Improving Patient Prioritization during Homecare Admission: A Pilot Study

Maxim Topaz[1,2], Marygrace Trifilio[3], Donna Maloney[2], Kathryn H. Bowles[2,4]

U P to half of hospitalizations happen within the first two weeks of homecare services [e.g.,[1,2]]. Early targeted allocation of services for high risk patients has been shown to significantly reduce 30-day readmissions for heart failure patients.[3] Recently, we developed a tool called PREVENT to facilitate decision making on patient prioritization for the first homecare visit during homecare admission. This pilot study aimed to test the PREVENT tool and determine its effect on the timing of the first nursing visit from hospital discharge (i.e. whether high risk patients were prioritized for care) and on average readmissions rates and time to readmission.

Methods: This pre-post, quasi-experimental, pilot study was conducted at a large, homecare agency in NewYork (NY, USA) with 176 patients admitted to homecare after a hospital stay. In the pre-experimental phase, we calculated the PREVENT priority score on 90 randomly selected patients but did not share the scores with the intake nurses. Prior to the post phase, we educated the intake nurses and regional teams about the PREVENT tool and asked them to prioritize the first visit for patients who scored high risk on the PREVENT tool. The PREVENT score was then computed by intake nurses for 86 randomly selected patients and visit priority (high or medium/low) was communicated to the regional teams responsible for patient admission. Timing of the first homecare visit and hospital admission information were extracted from the homecare administrative records. This study received IRB approval from the homecare organization.

Results: On average, patients in both phases were seen within two days of hospital discharge. In the pre-experimental phase, 72% of patients were high priority compared to 78% patients in the experimental phase (p =.35). During the pre-experimental phase, both high and medium/low priority patients were admitted to homecare on average 2.2 days after hospital discharge whereas in the experimental phase, high risk patients were admitted one-half day sooner (1.8 days) and medium/low priority patients within 2.6 days. Thirty-four percent of patients were readmitted within an average of 21.9 days (SD = 15) in the pre-experimental phase versus 30% of patients in the experimental phase within an average of 26.5 days (SD =18.8). Further, hospital admission rates decreased in both high risk (32.8% vs. 36.9%) and medium/low risk patients (21% versus 28%) between the pre and post experimental phases. Although none of the outcomes were statistically significantly different, all outcomes trended in the expected direction.

Discussion: In the experimental phase, high risk patients were admitted to homecare almost one day sooner than medium/low risk patients, reflecting changes in nurses' admission practices and almost one half a day was shaved off the wait time for high risk patients. The study successfully tested the feasibility and workflow for administering and delivering the PREVENT decision support intervention. Hospitalization outcomes all trend toward a positive effect of the PREVENT tool, however further study is needed with a larger sample under randomized conditions to eliminate confounders.

Conclusion: This pilot study of patient prioritization for the first homecare nursing visit showed promising results. After applying and sharing the PREVENT tool with the nurses, high priory patients were seen sooner and overall hospital admission rates decreased. Future work is necessary to validate these results using a larger sample in a randomized controlled trial. Combining home visit prioritization with other early interventions such as early followup doctor visits should be further explored.

References

1. Berkowitz, SA and Anderson, GF. Medicare beneficiaries most likely to be readmitted. Journal of hospital medicine 2013;8:639–641.

2. O'connor, M, Hanlon, A, and Bowles, KH. Impact of frontloading of skilled nursing visits on the incidence of 30-day hospital readmission. Geriatric Nursing 2014;35:S37–S44.

3. Murtaugh, CM, Deb, P, Zhu, C, et al. Reducing Readmissions among Heart Failure Patients Discharged to Home Health Care: Effectiveness of Early and Intensive Nursing Services and Early Physician Follow-Up. Health Services Research 2016.

[1]Brigham and Women's Hospital, Boston, MA, USA
[2]Harvard Medical School, Boston, MA, USA
[3]Visiting Nurse Service of New York, NY, USA
[4]School of Nursing, University of Pennsylvania , PA, USA