

Introduction

- Mobility during hospitalization is vital to prevent a decrease in patients' functional level and risk of complications.
- Mobility decreases cancer-related fatigue in both newly-diagnosed patients as well as patients who have been undergoing treatment over a period of time (National Comprehensive Cancer Network [NCCN], 2020).

Background and Significance

- Oncology patients are at a higher risk of developing complications due to immobility.
- Preventable hospital-acquired complications due to immobility include: pressure injuries, falls, pneumonia, and venous thromboembolisms (Teodoro, 2016).
- Hospital-acquired complication take longer to treat and can impact a patient's length of stay (LOS) as well as their discharge disposition.
- Being physically active has many benefits to cancer patients that include: improving muscle strength, lowering the risk of osteoporosis, improving blood flow, controlling weight, lowering risk for heart disease, and improving overall quality of life (American Cancer Society, 2014).
- The Johns Hopkins-Highest Level of Mobility (JH-HLM) scale is used to standardize patient mobility levels and assist staff in setting mobility goals with patients to promote early mobilization and decrease complications (Hoyer et al., 2016).
- The JH-HLM scale was recently implemented in the project organization in February 2021. It is used in addition to the Activity Measure for Post Acute Care (AMPAC) scale.

Clinical Question

- Will the implementation of the JH-HLM scale promote early mobility and improve patient outcomes in the oncology population?

Contact Information

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Methodology

Sample

A convenience sample of oncology patients admitted to the medical oncology unit meeting inclusion criteria were included. Comparisons between oncology and medical patients ($n = 904$) were conducted in the chart review. The survey was distributed to nurses ($n = 52$), which was completed by nine nurses.

Setting

The project took place on a 39-bed medical oncology unit in a large academic medical center in Philadelphia, Pennsylvania.

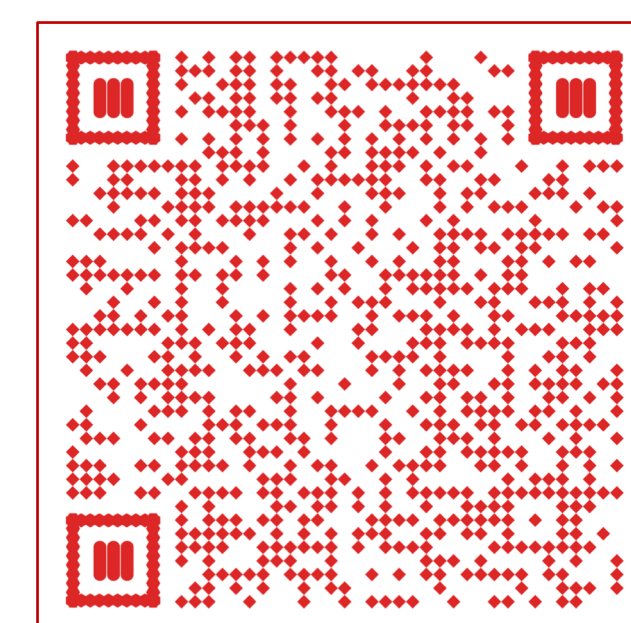
Outcomes Measured

Demographic data collected on patients was age. Data extracted from the EHR included: admission date, discharge date, diagnosis, AMPAC score on admission and discharge, mobility goal on admission and discharge, mobility goal achieved on admission and discharge, LOS, and discharge disposition. The nurse survey included 12 Likert-scale questions on knowledge and attitudes on the JH-HLM scale. Participants were queried on nursing experience in years.

Data Analysis

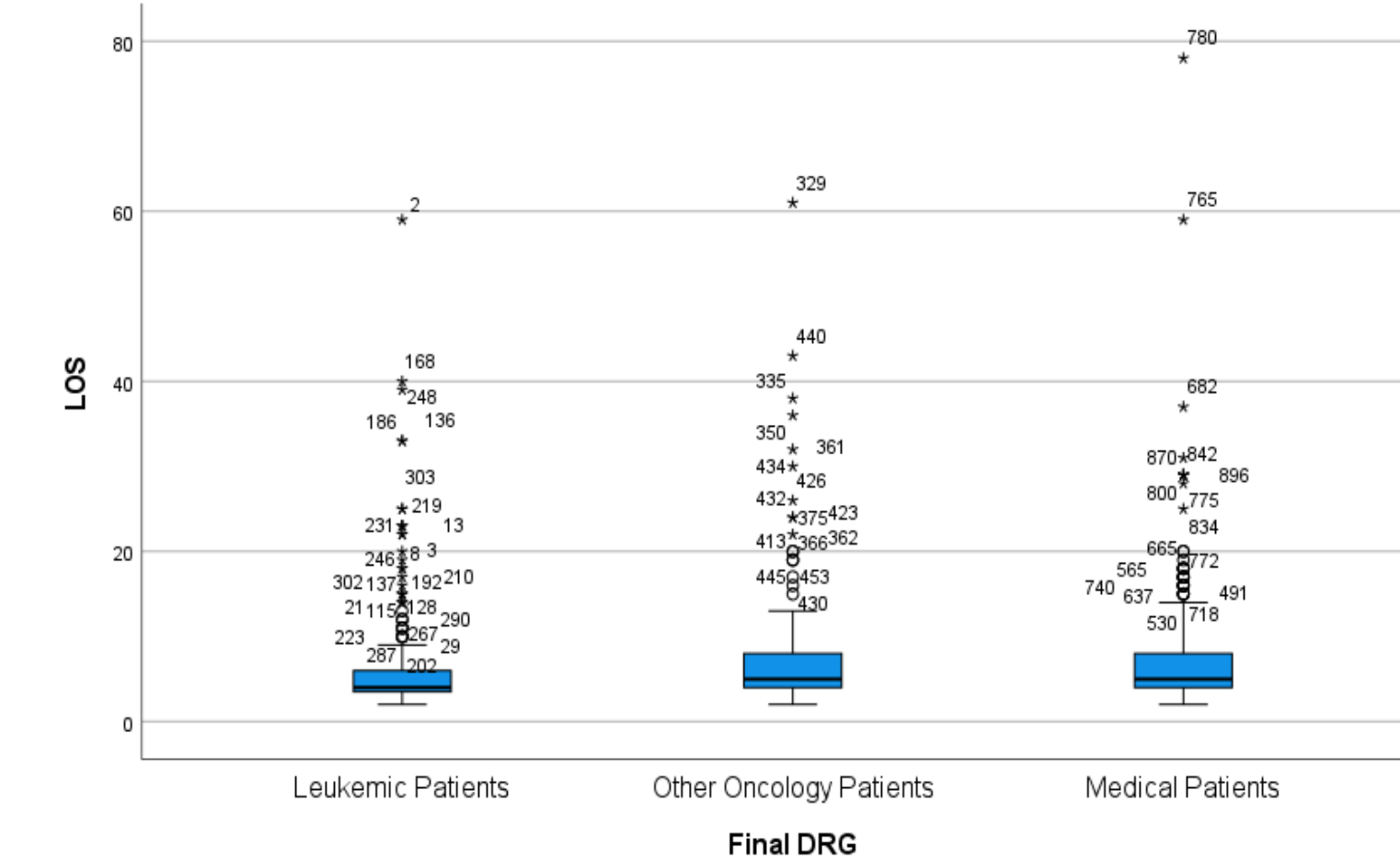
- Excel and Statistical Package for Social Sciences (SPSS) v. 27 was used
- Non-parametric comparison of means: Mann-Whitney U test
- Categorical data analysis: Chi-Square test

References



Results

Boxplots of LOS Outliers



Chi-Square Discharge Disposition for Both Populations in Postimplementation Period

		Discharge to Home		Discharge to Rehabilitation		Total	
Oncology Patients	Count	204	7	211.0			
	Expected Count	190.2	20.8	211.0			
	Adjusted Residual	4.4	-4.4				
Medical Patients	Count	189	36	225.0			
	Expected Count	202.8	22.2	225.0			
	Adjusted Residual	-4.4	4.4				
Total	Count	393	43	436.0			
	Expected Count	393.0	43.0	436.0			
	Adjusted Residual						

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	19.701 ^a	1	<.001		
Continuity Correction ^b	18.301	1	<.001		
Likelihood Ratio	21.527	1	<.001		
Fisher's Exact Test				<.001	<.001
Linear-by-Linear Association	19.656	1	<.001		
N of Valid Cases	436				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.81.
 b. Computed only for a 2x2 table

Chi-Square AMPAC Score for Both Patient Populations in Postimplementation Period

	Count	Oncology Patients	Medical Patients	Total
Lost Mobility during stay	Count	17	35	52
	Expected Count	24.0	28.0	52.0
	Standardized Residual	-1.4	1.3	
Achieved or gained mobility during stay	Count	126	132	258
	Expected Count	119.0	139.0	258.0
	Standardized Residual	.6	-6	
Total	Count	143	167	310
	Expected Count	143.0	167.0	310.0

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.539 ^a	1	.033		
Continuity Correction ^b	3.913	1	.048		
Likelihood Ratio	4.641	1	.031		
Fisher's Exact Test				.034	.023
Linear-by-Linear Association	4.525	1	.033		
N of Valid Cases	310				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.99.
 b. Computed only for a 2x2 table

Chi-Square AMPAC Score for Both Populations and

	Count	Oncology Patients	Medical Patients	Total
Lost mobility	Count	22	14	36
	Expected Count	30.4	5.6	36.0
	Standardized Residual	-2.7	3.1	
Maintained or exceeded mobility	Count	227	33	260
	Expected Count	218.6	41.4	260.0
	Standardized Residual	4.0	-4.0	
Total	Count	249	47	296
	Expected Count	249.0	47.0	296.0
Lost mobility	Count	46	18	64
	Expected Count	52.1	11.9	64.0
	Standardized Residual	-3.1	3.1	
Maintained or exceeded mobility	Count	203	39	242
	Expected Count	196.9	45.1	242.0
	Standardized Residual	3.1	-3.1	
Total	Count	249	57	306
	Expected Count	249.0	57.0	306.0

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Oncology Patients	Pearson Chi-Square	16.907 ^a	1	<.001	
	Continuity Correction ^b	14.951	1	<.001	
	Likelihood Ratio	13.572	1	<.001	
	Fisher's Exact Test			<.001	<.001
	Linear-by-Linear Association	16.850	1	<.001	
	N of Valid Cases	295			
Medical Patients	Pearson Chi-Square	4.850 ^c	1	.028	
	Continuity Correction ^b	4.006	1	.044	
	Likelihood Ratio	4.460	1	.035	
	Fisher's Exact Test			.045	.025
	Linear-by-Linear Association	4.800	1	.028	
	N of Valid Cases	306			

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.61.
 b. Computed only for a 2x2 table
 c. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.92.

Discussion

- LOS increased in postimplementation period
- More oncology patients discharged to home than expected, opposite for medical patients
- Higher number of oncology patients who maintained/exceeded AMPAC and less patients lost mobility, opposite for medical patients
- Longer LOS patients had lower AMPAC scores on discharge
- Majority of patients did not achieve or achieved a lower JH-HLM score, along with longer LOS
- Nurse survey: barriers to mobilization were disease complication and time. Nurses felt more comfortable mobilizing patients after seen by physical therapy.

Implications for Clinical Practice

- Communication of AMPAC scores, JH-HLM scale, along with mobility level changes during multidisciplinary rounds
- Increasing collaboration of the healthcare team towards mobility
- Use of ancillary staff to assist nurses in meeting patient's mobility goals

Implications for Healthcare Policy

- Opportunity exists in implementing a mobility protocol

Implications for Quality and Safety

- Although not analyzed for this project, can be an area of interest to the organization

Implications for Education

- Education to nursing staff on: how the AMPAC score related to the JH-HLM goal that is set for their patients, safe patient handling, chair or bed exercises, and review current mobility equipment

Implications for Financial Costs

- Having a shorter LOS by encouraging mobility and decreasing the risk of hospital acquired complications can influence financial costs