

Return of the House Call



The new norm in patient care

By Stuart Long

In March 2020, the Centers for Medicare & Medicaid Services (CMS) launched its Hospitals Without Walls program.¹ The initiative waived certain federal requirements governing healthcare organizations and established new rules to help systems continue to deliver high-quality patient care, even as COVID-19 cases surged.

By November 2020, efforts to combat the ongoing pandemic routinely included remote patient monitoring (RPM) and telehealth technologies. CMS' Acute Hospital Care at Home program expanded on the initial efforts of Hospitals Without Walls by supporting various models of at-home hospital care.² Following this regulatory expansion, many healthcare organizations

began offering certain services inside the patient's own residence.

Now, as vaccines help reduce the number of COVID-19 cases, healthcare entities are increasingly adopting telehealth and remote monitoring as essential components of patient care. According to some estimates, as many as 30 million Americans will use some type of RPM tool by 2024.³

The future looks bright for telehealth and other technologies designed to keep patients in their homes while they receive treatment. As use of these tools spreads, patients, clinicians, and hospital organizations all stand to benefit from this improved access to care.

Staying Put: Why and How to Keep Patients at Home

As worldwide COVID-19 cases grew, it became increasingly obvious that isolating people from others was necessary to help stop the virus' spread. Governing bodies implemented stay-at-home orders for the majority of United States citizens to help protect the public. But simply stopping the disease was not the only reason to keep people indoors.

During the COVID-19 surge, hospitals were at tremendous risk of becoming overwhelmed with sick patients. Bed capacity became a primary concern, especially as people needed extended hospitalization requiring intensive care. Efforts to treat patients remotely gained steam.

CMS identified more than 60 medical conditions, such as asthma, congestive heart failure, pneumonia, and chronic obstructive pulmonary disease (COPD), that could be treated safely and effectively at home.² After an initial in-person physician evaluation, qualifying patients could choose to receive care remotely. Registered nurses evaluated each patient at least once a day using information gathered from a distance to help inform treatment decisions.

However, these efforts obviously required proper monitoring and treatment tools. Enter modern remote patient monitoring and telehealth technologies.

Cardiology and RPM

The use of remote monitoring technologies and telehealth has been adopted by some medical subspecialties more than others. Cardiologists were among the earliest to use these technologies to keep tabs on patients outside hospital walls.³

So, beyond COVID-19, why remote patient monitoring? And why now?

Chronic diseases such as heart disease are the leading causes of death and disability in the United States, costing the country an estimated \$3.8 trillion in annual healthcare costs.⁴ According to the American Heart Association, it costs 3.5 times more to treat a chronic condition compared to other medical concerns. Chronic diseases also account for nearly 80% of all hospital admissions.⁵

But that is not the only problem. Socioeconomic and environmental factors limit access to care. As a result, chronic care patients do not benefit from many types of medical treatment, from preventative services to long-term care. And when they do seek treatment, they are often sicker and require intensive—and expensive—care (see “Portable Monitors”).

RPM devices are important for three distinct reasons:

- ▶ They allow physicians to capture a holistic view of a patient's health over time.
- ▶ RPM increases a doctor's understanding of the patient's compliance with treatment recommendations.
- ▶ The use of RPM enables timely interventions before costly care episodes.⁵

Already, there is evidence for the effectiveness of RPM on cardiovascular health:

Hypertension. The American Heart Association estimates that more than 42% of all American adults will be diagnosed with hypertension by 2035, an increase of 27 million people. Initial research shows that RPM reduces both systolic and diastolic blood pressure significantly compared to typical medical care and self-monitoring alone. Other research suggests that RPM's positive impact on systolic blood pressure increases with long-term use and multiple behavior change techniques.⁶

Atrial Fibrillation. It is estimated that 2.7 to 6.1 million people in the United States live with atrial fibrillation (AFib), a dangerous and potentially deadly type of cardiac arrhythmia. AFib is associated with increased risk for other adverse events such as heart failure, stroke, increased hospitalizations, and death. RPM may help improve outcomes for many through early detection and treatment of AFib. This, in

Remote portable monitors, like Dexcom's G6 Continuous Glucose Monitoring System, allow physicians to track chronic conditions in real time outside of office visits.



Portable Monitors

Today, cardiologists regularly use implantable devices, biosensors, blood pressure cuffs, and pulse oximeters as part of RPM technology to check in on patients located outside the hospital setting. These devices are small and unobtrusive enough to be worn by patients all day, every day. They automatically measure and transmit data at a distance, usually using wireless technology. Then, providers access the patient's complete medical record, making treatment recommendations as the patient's condition changes.



turn, helps decrease all-cause mortality rates and hospitalizations.⁶

Successful RPM Outcomes

The benefits of remote patient monitoring and telehealth technologies are now tangible. A quick Google search yields all kinds of testimonials on the advantages of RPM technologies. Here are a few:

- ▶ One physician was able to establish a first-time diagnosis of AFib from information transmitted electronically. The same doctor has also managed patients from diagnosis to coordination of cardioversion without using the telephone or seeing the patient in person.⁷
- ▶ Another doctor remotely follows more than 5,000 patients, all with implantable cardiac devices. Patients upload data into a home-based monitoring system and, after review by a nurse or device technician, any problems are immediately brought to the doctor's attention.⁷
- ▶ A cardiology practice in North Carolina equips all qualifying patients with a digital health kit that includes a blood pressure cuff and other devices, such as a blood glucose monitor. In the first three months of use, 100% of the practice's patients had lowered blood glucose and A1C readings. Additionally, the average systolic blood pressure dropped by 12mmHg per patient.⁸
- ▶ An off-the-shelf telehealth device allowed one mother to see AFib in real time in her young daughter, who initially complained of nausea and chest pain. The child was quickly taken to the emergency department and was eventually diagnosed with Graves' Disease.⁹

It stands to reason that the use of remote monitoring technologies will only continue to

grow, especially because the long-term cardiovascular implications of COVID-19 are unclear. It is now estimated that 88% of healthcare providers are invested in or are evaluating RPM.¹⁰

The Future of RPM

It is likely that the future of health care itself will be a hybrid model of care combining virtual, non-invasive monitoring with physician consultations and traditional physical examinations. Already, consumer use of telehealth services—including RPM—has risen from 11% in 2019 to 40% today.¹¹

Globally, the RPM market is set to reach \$117.1 billion by 2025, a more than five-fold increase compared to \$23.2 billion in 2020.¹² Cardiology is not the only subspecialty where RPM can improve outcomes. Monitoring services may eventually include conditions such as diabetes and obesity. There is even some speculation that RPM could be used to help diagnose and manage problems such as obstructive sleep apnea.¹²

All this is possible thanks to evolving technology. Patients already use smartphone apps to share information from remote monitoring devices directly to their providers. Sophisticated cloud-sharing platforms are also proving essential to the success of this hybrid model of health care, as many allow the integration of numerous types of RPM devices for the same patient. These same platforms also allow healthcare providers to easily view and manage patient data.

Now, many providers are leveraging mobile-enabled remote patient monitoring, which may be more cost-effective and efficient compared to other monitoring technologies. These devices use notifications that prompt users to enter data, providing almost instant clinical and financial value to large and small practices alike.¹³

It is clear that healthcare delivery in the virtual world is on the rise, and it will only continue to expand as patients and providers turn to remote monitoring or telehealth options. These essential augmentations to the existing healthcare landscape are already helping doctors manage a variety of chronic health conditions, such as heart disease. And these technologies bridge the care gap that many experience because of socioeconomic, geographic, or environmental difficulties.

The Hospital Without Walls model of health care gives patients freedom of choice and autonomy over their own health and treatment decisions. Remote monitoring technologies also help keep patients safe, even if they are not at risk for COVID-19. These technologies represent a fundamental change in how people access health care, analyze health data, and make decisions that improve patient outcomes. It truly is a win-win situation for everyone. [GRU](#)

Stuart Long was appointed CEO of InfoBionic in March 2017. Long brings more than 20 years of expertise in achieving rapid commercial growth.



Hospital at Home programs and using technology to enhance the patient experience at AMGA member groups—including Henry Ford Medical Group, Johns Hopkins Medicine, Northwell Health, the Permanente Medical Group, and University of Utah—will be featured in Peer-to-Peer Breakout Sessions at AMGA's 2022 Annual Conference, March 9–12, 2022, in Las Vegas. To find out more about these sessions and the other educational and networking opportunities at the event, visit amga.org/ac22.

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