

Remote Patient Monitoring (RPM)

Description

Remote patient monitoring (RPM), which is sometimes called self-patient management or self-testing, is a means of monitoring patient health and clinical information at a distance. It uses the latest advances in information technology to gather patient data outside of traditional healthcare settings. RPM is often provided using specified platforms to collect patient data such as lab readings, weight, vital signs, EKG, and Pulse Ox. It also involves the reporting, collection, transmission, and evaluation of patient health data through electronic devices such as wearables, mobile devices, smartphone apps, and internet-enabled computers. The devices used in RPM are built to gather data measurements and connect with a specific facility or provider for data transmission.

Purpose

To simplify patient compliance with diagnostic testing and lower the cost of frequent monitoring and hospital readmissions. **Increases the ability to identify potential complications earlier.**

Patient Population

RPM is often used to treat and manage chronic illnesses like asthma, cardiovascular disease, and diabetes and used often with the elderly. RPM is used with pediatric patients receiving palliative care, and with health promotion/lifestyle management. Participants may be considered healthy, but require basic engagement, including reminders and tracking of routine health activities to ensure that they still are on the right path and do not increase their healthcare exposure.

Types of equipment

RPM kits include: Internet connected scales, blood pressure monitors, glucometers, pulse oximetry, and connect via a mobile kiosk, tablet, or smartphone from home. This technology reminds patients to do things like weigh themselves, measure their blood pressure, etc. and send the measurements to their physicians. Wearables and other electronic monitoring devices are being used to collect and transfer vital sign data such as heart rates, oxygen levels, and respiratory rates.

Example Case Use of RPM devices

RPM equipment is often used to assess congestive heart failure patients in the home setting, using pulse oximetry, weight scales, and blood pressure devices. Old Dominion University has established C-TIER, the Center for Telehealth Innovation, Education, and Research, including a series of telehealth training videos, funded by a HRSA Advanced Education Workforce Grant. This training video shows how a home health nurse visiting a patient with congestive heart failure can do a real-time remote patient monitoring and Telehealth consult with a Provider using a handheld Telehealth.

<https://www.youtube.com/watch?v=tnwlqAcrtD0&list=PLM0VF0yZsE6f6737BT0QdUp7iC9BMINyC&index=10>

Other Resources

St. Luke's Virtual Care – Remote Patient Monitoring (video 2:49)

https://www.youtube.com/watch?v=QpEsR_f9pik

Remote Patient Monitoring Demo (video 3:57) <https://www.youtube.com/watch?v=nLLBQK1lke0>

Remote Health Monitoring for Patients with Chronic Health Problems (PMD Healthcare) (video

1:40) https://www.youtube.com/watch?v=LKRg_odx5dw

Additional equipment to consider

Mobile-enabled remote patient monitoring (mRPM) - can enhance communication between providers and patients. An automated schedule uses push notifications to prompt patients to enter requested biometric, objective, and subjective data (including social determinants of health); patients can then respond at a time and place convenient for them.

Selecting a Vendor

- Begin with your network, including asking for word-of-mouth referrals from experienced practices early on and researching third-party reviews
- Research potential vendors
- Build a Request for Proposal (RFP) and clearly outline the goals
- Send RFPs to vendors that most closely align to your goals
- Review RFP responses alongside key representatives from the Core and Advisory teams
- Ask for case studies and referrals
- Schedule live vendor demos with select members of the Core, Advisory, and Implementation teams
- Evaluate vendors across six critical factors: Business, Information Technology, Security, Usability, Customer Service, and Clinical Validation
- Narrow your options to one or two preferred vendors to include in your pitch to leadership
- Use established criteria to make the evaluation process simple for leadership when making the case
- If you are struggling to find a vendor that is right for you, consider consulting external resources, such as the American Telemedicine Association or your state Telehealth Resource Center for support. Incorporate legal feedback and security standards to make sure risk and liability are accurately assessed and mitigated

Select Vendors HRSA ANEW Telehealth Toolkit

<https://www.amchealth.com/>

<http://www.carematix.com/>

<https://allhealthchoice.com/>

<https://razielhealth.com/ideallife/>

<https://www.medtronic.com/us-en/about.html>

<https://www.usa.philips.com/healthcare/services/population-health-management/patient-engagement/remote-patient-monitoring>

Important Consideration

- Sharing of patient health information (PHI) with Business Associates (ask about formal Business Associates Agreements and how the vendor will protect PHI and perform reasonable due diligence to verify security practices)
- Broadband connectivity in Rural areas
- Need for training on patient monitoring devices (health professionals)
- Regulatory and reporting of adverse events
- Management of data flow
- EHR integration/compatibility
- Using off the shelf devices and whether the devices are compliant with healthcare interoperability standards
- Patient preference and acceptability
- Technology support service offered
- Vendor flexibility
- Cloud based storage
- Size/weight for portability
- Backup battery, charging stations, ease of use (need for routers, modems)
- Ease of use in home (easy to understand icons), accommodation for patients with limited English proficiency, low health literacy, vision or hearing impairments
- Sanitation and safety factors
- Workflow changes

Reimbursement considerations

CPT Codes 99453, 99454, 99457 which outline reimbursement for “Chronic Care Remote Physiologic Monitoring”

Reimburses for more work including initial setup, patient education, device monitoring, and extends eligible care provider definition to include clinical staff.

Selected Resources

[National Telehealth Technology Assessment Resource Center](#) - aims to create better-informed consumers of telehealth technology. By offering a variety of services in technology assessment, TTAC (pronounced “tea-tac”) aims to become the place for answers to questions about selecting right technologies for your telehealth program.

Telehealth Vendor Fact Sheet

<https://nosorh.org/wp-content/uploads/2016/11/NOSORH-Telehealth-Vendor-Fact-Sheet-FINAL.pdf>

Northeast Telehealth Resource Center: COVID-19 Epidemic Telehealth Toolkit:

<https://netrc.org/docs/COVID-19-Epidemic-Telehealth-ToolkitNETRC-March-2020.pdf>

Office of the National Coordinator for Information Technology

<https://healthit.gov>

Northwest Regional Telehealth Resource Center – Remote Patient Monitoring Toolkit

<https://nrtrc.org/content/article-files/RPM%20Toolkit.pdf>

National Consortium of Telehealth Resource Centers:

<https://www.telehealthresourcecenter.org/resources/>

Telehealth Resource Contacts:

<https://www.telehealthresourcecenter.org/wpcontent/uploads/2019/08/08.23.19-2019-Contact-Sheet.pdf>

Directory of Telehealth Service Providers - Telemedicine & Telehealth Service Provider Directory, a service of the Arizona Telemedicine Program. The directory is a resource for hospital and healthcare administrators and other decision-makers who want to expand or improve their healthcare services to their patients, employees, clients, etc. The directory lists companies supplying medical specialty services (such as radiology, rheumatology, neurology, psychiatry) and ancillary services (such as patient education and language interpretation) through telemedicine to healthcare providers such as hospitals, clinics, nursing homes, private practices, and urgent care centers. <https://telemedicine.arizona.edu/servicedirectory>

Selected Vendor Resources

UPDATED WITH MORE VENDORS (March 30, 2020): Healthcare IT News offers this listing of telemedicine companies that can help hospitals and other provider organizations deliver quality virtual care. <https://www.healthcareitnews.com/news/guide-telehealth-vendors-age-covid-19>