

# Using Telehealth to Reduce All-Cause 30-Day Hospital Readmissions among Heart Failure Patients



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**O**VER 5.7 million Americans aged 20 years or older suffer from heart failure (HF) with an expected increase of 46% by 2030. Hospital discharges with a primary diagnosis of HF rose from 877,000 in 1996 to 1,023,000 in 2010. Estimated total cost of HF in the United States exceeded \$30 billion in 2012 and is projected to be \$70 billion by 2030.<sup>1</sup> Heart failure is the primary diagnosis for 4.3% of home health episodes<sup>2</sup> and is among the top ten most common diagnoses related groups for Medicare beneficiaries discharged from an acute care setting to home health.<sup>3</sup> CMS implemented the Hospital Readmissions Reduction Program to reduce payment to hospitals with excess Medicare beneficiary 30-day readmissions for HF.<sup>4</sup> Approximately 25% of HF patients are readmitted to a hospital within 30 days of discharge<sup>5</sup> making the reduction of HF patient readmission rates a national priority. Prior research shows varied results on patient outcomes, however, a recent meta-analysis indicates TH reduces HF related hospital admissions compared to usual care.<sup>6</sup> This presentation will describe the launch of this program, how operations were centralized and future directions. Reducing 30-day readmissions was and continues to be a health system-wide objective.

**Methods:** A telehealth, remote monitoring program was initiated in September of 2010 at Penn Care at Home, a skilled home health agency affiliated with the University of Pennsylvania Health System. The TH program is intended to reduce HF patient readmission rates within the health system. Program processes were continually monitored and continue to evolve contributing to this program's success. Potential candidates have to speak English, be able to stand on a scale and be agreeable to TH. Initial equipment employed was moderate sized TH unit reliant upon a landline telephone or wireless card. In 2014 all TH equipment was converted to a 4G tablet based system collects patient vital signs and systems and is preloaded with patient education related to maintaining a healthy lifestyle and self-care (automated device-based). The software also includes instructional videos and individualized care plans. The recorded data is transmitted to the TH team, located within the health system's teleICU on a daily basis, who collaborate with patients and providers to identify goals and strategies to avoid a hospital readmission if possible. Data related to admissions is captured via the health system's electronic health record which alerts TH personnel. Nearly 200 patients receive TH each year.

**Results:** Year one all-cause 30 day readmission rate was 19.3% (fiscal year 2011-2012) among HF patients. Current rate is 5.2% (fiscal year 2014-2015), a reduction of over 14% in three years.

**Discussion:** TH was associated with reduced all-cause 30-day readmission among HF patients receiving skilled home health services. Vigilant clinicians and efficient processes, including collaboration with the health system's existing teleICU program, have contributed significantly to the programs' success. Limitations include only one home health agency, one health system and that efforts to reduce 30-day readmission was a health system-wide objective which could contribute to this programs success.

**Conclusion:** Penn Care at Home's all-cause 30-day readmission rate has steadily declined since the program's inception and has become an integral part of the University of Pennsylvania Health Systems' 30-day readmission reduction efforts.

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