

## **EDITORIAL:**

### **eSanjeevani - National Telemedicine Service: Evolution, Opportunities, and Challenges**

Seema Choudhary<sup>1</sup>, Diksha<sup>2</sup>, Princy Ghosh<sup>3</sup>

*“Sanjeevani”* is a Sanskrit word and is translated **mostly as the immortal, the infinite life, or life giving**<sup>1</sup>

#### **Vision behind eSanjeevani**

The word “Sanjeevani” has its origin from the Ramayana epic, mentioned as a “medicinal plant.” During the war with Ravana, Lakshmana was wounded and was killed almost by Indrajit. Hanuman (the monkey God) was called to bring Sanjeevani from the mountain Dronagiri in the Himalayas. When he reached the mountain, Hanuman was not able to identify the herb and decided to lift the complete mountain and bring it to the battlefield.<sup>1</sup>

Following the footsteps of the above event, the Government of India's flagship telemedicine technology, eSanjeevani, was developed by the Centre for Development of Advanced Computing (C-DAC), Mohali. ‘eSanjeevaniOPD’ was rolled out in India to deliver the health services at the place of need during the first lockdown on 13th of April 2020.<sup>2</sup> This variant of telemedicine was for the public to seek health care services. The “eSanjeevani outpatient department (OPD)” model proved very good to deliver tele-health care with minimal risk of cross-transmission during the COVID-19 pandemic in India.

#### **India's vision for Telemedicine**

**The Initial Footsteps: In 2001**, the first telemedicine pilot project in India was launched by the Indian Space Research Organization (ISRO) along with Apollo Hospitals. This project linked Apollo Rural Hospital at Aragonda village in the Chittoor district of Andhra Pradesh with Chennai's Super-specialty Apollo Hospital services.<sup>3</sup>

**In 2002**, the Karnataka Telemedicine Project linked the Narayana Hrudayalaya, a super specialty hospital for cardiac care at Bangalore, with the district hospital, Chamarajanagar, and the Vivekananda Memorial Trust Hospital at Saragur in south interior Karnataka.<sup>4</sup>

**In 2005**, the National Telemedicine Taskforce was established by the health ministry of India and the launch of telemedicine projects by the Ministry of External Affairs with the South Asian Association of Regional Cooperation (SAARC) nation groups and African countries.<sup>3</sup>

A few noteworthy examples of the successfully established telemedicine services in India include mammography services at Sri Ganga Ram Hospital, Delhi; oncology at the Regional Cancer Centre, Trivandrum; surgical services at the Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow and many more.<sup>5</sup>

Still, for years, its adoption and uptake have been very slow and low, being restricted largely to secondary and tertiary level care, with most of the projects failing to scale up and remaining as pilot projects. More generally, the low uptake of telemedicine services in India has been attributed to barriers at multiple levels, challenged with a failure to involve all stakeholders, especially the target community. Significantly, in India, the poor healthcare infrastructure and skewed distribution of specialist services make the country a perfect site for the adoption of telemedicine services.<sup>3</sup>

1. Professor & Head, Department of Community Medicine, Maharaja Agrasen Medical College, Agroha (Hisar), Haryana.
2. Senior Resident, Department of Community Medicine, Maharaja Agrasen Medical College, Agroha (Hisar), Haryana.
3. MBBS Student, Jagadguru Sri Shivarathreshwara Medical College, Mysore, Karnataka.

**Corresponding Author:** Dr. Seema Choudhary, Professor & Head, Department of Community Medicine, Maharaja Agrasen Medical College, Agroha (Hisar), Haryana- 125047; **Email:** profseemachoudhary@yahoo.co.in

|            |            |          |            |          |            |          |            |
|------------|------------|----------|------------|----------|------------|----------|------------|
| Submission | 04.11.2024 | Revision | 10.11.2024 | Accepted | 20.11.2024 | Printing | 31.12.2024 |
|------------|------------|----------|------------|----------|------------|----------|------------|

*Prior Publication: Nil; Source of Funding: Nil; Conflicts of Interest: None, Article #*

**Increasing pace of achievements:**

In 2019, COVID-19 has been one of the biggest health-care challenges. It led to very high mortality and morbidity. Developing and underdeveloped countries as well as developed countries faced health-care service delivery disruption due to COVID-19. The majority of healthcare services in most of the countries around the world were redirected to meet the pandemic needs. Non-emergency services were disrupted, and outpatient department services were shut down in hospitals to avoid community transmission of COVID-19. This necessitated the need for intervention measures to ensure continuity of health-care services. The Government of India had been working on telemedicine initiatives, telemedicine practice guidelines, and the eSanjeevani initiative was in the pipeline. The Government of India launched eSanjeevani in November 2019 as a national telemedicine platform.<sup>6</sup> All these measures led to an innovation in the Indian healthcare sector.

In 2020, the National Telemedicine Practice Guidelines 2020 were released, and the “eSanjeevani outpatient department (OPD)” was implemented to facilitate “doctor-to-patient” consultations.<sup>6</sup>

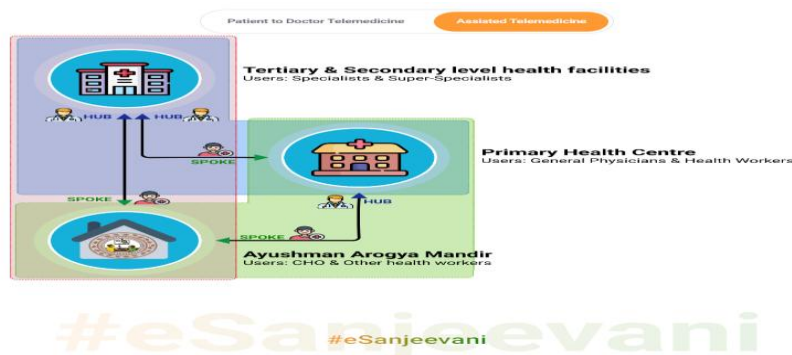
**Fig 1: Features of eSanjeevani National Telemedicine Service<sup>7</sup>**



Presently, the cloud-based eSanjeevani platform is implemented in two modes:

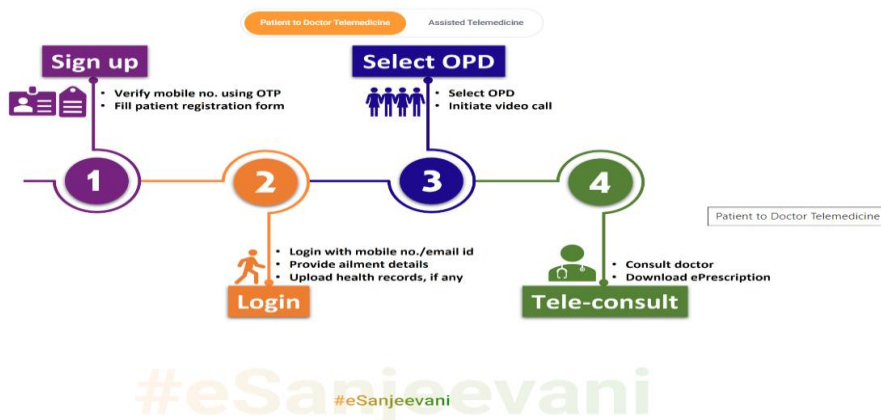
1. **eSanjeevaniAB-HWC (a provider-to-provider telemedicine platform):** This variant provides assisted teleconsultations for patients who walk into Health and Wellness Centres (HWCs). The Community Health Officers (CHO’s) in Health & Wellness Centres facilitate the teleconsultation for the patients who are connected to the doctors and specialists in hubs established in secondary/tertiary level health facilities or medical colleges. This variant is based on a Hub-and-Spoke model.<sup>8</sup> CHO’s act as mediators between patient and doctor.

**Fig.-2: Assisted Telemedicine<sup>9</sup> (Consultation process for eSanjeevaniAB-HWC)**



2. **eSanjeevaniOPD (apatient-to-provider telemedicine platform):** it empowers citizens to access health services in the confines of their homes through smartphones, laptops, etc.<sup>8</sup>

**Fig 3: Patient to Doctor Telemedicine<sup>10</sup>  
(Consultation process for eSanjeevaniOPD)**

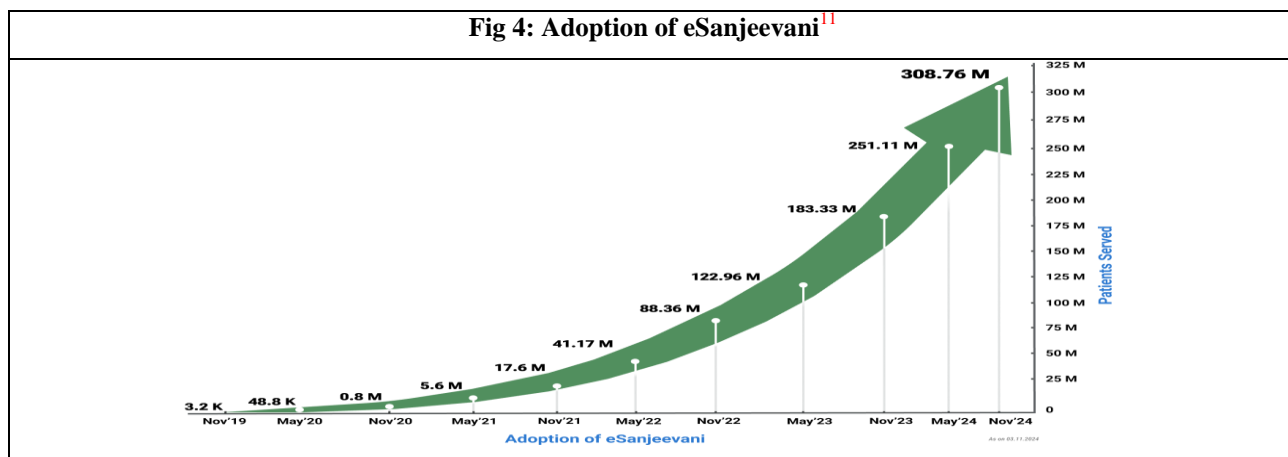


**Flow steps for eSanjeevani OPD**

1. **Registration/Sign up:** The user (patient) can register on the eSanjeevani National Telemedicine Service portal (<https://esanjeevani.mohfw.gov.in/#/patient/signin>) with an ABHA/mobile number. For mobile number, verification is done by using OTP, which is sent to the entered mobile number; then the patient will fill out a registration form. After this, patient ID is assigned by eSanjeevaniOPD. After this, a 16-digit unique ID is assigned to every patient by eSanjeevaniOPD.
2. **Login:** The user (patient) will login on the website by using an OTP or password, then upload his/her chief complaints, history (medical, personal, and family), active medication, health records (if any), queries, and select state/hospital or organization/doctor for consultation.
3. **Consultation:** For consultation, the user will click the call button and consult the doctor on video call. The doctor can see the patient’s health records if the records have already been uploaded from the patient's side. A unique consultation number is assigned to every consultation.
4. **ePrescription:** An electronic prescription is prepared by the doctor while the consultation process continues. This ePrescription is sent to the user/patient at the end. Patient needs to save or print the electronic prescription and then can log out.

**Present scenario**

The National Telemedicine Service of India has already served over 308,766.000 million patients at over 129,200 Health & Wellness Centers (as spokes) through 16,360+ hubs and over 660 online OPDs serviced by more than 225,000 doctors, medical specialists, super-specialists, and health workers as telemedicine practitioners [as of November 03, 2024].<sup>8</sup>



It is reassuring to note that over 57% of the beneficiaries of eSanjeevani are females, and around 12% of all the beneficiaries are senior citizens.<sup>8</sup>

**Opportunities**

There is a colossal populace for the use of eSanjeevani. The beneficial or motivating factors of eSanjeevani include:

1. Providing health education to the patients,
2. Can play a role in facilitating services to immovable persons,
3. Can expedite referral in rural and remote areas for chronic disease patients,
4. Better doctor-to-doctor collaboration, easy obtainment of expert opinion and second opinion through the use of eSanjeevaniAB-HWC,
5. De-stressing an overburdened healthcare system,
6. Reducing the treatment gap by making skilled healthcare available and affordable, and
7. Option of cross-referrals and step-up care.

**Challenges**

It is highly appreciable the way the government reacted during the lockdown period of COVID-19 through eSanjeevani to ensure health services in remote areas. However, eSanjeevani is not a substitute for conventional in-person OPD services.<sup>12</sup> Some of the factors that need improvement and intervention are:

1. **Abuse or misuse:** The process involved in the registration does not verify the authenticity of the patient; this makes eSanjeevani OPD susceptible for abuse or misuse. To ease the process of registration for patients, no proof of identity is requested at the time of registration. This lack of authenticity verification makes it easy for abusers and misusers to misrepresent their details and enter the platform with no way to trace them back. The OTP verification process only confirms the accessibility of the patient to the mobile number provided during registration. It does not provide any verification features for tracing back the number if any misuse happens.<sup>13</sup>
2. **Availability:** Our health system faces the shortage of healthcare professionals; eSanjeevanican help to cope with this and can help to achieve the target to provide health care to every person in the nation. But eSanjeevani also struggles with a shortage of doctors providing specialized services.
3. **Access:** The platform of eSanjeevani is video-based. This requires the patient to possess a smartphone or a laptop with good internet connection and speed. The hardware requirement for using the platform made

it inaccessible in rural and remote areas because either there is a lack of equipment or a lack of good internet connectivity.<sup>13</sup>

However, to ensure the accessibility of services to all, the government started using community-based digital centres (Common Service Centres, Panchayat Offices) which are already equipped with mobiles or tablets to increase access. Apart from all, recruitment of community health officers (CHO's) made the platform accessible in rural and remote areas.

4. **Data privacy and ensuring availability** of appropriate technology are other challenges.

#### Recommendations:

1. Use of Aadhaar verification during the registration process to enhance authenticity and prevent abuse or misuse. An OTP must be sent only to the registered mobile number linked against the person's Aadhaar. There were incidences reported by female service providers/doctors who faced abuse by platform users. Aadhaar verification will discourage those who sign up to misuse the platform.<sup>13</sup>
2. Recruitment of specialists to provide opinions solely to eSanjeevani-using patients can help to improve the availability of health services to the users (patients).
3. Provision of examining cameras to aid in physical examination of patients.
4. Setup of network towers in rural or remote areas to help with uninterrupted video links.
5. Upgrade of existing software where all the previous health records and consultations of patients must be saved and that can be viewed both by patient and doctor when the same patient consults again to any health care provider for any reason.

To conclude, eSanjeevani has digitally brought health services to the masses in rural areas and remote communities, but there is a long way full of challenges to go.

#### References

1. Sanjeevani Retreat. What does Sanjeevani mean? [Internet]. [Place unknown], [Publisher unknown]; 2014 [cited 2024 Nov 12]. Available from: <http://www.sanjeevani-retreat.com/en/what-does-sanjeevani-mean/>
2. Ministry of Health and Family Welfare, eSanjeevani, Govt. of India's telemedicine initiative, completes 1.2 Crore consultations [Internet]. Delhi (India): Ministry of Health and Family Welfare; 2021 Sep 21 [cited 2024 Nov 09]. Available from: <https://pib.gov.in/pressreleasepage.aspx?prid=1756649>
3. Singh V, Dev V. Telemedicine Adoption in India: Identifying Factors Affecting Intention to Use. *Int J Healthc Inf Syst Inform.* 2021;16(4):1-8.doi: 10.4018/IJHISI.20211001.oa34
4. Indian Space Research Organisation. Telemedicine- Healing Touch Through Space. [Internet]. Bangalore (India): Publications and Public Relations Unit, ISRO Headquarters, Bangalore; 2005 Feb [cited 2024 Nov 09]. Available from: <http://www.televital.com/downloads/ISRO-Telemedicine-Initiative.pdf>
5. Chellaiyan VG, Nirupama AY, Taneja N. Telemedicine in India: Where do we stand?. *J Family Med Prim Care.* 2019;8(6):1872-1876. doi: 10.4103/jfmpc.jfmpc\_264\_19
6. Suhas S, Kumar CN, Math SB, Manjunatha N. E-Sanjeevani: A path breaking telemedicine initiative from India. *J Psychiatry Spectr.* 2022;1(2):111-6.doi: 10.4103/jopsys.jopsys\_8\_21
7. Ministry of Health and Family Welfare, Government of India. [Features of eSanjeevani - National Telemedicine Service] [Image on the internet]. India: Ministry of Health and Family Welfare, Government of India; 2024 [cited 2024 Nov 09]. Available from: <https://esanjeevani.mohfw.gov.in/#/>

8. Ministry of Health and Family Welfare, Government of India. eSanjeevani - National Telemedicine Service [Internet]. India: Ministry of Health and Family Welfare, Government of India; 2024 [cited 2024 Nov 09]. Available from: <https://esanjeevani.mohfw.gov.in/#/about>
9. Ministry of Health and Family Welfare, Government of India. Assisted Telemedicine [Image on the internet]. India: Ministry of Health and Family Welfare, Government of India; 2024 [cited 2024 Nov 09]. Available from: <https://esanjeevani.mohfw.gov.in/#/>
10. Ministry of Health and Family Welfare, Government of India. Patient to Doctor Telemedicine [Image on the internet]. India: Ministry of Health and Family Welfare, Government of India; 2024 [cited 2024 Nov 09]. Available from: <https://esanjeevani.mohfw.gov.in/#/>
11. Ministry of Health and Family Welfare, Government of India. Adoption of eSanjeevani till. [Image on the internet]. India: Ministry of Health and Family Welfare, Government of India; 2024 [cited 2024 Nov 09]. Available from: <https://esanjeevani.mohfw.gov.in/#/about>
12. Guleria KSDS, Patiyal N, Negi AK, Kanwar V, Dinesh K. Utilization of outpatient eSanjeevani National Teleconsultation Service during COVID- 19 pandemic in a public healthcare institution in North India. *Indian J Pharm Pharmacol.* 2020;7(4):265-269. doi: 10.18231/j.ijpp.2020.045
13. Khanduja Puneet, Venkat Goli, and Suhird Singh. 2021. Re-imagining the Indian Government's Telemedicine Platform. [Place unknown]: MicroSave Consulting (MSC); 2021 Feb 10 [cited 2024 Nov 09]. Available from: <https://www.microsave.net/2021/02/10/reimagining-the-indian-governments-telemedicine-platform/>
14. Dinesh K. Utilization of outpatient eSanjeevani National Tele consultation Service during COVID- 19 pandemic in a public healthcare institution in North India. *Indian J Pharm Pharmacol* 2020;7(4):265-26

**Citation:** Choudhary S, Diksha, Ghosh P eSanjeevani - National Telemedicine Service: Evolution, Opportunities, and Challenges. *Indian J Prev Soc Med*, 2024; 55 (4): **253-258**.