

# Remote patient monitoring in cardio-diabetes an innovative technology for better disease management

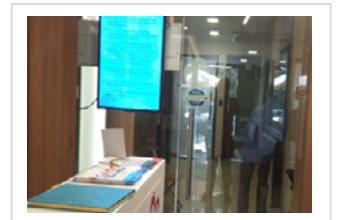


**M. Wasim Ghori**

AMSYS Heart & Diabetes Clinics, India

## Biography

M. Wasim Ghori is a consultant diabetologist and currently the medical director for a chain of specialty heart & diabetes clinics, India. He holds an MBA in international health services & hospital management from London South Bank University where he spent considerable time studying the national health service (NHS, England). He is the founder of the award-winning Rx healing canvas and partners with healthcare leaders with the aim of using visual art in designing aesthetically pleasing hospital environments. He also serves as the executive director MAHIMA recognised by Maharashtra Medical Council & aims towards digital transformation of healthcare industry from paper to paperless especially in medical value travel. The British Council appointed him as the brand ambassador for education U.K. highlighting his outstanding achievements as a healthcare leader.



## Abstract

Lifestyle disorders such as diabetes and heart disease require regular monitoring of important health parameters and frequent follow-ups with the doctors. The self-monitoring of vitals, such as blood pressure, blood sugar and weight monitoring has become more comfortable with the development of digital devices. However, it is difficult for a health care provider to do reasoning of changes in these parameters just looking at the data that is presented at the follow-up visit, which may happen at a frequency of a couple of weeks to a month. This problem is more prominent in countries like India, where the proportion of doctors per number of patients is much lower. An innovative concept called remote patient monitoring can help us to bridge this gap in patient care. Let's understand what remote patient monitoring is and how it works.

### What is Remote Patient Monitoring?

Remote patient monitoring literally means watching or helping a patient from a distance! We have been using remote service in day-to-life for quite some time now. For instance, banking! You can get your work done using the internet without having to visit the bank in person. In the same way, in remote patient monitoring, the patient uses web-enabled digital devices to track vitals and the doctor gets to analyse data by logging into an App in real-time. Remote Patient Monitoring is also known as Telehealth or Telemonitoring and seems like a promising tool in the management of health conditions that require constant monitoring.

### How does Remote Patient Monitoring work?

For remote patient monitoring to work efficiently, the doctor and patient must work together at an initial stage. At first few visits to the clinic; the doctor examines the patient and decides the frequency and type of health parameters that needs to be watched continuously. In the management of diabetes and heart disease, a patient needs to regularly track vitals such as blood pressure, blood sugar, weight and need to adhere to the given medication schedule. Of course, all of these using digital devices! The data is then saved into a unique application (App) manually or automatically using Bluetooth connection on the digital devices. Most Apps for remote patient monitoring prefer using cloud-connected devices to take reading for vital parameters from which the data can be transferred automatically to the App. A doctor can log in to the App and track daily reading and progress from the patient.

### What are the benefits of Remote Patient Monitoring?

Remote patient monitoring can provide several benefits, mainly related to the management of chronic illnesses such as diabetes and heart disease. A patient can get treated from a specialist of choice without having to travel. The most remarkable benefit of remote patient monitoring is that a doctor can co-relate change in any parameter to day-to-day activity. For instance, if the doctor notices a rise in blood sugar, he can immediately check if the glucose lowering medications were missed. Some Apps used for patient monitoring also allow the patient to track their diet and activity. This further helps the doctor to relate the changes in blood sugar and other health parameters.

### A quick look at the benefits of remote patient monitoring:

- Efficient treatment
- Real-time data monitoring

5<sup>th</sup> International Conference on Diabetes and Endocrinology | October 16, 2020

**Citation:** M. Wasim Ghori, Remote patient monitoring in cardio-diabetes an innovative technology for better disease management, Clinical Endocrinology 2020, 5th International Conference on Diabetes and Endocrinology, 16/10/2020, Page 02

- Prevention of emergency episodes or complications
- Time saving
- Provides education, feedback and data transmission
- Facilitates communication between patient and doctor

Is there any evidence for the efficacy of Remote Patient Monitoring?

Researches have studied the effectiveness of Telemonitoring or Remote Patient Monitoring in patients with various health conditions such as heart problems, cancer, lung diseases, kidney diseases and diabetes. Studies that observed hypertensive patients reported that home BP telemonitoring showed better BP control compared with usual care. Another study reported that Telemonitoring could reduce the emergency department visits in people with heart failure as their vitals and clinical alerts are watched over by medical staff remotely.

Clinical evidence reports that Remote Patient Monitoring in people with diabetes can help to achieve better glycaemic control. A study that compared home telemonitoring and standard care with monthly co-ordination call revealed that in just three months, telemonitoring showed a 1.7% decrease in the A1c value, whereas standard care showed only 0.7% decrease.

Tackling Diabetes with Remote Patient Monitoring / Telehealth

A recently published randomized controlled trial explored the use of Telehealth in the management of patients with Type 2 Diabetes. Study participants were comprised of low-income adults living in rural communities with poorly controlled Type 2 Diabetes. Subjects were randomly divided into a control group and an intervention group. The control group received usual care for Type 2 Diabetes, while the intervention group received a combination of telehealth with nurse case management. Study participants were asked to take daily blood glucose and blood pressure readings using a telehealth system for diabetes. The telehealth system allowed the nurse case manager to virtually monitor the patients in real time and adjust medication dosage when necessary, under the supervision of a physician.

These results suggest that the combined approach of telehealth and nurse case management is more beneficial than usual care for patients with Type 2 Diabetes. Additionally, these results demonstrate that remote monitoring through telehealth is a safe and viable care delivery option for patients living in rural communities. The authors of this RCT attribute much of the success of the intervention group to improved patient adherence. Adherence to prescribed therapy and lifestyle modifications are necessary components of the management of type 2 diabetes. It was concluded that remote patient monitoring through telehealth improved patient adherence in a variety of ways:

- The telehealth system allowed patients to easily report daily blood glucose readings.
- The nurse could quickly respond to a patient's status and titrate medications when necessary.
- Telehealth facilitated regular communication between the patients and the nurse case manager.

The findings from this study are consistent with mounting evidence supporting the case for managing diabetes with remote monitoring / telehealth platforms. A 2015 Cochrane Review that examined the efficacy and feasibility of using telehealth with patients with diabetes found that telehealth interventions result in significantly improved blood glucose control compared to usual care interventions. Additionally, a systematic review from 2009 concluded that home telehealth results in improved glycaemic control compared to standard care among patients with type 2 diabetes.

Embracing Change for Better Healthcare Delivery

Several studies report a substantial shortage of doctors and specialists who can engage in real patient care. This condition is expected to develop in the coming years in various countries, including India. Remote patient monitoring, therefore, seems like a promising tool in the management of chronic lifestyle illnesses such as heart disease, diabetes, stroke and others. However, for the remote patient monitoring plan to work efficiently, the patient needs to be determined and involved in managing his/her own healthcare condition. Regular monitoring and keeping the App up to date with data can help the doctor to track progress and take actions when needed. This technology demands the patients to use digital devices to self-monitor and record important parameters and then actively partner in collaboration with health care providers to manage their condition.

Remote Patient Monitoring through telehealth has great potential to change the way diabetes is managed by improving efficiency of care and enhancing quality of treatment for all patients who suffer from this condition. Providers who embrace new health technology will be able to increase access to care in underserved communities and contribute to reduced healthcare costs associated with diabetes management.