Pylo Guide to Remote Patient Monitoring Devices

Heading into 2020, adoption of telehealth services was already on the rise. Then the health crisis hit. Now it appears that COVID-19 has not only cemented telehealth's place in the healthcare landscape but done so in a very big way. Remote patient monitoring, or RPM, is one such telehealth service experiencing a surge in adoption during the crisis that is likely to continue well after we've put the pandemic behind us.

With the stars aligning for RPM, it is an optimal time to consider launching or growing RPM programs. Another factor convincing more practices to pursue RPM is that they now have several choices of medical devices to offer patients and include in their programs. From these options, practices can select the devices that will best meet the short- and long-term care needs of their patients and maximize RPM programs' revenue potential.

Medicare-Qualified RPM Devices

In order to bill for RPM, the patient device used must meet certain criteria specified under Medicare guidelines. These criteria have been tweaked by Medicare each year since they announced coverage for periodic RPM in 2019 in order to better define what can be considered a connected RPM device. Here are the current key requirements:

- The device must meet the definition of a medical device per Section 201(h) of the Food, Drug, and Cosmetic Act.
- The device must be reliable and valid.
- The device must electronically (i.e., automatically) collect and transmit a patient's physiologic data. Self-reporting or manual collection is not permitted.
- The physiological data collected must allow or increase the understanding of a patient's health status in order to develop or manage a plan of treatment.
- The device must be capable of transmitting at least 16 days of measurements per month (a requirement for billing CPT 99453 and 99454).

RPM Connectivity Types

As you research your RPM device options, you will find information from RPM devices can be transmitted to practitioners in a few different ways. Here are the most common transmission types.

Direct Cellular

Direct cellular devices use wide-area 4G LTE technology to send all device readings directly to the receiving RPM platform. These are the easiest to use of all device types as the patient just adds batteries and they are ready to go.

Cellular Gateways

Cellular gateways connect with Bluetooth RPM devices and then send the data along over the cellular network. Some gateways have a tablet-like interface and extra non-RPM features (e.g., video telehealth) while others are simple passive gateways.

Direct Wi-Fi

Direct Wi-Fi devices use a mobile phone app to connect the device to the patient's home Wi-Fi network. Once that is complete, the devices send readings directly to the RPM platform as long as the devices are kept within Wi-Fi range. These are not quite as easy to setup and use as cellular devices, but setup still tends to be pretty simple and the usage of these devices eliminates the need for an expense of a mobile network subscription.

Classic Bluetooth

Bluetooth RPM devices use short-range wireless connections to transmit data to an internet-connected device. Patients can transmit health data via the internet to their healthcare team without any concern of cellular network availability if they have internet access and a Bluetooth-capable device.

Bluetooth Low Energy (BLE)

BLE devices utilize a different protocol than traditional Bluetooth. As the name implies, it uses less energy, but it also allows for a much quicker and easier "pairing" process. The patient just opens an associated RPM application on their mobile phone, uses the device, and the readings are securely sent to the RPM platform over the phone's internet connection.

Cloud Connected (oAuth)

In addition to the device-direct connections above, some RPM platforms can pull health information from cloud and mobile health applications (e.g., FitBit, Google Fit). In these instances, the provider of the RPM platform will typically send patients an email with a link where they can use their third-party cloud app username and password to authorize the RPM vendor to collect their health data. Once the patient completes this authorization, the platform can pull the information from the patient's preferred health app.

Most Common RPM Devices

Now let's look at some background information on five of the most common types of RPM devices used by practices today.

1 Blood Pressure Monitor

According to the CDC, almost half of U.S. adults have hypertension, and nearly half a million U.S. deaths in 2017 included hypertension as a primary or contributing cause. Practices are increasingly leveraging blood pressure monitors, typically cuffs worn on patients' wrists, to improve hypertension management. As the American Heart Association notes, research has shown that remote cardiac monitoring can greatly reduce patient blood pressure compared to typical care and self-monitoring alone.

The use of a remote blood pressure monitor allows practitioners to perform ongoing virtual monitoring and treatment of hypertension/high blood pressure. In addition, RPM helps avoid misleading blood pressure readings due to "white-coat hypertension." These false results occur when blood pressure readings are higher during in-person practice visits than they are when patients are in other settings (e.g., home, office) due to the stress of meeting with a practitioner. Such a misleading reading may be even more commonplace during the pandemic, with some patients experiencing higher stress when leaving their home and going to a setting often associated with sick people.

2 Weight Monitor

There is an obesity problem in the United States, but it may be worse than you realize. CDC reports that in 1999-2000, the obesity rate was 31%. Fast forward to 2017-2018, and the data showed a rate of 42% — an 11% increase in obesity in the United States. Also, the prevalence of severe obesity — considered BMI of 40 or higher — increased from about 5% to about 9% during this period. Obesity-related conditions include heart disease, stroke, type 2 diabetes, and certain types of preventable cancer.

Practices can use remote weight monitoring, typically performed via a scale, for multiple purposes. For congestive heart failure patients, a sudden weight gain of even just a few pounds may be an indicator that the condition is worsening, prompting practitioners to take action, such as adjusting existing medications, prescribing a diuretic, or arranging an in-person or virtual (telehealth) visit.

For practitioners working to help patients lose weight, ongoing monitoring can help assess trends and measure success. If unexpected, rapid weight loss occurs, remote weight monitoring helps ensure it is identified quickly. Practitioners can then work to reduce the risks associated with sudden weight loss, which include weakened bones, compromised immune system, dehydration, and fatigue.

3 Blood Glucose Monitor

Monitoring blood glucose levels is critical for keeping patients with diabetes safe. Patients often do not feel particular symptoms associated with diabetes until they experience hyperglycemia (glucose level too high) or hypoglycemia (glucose level too low). Untreated hyperglycemia can lead to the life-threatening condition of ketoacidosis (diabetic coma) and other complications affecting the eyes, kidneys, nerves, and heart. Untreated hypoglycemia can initially lead to blurred vision, confusion, slurred speech, and drowsiness, and eventually more significant complications, such as seizures, coma, and sometimes death.

Blood glucose monitoring can be performed using various types of RPM devices, some of which do not require patients to draw blood. Practitioners can use the data captured by a remote blood glucose monitoring device to detect potential alarming changes in glucose level and take immediate actions. Also, the data can provide insights that practitioners will use to guide recommendations concerning medications, diet, and exercise.

Diabetes patients are some of the most aware concerning digital health, and monitoring blood glucose levels is one of the most effective RPM applications. Remote monitoring of glucose levels has been proven to reduce the need for in-person visits to practices. In addition, a study showed that 70% of high-risk diabetic patients were able to lower their A1C levels by using RPM devices.

4 Pulse Oximeter

For patients with pulmonary issues, including chronic obstructive pulmonary disease (COPD) and asthma, monitoring and measuring oxygen saturation (i.e., the percentage of hemoglobin saturated with oxygen in arterial blood) is vital to health and wellness. COPD is recognized as the third leading cause of death by disease in the United States. More than 16 million people have been diagnosed with COPD and millions more likely have the disease without even knowing it.

A pulse oximeter measures oxygen saturation level. Placed on a finger, earlobe, or toe. it can detect even small changes in how efficiently oxygen is carried to the extremities furthest from the heart, such as the arms and legs. The use of remote pulse oximeter monitoring delivers real-time pulse oximetry measurements to practitioners so they can review the readings and assess whether patients are potentially experiencing hypoxemia — the deficiency in oxygen reaching body tissues. When practitioners detect a concerning decline in oxygen saturation level, they can schedule an in-person visit with the patient for assessment and then possibly order testing and/or treatment to help elevate oxygen saturation levels to a more normal, healthier percentage.

5 Spirometer
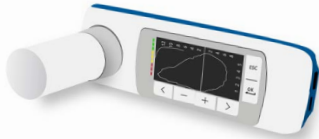
The spirometer may be the least common of the RPM device examples listed here, but practitioners should expect to be hearing a lot more about remote spirometry. Spirometry, also known as pulmonary function testing, measures lung function. Specifically, a spirometer measures the volume (i.e., amount) and/or flow (i.e., speed) of air that an individual can inhale or exhale. Like pulse oximetry, spirometry testing plays an essential role in diagnosing lung diseases as well as assessing and monitoring conditions such as asthma and COPD.

While a spirometer is typically used by a patient during an in-person practice visit, remote spirometry was on the uptick even before the COVID-19 health crisis. Remote spirometry allows practitioners to monitor a patient's lung condition virtually as well as assess whether treatments, including medications, are proving successful in helping patients better manage breathing issues. The pandemic will likely contribute to a greater surge in remote lung function monitoring for those with respiratory risks.

Other RPM Devices

While the five devices described above are the most common for RPM, there are many other types of devices that practices can consider for their programs. These include the following:

- Thermometer
- Anticoagulation testing
- Electrocardiography (ECG)
- Wearables (e.g., activity/fitness trackers, watches, body-mounted sensors)

Before building an RPM program around any of these devices, it is imperative that practices ensure they have an RPM vendor partner and platform capable of pulling health information from the devices. While self-reporting measurements into a patient portal or app or otherwise manually conveying measurements to providers may qualify for other Medicare covered services, data captured in such a fashion cannot be counted towards Medicare RPM. RPM device measurements must automatically sync with a provider's RPM platform without any patient transcription.

FAQs

The following are some frequently asked questions concerning RPM devices.

Q: **What are common patient data types collected via RPM?**

A: Providers can use RPM to collect a range of patient health data, including blood pressure, vital signs, weight, heart rate, blood sugar levels, and physical activity.

Q: Where is data captured via RPM stored?

A: Where RPM data is stored will depend upon the device. Typically, data is captured and transmitted via a Wi-Fi or cellular network to a central data repository. Types of repositories include an electronic health record (EHR) system or personal health record.

Older devices often stored the information on the device itself, which then required patients to convey the information to their providers. This type of workflow is no longer considered RPM by Medicare and most other payers.

Q: How do I ensure my RPM program is HIPAA compliant?

A: This essentially boils down to carefully vetting RPM vendors and their devices. Vendors should build their devices so that patient data is encrypted when it is in transit — from patient to provider and vice versa — and when the device that stores the data is not in use.

Q: Is setting up the RPM device and related patient education considered covered services?

A: Yes, via CPT code 99453.

Q: Is CPT code 99454 reimbursed per device or per patient?

A: 99454 can only be billed once per patient every 30 days. This is regardless of whether the patient is using a single device or multiple devices.

Delivering RPM to Your Patients

If you are interested in offering one or more RPM devices to your patients, contact Pylo at (818) 600-7161 or sales@pylo.com. You can speak with one of our customer service representatives who will answer the questions you have about RPM and how to determine what devices are right for your practice and patients.