

# Evidence in Action: Impact of Early Occupational Therapy Intervention in the Complex Stroke Patient

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## Introduction

Cerebrovascular disorders represent the third leading cause of mortality and second major cause of long-term disability in North America (3). Patients who arrive at the emergency room within 3 hours of their first symptoms tend to have less disability 3 months after a stroke than those who received delayed care (4). Further, several studies suggest stroke rehabilitation is most effective when initiated early, and confirms the existence of a positive correlation between early rehabilitation interventions and improved functional outcomes (2). Rationale to support these findings is centered around various arguments that bed rest negatively affects various body systems and that there may be a narrow window of opportunity for neuro plasticity. Thus, the optimum period to regain function could be early after stroke (1). Guided by these findings, early mobilization strategies have been widely adapted in intensive care units to facilitate recovery, particularly with those status post onset of stroke symptoms. Further, occupational therapy interventions, coupled with early mobilization protocols, maximizes potential for earlier admission to acute inpatient rehabilitation (4). Timely rehab admission is also associated with more favorable functional outcomes and a decreased rehab length of stay (1).

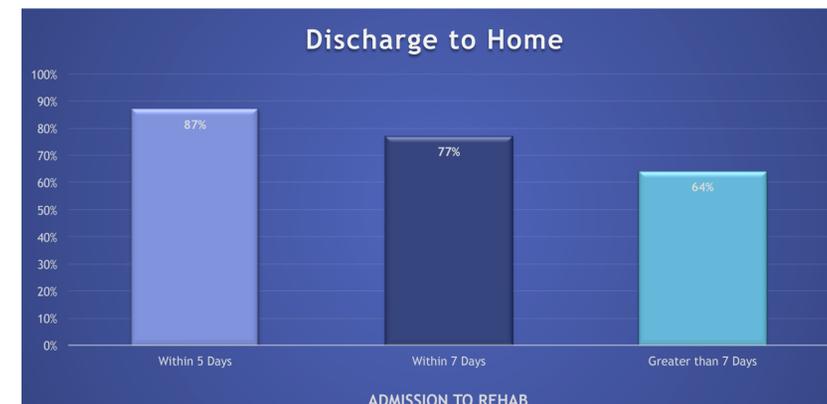
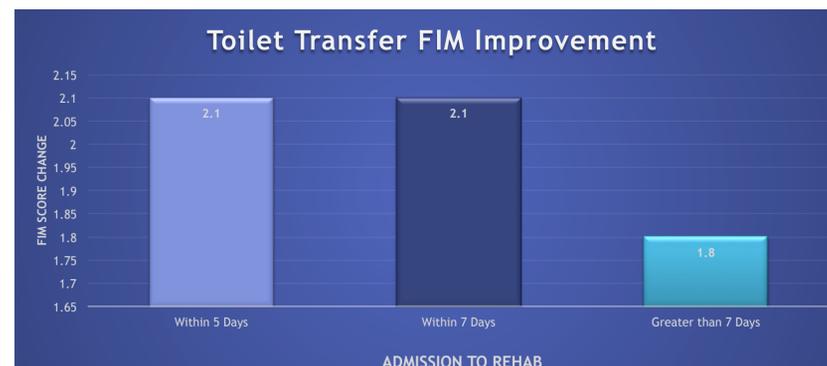
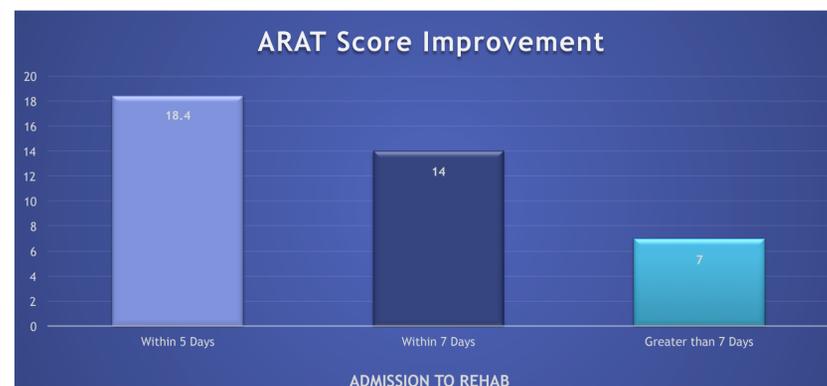
## Objectives

- Identify the unique role of occupational therapy across the continuum of care for the treatment of patients post stroke.
- Determine if early intervention of occupational therapy, including early mobilization in acute care, followed by earlier admission to inpatient rehabilitation facilitates an increase in overall independence and discharge back into the community.
- Apply research supporting early occupational therapy intervention, coupled with early mobilization, in the development of an evidence-based model of delivery of occupational therapy services for the stroke population.

## Methods

- OT initial evaluations were completed on 44 ischemic stroke survivors within the first 24-48 hours of hospital admission over
- Participant's age ranged from 31-90 years old
- Outcome measures used : FIM & ARAT
- Additional factors: acute care length of stay, rehab length of stay, disposition
- Data collected over an 8 month period of time

## Results



## Discussion

Through a collaborative effort between occupational therapists at Jefferson Hospital (TJUH), our research supports that early intervention in the acute care setting, coupled with an earlier admission to acute rehabilitation yields better functional outcomes for patients with an ischemic stroke. This hospital system is home to the Jefferson Comprehensive Stroke Center located at the Jefferson Hospital for Neuroscience (JHN). Patients in our study were evaluated by a member of the occupational therapy team within 48 hours of admission to JHN. Per rehabilitation department protocol, patients with a stroke diagnosis are seen on a daily basis while in acute care. TJUH is unique in its ability for the acute care therapy team to closely collaborate with and transition care to the acute rehabilitation team. Most members of the department are cross trained to treat in both settings, allowing maximum continuity of care. Because of this, therapists are comfortable treating a more medically complex patient upon admission to rehab. Additionally, this system encourages the greatest amount of communication during the transition of care. The results of our study support the advantages of an evidence based model of early occupational therapy in both the acute care and acute rehabilitation settings. Our plan is to use these outcomes to further facilitate occupational therapy in neuro based acute care to commence the rehabilitation process earlier with the goal of a sooner transition to acute rehab.

## Conclusions

- Patients admitted to acute rehabilitation less than or equal to 5 days post-diagnosis, had overall FIM scores improve by an average of 24.9
  - 86% of these patients discharged home
  - These patients' ARAT scores were 3 times greater that the sample admitted 6 days or more after diagnosis.
- The percentage of community discharges dropped as the acute care length of stay increased
- Despite an earlier admission to acute rehabilitation, this did not increase the length of the rehabilitation stay

## References

1. Bernhardt, J., Langhorne, P., Lindley, R. I., Thrift, A. G., Ellery, F., Collier, J., & Donnan, G. (2015). Efficacy and safety of very early mobilisation within 24 h of stroke onset (AVERT): a randomised controlled trial. *Lancet*, 386 North American Edition(9988), 46-55 10p. doi:10.1016/S0140-6736(15)60690-0
2. Cifu, D. X., & Stewart, D. G. (1999). Factors affecting functional outcome after stroke: a critical review of rehabilitation interventions. *Archives of physical medicine and rehabilitation*, 80(5), S35-S39.
3. Delaney, G. A., & Potter, P. J. (1993). Disability post stroke. *Physical Medicine and Rehabilitation*, 7, 27-27.
4. Sigler, M., Nugent, K., Alalawi, R., Selvan, K., Tseng, J., Edriss, H. . . . Krause, D. (2016). Making of a successful early mobilization program for a medical intensive care unit. *Southern Medical Journal*, 109(6), 342-345. doi:10.14423/smj.0000000000000472 Stroke Facts. (2015). Retrieved June 02, 2016, from <http://www.cdc.gov/stroke/facts.htm>