

Poster

Lower Risk of Home Hemodialysis Attrition in Patients Using Nx2me Connected Health Technology

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Abstract

Background: Home hemodialysis is a growing treatment modality for end-stage renal disease. Home hemodialysis facilitates increased treatment frequency, which may reduce intradialytic symptoms, decrease risk of cardiovascular morbidity, and improve quality of life. However, patients may elect to discontinue home hemodialysis for medical or psychosocial reasons and to convert to in-center hemodialysis. Tools that improve communication and coordination between patients and providers and reduce therapy burden on patients may reduce risk of attrition. Nx2me Connected Health (NxStage Medical, Inc, Lawrence, MA) is a telehealth platform that collects NxStage System One cyclers data and patient factors (eg, blood pressure, weight), transmits data to providers after each dialysis session, and enables providers to review data in the Nx2me Clinician Portal regularly; in contrast, usual care involves monthly review of patient-completed session records on paper.

Objective: To assess whether use of Nx2me Connected Health was associated with reduced risk of home hemodialysis attrition in patients on the System One cycler.

Methods: We collected data from home hemodialysis patients that initiated use of Nx2me Connected Health. At first use of Nx2me, we identified cumulative time with the System One cycler and treatment setting (in-center training or home). From NxStage records, we identified 3 matched controls for each Nx2me user. Specifically, for a Nx2me user who had accumulated t days with the System One cycler at first use of Nx2me, we identified potential controls who had also accumulated at least t days with the System One cycler (without use of Nx2me) and retained those in the same treatment setting as the Nx2me user at t days after first use of the System One cycler. We randomly selected 3 matched controls from this subset. We followed Nx2me users and matched controls until home hemodialysis attrition and classified the cause of attrition as non-controllable (due to transplant or death) or controllable (due to health issues, therapy burden, or other reasons). We used Fine-Gray competing-risks regression to model incidence of attrition, with stratification by matched cluster and adjustment for race, vascular access modality, and number of dialysis sessions per week.

Results: We identified 401 Nx2me users (cumulative follow-up years, 356) and 1203 matched controls (1111). Crude attrition rates in Nx2me users and matched controls were 39.6 and 50.6 stops per 100 patient-years, respectively. For Nx2me users versus matched controls, adjusted hazard ratios of attrition due to controllable causes were 0.64 (95% CI 0.49-0.83) overall and 0.52 (95% CI 0.36-0.76) in the subset of patients with <3 months on the System One cycler at first use of Nx2me (and their respective matched controls). In contrast, adjusted hazard ratios of attrition due to non-controllable causes were 1.09 (95% CI 0.79-1.51) overall and 1.01 (95% CI 0.55-1.84) in the aforementioned subset.

Conclusions: Use of Nx2me Connected Health reduced risk of home hemodialysis attrition due to health issues, therapy burden, and other reasons that ordinarily lead to conversion to in-center hemodialysis. The magnitude of risk reduction was larger in patients who initiated use of Nx2me shortly after first treatment with the NxStage System One cycler.

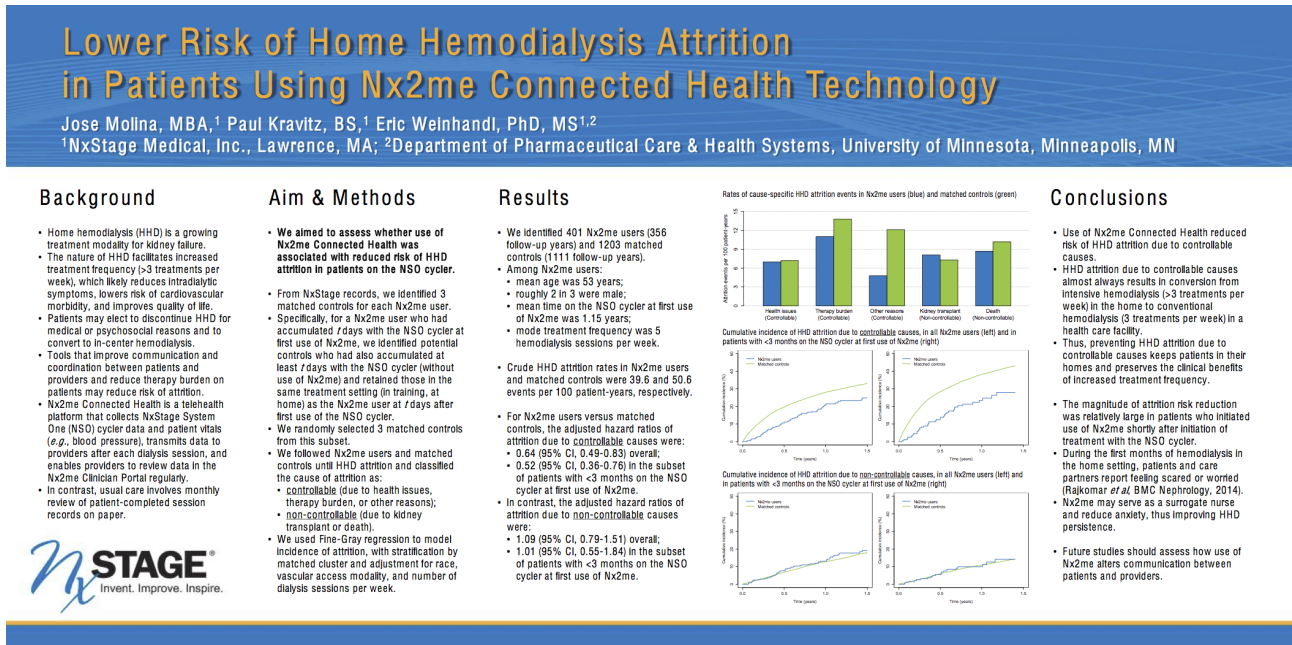
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KEYWORDS

end stage renal disease; home hemodialysis; technique failure; telehealth

This poster was presented at the Connected Health Symposium 2016, October 20-21, Boston, MA, United States. The poster is displayed as an image in [Figure 1](#) and as a PDF in [Multimedia Appendix 1](#).

Figure 1. Poster.



Multimedia Appendix 1

Poster.

[\[PDF File \(Adobe PDF File\), 269KB-Multimedia Appendix 1\]](#)

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