

Early Mobility in ICU Patients Improves Outcomes

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Background

Lack of mobility for ICU patients is associated with myriad negative patient outcomes that are positively impacted by early mobility interventions. Several studies show reductions: \$1690 per patient reduction in ICU costs¹, hospital associated infections reduced 50%⁵, ICU-specific length of stay (LOS) reduced from 6.5 to 5.8 days⁵, hospital LOS reduced from 11.3-14.1 to 8.8-9.3 days⁵, \$12 million reduction in hospital costs in < 3 years⁵, pressure injuries reduced from 9.2% to 6.1%⁸. These crucial areas of impact demonstrate the necessity of early mobility interventions in ICU patients to improve patient outcomes.

PICOT

Do early mobility interventions positively impact patient outcomes in the ICU compared to usual mobility interventions?

Needs Assessment

Databases: CINAHL, PubMed

Key words: nurse, outcomes, ambulation, movement,

ICU, and mobility
Date range: 2013-2018

Synthesis

The research contained in the articles supports the assertion that mobility interventions in the ICU have an overall positive effect on patient outcomes. Studies found that mobility interventions decreased the number of falls¹, sedation levels¹, ventilator-associated events^{1,2,3,4}, pressure injuries¹, CAUTIs¹, length of stay^{1,2,5,6,7,8,9}, delirium^{2,9}, hospital costs^{1,5}, and incidences of deep vein thrombosis⁷. It also enabled earlier mobilization⁷, allowed for better discharge disposition⁷, increased the overall education on mobility¹⁰, and produced better outcomes for the patient overall^{11,12}.

Decision to Change

Mandatory interprofessional education for 100% of ICU RNs and physical therapists on daily patient assessment with regard to mobility, and development of treatment plans will be completed first. RNs will assess patients' abilities to participate in mobility interventions and incorporate this in the daily care plan, and communicate the plan to the physical therapist(s) each day, for the development of the daily therapy plan. A daily huddle in the ICU for collaborative discussion of assessment and treatment plans by each discipline will detail patient goals for the day and for the stay. Daily assessment of 100% of ICU patients will be completed for needs, progress, and possible interventions, based on an individualized plan of care. Through interdisciplinary collaboration, the appropriate discipline will be involved in all interventions; for example, RNs may perform passive range of motion, while physical therapists may aid with ambulation. RN and PTs share the goals of mobility care and expected outcomes.

Results

Initial education will be provided for RNs and PTs, and baseline measurements in ICU patients will be taken: fall rates, ventilator-associated events, pressure injury rates, CAUTIs, LOS, delirium days, and DVTs. After implementation, monthly measurements will be taken in the same parameters for at least 6 months, with the goal of a decline in rates.

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References

- Fraser, D., Spiva, L., Forman, W., & Hallen, C. (2015). Original research: Implementation of an early mobility program in an ICU. *The American Journal of Nursing Online*, 115(12), 49-58. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/26600359
- 2. Booth, K., Rivet, J., Flici, R., Harvey, E., Hamill, M., Hundley, D., . . . & Collier, B. (2016). Progressive mobility protocol reduces venous thromboembolism rate in trauma intensive care patients: A quality improvement project. *Journal of Trauma Nursing*, 23(5), 284-289. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/27618376
- 3. Bruce, R. & Forry, C. (2018). Integrating a mobility champion in the intensive care unit. *Dimensions of Critical Care Nursing*, *37*(4), 201-209. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/29847431
- Clark, D. E., Lowman, J. D., Griffin, R. L., Matthews, H. M., & Reiff, D. A. (2013). Effectiveness of an early mobilization protocol in a trauma and burns intensive care unit: a retrospective cohort study. *Physical Therapy*, 93(2), 186-196. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3563027/
- 5. Hester, J. M., Guin, P. R., Danek, G. D., Thomas, J. R., Titsworth, W. L., Reed, R. K., & Fahy, B. G. (2017). The economic and clinical impact of sustained use of a progressive mobility program in a neuro-ICU. *Critical Care Medicine*, 45(6), 1037-1044. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/28328648
- . Klein, K., Mulkey, M. Bena, J., & Albert. N. (2015). Clinical and psychological effects of early mobilization in patients treated in a neurologic ICU: a comparative study. *Critical Care Medicine*, 43(4), 865-873. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/25517476
- 7. Moyer, M., Young, B., Wilensky, E.M., Borst, J., Pino, W., Hart., M., . . . & Kumar., M. (2017). Implementation of an early mobility pathway in neuro-intensive care unit patients with external ventricular devices. *Journal of Neuroscience Nursing*, 49(2), 102-107. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/28230563
- 8. Ogochukwu, A., Gammon, H., Burmeister, C., Frega, D., Nerenz, D., DiGiovine, & B., Siddiqui, A. (2016). Benefits of early active mobility in the medical intensive care unit: A pilot study. *The American Journal of Medicine, 129*(8), 866-877. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/27107920
- 9. Winkleman, C., Sattar, A., Momotaz, H., Johnson, K., Morris, P., Rowbottom, J., . . . & Levine, A. (2018). Dose of early therapeutic mobility: Does frequency or intensity matter?, *Biological Research for Nursing*, *6*(2), 1-9. Retrieved from http://journals.sagepub.com/doi/10.1177/1099800418780492
- 10. Johnson, K., Petti, J., Olson, A., & Custer, T. (2017). Identifying barriers to early mobilization among mechanically ventilated patients in a trauma intensive care unit. *Intensive & Critical Care Nursing*, 42, 51-54. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/28743548
- 11. Dubb, R., Nydahl, P., Hermes, C., Schwabbauer, N., Toonstra, A., Parker, A. M., . . . & Needham, D. M. (2016). Barriers and strategies for early mobilization of patients in intensive care units. *Annals of The American Thoracic Society*, *13*(5), 724-730. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/27144796
- 12. Perme, C., Nalty, T., Winkelman, C., Kenji Nawa, R., & Masud, F. (2013). Safety and efficacy of mobility interventions in patients with femoral catheters in the ICU: a prospective observational study. *Cardiopulmonary Physical Therapy Journal (American Physical Therapy Association, Cardiopulmonary Section)*, 24(2), 12-17. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3691704/

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