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Feasibility and Acute Care Utilization Outcomes of a Post-Acute Transitional Telemonitoring Program for Underserved Heart Failure Patients

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Background: Heart failure (HF) is a chronic disease imparting significant burden. Limited access to health services affects disease severity and functional status. Telemonitoring shows promise in reducing acute care utilization for HF patients, but evidence of benefit for underserved patients is limited. We evaluated the feasibility and acute care utilization outcomes of a post-acute 90-day transitional care program integrating telemonitoring technology for underserved HF patients.

Methods: HF patients were enrolled into the program at two Sharp HealthCare hospitals with a large underserved population between 11/2010 and 11/2011. Primary outcomes were 30, 90 and 180-day ED use or all-cause readmission to any Sharp hospital (Sharp HealthCare is a large community based health system with 7 hospitals across San Diego County). We measured program satisfaction with a telemonitoring satisfaction questionnaire, and self-maintenance at enrollment and discharge using the Self-care Heart Failure Index (SCHFI). The Masters-prepared RN program coordinator (PC) set up the telemonitoring equipment during the post-discharge initial home visit. Telemonitoring included daily patient weight and symptomology recording. Changes in status or lack of recording prompted a call from the telemonitoring RN or PC. Telemonitoring equipment was removed at 90 days by PC, along with administration of final questionnaires.

Results: Control cohort was identified through Sharp HealthCare's electronic health record. Final N after propensity matching (3:1) on 18 demographic and clinical covariates was 49 program and 147 control patients. Patient satisfaction with program was 4.85 (1-5 scale). Average self-maintenance score was 50.25 (SD519.68) pre, and 88.77 (SD59.62) post, reflecting post-program self-activated behaviors (defined as score ≥ 70). There was no significant difference in ED utilization between cohorts. There was a clinically meaningful 22% difference in 30-day readmission rates between groups (18% vs. 14%, OR5 1.44 CI5 0.52, 4.02). There was no difference in 90 and 180-day readmission rates.

Conclusions: Program implementation was feasible and satisfactory to patients. Participants reported clinically meaningful changes in their self-maintenance, yet outcomes were not significantly different between groups at program end. This is in contrast to a subsequent study with underserved COPD patients, where program implementation resulted in a reduction in acute care utilization. Underserved HF patients have complex physiological care needs that may not have been adequately addressed with this study's telemonitoring technology, which did not monitor biomarkers such as blood pressure and heart rate. Further investigation is warranted to identify Telemonitoring functionality necessary to provide benefit for underserved HF patients.

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