



New England Healthcare Institute

## Study in Brief:

With more evidence to draw from than ever before, NEHI's 2009 remote physiological monitoring (RPM) update expands upon the evidence base provided in its 2004 report, *Remote Physiological Monitoring: Innovation in the Management of Heart Failure*. The 2009 update provides a current cost-effectiveness analysis, examines the barriers to adoption, and presents new policy solutions to speed the adoption of RPM technologies in the treatment of congestive heart failure. This new information continues to demonstrate the high value of RPM and the barriers that must be addressed to achieve widespread adoption of this innovative technology for the benefit of patients and the health care system.

To read the full update, visit [www.nehi.net](http://www.nehi.net).

# Remote Physiological Monitoring

## OVERVIEW

Approximately 5.3 million people live with congestive heart failure in the United States today. Remote physiological monitoring (RPM) is a high-value, innovative telehealth technology with great potential to dramatically reduce costs and improve the quality of care for patients with this complex and costly disease. Since the publication of NEHI's initial RPM research report in 2004, there has been growing evidence of the potential of RPM to dramatically reduce readmissions – a key cost driver – for heart failure patients. In a 2009 update to this report, NEHI presents new evidence of the technology's cost effectiveness, as well as remaining barriers to its adoption.

## KEY FINDINGS

To estimate the national impact of remote monitoring technologies on Class III and Class IV heart failure patients – representing 30 percent of all heart failure cases – NEHI compared use of RPM to two existing heart failure management options: disease management and standard care. In terms of financial costs and reduction in heart-failure related readmissions using RPM, we found that:

- There is a 60 percent reduction in hospital readmissions compared to standard care and a 50 percent reduction in hospital readmissions compared to disease management programs without remote monitoring.
- Remote patient monitoring has the potential to prevent between 460,000 and 627,000 heart failure-related hospital readmissions each year.
- Based on this reduction in hospital readmissions, NEHI estimates an annual national cost savings of up to \$6.4 billion dollars.

## RPM AND COST EFFECTIVENESS

NEHI estimates the average yearly cost of RPM to be \$2,052 per patient for the technology alone and \$2,802 per patient for the technology along with a disease management program. Further, research found that patients using RPM technology experienced heart-failure related readmissions at a rate of .552 percent each year compared to patients receiving only disease management and standard care with significantly higher readmission rates of 1.116 percent and 1.320 percent respectively.

When these readmission estimates are applied to the cost of a heart-failure related hospitalization, the yearly per patient cost ranged from \$5,632 for RPM patients to \$11,387 for disease management without RPM patients to \$13,468 for standard care patients. The net savings of RPM technology (i.e. savings after the costs associated with interventions) were \$3,703 per patient per year for RPM versus disease management and \$5,034 patient per year for RPM versus standard care.

Finally, these savings, applied to all Class III and Class IV heart failure patients, assuming that 80% of the 1.59 million patients in these two classes, or 1.27 million patients, will be hospitalized in a year, demonstrated that **RPM can potentially yield a savings between \$4.7 and \$6.4 billion.** (See chart on reverse.)

## About NEHI

The New England Healthcare Institute (NEHI) is an independent, nonprofit research and health policy organization dedicated to transforming health care for the benefit of patients and their families. Together with its membership of committed health care leaders, NEHI brings an objective, collaborative, and fresh voice to health policy.

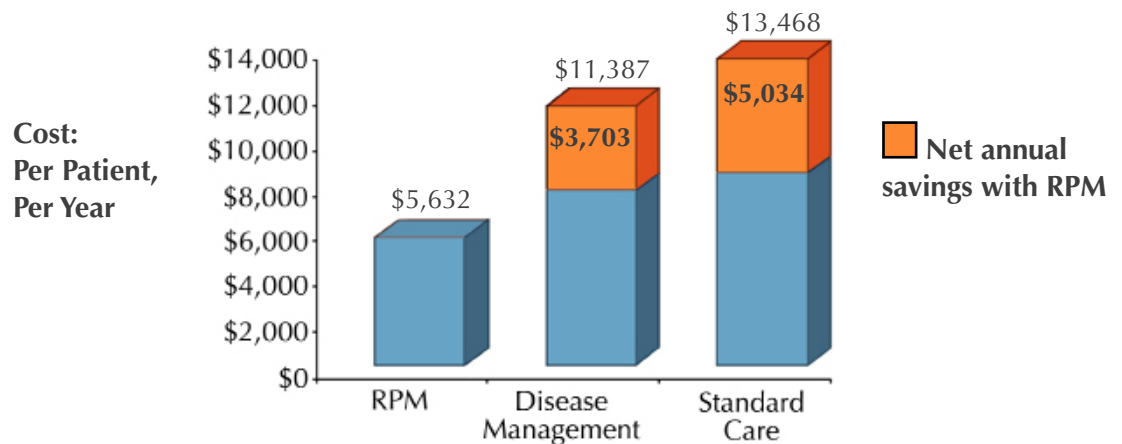
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“RPM has enormous potential to not only save money, but to drastically improve the lives of patients suffering from heart disease.”

Wendy Everett, ScD,  
NEHI President

## HEART FAILURE CARE COMPARISON



## BARRIERS TO CHANGE

While the barriers to RPM adoption identified in NEHI's 2004 report still remain, new information on these barriers is now available. Among the new developments are:

**Inadequate reimbursement:** Medicare does not widely support remote health services, nor do about half of the state Medicaid programs, but approximately 130 insurance companies now provide coverage for telemedicine in some capacity.

**Provider concerns:** Providers remain concerned that telemedicine will generate large volumes of additional work, increase legal liability, and lead to the loss of traditional provider control.

**Limited patient awareness:** Patient awareness of RPM remains low because there is a limited amount of public information available and that which is available is not reaching the target audience – seniors, the chronically ill and their caretakers.

**Information technology barriers:** The lack of interoperable connectivity standards among providers, the spotty adoption of electronic medical records, and the lack of infrastructure in rural areas must all be addressed before RPM technology can diffuse widely in the marketplace.

## COVERAGE AND REIMBURSEMENT POLICY OPTIONS

New codes in the Centers for Medicare and Medicaid Services' (CMS) 2009 final physician payment rule represents a key milestone toward broadened coverage prospects for RPM technologies. In the future, potential strategies to further expand RPM coverage include Medicare providing provisional national coverage and CMS Regional Offices pursuing Local Coverage Determination (LCD), which would improve the available evidence and demonstrate effectiveness, perhaps leading eventually to a National Coverage Decision (NCD).

As CMS and the Medicare Payment Advisory Commission look to redesign the reimbursement system to encourage efficiency, a strong recommendation has been made to Congress to eliminate hospital payment for readmission for the same condition within 30 days. To encourage hospitals to collaborate with post-acute providers after a patient is discharged, CMS should also provide incentive payments to hospitals that demonstrate a lower readmission rate. These actions will encourage the adoption of RPM, and payment incentives will provide the financial support for those hospitals that incorporate RPM.