Reducing 30-day Readmissions in Nursing Home Residents with Heart Failure

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INTRODUCTION

- Heart failure (HF) is the leading cause of hospital admissions and readmissions among adults ≥65 years.[1]
- HF disproportionately affects nursing home (NH) residents because of the complex interplay of factors.[2,3,4]
- Social determinants of health (SDOH) cause a disparate increase in HF prevalence among low-income and ethnic minorities in NHs.[5,6]
- There is limited evidence that HF guidelines effectively reduce readmissions in the NH.

OBJECTIVES

- Determine the impact of a 12-week evidence-based HF protocol on 30-day readmissions
- Evaluate the effect of HF education program on the knowledge of the NH's nursing staff
- Determine the feasibility of integrating a HF protocol into the NH's standard of care

METHODS

- **Design & Setting:** Pre-post intervention at a Medicare and Medicaid certified NH in California
- **Participants:** RN and LVN employees; NH residents ≥21 years with HF
- **Intervention:** HF protocol (Risk identification, weight monitoring, sodium restriction) and HF education program
- **Measures**: Readmissions, HF knowledge, Feasibility of intervention
- **Analysis:** Chi square, Wilcoxon signed-rank test, Descriptive statistics

RESULTS

Participant Demographics

- 8 Nursing staff
  - 75% LVNs, 12.5% ADN, 12.5% BSN
  - Mean length of experience: 4.3 years
- 34 NH residents (14 in pre-intervention and 20 in post-intervention)
  - Ages ranged from 68-98 years
  - 58.8% White, 5.9% Black, 14.7% Asians, 11.8% Hispanics, 8.8% not specified
  - No statistically significant differences in age, sex, and race between groups

RESULTS

Table 1: Pre- and Post-Intervention 30-day Readmission Rates

30-Day Readmission Rates	Pre-Intervention n (%)	Post-Intervention n (%)	X^2	p
Unadjusted	5 (35.7)	10 (50)	.68	.409
Adjusted [a]	5 (35.7)	7 (35)	.00	.966

[a] Adjusted for COVID-19

Readmissions were caused by a wide array of non-HF-related conditions.

Figure 1: 30-Day Readmission Rates by Race/Ethnicity

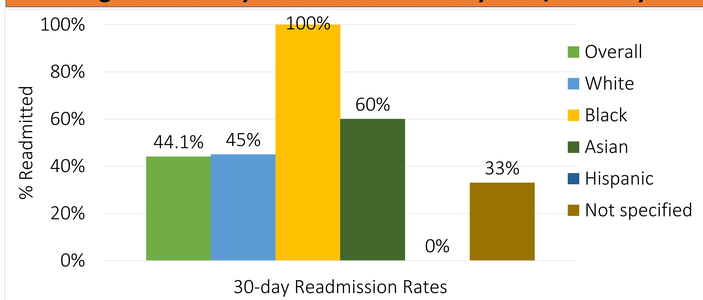

Table 2: HF Knowledge Pre- and Post-Test Scores

Variable	Pre-Test	Post-Test	Pre- Post Difference	p
	Mdn (SD)	Mdn (SD)	Mdn Change (SD)	
HF knowledge score	15 (1.81)	17 (1.39)	2 (.99)	.016

Note. N = 8

RESULTS

Table 3: Acceptability, Appropriateness, and Feasibility Rating of Intervention

Variables	M	Mdn	Mode	SD
Acceptability	4.57	5.0	5.0	.53
Appropriateness	4.28	4.0	4.0	.49
Feasibility	4.03	4.0	4.0	.09

Note. N = 7. Scores indicate the following: 1 = Completely disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Completely agree

CONCLUSION

- HF-specific interventions, including weight monitoring and sodium restriction, do not have a substantial impact on readmissions.
- Racial disparities exist in NH readmissions.
- HF education is associated with significant improvement in HF knowledge of NH staff.
- The HF protocol is feasible for implementation in the NH.

IMPLICATIONS

Future quality improvement projects need to:

- Focus on broad interventions that encompass medical diagnoses, improve the overall care of older adults, and target SDOH to reduce readmissions.
- Explore the impact of a tailored HF education on nursing assistants' HF knowledge.

REFERENCES

1. Savarese, G., Becher, P. M., Lund, L. H., Seferovic, P., Rosano, G. M. C., & Coats, A. J. S. (2022). Global burden of heart failure: A comprehensive and updated review of epidemiology. *Cardiovascular Research*, *118*, 3272-3278. https://doi.org/10.1093/cvr/cvac013
2. Jurgens, C. Y., Goodlin, S., Dolansky, M., Ahmed, A., Fonarow, G. C., Boxer, R., Arena, R., Blank, L., Buck, H.G., Cranmer, K., Fleg, J. L., Lampert, R. J., Lennie. T. A., Lindenfield, J., Piña, I. L., Semla, T. P., Trebbien, P., Rich. M. W., & the members of American Heart Association Council on Quality of Care and Outcomes Research and the Heart Failure Society of America. (2015). Heart failure management in skilled nursing facilities: A scientific statement from the American Heart Association and the Heart Failure Society of America. *Circulatory Heart Failure Journal*, *8*, 655-687. https://doi.org/10.1161/HHF.0000000000000005
3. Roger, V. L. (2021). Epidemiology of heart failure: A contemporary perspective. *Circulation Research*, 128, 1421-1434. https://doi.org/10.1161/CIRCRESHAHA.121.318172
4. Albert, N. M., Barnason, S., Deswal, A., Hernandez, A., Kociol, R., Lee, E., Paul, S., Ryan, C. J., White-Williams, C., and the members of the American Heart Association Complex Cardiovascular Patient and Family Care Committee of the Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, and Council on Quality of Care and Outcomes Research. (2015). Transitions of care in heart failure: A scientific statement from the American Heart Association. *Circulatory Heart Failure*, *8*, 384-409. https://doi.org/10.1161/HHF0000000000000006
5. Javed, Z., Maqsood, M. H., Yahya, T., Amin, Z., Acquah, I., Valero-Elizondo, J., Andrieni, J., Dubey. P., Jackson, R. K., Daffin, M. A., Cainzos-Achirica, M., Hyder, A. A., & Khurram, N. (2022). Race, racism, and cardiovascular health: Applying a social determinants of health framework to racial/ethnic disparities in cardiovascular disease. *Circulation: Cardiovascular Quality and Outcomes*, *15*, 72-86. https://doi.org/10.1161/CIRCOUTCOMES.121.007917
6. Lewsey, S. C. & Breathett, K. (2021). Racial and ethnic disparities in heart failure: Current state and future directions. *Current Opinion in Cardiology*, *36*, 320-328. https://doi.org/10.1097/HCO.0000000000000855