	Johns Hopkins Health Plans <b>Medical Policy Manual</b> <b>Medical Policy</b>	<i>Policy Number</i>	CMS24.20	
		<i>Effective Date</i>	10/01/2024	
		<i>Approval Date</i>	07/16/2024	
	<i>Subject</i>	<b>Remote Patient Monitoring</b>	<i>Supersedes Date</i>	N/A
			<i>Page</i>	2 of 7

For Employer Health Programs (EHP) refer to:

- Plan-specific Summary Plan Descriptions (SPDs)

For Priority Partners (PPMCO) refer to: [Code of Maryland Regulations \(COMAR\)](#)

- Code of Maryland Regulations (COMAR) 10.09.96 [Remote Patient Monitoring](#)
- Maryland Department of Health (MDH) [PT 20-18 General Provider Transmittal 85 Medicaid Program Updates](#)

For US Family Health Plan (USFHP) refer to: [Tricare Policy Manuals](#)

- TRICARE Policy Manual 6010.63-M, April 2021, Chapter 2, Section 7.1 [Remote Physiological Monitoring \(RPM\)](#)

#### **IV. POLICY CRITERIA**

- A. **General Considerations:** When benefits are provided under the member's contract, JHHP considers remote patient monitoring medically necessary when ALL of the following are met:
1. Remote patient monitoring is prescribed by a qualified supervising physician and is a part of a treatment plan or episode of care, AND;
  2. The member meets the medical necessity requirements in section B.
- B. **Medical Necessity:** When benefits are provided under the member's contract, JHHP considers remote patient monitoring medically necessary when ALL of the following criteria are met:
1. The member's risk of higher care utilization is present due to at least ONE of the following:
    - a. Chronic Obstructive Pulmonary Disease of Stage 2/Moderate or higher, OR;
    - b. Diabetes Mellitus, Type 1, with hemoglobin A1C 7.0% or higher, OR;
    - c. Diabetes Mellitus, Type 2, with hemoglobin A1C 7.0% or higher, OR;
    - d. Congestive Heart Failure of NYHA Class 3 or higher, OR;
    - e. Other poorly controlled conditions where remote monitoring can be expected to result in improved care (e.g. timely intervention to prevent worsening, reduce emergency visits and/or hospitalizations, improved medication management).
  2. Documentation has been submitted showing the member's condition is poorly controlled, as demonstrated by ONE of the following in the last SIX (6) months:
    - a. At least TWO hospital admissions with the same qualifying medical condition as the primary diagnosis, OR;
    - b. At least TWO emergency department (ER) visits with the same qualifying medical condition as the primary diagnosis, OR;
    - c. At least ONE hospital admission AND at least ONE separate ER visit with the same qualifying condition as the primary diagnosis.
- C. **Initial Duration and Continuation:**
1. Initial requests for remote patient monitoring may be approved up to 60 days.
  2. Continuing requests for remote patient monitoring services for subsequent 60-day periods are covered when the criteria in sections A and B are satisfied AND ALL of the following are provided:
    - a. Written documentation from a qualified supervising physician of continued medical necessity and an updated plan of care, AND;
    - b. A dated and signed order by the prescribing provider is provided every 60 days;
  3. Continuing requests totaling more than 120 days per 365 days per member requires a medical director's review.

 <b>JOHNS HOPKINS</b> HEALTH PLANS	Johns Hopkins Health Plans <b>Medical Policy Manual</b> <b>Medical Policy</b>	<i>Policy Number</i>	CMS24.20
		<i>Effective Date</i>	10/01/2024
		<i>Approval Date</i>	07/16/2024
	<i>Subject</i>	<i>Supersedes Date</i>	N/A
	<b>Remote Patient Monitoring</b>	<i>Page</i>	3 of 7

## V. DEFINITIONS

**Remote Patient Monitoring / Remote Physiologic Monitoring (RPM):** The use of digital health solutions which capture and record patient physiologic data outside of a traditional health care environment (AMA, 2022). RPM allows for monitoring of physiological factors like weight, heart rate, blood pressure, oxygen saturation, respiratory rate, expired carbon dioxide, spirometry, and blood glucose, among others.

**Remote Therapeutic Monitoring (RTM):** The use of medical devices to collect non-physiological data to monitor health conditions including musculoskeletal and respiratory system status and adherence and response to prescribed therapies or medications (APTA, 2022).


**Qualified Supervising Physician:** Any physician who is licensed to practice within the state where the RPM service is ordered and is proficient in the interpretation of RPM results collected during the episode of care and treatments based on these results are within their licensed scope of practice.

## VI. BACKGROUND

Remote patient monitoring (RPM), also known as remote physiological monitoring, is a form of telehealth which utilizes digital technologies to allow for the automatic and secure collection of health data from individuals for assessment and management of acute and chronic conditions. Use of these approved technologies allows for monitoring outside of traditional office visits and has the potential of increasing access to health services while decreasing costs of care. Current devices available include, but not limited to, weight scales, blood pressure monitors, pulse oximeters, blood glucose monitors, and spirometers. Nationally, the use of RPM continues to increase as these technologies become more affordable, of higher fidelity, and more widely available. In 2019, CMS payments for RPM totaled \$5.5 million, which increased markedly to \$101 million by 2021 (Curtis & Willig, 2023). There are several ongoing studies and trials investigating the benefits and limitations of RPM for many different conditions.

Heart failure (HF) is a clinical syndrome characterized by the inability to pump blood at a rate sufficient to meet the body's metabolic requirements. For this policy, both systolic and diastolic dysfunction are considered for remote patient monitoring. The symptoms of HF can include shortness of breath, swollen legs, weight gain, faster heart rate, and fatigue. The New York Heart Association (NYHA) Functional Classification system has been developed to categorize a patient's severity based on symptoms. The classification ranges from Class I (mild) to Class IV (most severe). Koehler et al. (2018) conducted the Telemedical Interventional Management in Heart Failure II (TIM-HF2) trial which investigated the effects of RPM within a patient population with HF. Patients were followed for 12 months and included in the trial if they had NYHA class II or III and an HF hospitalization in the last 12 months with LVEF <45%. This trial showed those receiving RPM services had a lower percentage of days lost due to unplanned cardiovascular hospital admission or all-cause death compared to usual care at 4.88% and 6.64%, respectively. Additionally, all-cause mortality alone was reduced in those with RPM care versus usual care at 7.9% and 11.3% per 100 person-years, respectively. The effects of RPM on HF hospitalizations alone were not studied in this trial. It is important to note that Koehler and Koehler saw the benefits of RPM being largely extinguished at a follow-up 12 months after RPM discontinuation. Park et al. (2019) reported on 58 patients enrolled into an RPM program for HF prior to discharge from an inpatient admission. Participants had their weight and blood pressure remotely monitored. They found a lower 30-day readmission rate for those enrolled (10%) compared to both the national average (~25%) and the hospital's historical average (~23%) showing both direct health benefits and potential decreases in cost of care.

Diabetes is a chronic condition involving the absence (Type 1) or poor response (Type 2) to insulin. Both type 1 and type 2 diabetes may require daily glucose monitoring and the use of exogenous insulin. Due to the negative effects on several organ systems of chronically high average blood glucose, diabetes management focuses on control of daily blood glucose levels. Hemoglobin A1C is used to estimate the average blood glucose over the past three months and is often utilized to measure effectiveness of treatments and disease severity. For this policy, a determination of poorly controlled disease would


 <b>JOHNS HOPKINS</b> HEALTH PLANS	Johns Hopkins Health Plans <b>Medical Policy Manual</b> <b>Medical Policy</b>	<i>Policy Number</i>	CMS24.20
	<u>Subject</u> <b>Remote Patient Monitoring</b>	<i>Effective Date</i>	10/01/2024
		<i>Approval Date</i>	07/16/2024
		<i>Supersedes Date</i>	N/A
		<i>Page</i>	4 of 7

be a hemoglobin of 7.0% or higher. Today's market has a wide selection of continuous glucose monitors (CGMs) allowing patients and care teams to monitor their blood glucose levels and intervene when necessary. Park et al. (2023) studied the use of RPM among Medicaid patients with diabetes and found participation within an RPM program and treatment plan (i.e. participants received adherence calls) increased adherence to blood glucose measurements and saw statistically significant improvements in mean blood glucose levels over five months of participation. Fremont and Miller (2021) found RPM use in youth with type 1 diabetes using CGMs led to better self-efficacy and an improved ability to control mean blood glucose levels. Importantly, this study also highlighted the sensitive balance between collecting an appropriate level of measurements and an overload of information, with some parents reporting anxiety with the increase in measurements leading them to become overly involved.

Chronic obstructive pulmonary disease (COPD) is a chronic respiratory condition typically caused by damage to the lungs from exposure to pollutants, including tobacco smoking, over many years. Common symptoms of COPD include shortness of breath, wheezing, chest tightness, and increased susceptibility to respiratory illnesses. Severity of COPD is classified using the Global Initiative for Chronic Obstructive Lung Disease (GOLD) and ranges from Stage 1/mild to Stage 4/very severe and is based on a combination of FEV1 measurements and symptoms. For this policy, poorly controlled COPD is defined as Stage 2/moderate or higher. Polsky et al. (2023) studied how 126 subjects responded to RPM reporting the rates of unplanned hospitalization before and after enrolling into a 12-month RPM program. They found unplanned, all-cause hospitalizations per patient per year decreased from 1.09 to 0.38. Studies have also looked at using RPM with COPD to predict an exacerbation with the goal of early intervention and avoidance of emergency visits or hospitalizations. Cooper et al. (2020) studied 17 participants with moderate to severe COPD and found that measurements of oxygen saturation, FVC, and FEV1 correlated with self-reported use of short-acting bronchodilators, exacerbations, and healthcare utilization. Polsky and Moraveji (2021) presented a case report on how RPM was utilized for a patient with mild COPD to detect changes which indicated worsening disease and allowed for successful early intervention and probable avoidance of higher level healthcare utilization.

Other chronic conditions may also benefit from RPM including asthma and hypertension. Van der Kamp et al. (2023) are currently studying health care utilization, costs, and health outcome effects of RPM for pediatric asthma through the ALPACA study. Persell et al. (2023) followed a cohort of patients aged 65 to 85 years with uncontrolled hypertension and showed adding RPM programs to usual care led to control by 32.5% of participants versus 30.7% for RPM-only and 27.1% for usual care programs.

Regardless of the underlying disease, RPM programs should be supported with appropriate treatment plans and documentation. Treatment plans will vary between conditions and based on shared decision-making with each patient. Some elements common to a treatment plan are treatment goals and endpoints, patient consent, patient acknowledgment of capacity to utilize the monitoring equipment (e.g. education on use, Internet connection, adequate supplies) and willingness to meet the minimal frequency of monitoring, and a monitoring plan for the collected data and an established process to address abnormal measurements. Examples of goals of RPM may include timely intervention to prevent worsening, reduction of emergency visits and/or hospitalizations, reduction in severity or burden of illness, and improved medication management. The medical devices used in the RPM program should satisfy the definition of "medical device" per Section 201(h) of the Food, Drug, and Cosmetic Act and is cleared or authorized for the intended, prescribed use. Device approvals and indications can be verified at [Devices@FDA](mailto:Devices@FDA) (HHS, 2024). The device should automatically collect the data and securely transmit the data to the ordering provider (or qualified team member) for analysis and interpretation. A minimum of 16 days of data collection should occur within each 30-day period.

 <b>JOHNS HOPKINS</b> HEALTH PLANS	Johns Hopkins Health Plans <b>Medical Policy Manual</b> <b>Medical Policy</b>	<i>Policy Number</i>	CMS24.20	
		<i>Effective Date</i>	10/01/2024	
		<i>Approval Date</i>	07/16/2024	
	<i>Subject</i>	<b>Remote Patient Monitoring</b>	<i>Supersedes Date</i>	N/A
			<i>Page</i>	5 of 7

## VII. CODING DISCLAIMER

CPT<sup>®</sup> Copyright 2024 American Medical Association. All rights reserved. CPT<sup>®</sup> is a registered trademark of the American Medical Association.

*Note:* The following CPT<sup>®</sup>/HCPCS codes are included below for informational purposes and may not be all-inclusive.


Inclusion or exclusion of a CPT<sup>®</sup>/HCPCS code(s) below does not signify or imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member's specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee of payment. Other policies and coverage determination guidelines may apply.

*Note:* All inpatient admissions require preauthorization.

<i>Adherence with the provision in this policy may be monitored and addressed through post payment data analysis and/or medical review audits</i>
Employer Health Programs (EHP): Refer to specific Summary Plan Description (SPDs). If there is no criteria in the SPD, apply the Medical Policy criteria.
Priority Partners (PPMCO): Refer to COMAR guidelines. If there are no criteria in COMAR regulations, then apply the Medical Policy criteria.
US Family Health Plan (USFHP): TRICARE Policy supersedes JHHC Medical Policy. If there is no Policy in TRICARE, apply the Medical Policy criteria.
Advantage MD: LCDs and NCDs supersede JHHC Medical Policy. If there is no LCD or NCD, apply the Medical Policy criteria.
Johns Hopkins Health Plan of Virginia LLC (JHHPVA): LCDs and NCDs supersede JHHC Medical Policy. If there is no LCD or NCD, apply the Medical Policy criteria.

## VIII. CODING INFORMATION

CPT <sup>®</sup> CODES ARE FOR INFORMATIONAL PURPOSES ONLY	
99453	Remote monitoring of physiologic parameter(s) (e.g., weight, blood pressure, pulse oximetry, respiratory flow rate), initial; set-up and patient education on use of equipment.
99454	Remote monitoring of physiologic parameter(s) (e.g., weight, blood pressure, pulse oximetry, respiratory flow rate), initial; device(s) supply with daily recording(s) or programmed alert(s) transmission, each 30 days.
99457	Remote physiologic monitoring treatment management services, clinical staff/physician/other qualified health care professional time in a calendar month requiring interactive communication with the patient/caregiver during the month; first 20 minutes.
99458	Remote physiologic monitoring treatment management services, clinical staff/physician/other qualified health care professional time in a calendar month requiring interactive communication with the patient/caregiver during the month; each additional 20 minutes (List separately to code for primary procedure).

	Johns Hopkins Health Plans <b>Medical Policy Manual</b> <b>Medical Policy</b>	<i>Policy Number</i>	CMS24.20	
		<i>Effective Date</i>	10/01/2024	
		<i>Approval Date</i>	07/16/2024	
	<i>Subject</i>	<b>Remote Patient Monitoring</b>	<i>Supersedes Date</i>	N/A
			<i>Page</i>	6 of 7

99091	Collection and interpretation of physiologic data (e.g., ECG, blood pressure, glucose monitoring) digitally stored and/or transmitted by the patient and/or caregiver to the physician or other qualified health care professional, qualified by education, training, licensure/regulation (when applicable) requiring a minimum of 30 minutes of time, each 30 days.
-------	---

#### HCPCS CODES ARE FOR INFORMATIONAL PURPOSES ONLY

S9110	Telemonitoring of patient in their home, including all necessary equipment; computer system, connections, and software; maintenance; patient education and support; per month.
-------	--

#### ICD-10 CODES ARE FOR INFORMATIONAL PURPOSES ONLY

J44	Other Chronic Obstructive Pulmonary Disease
E10	Type 1 Diabetes Mellitus
E11	Type 1 Diabetes Mellitus
I50	Heart Failure
I10	Essential (primary) hypertension

## IX. REFERENCE STATEMENT

Analyses of the scientific and clinical references cited below were conducted and utilized by the Johns Hopkins Health Plans (JHHP) Medical Policy Team during the development and implementation of this medical policy. The Medical Policy Team will continue to monitor and review any newly published clinical evidence and revise the policy and adjust the references below accordingly if deemed necessary.

## X. REFERENCES

American Medical Association (AMA). (2022). *Remote Patient Monitoring Playbook*. <https://www.ama-assn.org>


American Physical Therapy Association (APTA). (2022). *APTA Practice Advisory: Remote Therapeutic Monitoring Codes Under Medicare*. <https://www.apta.org>

Cooper, C. B., Sirichana, W., Arnold, M. T., Neufeld, E. V., Taylor, M., Wang, X., & Dolezal, B. A. (2020). Remote Patient Monitoring for the Detection of COPD Exacerbations. *International journal of chronic obstructive pulmonary disease*, *15*, 2005–2013. [doi.org/10.2147/copd.s256907](https://doi.org/10.2147/copd.s256907)

Curtis, J. R., & Willig, J. (2023). Uptake of Remote Physiologic Monitoring in the US Medicare Program: A Serial Cross-sectional Analysis. *JMIR mHealth and uHealth*, *11*, e46046. [doi.org/10.2196/46046](https://doi.org/10.2196/46046)

Fremont, E. R., & Miller, V. A. (2021). Perspectives on Remote Glucose Monitoring in Youth With Type 1 Diabetes. *Journal of pediatric psychology*, *46*(10), 1276–1285. [doi.org/10.1093/jpepsy/jsab068](https://doi.org/10.1093/jpepsy/jsab068)

Koehler, F., Koehler, K., Deckwart, O., Prescher, S., Wegscheider, K., Kirwan, B. A., Winkler, S., Vettorazzi, E., Bruch, L., Oeff, M., Zugck, C., Doerr, G., Naegele, H., Störk, S., Butter, C., Sechtem, U., Angermann, C., Gola, G., Prondzinsky, R., Edelmann, F., ... Stangl, K. (2018). Efficacy of telemedical interventional management in patients with heart failure

 <b>JOHNS HOPKINS</b> HEALTH PLANS	Johns Hopkins Health Plans <b>Medical Policy Manual</b> <b>Medical Policy</b>	<i>Policy Number</i>	CMS24.20
		<i>Effective Date</i>	10/01/2024
		<i>Approval Date</i>	07/16/2024
	<i>Subject</i> <b>Remote Patient Monitoring</b>	<i>Supersedes Date</i>	N/A
		<i>Page</i>	7 of 7

(TIM-HF2): a randomized, controlled, parallel-group, unmasked trial. *Lancet (London, England)*, 392(10152), 1047–1057. [doi.org/10.1016/S0140-6736\(18\)31880-4](https://doi.org/10.1016/S0140-6736(18)31880-4)

Park, C., Ootob, E., Ullman, J., Rogers, J., Fasihuddin, F., Garg, S., Kakkar, S., Goldstein, M., Chandrasekhar, S. V., Pinney, S., & Atreja, A. (2019). Impact on Readmission Reduction Among Heart Failure Patients Using Digital Health Monitoring: Feasibility and Adoptability Study. *JMIR medical informatics*, 7(4), e13353. [doi.org/10.2196/13353](https://doi.org/10.2196/13353)

Park, S., Kum, H. C., Zheng, Q., & Lawley, M. A. (2023). Real-World Adherence and Effectiveness of Remote Patient Monitoring Among Medicaid Patients With Diabetes: Retrospective Cohort Study. *Journal of medical Internet research*, 25, e45033. [doi.org/10.2196/45033](https://doi.org/10.2196/45033)

Persell, S. D., Petito, L. C., Anthony, L., Peprah, Y., Lee, J. Y., Campanella, T., Campbell, J., Pigott, K., Kadric, J., Duax, C. J., Li, J., & Sato, H. (2023). Prospective Cohort Study of Remote Patient Monitoring with and without Care Coordination for Hypertension in Primary Care. *Applied clinical informatics*, 14(3), 428–438. [doi.org/10.1055/a-2057-7277](https://doi.org/10.1055/a-2057-7277)

Polsky, M. B., & Moraveji, N. (2021). Early identification and treatment of COPD exacerbation using remote respiratory monitoring. *Respiratory medicine case reports*, 34, 101475. [doi.org/10.1016/j.rmcr.2021.101475](https://doi.org/10.1016/j.rmcr.2021.101475)

Polsky, M., Moraveji, N., Hendricks, A., Teresi, R. K., Murray, R., & Maselli, D. J. (2023). Use of Remote Cardiorespiratory Monitoring is Associated with a Reduction in Hospitalizations for Subjects with COPD. *International journal of chronic obstructive pulmonary disease*, 18, 219–229. [doi.org/10.2147/COPD.S388049](https://doi.org/10.2147/COPD.S388049)

U.S. Food and Drug Administration (FDA). (2024). *Devices@FDA*. <https://www.accessdata.fda.gov>

van der Kamp, M., Hengeveld, V., Willard, N., Thio, B., de Graaf, P., Geven, I., & Tabak, M. (2023). Remote Patient Monitoring and Teleconsultation to Improve Health Outcomes and Reduce Health Care Utilization of Pediatric Asthma (ALPACA Study): Protocol for a Randomized Controlled Effectiveness Trial. *JMIR research protocols*, 12, e45585. [doi.org/10.2196/45585](https://doi.org/10.2196/45585)

## **XI. APPROVALS**

10/01/2024