Improved Health Outcomes and Cost-Savings with Remote Monitoring of Cardiac Implantable Electronic Devices

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INTRODUCTION

- National health reform trends reward health systems and providers that deliver low-cost, high-quality services with a focus on initiatives that limit downstream morbidity, mortality, and hospital readmissions. We sought to describe the impact of remote monitoring (RM) of cardiac implantable electronic devices (CIEDs) on cost and cardiovascular outcomes in a Medicare population.

METHODS

- Using a Medicare 5% beneficiary sample limited data set, a retrospective analysis was performed comparing downstream expenditures and health outcomes between those CIED patients engaged in RM (at least one billed transmission over three years), and those who were not. The analysis included all pacemaker and ICD implants and revisions in the sample from the 2006 and 2007 calendar years.

RESULTS

- A total of 19,954 cases were analyzed. Medicare expenditures for CIED patients were tracked for three years after device implant. For those patients with pacemaker (PM) implants, the use of remote monitoring was associated with a 9% reduction in downstream cost ($49,496 vs $45,130, p<0.001).

- While the overall spend was higher with the presence of co-morbid atrial fibrillation (AF), the impact of RM remained similar ($58,453 vs $53,000, p=0.026). Likewise, in patients with ICD/CRT-D devices, RM was associated with a 17% reduction in spending ($64,173 vs $53,532, p<0.001).

- Additionally, RM of ICD/CRT-D devices was associated with a significant reduction in stroke admissions (6% vs 4.2%, p=0.013) and CHF admissions (56.9% vs 42.4%, p<0.001). RM of CIEDs favorably impacted all-cause mortality for both PM (9.6% vs 6.3%, p<0.001) and ICD/CRT-Ds (10.7% vs 7.8%, p<0.001).

- An even greater reduction in all-cause mortality was noted for RM of PM patients when AF was present (11.5% vs 6.6%, p<0.001).

DISCUSSION

- The use of RM of CIEDs is associated with significantly lower downstream expenditures and improved health outcomes in a Medicare population. Keeping patients and providers frequently linked via RM may reduce cost and improve quality in the health system. This presents an opportunity for providers to better manage payment risks associated with current U.S. healthcare reforms.

References

3. CONNECT Trial Demonstrates Clinical and Economic Benefits of Remote Monitoring in Reducing Hospital Stays and In-Office Visits for Cardiac Patients Treated with Implantable Devices (Medtronic CareLink® Network Remote Monitoring Helps Improve Patient Care and Reduce Healthcare Costs.

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