

Impact of Pharmacist-Led Medication Education on Heart Failure Readmission Rates

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Introduction to Facility

- Research Medical Center (RMC)—Kansas City, Missouri
 - 590-bed tertiary care facility
 - Level I trauma center
 - Joint Commission Comprehensive Stroke Certified
 - Level IIIa NICU
 - 18 OR suites
 - Orthopedics
 - Neurosurgery
 - Cardiothoracic surgery
 - Grossman Burn Center
 - Kidney/pancreas transplant
 - Sarah Cannon Cancer Center
 - Autogeneic bone marrow transplant



NICU = neonatal intensive care unit
OR = operating room

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Background

- Currently there are 6.5 million American adults with heart failure, 8 million adults estimated by 2030
- Almost half of HF patients will die within 5 years of diagnosis
- HF is one disease state affected by the Hospital Readmissions Reduction Program developed by the Affordable Care Act in 2016
- With these increasing rates, hospitals must use all their available resources to help improve HF outcomes

Heidenreich PA. *Circulation: Heart Failure*. 2013
Loehr LR. *Am J Cardiology*. 2008

Problem statement

- Investigate the impact of a pharmacist-led heart failure patient counseling program

- Primary objective:
 - Evaluate impact of pharmacist education on 30-day all-cause readmission of HF patients

- Secondary endpoints:
 - Change in HF-related 30-day readmission following pharmacist intervention
 - Change in patient satisfaction (HCAHPS) following pharmacist intervention

HF = heart failure

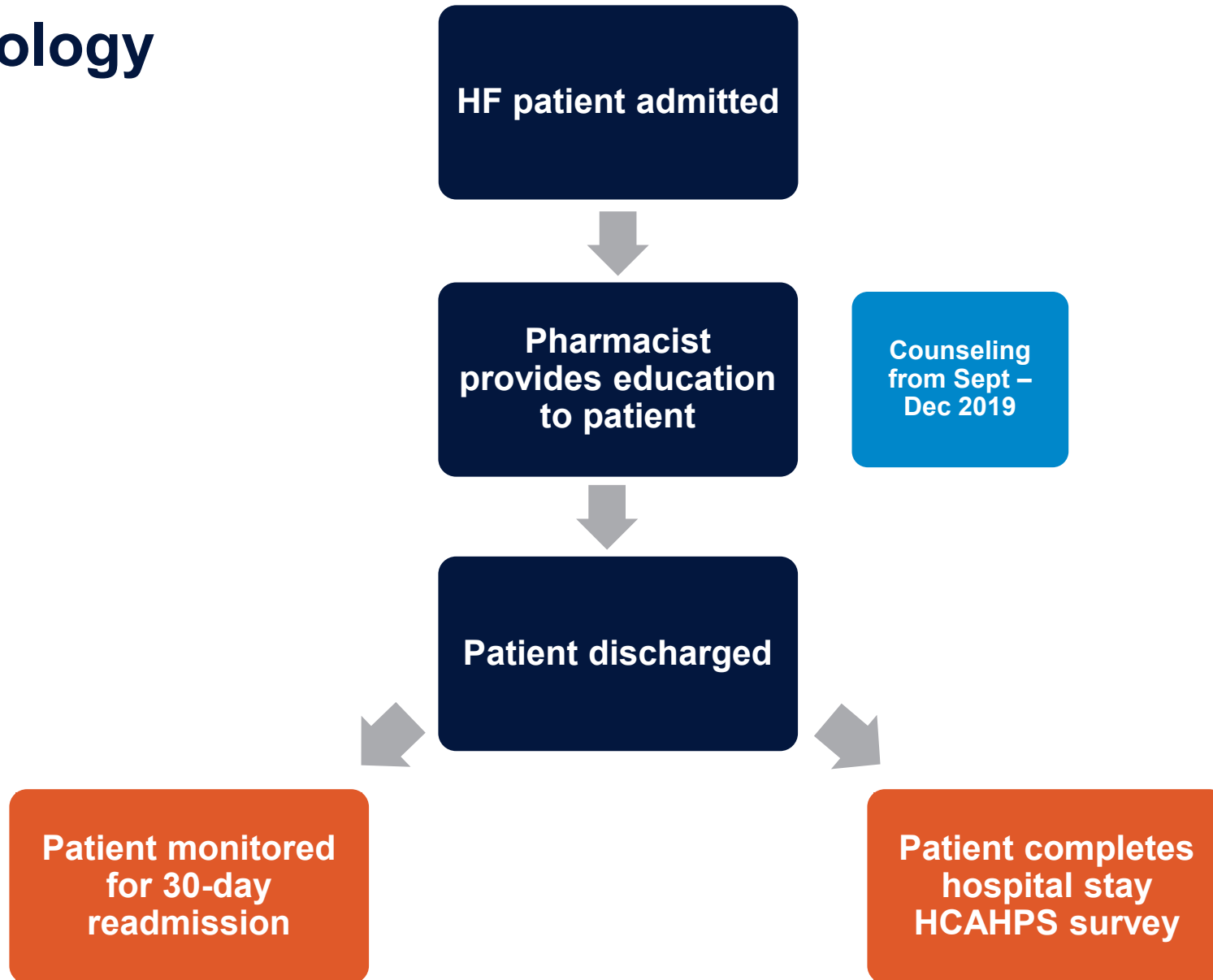
HCAHPS = Hospital Consumer Assessment of Healthcare Providers and Systems

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Methodology

- **Design:** Open-label, non-randomized, controlled study
- **Sample:** Patients aged 18 and older provided consent and were enrolled if they had a new diagnosis of heart failure or heart failure exacerbation

Methodology



HF = heart failure

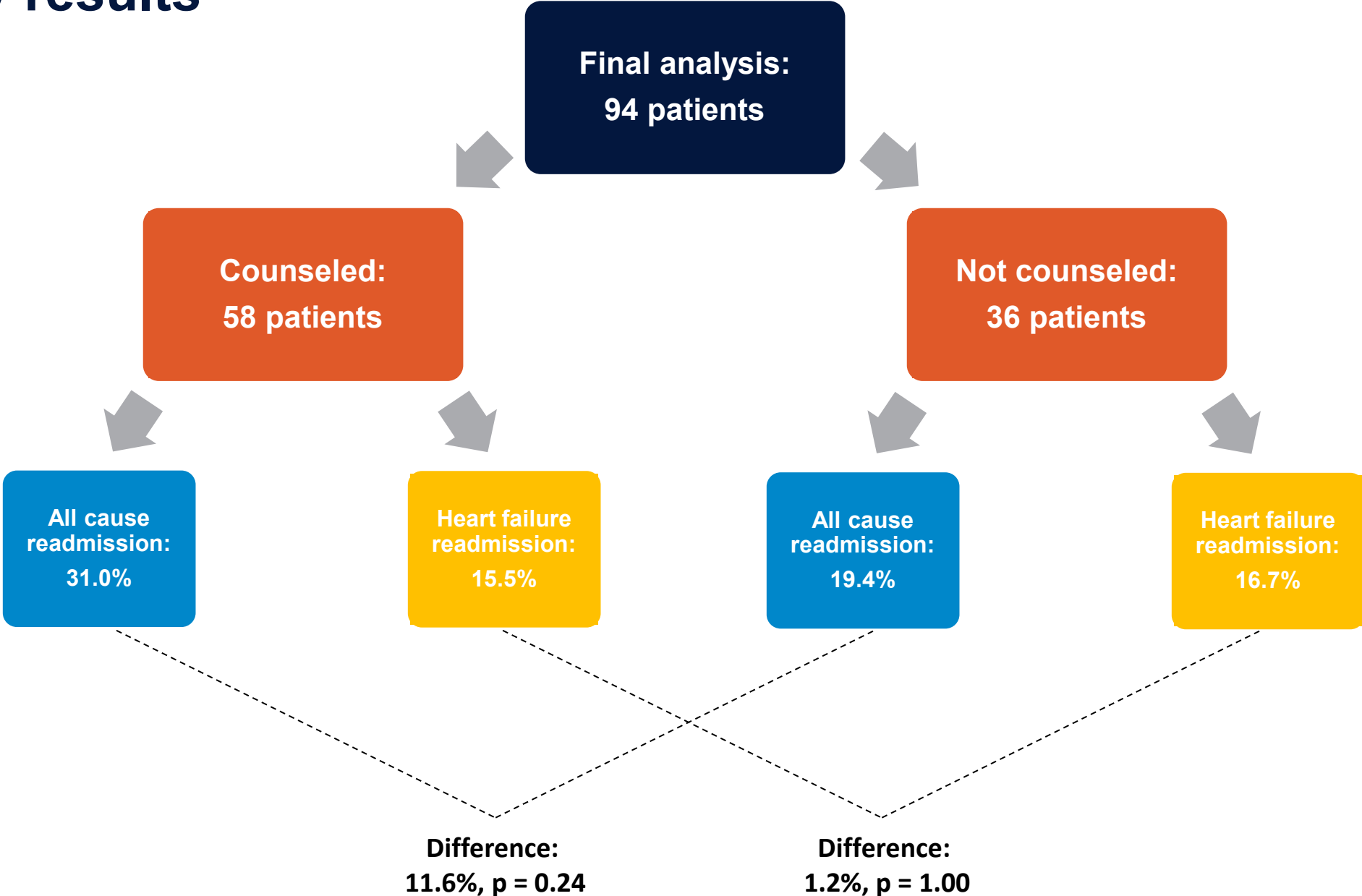
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Methodology

Inclusion	Exclusion
All admitted patients (≥ 18 years) with a new HF diagnosis or exacerbation	Patients that will not be managing their medications upon discharge (e.g. nursing home, institutionalized patients)
	Imprisoned patients
	Pregnant patients
	Non-English speaking patients
	Patients that died while hospitalized
	Patients without capacity to receive information on their medications

Study results



Study results: Table 1

Variable	Counseled (N = 58)	Not counseled (N = 36)
Age (years), mean (SD)	64.1 (13.5)	65.3 (10.1)
Sex (male), No. (%)	29 (50)	22 (61.1)
Body mass index (kg/m ²), mean (SD)	33.7 (13.5)	28.3 (9.1)
Weight (kg), mean (SD)	94.7 (33.5)	84.4 (26.3)
New HF diagnosis, No. (%)	10 (17.2)	3 (8.3)
Length of stay, median (IQR)	6 (3-8)	4 (3-7.5)
Race, No. (%)		
White	15 (25.9)	19 (52.8)
African American	43 (74.1)	17 (47.2)

Study results and recommendations

- **Study group differences:** Patients that were counseled were more likely to have a higher BMI and more likely to be African American than those that were not counseled.
- These differences in baseline characteristics were found to be predictors of all-cause 30-day hospital readmission ($p < 0.05$).

Recommendations:

Pharmacist-led medication counseling trended towards a reduction in 30-day heart failure readmission. Consider focusing counseling on patient groups at high risk for readmission.

Study limitations

- Small population size
- Differences in study groups
- Lack of objective patient identification
- Differences in counseling technique and skill
- Lack of HCAHPS response

Summary and Conclusion

- In patients admitted for heart failure exacerbation or newly diagnosed heart failure, pharmacist-led medication counseling trended towards a reduction in 30-day heart failure readmission
- All cause 30-day readmission was not associated with a significant reduction following medication counseling.

- **Future considerations include:**
 - Focusing counseling on patient groups at high risk for readmission
 - Assessing nursing and provider satisfaction with pharmacist counseling

References

- Heidenreich, Paul A. et al. “Forecasting the Impact of Heart Failure in the United States.” *Circulation: Heart Failure*, vol. 6, no. 3, 2013, pp. 606–619., doi:10.1161/hhf.0b013e318291329a
- Loehr, Laura R. et al. “Heart Failure Incidence and Survival (from the Atherosclerosis Risk in Communities Study).” *The American Journal of Cardiology*, vol. 101, no. 7, 2008, pp. 1016–1022., doi:10.1016/j.amjcard.2007.11.061.

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