

## Study Shows Practice Improvement Program Enhances Guideline-Recommended Device and Drug Therapy Use for Heart Failure Patients

*IMPROVE HF Study Published in Circulation Demonstrates Improved Adherence to Five of Seven Guideline-Recommended Care Measures*

MINNEAPOLIS, Jul 26, 2010 (BUSINESS WIRE) --

Results of the largest U.S. outpatient heart failure clinical study show that implementation of a process improvement program significantly improved adherence to evidence-based, guideline-recommended cardiac resynchronization therapy (CRT), implantable cardioverter-defibrillator (ICD) and drug therapy. Twenty-four-month findings from IMPROVE HF, (The Registry to Improve the Use of Evidence-Based Heart Failure Therapies in the Outpatient Setting), were made available online and will be formally published in the August 10 issue of *Circulation: Journal of the American Heart Association*. This study was funded by Medtronic, Inc. (NYSE: MDT).

The study demonstrates that cardiology practices implementing the process improvement program significantly increased use on five of seven guideline-recommended care measures. Specifically, CRT and ICD use increased by 30 and 27 percent, respectively, and aldosterone antagonist use increased by 25 percent, all compared to baseline results. The study also showed significant improvement on use of beta blockers and the delivery of heart failure education when practice improvement programs were implemented. Use of angiotensin converting enzyme inhibitors or angiotensin II receptor blockers and anticoagulation for atrial fibrillation did not show significant improvement.

"With more than five million Americans suffering from heart failure and as one of the few cardiovascular diseases on the rise, there is a clear and urgent need to close the treatment gap between heart failure guidelines and the level of care patients currently receive," said Gregg C. Fonarow, M.D., co-chair of the IMPROVE HF Scientific Steering Committee and Professor of Cardiovascular Medicine at the University of California at Los Angeles. "The IMPROVE HF study results serve as a call to action to transform heart failure care delivery in the outpatient practice setting to consistently implement guideline-driven standards of care."

IMPROVE HF baseline data, collected prior to any performance improvement intervention, demonstrated inconsistencies in guideline recommended care for heart failure patients, with women and elderly particularly at risk for underutilization of lifesaving heart failure device therapies. Specifically, clinic-level analysis shows only 37 percent of eligible heart failure patients received a CRT device, 50 percent received an ICD, and 35 percent received aldosterone antagonist drug therapy. The 24-month data, which were gathered after implementing the practice-specific performance improvement interventions, showed higher utilization with CRT therapy increasing to 66 percent, ICD use increasing to 78 percent and aldosterone antagonist drug therapy increasing to 60 percent utilization.

"Medtronic is committed to supporting research and providing solutions that will help physicians provide better quality of care for their heart failure patients," said Pat Mackin, president of the Cardiac Rhythm Disease Management business and senior vice president at Medtronic. "This innovative program and the clinical sites participating in IMPROVE HF are leading the way."

### About IMPROVE HF

IMPROVE HF is the first-of-its-kind, large-scale, prospective study involving approximately 35,000 heart failure patients from 167 U.S. cardiology practices. Using a process improvement intervention and chart reviews at

baseline, six, 12, 18 and 24 months, IMPROVE HF was designed to quantify and improve quality of care for heart failure patients by promoting the use of evidence-based, guideline-recommended therapies. All study data were collected and analyzed by an independent clinical research organization.

The quality measures apply only to patients documented to be eligible for treatment according to current guidelines and without any recorded contraindications, intolerance, or other rationale for not treating.

#### About Medtronic

Medtronic, Inc. ([www.medtronic.com](http://www.medtronic.com)), headquartered in Minneapolis, is the global leader in medical technology - alleviating pain, restoring health, and extending life for millions of people around the world.

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