

Impact of Health Literacy on Heart Failure

Jenny Guevarra, APN, CCRN

Chair: Barbara Niedz, PhD, RN, CPHQ

Team Member: Pamela Wohlgemuth, DNP, APN

Introduction

- Heart failure (HF) is caused by a cardiac structural or functional abnormality that results in insufficient cardiac output.
- Mortality rate of 50% at 5 years and 90% at 10 years
- Frequent exacerbations and readmissions.
- Mortality increases with each hospitalization.

Health Literacy

- Low health literacy scores correlate with higher risk of 30-day readmissions
- Low levels of health literacy is estimated to be anywhere from 12%-33%

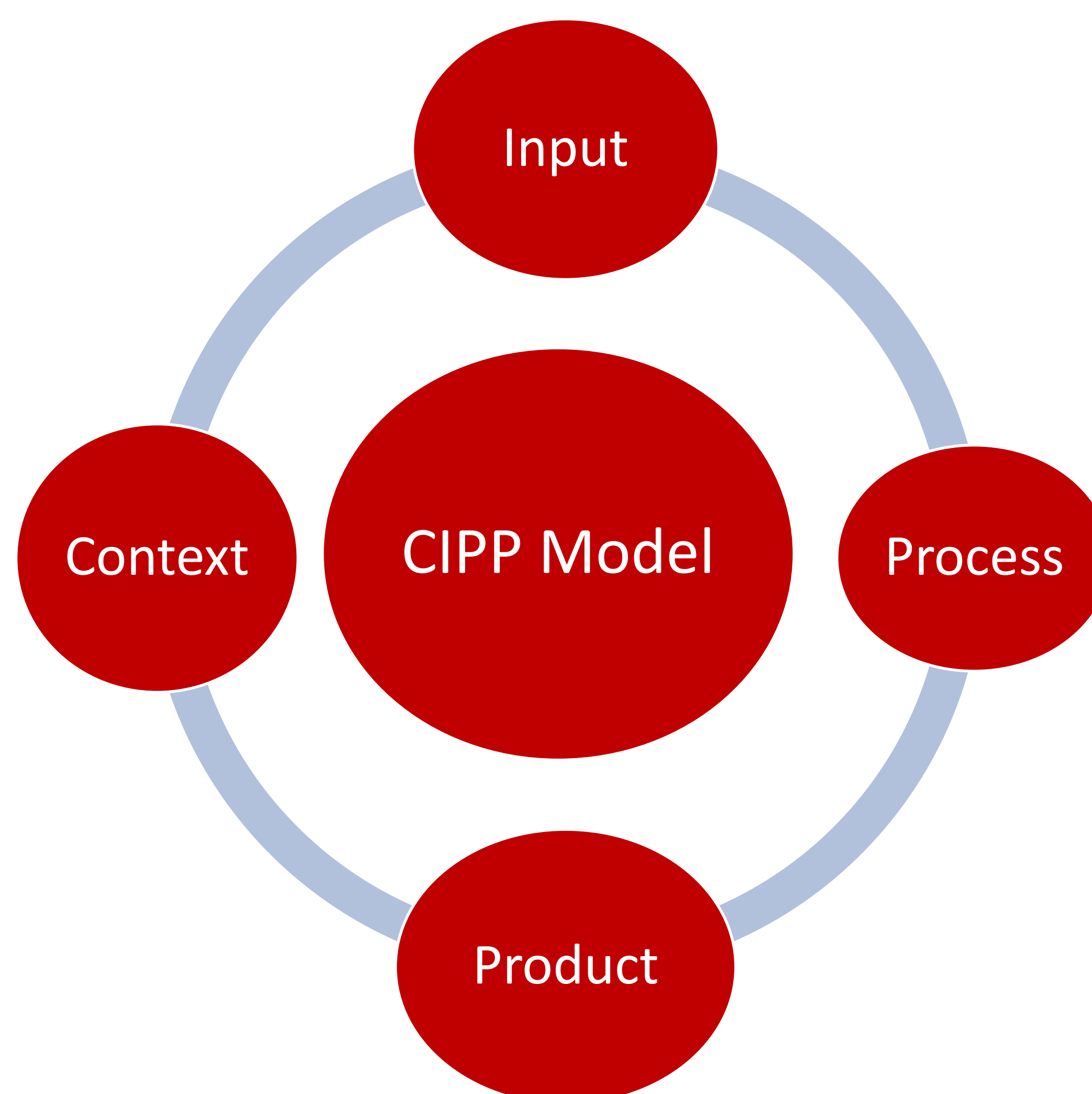
Background and Significance

- The Hospital Readmission Reduction Program initiates financial penalties for excessive 30-day all-cause readmission rates
- Excessive HF readmissions and Emergency Department (ED) visits can also lead to poor quality of life and increased risk of mortality.

Problem and Purpose

- Higher 30 day readmission rates
- HF team began assessing Health literacy using the Brief Health Literacy Scale (BHLS)
- Educational sessions were provided using a simplified handout designed using American Academy of Family Physician guidelines.

Theoretical Model: CIPP



Methodology

- Retrospective chart review of 30-day all cause readmission rates, post-hospitalization ED visits and post discharge phone call responses from March 1, 2019 to August 31, 2019 and March 1, 2021 to August 31, 2021.
- All patients aged 18 years or older admitted to the Doctorate of Nursing Practice project site and discharged under the HF DRG 291-293 or had HF as a primary secondary or tertiary diagnosis.
- Patients are called with increased frequency based upon a risk stratification score using length of stay, acuity, comorbidities and ED visits.

Results

Discharge Phone Calls

	Preimplementation	Postimplementation	Mean
Day 1 Sum	5.17	7.00	
Day 7 Sum	6.50	7.18	
Day 14 Sum	6.33	7.18	
Day 21 Sum	6.67	7.36	
Day 28 Sum	6.67	7.64	
Mann Whitney U	952.00	1359.00	417.50
Wilcoxon W	2177.00	2727.00	882.50
Z	-3.678	-4.441	-3.857
Asymp. Sig. (2 tailed)	< 0.001	< 0.001	< 0.001

ED Visits

	Yes	No	Total
LACE less than 11			
Preimplementation	3	33	36
Postimplementation	2	64	66
Total	5	97	102
LACE greater than or equal to 11			
Preimplementation	3	91	94
Postimplementation	9	98	107
Total	12	189	201

Pearson chi-square	Value	df	Asymp. Sig. (2 sided)
LACE less than 11	1.405	1	0.236
LACE greater than or equal to 11	2.429	1	0.119

30-Day All Cause Readmissions

	Yes	No	Total
LACE less than 11			
Preimplementation	6	30	36
Postimplementation	8	58	66
Total	14	88	102
LACE greater than or equal to 11			
Preimplementation	21	73	94
Postimplementation	12	95	107
Total	33	168	201

	Value	df	Asymp. Sig. (2 sided)
LACE less than 11	0.406	1	0.524
LACE greater than or equal to 11	4.514	1	0.034

- Context:** High HF readmission rates at site
- Input:** Health literacy assessment and revised patient education materials instituted
- Process:** Discharge phone calls for all discharged HF patients and more frequent with LACE > 11
- Product:** 30-day readmission rates decreased after the intervention but ED visits did not

Discussion

- The results demonstrated a statistically significant reduction in 30-day all cause readmissions in the group with LACE scores greater than 11.
- Patients with the highest risk of readmission at baseline benefit the most from modified educational sessions.
- Focus on health literacy in Medicare and Medicaid patients maybe beneficial.
- There was a statistically significant lower 30-day all cause readmission rates when compared to pre-intervention timeframe
- In addition, post intervention group were able to answer more questions correctly during post-discharge phone calls.

References
 Altibi, A.M., Prousi, G., Agrawal, M., Shah, M., Tripathi, B., Ram, P., & Patel, B. (2021). Readmission-free period and in-hospital mortality at the time of first readmission acute heart failure patients- NRD based analysis of 40,000 heart failure admissions. *Heart Failure Reviews*, 26, 57-64.

Chew, L.D., Bradley, K.A., & Boyko, E.J. (2004). Brief questions to identify patients with inadequate health literacy. *Family Medicine*, 588, 588-594.

Fabbri, M., Yost, K., Finney Rutten, L.J., Manemann, S.M., Boyd, C. M., Jensen, D., Weston, S.A. Jiang, R., & Roger, V.L. (2018). Health literacy and outcomes in patients with heart failure: A prospective community study. *Mayo Clinic Proceedings*, 93(1), 915. Maddox, T.M., Lanuzzi, J.L., Allen, L.A., Breathett, K., Butler, J., Davis, L.L., Fomarov, G.C., Ibrahim, N.E., Lindenfeld, J., Masoudi, F.A., Motiwala, S.R., Olives, S., Patterson, J.H.

Walsh, M.N., Wasserman, A., Yancey, C.W., & Youmans, Q.R. (2021). Update to the 2017 ACC expert consensus decision pathway for optimization of heart failure treatment: Answers to 10 pivotal issues about heart failure with reduced ejection fraction: A report of the American College of Cardiology solution set oversight committee. *Journal of American College of Cardiology*, 77(6), 772-810.

Ordonez-Piedra, J., Ponce-Bladon, J.A., Robles-Romero, J.M., Gomez-Salgado, J., Jimenez-Picon, N., & Romero-Martin, M. (2021). Effectiveness of the advanced practice nursing interventions in the patient with heart failure: A systematic review. *Nursing Open*, 2021, 1-13.

Peterson, P.N., Shetterly, S.M., Clark, C.L., Bekelman, D.B., Chan, P.S., Allen, L.A., Matlock, D.D., Magid, D.J., & Masoudi, F.A. (2011). Health literacy and outcomes among patients with heart failure. *Journal of American Medical Association* 306(16), 1695-1701.

