Use of a device-based remote management heart failure care pathway is associated with reduced hospitalization and improved patient outcomes: TriageHF Plus real-world evaluation


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Background: Heart failure (HF) is a leading cause of hospital admission. However, prompt identification of worsening HF using implantable device data and proactive intervention may reduce hospitalizations. The validated TriageHF algorithm in enabled ICD/CRT devices uses sensor data to risk stratify patients for HF hospitalization in the next 30 days. TriageHF Plus is a novel device-based HF care pathway (DHFP) that uses “high” risk status as the trigger for remote intervention (see Figure 1 for pathway overview). Outcomes after DHFP implementation in a clinical setting have not been examined.

Purpose: To evaluate the impact of TriageHF Plus clinical pathway on hospitalisation rates.

Methods: A prospective, multi-center evaluation comparing monthly hospitalization rates for patients enrolled in a DHFP with a concurrent standard of care (SoC) cohort and characterizing staffing resources necessary to implement the DHFP. The DHFP cohort received telephonic assessment and guideline-directed clinical care upon transition to high-risk status. Propensity scores (PS) were applied to DHFP and SoC cohorts to allow unbiased comparison. A negative binomial model was fitted to the monthly number of all-cause hospitalizations with treatment group (DHFP vs. SoC) as a covariate, using PS as weights.

Results: Between 09/11/2019 and 06/24/2021, 758 patients were included in the study (443 DHFP, 315 SoC). Proportion CRT <50% 76%/ 89% and LVEF <50% 78%/ 66% for DHFP/ SoC, respectively. High risk transmissions took on average 19 minutes per clinical assessment (initial telephone triage and 30 day follow up). The rate of hospitalizations was 58% lower in the DHFP group, compared with SoC, after PS adjustment (IRR 0.42, 95% CI: 0.23, 0.76, p=0.004), see Figure 2. Sensitivity analyses showed Covid-19 had little effect on results.

Conclusions: This is the first prospective, real-world evaluation of a device-based HF care pathway to report a reduction in hospitalizations and does so with minimal staffing time. Integrated into existing HF services, device-based remote monitoring of HF patients can improve outcomes.