobile App or internet based digital platforms for telemedicine or data transmission systems like Skype/ email/ fax etc.

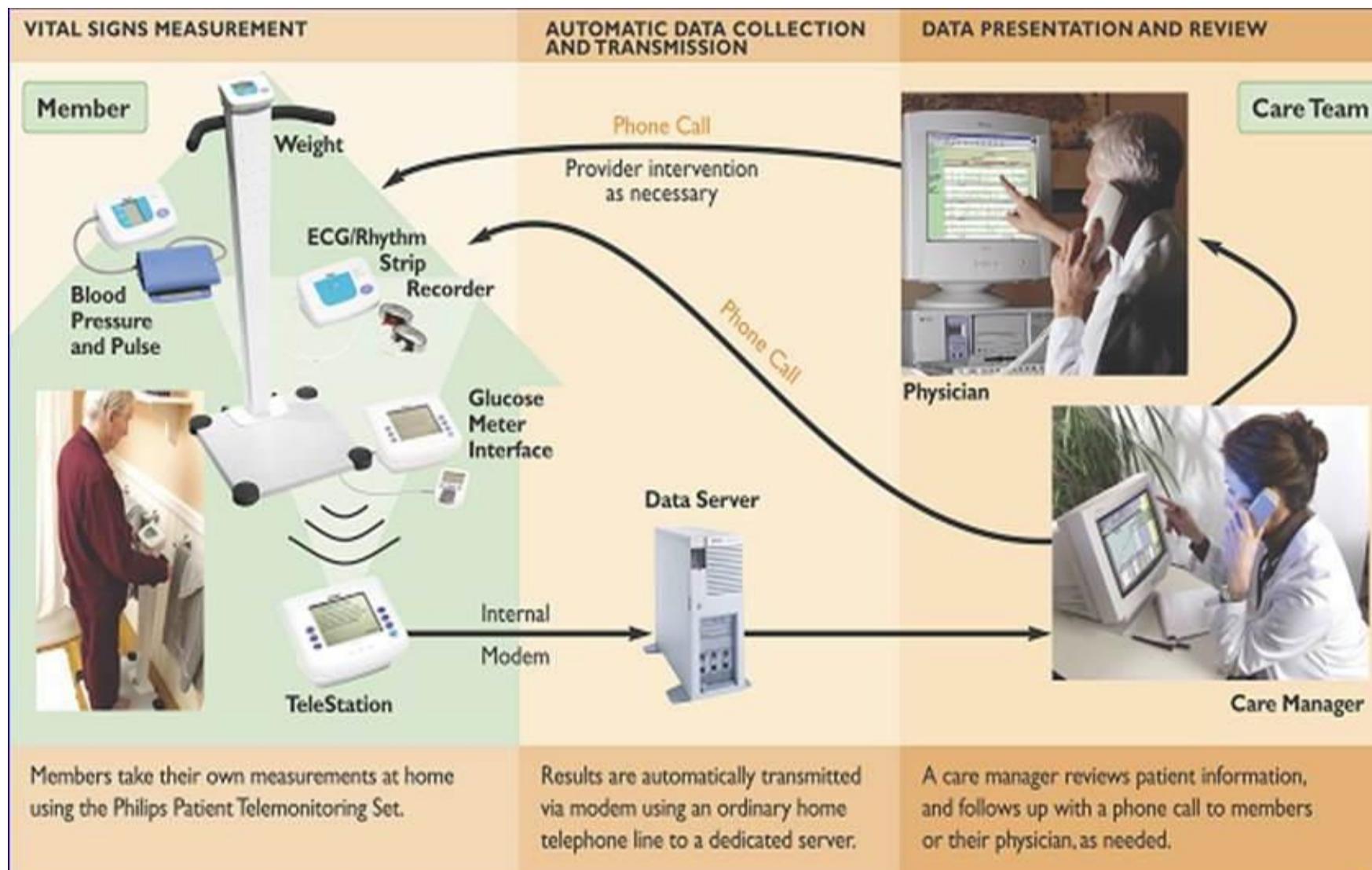


Telemedicine applications can be classified into four basic types

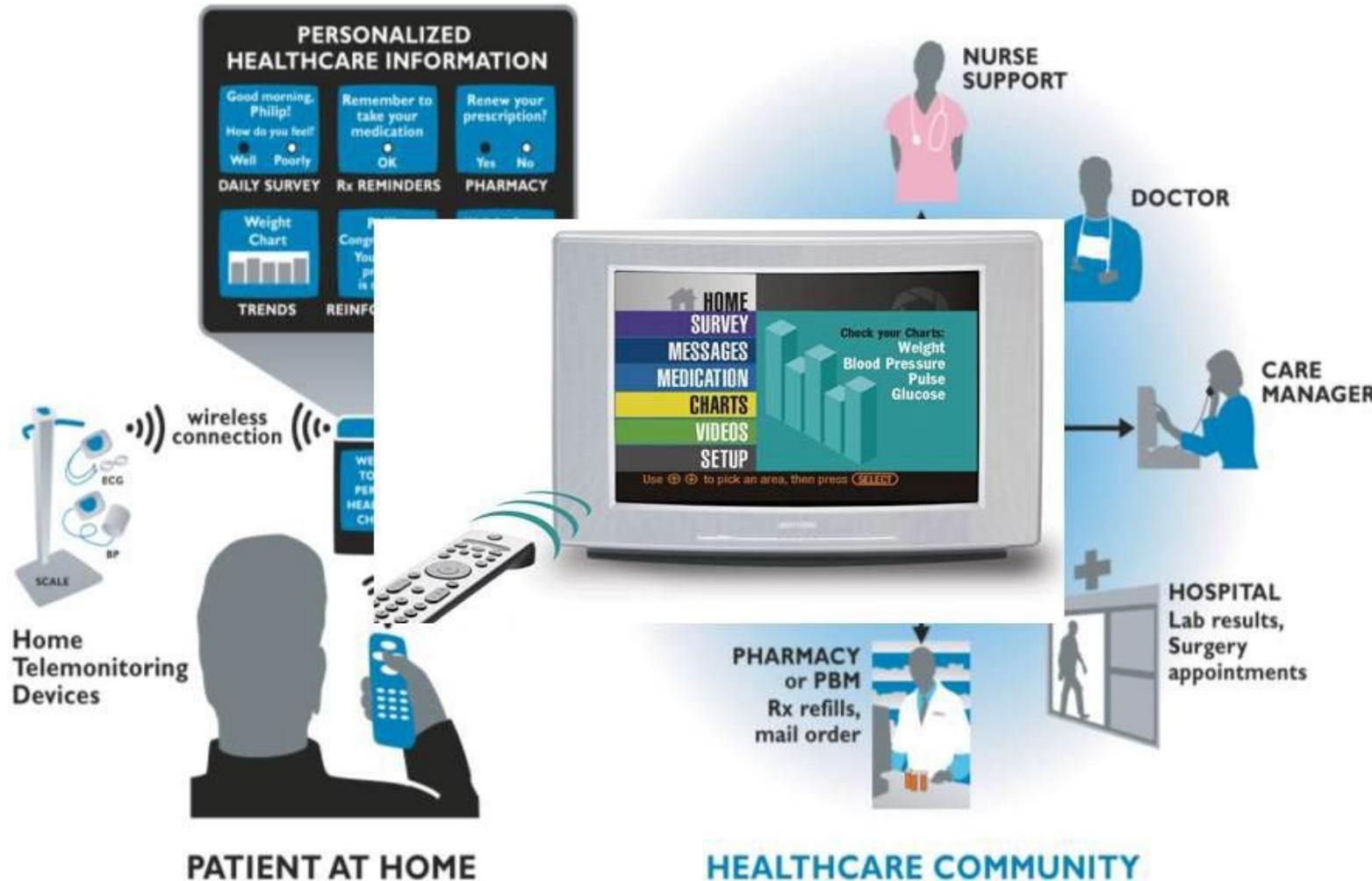
- 1.mode of communication
- 2.timing of the information transmitted
- 3.the purpose of the consultation and
- 4.the interaction between the individuals involved—be it RMP-to-patient / caregiver, or RMP to RMP.

# ENVIRONMENTAL STUDIES & LIFE SCIENCES

## Introduction to Telemedicine



### Home monitoring with interactive television



## Advantages

- Real-time data
- Decreased hospitalizations
- Actionable alerts
- Early identifications can be reported
- Client satisfaction

**Must watch:** <https://www.youtube.com/watch?v=H0etieBDxeY>

### Disadvantages

- Reducing the number of complications remains inconsistent across chronic illnesses
- Very few have reported resulting changes in medication regimens and quality of life
- Clinical effects reported in several cardiac studies were often minimal and inconclusive

## Telemedicine in Karnataka

- Karnataka introduced the Telemedicine Network Project in 2001 and the project was initiated by the Indian Space Research Organisation (ISRO).
- The first phase of the project was rolled out in the district hospitals of Mandya, Chitradurga, Chamarajnagar, Tumkur, Chikmagalur, Karwar, Shimoga, and Gadag.
- At the taluk level, hospitals offering telemedicine services during the first phase were Sagara, Maddur, and Yadgir.
- Expert medical advice was given by specialists from St. John's Medical College and Hospital, NIMHANS, Jayadeva Institute of Cardiology, Narayana Hrudayalaya, in Bangalore while from Mysore, it was JSS hospital that offered the service.

- The telemedicine project in Karnataka is coordinated by the Karnataka State Remote Sensing Applications Centre (KSRSAC) which uses the Indian Remote Sensing Satellite for monitoring and managing resources.
- Under the telemedicine project, hospitals in remote locations are connected to super-speciality hospitals from major cities via INSAT satellites thereby establishing a link between the patients and the specialised medical experts.
- The telemedicine system is a customised software that is integrated with the computer hardware and diagnostic instruments which in turn is joined to the Very Small Aperture Terminal (VSAT) at every location.



**THANK YOU**

---

**Dr. Sasmita Sabat**

Department of Biotechnology

**sasmitasabat@pes.edu**

**+91 80 2672 6672 Extn 347**