

e-SANJEEVANI - TELEMEDICINE SERVICE

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ABSTRACT

eSanjeevani is an integrated telemedicine solution and the National Teleconsultation Services initiative of Health Ministry and is serving in two major streams.

- Doctor to Doctor
- Patient to Doctor

Health and Wellness Centre and Out Patient Department (HWC & OPD) respectively in 28 States and Union Territories. It is a part of Health Informatics technology. It includes a planned designed view and safe teleconsultation between a doctor and a patient through online mode (eSanjeevani OPD). eSanjeevani is the first- ever online OPD (inpatient) argument service offered by the government of India to citizens. The eSanjeevani OPD portal and system has been developed and integrated by the Centre for Development of Advanced Computing by central government (C-DAC). The panel of sub divisions on the service is drawn by the various state governments. In country many states like Jharkhand, Kerala, Punjab and Tamil Nadu, A.P etc. Have started offering specialised services also. The service is also available on mobile operation.

Keywords: e-Sanjeevani, telemedicine, tele-consultations, patient consultations, teleconference, doctor to doctor consultation.

I. INTRODUCTION

eSanjeevani is a doctor to patient telemedicine system through online has been deployed nationally for the Ministry of Health & Family Welfare under Ayushman Bharat Scheme of Government of India. Through eSanjeevani OPD, anyone can get the medical advice through audio and video. It's the one of the best schemes under Digital India for public across India launched by our Hon'ble Prime Minister of India Shri Narendra Modi. eSanjeevani, Health Ministry's national telemedicine initiative today completed 19 lakh consultations. According to the central government of India and health ministry, this is the first time the government of a country is offering a tele medical services of this kind to its citizens. The scheme was started

in November 2019. It's run by the Ministry of Health and Family Welfare. Also called the National Teleconsultation Service, it aims to give healthcare services to cases in their homes.

II. TYPES OF e SANJEEVANI

1) Tele monitoring through esanjeevani

Telemonitoring refers to the transmission of symptom scores, physiological data including heart rate, blood pressure, oxygen achromatism, and weight directly to watch providers either via automated electronic means or by web- predicated or phone- based data entry. Over time these interventions have evolved from automated phone response systems to web, to interactive TV- grounded systems, to mobile phone or PDA- predicated systems to complex systems, which wirelessly transmit recorded physiological data(120). Anker has sub classified telemonitoring systems into those which serve as nonreactive data collection bias (similar as event reporters), those with a delayed logical and decision- making structure (e.g., only within office hours), those with continuously operating logical and decision- making structure, and complex systems that integrate invasive and non invasive data.

Benefits of store and forward consultations include the patient, GP and specialist don't have to be available at the same time perfecting effectiveness and convenience they don't need to travel participators can be located anywhere Staying times are reduced. specialist reports are frequently entered within a many hours of the request alternate opinions can be snappily attained inpatient movables are freed up for cases that need them most gratuitous conventions and surgical procedures are minimised.

2) Store and forward though esanjeevani

Store- and- promote telemedicine is collecting clinical information and transferring it electronically to another point for evaluation. Information generally includes demographic data, medical history, documents similar as laboratory reports, and image, vid and/ or sound lines. It may be necessary to arrange an in-person or vid discussion at a after date.

3) Remote patient monitoring through esanjeevani

Those people which are located at villages or remote areas they are also connected through online platform to get efficient doctor services by video and audio conference, it is one the best tool for not interact socially and be aware of diseases.

4) Real time monitoring through esanjeevani

The confluence of Internet technology, bettered telemetry, and enhanced CIED diagnostics permits remote monitoring of multiple device functions and improves patient management presently, utmost ICDs and numerous leaders use “wireless telemetry” to transmit stored data stored automatically to a home examiner, which also relays the data to a garçon via an Internet connection. By convention, remote interrogation refers to listed, routine device interrogation at a distance, corresponding to in- clinic interrogation; remote monitoring refers to automatic data transmission based on device- generated cautions.³⁶ Colloquially, “ remote monitoring ” includes both. Routine, listed transmissions include battery status, pacing and seeing thresholds, lead impedances, and detected arrhythmias. Cases can also initiate transmissions in response to symptoms. Health care providers log into a Web server to review cautions and transmitted data. ICDs and some leaders give programmable cautions for system malfunction (e.g., suspected described failure), implicit programming crimes, or high- threat arrhythmias. Cautions may be transmitted daily or indeed incontinently. Cautions may also notify the case through audible tones or creator vibration. A “varied and integrity alert” reduces unhappy shocks caused by lead valued failure.

III. WAYS OF e SANJEEVANI

1. e-Sanjeevani AB-HWC which is also for doctor – to – doctor-Tele consultations.

It is a doctor to patient and doctor to doctor telemedicine that has been emplaced nationally by the Ministry of Health & Family Welfare under Ayushman Bharat Scheme. It extends the reach of technical healthcare services to millions in both pastoral areas and insulated communities. It tackles the issues of uneven distribution of healthcare labor force and structure by bridging the peak that exists between civic and pastoral, rich and poor, in terms of access to healthcare services.

2. e-Sanjeevani OPD which is also for patient – to – doctor -Tele consultation.

eSanjeevani was launched in 2019. The first state to launch this service was Andhra Pradesh. eSanjeevani OPD This is grounded on the eSanjeevani model and offers OPD discussion services to people in the comfort of their homes. This was launched during the COVID epidemic in April 2020. Then, doctor to patient teleconsultation is offered free of cost to the cases.eSanjeevani OPD was launched in 2020

3. Cloud-based telemedicine system

esanjeevani is a cloud Based telemedicine which connect the people which are in remote areas and they are connected through online by that they interact with odp doctor for consultation.

4. Ayushman Bharat Digital Mission (ABDM) Compliant

It's one of the missions under Ayushman Bharat Digital Mission (ABDM) Compliant.

5. Assisted Telemedicine

It also assists the telemedicine through online.

Table 1: Features of eSanjeevani

Patient Registration	Token Generation	Queue Management
Audio-Video Consultation with a Doctor	Prescription	SMS/Email Notifications
Serviced by State's Doctors	Free Service	Fully configurable (no. of daily slots, no. of doctors/clinics, waiting room slots, consultation time limit, etc).

IV. SIGNIFICANCE OF ESANJEEVANI TELEMEDICINE SERVICES

Telemedicine services are very essential and important in a country like ours where the doctor to patient ratio is much lower than the number prescribed by World Health Organization (WHO). In India, there is only one doctor for every 1445 Indians (the WHO recommended ratio is 1:1000). The availability of medical services including doctors is highly scarce and less in rural and remote areas of the country. In such conditions, it is important to have a system that will provide consultation services and conference services to people residing in rural and backward/hilly areas. This is where we use eSanjeevani OPD can be useful. Also, In time of the current pandemic times, it is important that patients find a way to have consultations and conference with doctors for ailments. This can prevent them from travelling time to hospitals/PHCs and decrease the risk of catching infections especially covid-19.

esanjeevani telemedicine refers specifically to remote clinical services.

- The Telemedicine refers to the use of information technologies and electronic communications to provide remote clinical services to the patients.
- The digital transmission of telemedicine imaging, remote medical diagnosis and evaluation and video consultation with specialists are examples of telemedicine.

V. CHALLENGES IN eSANJEEVANI

- The challenges esanjeevani in Country include Little or no connectivity in rural areas, Connectivity Slow growth and usage of telemedicine and Requirement of additional training,
- lack of basic facilities in some states is also an interruption.
- eSanjeevani has also soothed multitudinous challenges commonly linked with healthcare delivery, similar as advanced costs and fatigue pertaining to seeking an in- person discussion with a doctor besides controlling the ongoing epidemic that had burdened the country's healthcare infrastructure like no way ahead.
- This note highlights three crucial challenges — abuse, availableness, and access that telemedicine platforms in India, similar as the government's eSanjeevani, need to address. It also benchmarks eSanjeevani with other global telemedicine platforms and suggests strategies to attack the current challenges.

VI. REQUIREMENTS OF e SANJEEVANI

1. Context Situation

eSanjeevani Ayushman Bharat- Health and Wellness Centre AB- HWC is a Doctor- to- Doctor telemedicine service under the Ayushman Bharat- Health and Wellness Centres scheme of government that give general and specialised health services in pastoral areas and insulated communities. Doctor- to- Doctor telemedicine service is grounded on a Hub- and- Spoke model. ' eSanjeevani AB- HWC ' enables virtual connection between the succeder(along with paramedic and a generalist) at the spoke i.e. HWC and doctor/ specialist at the hub(tertiary healthcare facility/ hospital/ medical institute). This facilitates real- time virtual discussion from doctors & specialists at the hub with the devisee through paramedics at the spoke. Thee-

prescription generated at session end is used for carrying drugs. ' eSanjeevaniAB- HWC ' was enforced with a vision to give quality health services to the maximum number of citizens by using the eventuality of Information Technology bypassing hindrances of geography, availability, cost and distance.

2. Identification of risk management of patients

Identify the risk management by taking insights of data integrity and data correctness and irrelevant data will be the risk factors of the patients

3. Mode of communications

esanjeevani telemedicine includes any two-way communications those are (including video conferencing and phone consultations services) that let providers and patients communicate in real-time. Assessments of medical history data basic visual examinations summary psychiatric evaluations, and even ophthalmic tests can all be done via real-time telemedicine application.

4. Types of communications

There are broadly two types of communications those are:

- Doctor-Doctor
- Doctor-Patient

DOCTOR-DOCTOR: The physicians using this platform among themselves to exchange the information among themselves to perform various operations like surgery, radiology, rehabilitation, psychiatry etc..

DOCTOR-PATIENT: The Doctors interact with the patients by mode of communications including video conferencing and phone consultations services and give prescribed information and diagnosis information and disease cure information etc..

5. Patient evaluation

- Represents patient's health history and Medium of Communication among health and care practitioners
- Legal document for health care
- Source for clinical outcomes and health services research also resource for practitioner education ,Alerts, reminders, quality improvement
- Data components documented in EHR
- An electronic health record should contain important data such as

- Patient profile and demographics.
- Medical history includes information about allergies, illness, immunization, disorder and diseases and delivers the medicine taken and its compatibility with drug interaction
- Records of appointment ,Data components documented in EHRs and also admission nursing note and daily charting, physical assessment, present complaints (e.g. symptoms), diagnoses, tests, procedures, treatment, nursing care plan, medication administration, progress notes ,laboratory data, and radiology report, referral, Discharge history and Billing records.

6. Patient management

- Patient care administration is a program that involves comprehensive health services to help patients in managing their health, including primary care practices like scheduling appointments to short-term case operation and habitual.
- Care operation plans enhance care collaboration, allowing patients to control universal.
- Healthcare needs better when clinging to simple directions from trusted clinicians and caregivers. Patient care operation supports the development of healthcare models that give the best treatment approaches and allow patients to take hands of specific healthcare pretensions.
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VII.FIELDS OF eSANJEEVANI

1. *esanjeevani tele radiology*

Teleradiology is a branch of telemedicine service in which tcommunication systems are used to interact and transmit radiological images from one location to another.

2. *esanjeevani tele pathology*

Telepathology deals to practice pathology study from a distance. Telecommunications technology is used for Providing the transmission of pathology

3. *esanjeevani tele cardiology*

Telecardiology is a modern medical practise that uses telecommunications to achieve remote diagnosis and treatment of heart disease. This includes both chronic and acute heart disease, as well as arrhythmias, congestive cardiac failure, and sudden cardiac arrest.

4. *esanjeevani tele surgery*

Telesurgery employs wireless networking and robotic technology to enable surgeons to operate on patients who are physically separated from them. This technology not only benefits today's surgeon shortage, but it also eliminates geographical barriers that prevent timely and high-quality surgical intervention, as well as financial burden, complications, and often dangerous long-distance travel. The system also improves surgical

5. *esanjeevani tele psychiatry*

Telepsychiatry. Its use of video-based telemedicine assists in satisfying patients' needs for convenient, affordable, and easily accessible mental health services.

VIII. IMPORTANCE OF eSANJEEVANI

- It helps prevent the spread of Covid-19, Other flu and Infection diseases; doctors can use to pre-screen patients for possible infectious disease.
- Appointments patients all our country possible.
- It also saves Sick people from having to come into the office.
- eSanjeevani Ayushman Bharat- Health and Wellness Centre AB- HWC is a Doctor- to- Doctor telemedicine service under the Ayushman Bharat- Health and Wellness Centres scheme of government that give general and specialised health services in pastoral areas and insulated communities.
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Highlights esanjeevani

- perfect guide to telemedicine.
- No transportation time or costs.
- No need to time off work.
- Eliminate child or elder case Issues
- On Demand options.
- Access to specialists
- Less chance of catching new illness.
- Less time in waiting room
- Better healthcare

IX.CONCLUSION

The study emphasizes on that Telemedicine is an innovative approach. solution to many of the challenges faced by COVID-19 pandemic. It acts another way and not as a substitute to conventional in-person OPD services. It can help in rapidly decreasing the OPD workload in hospitals & at the same time decrease infection and disease spread chances for both patients & hospital staff. More such studies with larger sample size should be done. Studies evaluating the economic advantages of & man- hours saved by telemedicine for both patients & hospitals must be done in future.

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