

5 REASONS YOU SHOULD USE REMOTE PATIENT MONITORING TO MANAGE PATIENT HEALTH AND RECOVERY



Healthcare providers and health systems are facing an unprecedented challenge: Provide individualized care to patients while managing ever-increasing demands on resources.

Remote patient monitoring is one way to support care provided to patient populations. Remote patient monitoring programs use technology and patient support services to monitor patients' health status over time outside of conventional clinical settings. [Medtronic Care Management Services](#) provides remote monitoring programs designed to help healthcare providers and health systems better manage the health of focused populations, providing five key benefits.

5 BENEFITS OF REMOTE PATIENT MONITORING

Clinical studies have shown the following benefits are linked to remote monitoring programs:

1 ENGAGES PATIENTS WITH TAILORED INFORMATION	2 IMPROVES HEALTH OUTCOMES AND REDUCES HEALTHCARE UTILIZATION	3 REDUCES THE TOTAL COST OF CARE
4 SCALES TO LARGE PATIENT POPULATIONS	5 MONITORS MULTIPLE CHRONIC CONDITIONS	

1. Remote patient monitoring can engage patients with individualized experiences

Remote patient monitoring programs should do more than gather data. They should provide a vital two-way connection between patients and their care teams.

This connection bolsters confidence and keeps patients engaged in their own self-care.

Health systems may use remote patient monitoring to provide condition-related education to their patients. For example, patients using Medtronic Care Management Services remote monitoring are offered condition-related educational content directly through the monitoring platform as they complete their daily health check. Based on the patient responses to health check questions, the program uses branching logic to ask different questions and may provide relevant content to help patients understand their condition or symptomology.

The individualized experience provided through medication reminders, health maintenance interventions, and condition-related educational content are designed to help patients feel more confident and in control of their health.

2. Remote patient monitoring can improve health outcomes and reduce unnecessary healthcare utilization^{1,2,3}

A good remote patient monitoring program should help clinicians prioritize their most at-risk patients and alert clinicians to notable changes in patients' health status, allowing for intervention before an acute event occurs.

The U.S. Department of Veterans Affairs (VA) studied 4,999 patients with multiple chronic conditions using remote patient monitoring in a telehealth program. The chronic disease management program promoted patient self-management through care coordination, supplemented with home telehealth monitoring. The VA achieved lowered mortality rates compared to patients outside of the program by more than 40% over 12 months.¹

Medtronic
Further, Together

Studies have found remote patient monitoring reduced healthcare utilization when used as part of a care management program. For example, a Medicare Advantage plan implemented Medtronic Care Management Services heart failure monitoring and experienced a 30% reduction in emergency room (ER) visits per thousand patients.²

In another example, the University of Nebraska conducted a 90-day telehealth study on 552 recently discharged patients diagnosed with Type 2 diabetes. The telehealth program included weekly phone calls for coaching and education in addition to the Medtronic Care Management Services remote patient monitoring program. The University of Nebraska saw a 55% reduction in the percentage of patients with hemoglobin A1c levels above 9% — a key measurement tied to positive diabetic health outcomes.³

3. Remote patient monitoring can reduce the total cost of care^{4,5}

Remote patient monitoring can offer a solid return on investment by helping reduce the total cost of care per member per month (PMPM) for high-risk patient populations. Clinical evidence suggests that monitoring technology and services can aid health plans and health systems in early intervention, patient self-care, and patient education.

50%, decreased length of stay by almost 70%, and lowered the average daily charge per patient by more than 55%⁴

Spectrum Health, an integrated health system in Michigan, performed a nearly six-month study on 795,000 heart failure patients recently discharged from an acute care setting, including 138 patients on Medtronic Care Management Services monitoring. Spectrum found that using the Medtronic Care Management Services monitoring program reduced hospital admissions by more than 50%, decreased length of stay by almost 70%, and lowered the average daily charge per patient by more than 55% — from \$5,705 to \$2,525 on average per patient.⁴

Additionally, a randomized controlled study of satisfaction using home telehealth tools shows patients report a positive experience with remote monitoring. In fact, patients receiving home monitoring services were more likely to report higher satisfaction than those receiving usual care. The mean age of the study participants is 78 years, indicating that telehealth technology may be a useful tool at any age.⁵

4. Remote patient monitoring scales to large patient populations⁶

Remote patient monitoring can be used to maximize the impact of care management across diverse patient populations. Advances in technology have given remote monitoring providers the ability to analyze data in large patient populations. Risk stratification algorithms can process and apply criteria to retrospective clinical and claims data to identify cohorts of high-risk patients.

Some remote monitoring providers can scale to maintain many patients on service simultaneously — while providing a level of personalization to each patient’s needs. The aforementioned VA study is a prime example of how nearly 5,000 patients participated in one home telehealth study using remote patient monitoring to promote self-management.⁶

Clinical monitoring software can analyze patient-submitted data, identify notable changes to their health, and alert clinicians. Automated data analysis in Medtronic Care Management Services remote monitoring software is designed to help clinical staff prioritize follow up with high-risk patients. We believe this efficiency is critical to managing large populations and helping target your most acute patients requiring clinical resources.

5. Remote patient monitoring can support the medical and surgical needs of patients with chronic complex conditions^{7,8}

The prevalence of patients with complex, chronic, co-morbid conditions is staggering. Comorbidity is so common among patients with chronic conditions that 99% of heart failure patients and 96% of diabetes patients have more than one other condition.⁷

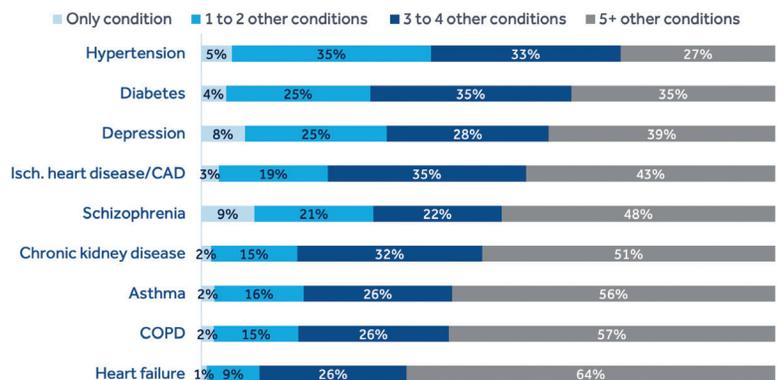


Figure 1. Comorbidity among chronic conditions for Medicare FFS beneficiaries (2015)

Healthcare providers are looking for partners who can help them manage their patients holistically outside the acute care setting, not just specific conditions

during a singular point in time.⁸ Effective remote patient monitoring programs have the ability to monitor multiple diseases or chronic conditions over time.

We designed more than 20 different disease management programs for Medtronic Care Management Services, covering a wide range of health conditions (like the nine listed in Figure 1), in addition to post-procedural needs and care transitions. By targeting high-cost, high-risk conditions like heart failure, COPD, and diabetes, we can simultaneously monitor other chronic conditions for a more complete view of patients' health.

In conclusion, no one healthcare entity can address all chronic care management needs, so we must collaborate across the industry to create more connected and integrated models of care. Remote patient monitoring is a tool that supports clinician care management to deliver benefits to the health systems and — most importantly — to the health of their patients.

ABOUT THE AUTHOR

Author **Lindsay Streeter** is the former clinical leader at Medtronic Care Management Services, serving as the clinical voice of the business and was responsible for designing solutions to meet clinical strategic initiatives and serve patients, caregivers, and healthcare professionals across the care continuum.



Lindsay started at Medtronic Care Management Services in 2011 and held a variety of positions including clinical operations management, program management and strategic clinical program design. Prior to Medtronic, Lindsay was a charge nurse for a large in-center hemodialysis provider and a Heart Failure Nurse Clinician for an integrated network in Minneapolis, Minnesota.

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REFERENCES

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¹ Darkins A, Kendall S, Edmonson E, Young M, Stresel P. Reduced Cost and Mortality Using Home Telehealth to Promote Self-Management of Complex Chronic Conditions: A Retrospective Matched Cohort Study of 4,999 Veteran Patients. *Telemed JE Health*. 2015(21):70–76.

² Medtronic data on file.

³ Siahpush, Mo, Tyson, Geri. Remote Interventions Improving Specialty Complex Care (RIISCC): Remote Patient Monitoring for Diabetes Patients. University of Nebraska Medical Center PowerPoint presentation. 2016.

⁴ Dickinson, Michael G., and Kevin L. Vos. "Home Telehealth Done in an Integrated Disease Management Program Results in Substantial Cost Savings and Reduction in Healthcare Utilization." *Journal of Cardiac Failure*, vol. 21, no. 8, Aug. 2015, p. S78.

⁵ Grant LA, Rockwood T, Stennes L. Client Satisfaction with telehealth services in home health agencies. *Journal of Telemedicine and Telecare* 2015; 21(2): 88-92

⁶ Darkins, Adam, et al. "Reduced Cost and Mortality Using Home Telehealth to Promote Self-Management of Complex Chronic Conditions: A Retrospective Matched Cohort Study of 4,999 Veteran Patients." *Telemedicine and e-Health*, vol. 21, no. 1, 2015, pp. 70–76.

⁷ Chronic Conditions Among Medicare Beneficiaries, Chart Book: 2012 Edition. Baltimore, MD. Centers for Medicare & Medicaid Services. Accessed January 2016. *Data is based on third-party data, which is not necessarily identical to the Medtronic Care Management Services data.*

⁸ Medtronic data on file.