



# Telemedicine services in diabetes care: An audit

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## Abstract

**Background:** The COVID-19 pandemic and subsequent nationwide lockdown in March 2020 necessitated a rapid shift in healthcare delivery to ensure continuity of care for chronic conditions. Following the legalization of telemedicine by the Medical Council of India (MCI) on March 25, 2020, our institution embarked on a structured journey to implement virtual care for patients with diabetes.

**Key words:** Medical Council of India (MCI); Telemedicine; COVID-19

## 1. Introduction

According to WHO, the delivery of healthcare services where distance is a key factor, using information and communication technologies (ICT) for the exchange of information for diagnosis, treatment, prevention, research, and education. Telemedicine has been in use in some form or the other for over 50-60 years.

In NASA, during early 1960s when humans began flying in space. Physiological parameters were transmitted from spacecraft's during missions.

From ISRO, Telemedicine pilot project began in 2001 to demonstrate the feasibility of using space technology to provide healthcare services. It has treated over 2.5,00,000 patients in remote areas, connected 45 remote and rural hospitals and 15 Superspeciality hospitals.

Adherence is crucial for diabetic patients to control blood sugar, prevent complications like heart disease and stroke, reduce hospitalizations, and lower healthcare costs. Poor access to care, long travel distances and associated costs were ultimately increased lots of hope for telemedicine in diabetes care.

## 2. Telemedicine Adoption into Clinical Practice

Step 1: Become familiar with federal and State laws regarding the use of Telemedicine

Step 2: Identify the telemedicine service model that fits your hospital and patient population

Step 3: Select Appropriate technology and support needed to implement the model (ex. cgm data, end to end encryption)

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Step 4: Follow the clinical practice guidelines for using telemedicine - MCI 2020 guidelines

### 3. Our Journey in Telehealth started in August 2020

Earlier diabetic patients were seen only in OPD once in 3-4 months & contacted via telephone conversations.

Telemedicine was legalised – 25th March 2020 by the MCI

During Covid 19 pandemic, Teleconsultation started via Zoom app. In 2021, Kauvery Kare App with EMR was initiated. In 2021, Teleconsultation integrated in our EMR system.

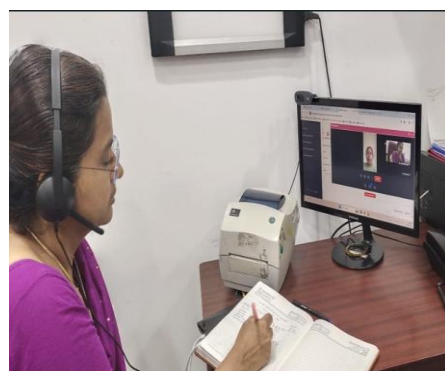
Training given to the entire Diabetic care team. An educative video on how to use telemedicine was made and sent to the patients.

### 4. Challenges and Limitations

1. Barriers to Access: Limited broadband internet access, lack of digital literacy, and systemic inequalities.
2. Privacy and Security Concerns
3. Limitations of Virtual Physical Exams: Assessing for neuropathy, lipohypertrophy, or conducting pubertal examinations.
4. Need for Infrastructure and Policy Changes: To achieve universal access, health systems need to address technological infrastructures, create supportive payment models, and adapt policies to fully integrate telemedicine.

### 5. Various Telemedicine modalities we Practice

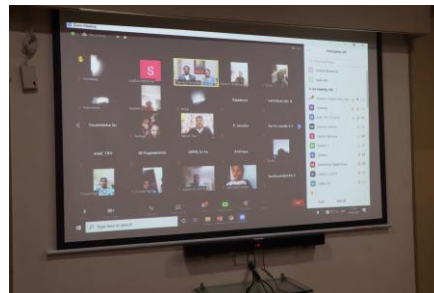
#### 5.1. Teleconsultation



Through this we did the following things

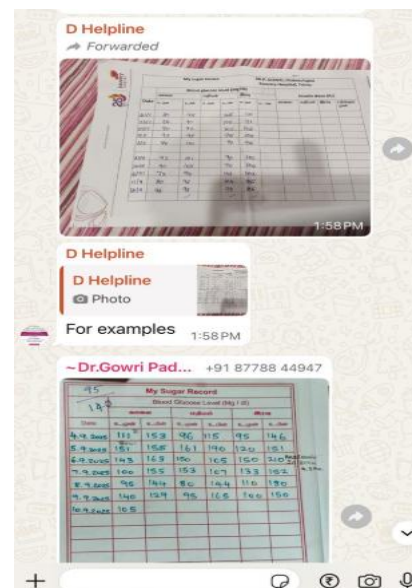
- Complaints if any - addressed
- Blood glucose data analysed
- Optimization of Insulin doses
- Counselling if needed

### 5.2. Tele-education – Group Counselling



- Diet, Psychosocial, Physiotherapy
- Connect with each other
- Share experiences
- Discuss challenges and provide emotional support.

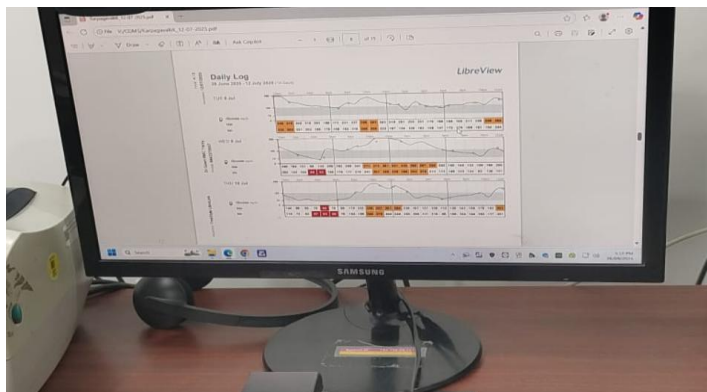
### 5.3. Sigaram Whatsapp Group



- Text messages
- Education videos
- Insulin dose adjustments
- Sharing Link for tele-education sessions

### 5.4. Remote Patient Monitoring

Freestyle Libre – Liberview & Librelink App



### 5.5. Diabetic Helpline

Parents have numerous doubts and questions- a dedicated helpline is needed.

- Adjust insulin doses as per sugar values
- Assist in Hypoglycemia & Sick day management
- Diabetes educators give regular counselling (diet, psychological support, complications etc)

### 6. Aim

Evaluate the effectiveness and overall performance of Teleconsultation services in Diabetic OPD, Kauvery Hospital.

Formulate plans and implement changes to improve the quality and outcomes of teleconsultation service.

### 7. Research Methods

- Retrospective analysis of all telemedicine consultations from August 2020 to July 2025.
- Formulated plans and changes implemented from August 2025.
- Prospective Data collected from September to November 2025.

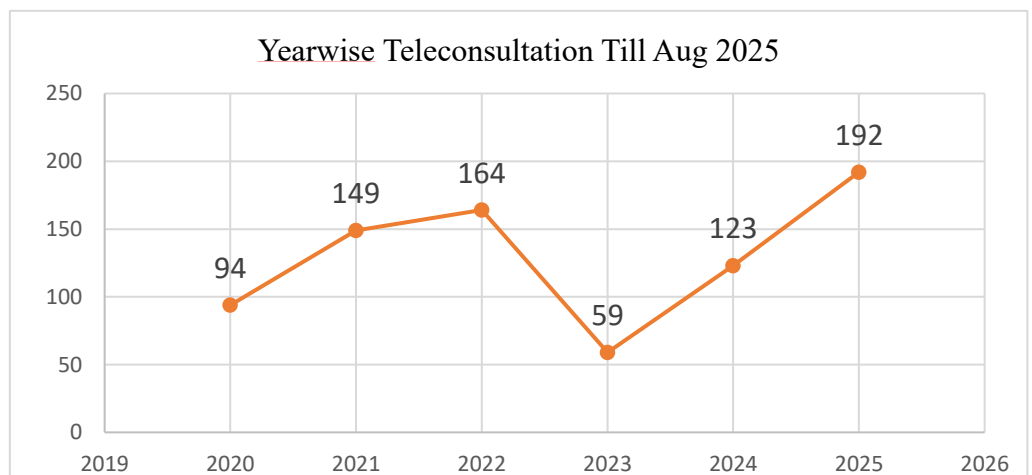
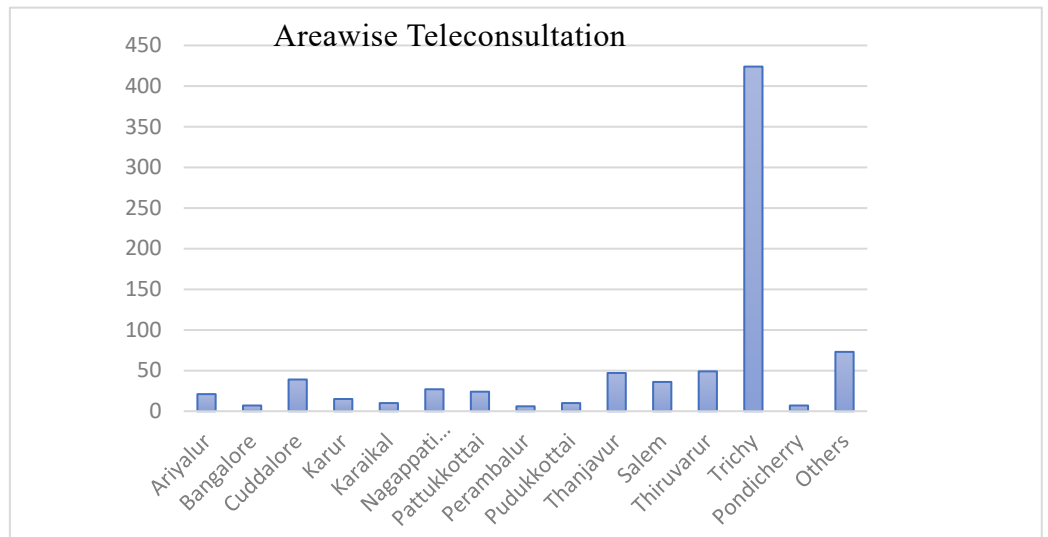
### 8. Results

#### 8.1. Patient Demographics (till August 2025) N=79

Age Category	Count
20 to 40 yrs	406
40 to 60 yrs	170
>60 yrs	182
>20 yrs (Type 1)	37
<b>Total</b>	<b>795</b>

Repetitive consultations	Count
1	309
>2	99
>4	45
<b>Total</b>	<b>144</b>

Sex	Count
Male	354
Female	441
<b>Total</b>	<b>795</b>



**8.2. Changes implemented in August 2025**

- Telemedicine Team was formed:
  - Clinical Team
  - Technical Team

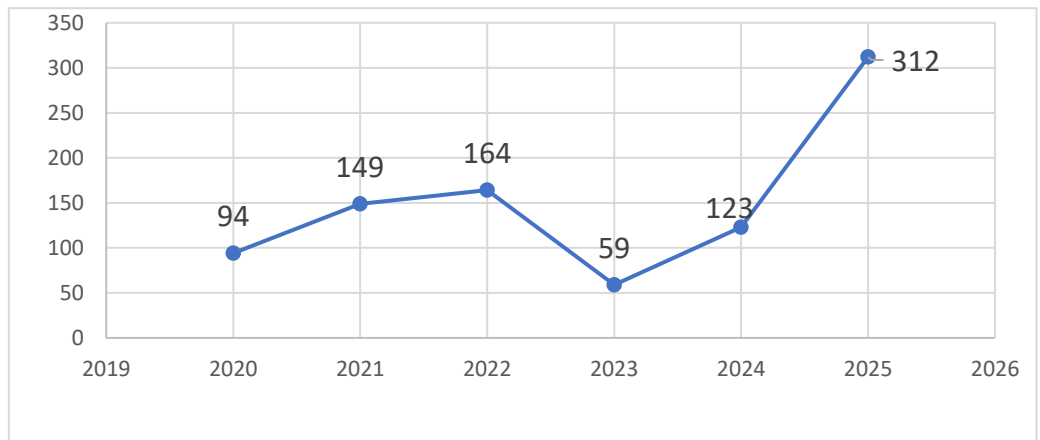
- Sign board kept in the OPD (How to do video Cx)
- Education video for the patients
- WhatsApp video calls to be accepted.

**8.3. Patient Demographics – Teleconsultation N=915 ( 120 consultations in 3 months)**

Age Category	Count
20 to 40 yrs, 40 to 60 yrs	441, 214
>60 yrs	209
>20 yrs (Type 1)	51
<b>Total</b>	<b>915</b>

Repetitive consultations	Count
1	409
>2	125
>4	68
<b>Total</b>	<b>193</b>

**Year wise Teleconsultation till Nov 2025**



**9. Conclusion**

Telemedicine is the way forward for diabetes care. Patient Education and Teamwork will enhance the effectiveness of telemedicine services. Benefits offered - increased accessibility, affordability, and improved patient and provider satisfaction.

Challenges remain -protecting patient privacy, maintaining the data, developing standardized protocols and ensuring equitable access. Hybrid care - Integrating telemedicine with in-person care will be the model in future