

Early Physical Therapy in Critically Ill Patients Decreases Hospital Length of Stay

Rita Pechulis MD, FCCP

Lehigh Valley Health Network, Rita_M.Pechulis@lvhn.org

Jenna McLane DPT

Lehigh Valley Health Network

Sarah Krebs DPT

Lehigh Valley Health Network, Sarah.Krebs@lvhn.org

Michael Pechulis DPT

Lehigh Valley Health Network, Michael.Pechulis@lvhn.org

Kamille J. Sprenkle DPT

Lehigh Valley Health Network, Kamille.Sprenkle@lvhn.org

Follow this and additional works at: <http://scholarlyworks.lvhn.org/medicine>



Part of the [Medical Sciences Commons](#)

Published In/Presented At

Pechulis, R., McLane, J., Krebs, S., Pechulis, M., Sprenkle, K. (2015, January 17). *Early Physical Therapy in Critically Ill Patients Decreases Hospital Length of Stay*. Poster presented at: Society of Critical Care Medicine; SCCM 2015, Phoenix, AZ.

This Poster is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact LibraryServices@lvhn.org.

Early Physical Therapy in Critically Ill Patients Decreases Hospital Length of Stay

Rita Pechulis MD, Jenna McLane DPT, Sarah Krebs DPT, Michael Pechulis DPT, Kamille Sprengle DPT

Lehigh Valley Health Network, Allentown, PA

Introduction

Recent evidence indicates that reviving principles of early mobility within the intensive care unit (ICU) may decrease both ICU and hospital length of stay (LOS).¹⁻⁴ We sought to determine if using a physical therapy (PT) driven early mobility protocol will result in decreased ICU LOS, days on mechanical ventilation (MV) and hospital LOS at a university affiliated ICU.

Methods

This IRB approved study included all medical patients admitted to the Medical/Surgical ICU at Lehigh Valley Health Network, Allentown PA (n=1197).

Patients without PT orders (n=478), patients readmitted to the ICU (n=33, total of 71 admissions), patients transferred among multiple ICUs (n=38) and patients whose PT orders were not placed until after leaving the ICU (n=129) were excluded from the study.

For 10 weeks (intervention period) we increased the PT staffing ratio in the ICU from 0.7 FTE/36 patients to 4 FTE/36 patients and compared this to the 10 week period prior to intervention (control group 1) and 10 week period post intervention (control group 2).

Data collected included age, gender, MS-DRG code, number of patients on mechanical ventilation (MV), time on MV and discharge destination. Hospital LOS and ICU LOS were compared for all patients using ANOVA comparison of groups. Patients that required MV during their ICU stay were also analyzed by ANOVA comparison of groups. The comparison of patient actual LOS versus expected LOS based on MS-DRG was performed using a chi-square test.

Conclusions

Physical Therapists are trained to identify movement disorders and implement a plan of care that progresses a patient from debilitation to independence. In this study of 486 patients, we found implementing a PT driven early mobility protocol significantly decreased hospital LOS. Also, patients during the trial period had LOS shorter than expected based on their MS-DRG. In this era of increasing fiscal uncertainty the amount of resources required to maximize benefits will require further study.

References:

- 1 Adler, J. Malone, D. Early Mobilization in the Intensive Care Unit: A Systematic Review. *Cardiopulmonary Physical Therapy Journal*. 2012. 23: 5-12.
- 2 Needham, D., et al. Early Physical Medicine and Rehabilitation for Patients With Acute Respiratory Failure: A Quality Improvement Project. *Arch Phys Med Rehabil*. 2010. 91: 536-42.
- 3 Schweickert, W., et al. Early Physical and Occupational Therapy in Mechanically Ventilated, Critically Ill Patients: A Randomised Controlled Trial. *Lancet*. 2009. 373: 1874-1882.
- 4 Engel, H, Needham, D. et al. ICU Early Mobilization: From Recommendation to Implementation at Three Medical Centers. *Crit Care Med*. 2013;41(9):S69- S80.

Results

Demographics				
	Pre-Trial n=147	Trial n=215	Post Trial n=124	p Value
Age (Years, SD)	70.4 +/- 15.1	65.9 +/- 17.8	66.7 +/- 16.5	0.036
Male (N, %)	80, 54.7%	106, 49%	61, 49%	ns
Ventilator (N,%)	62, 42.1%	58, 26.9%	60, 48%	0.0001
Discharged prior to discharge	17, 11.5%	22,10.2%	17, 13.7%	ns
Length of Stay for ICU and Total Hospital Admission				
ICU LOS (Days, SD)	6.4 +/- 9.1	5.0 +/- 8.0	5.1 +/- 5.1	ns
Hospital LOS (Days, SD)	14.0 +/- 13.1	10.6 +/-10.1	12.0 +/-9.2	0.015
Demographics of Patients Requiring Mechanical Ventilation				
	Pre-Trial n=62	Trial n=58	Post Trial n=60	p Value
Age	67.9 +/-15.7	62.5 +/-17.4	63.7 +/-16.7	ns
Male	28, 45%	41, 70%	32, 53%	
Duration of Mechanical Ventilation and ICU LOS for Patients on Mechanical Ventilation				
Time on ventilator (days)	10.0 +/-10.6	6.90 +/-11.1	6.4 +/-15.6	0.07
ICU LOS (days)	11.2 +/- 11.8	8.2 +/-11.2	7.5 +/-6.0	0.09

Actual Hospital LOS Compared to MS-DRG Expected LOS		
	LOS Shorter (N, %)	LOS Longer (N, %)
Pre-Trial (n=147)	53, 35.8%	94, 63.5%
Trial (n=215)	109, 50.6%	106, 49.3%
Post Trial (n=124)	50, 40.3%	74, 59.6%
	p=0.015	

Discharge Destination				
	Home	Rehab	SNF/LTACH	Died/ Transferred
Pre-Trial (n=147)	35%	7%	37%	20%
Trial (n=215)	44%	6%	32%	19%
Post Trial (n=124)	38%	8%	31%	23%
	p=ns			