

Restoration of Functional Mobility for a Young Adult Patient Following a Severe Motor Vehicle Accident: A Case Report

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Background

- Over 50 million people world-wide experience non-fatal injuries due to MVA annually.¹
- 1.2 million people die as a result of MVA annually.¹
- Unintentional injury, including MVA, was the leading cause of death in females age 15-24 in 2014.²
- Higher intensity therapy can result in greater gains in functional mobility in rehabilitation settings.³
- Skilled nursing facilities typically care of older patients, but younger patients can also benefit.

Purpose

•To document a young adult patient's response to skilled PT interventions with the goal to return the patient to prior level of function

Case Description

•20 year old female, college student, involved in a MVA versus tree accident with fatalities

Injuries Included:

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| <ul style="list-style-type: none"> • Fractures: • Left orbital floor • Left maxillary sinus, nasal bone • C2 dens fracture, intrarticular fracture involving C2-C3 • Left ribs 3-7, 10, right ribs 1, 4-6, 8-9, 11-12 with pneumothorax of right lung • Right medial epicondyle avulsion fracture | <ul style="list-style-type: none"> • Open book pelvic fracture with pronounced diastases and asymmetry • Extensive fractures of the sacrum and right acetabulum • Left superior and inferior rami fracture • Right L5 transverse process fracture | <p>Other Trauma:</p> <ul style="list-style-type: none"> • Liver grade 2 trauma • Left planter foot wound |
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Outcome Measures

CARE Items Mobility Assessment Score		
Total Score	18/84	51/84
Basic Mobility		
Lying to Sitting on Side of Bed	Dependent	Independent
Sit to Lying	Dependent	Independent
Rolling Left & Right	Maximal Assistance	Independent
Sit to Stand	Dependent	Setup/cleanup assistance
Chair or Bed to Chair Transfer	Dependent	Setup/cleanup assistance
Toilet Transfer	Dependent	Setup/cleanup assistance
Locomotion - Walking		
Walking Distance (ft.)	DNT	DNT
Locomotion - Wheeling		
Wheeling Distance (ft.)	DNT	>= 150 feet
Wheeling - Level of Assistance	Dependent	Independent
Additional Mobility		
Picking Up Objects	Dependent	Setup/cleanup assistance
Car Transfer	Dependent	Setup/cleanup assistance

Radiographic Images of the Pelvis



Figure 1. Radiographic Images: **A.** The radiograph demonstrates a Foley catheter in place projecting over the pelvis. A comminuted left superior and inferior pubic rami fractures, pubic symphysis diastases, comminuted right acetabular and bilateral sacral ala fractures are demonstrated. A displaced fracture of the right L5 transverse process is also pictured, denoting an unstable vertical shearing injury to the pelvis. **B.** Patient was status post external fixation of the pelvis with screws traversing the right and left iliac bone. Multiple pelvic fractures are demonstrated including comminuting fractures of bilateral sacrum, right acetabulum, right symphysis pubis, left superior and inferior pubic rami, and diastasis of the pubic symphysis is noted. **C.** X-ray taken 77 days post MVA. This radiographic image of the pelvis demonstrates healing of the previously stated fractures and the internal fixator.

Functional Mobility/Therapeutic Exercise

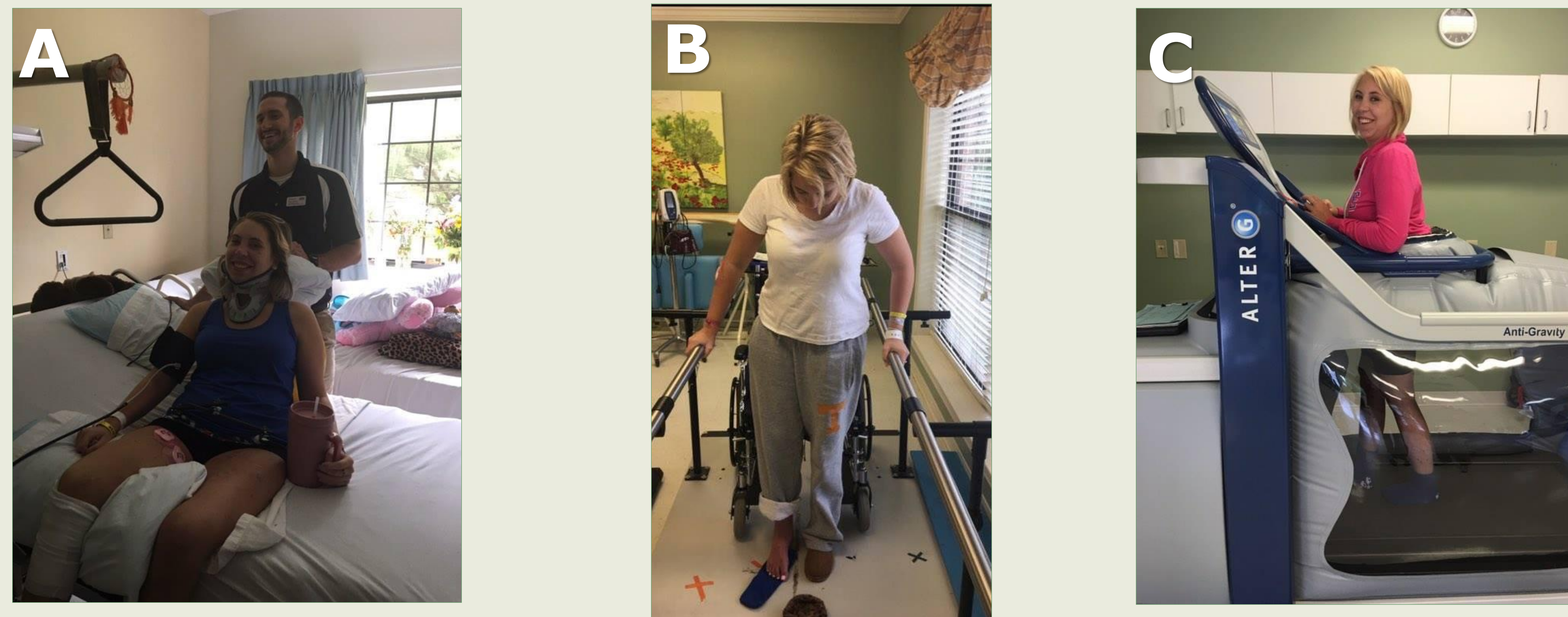
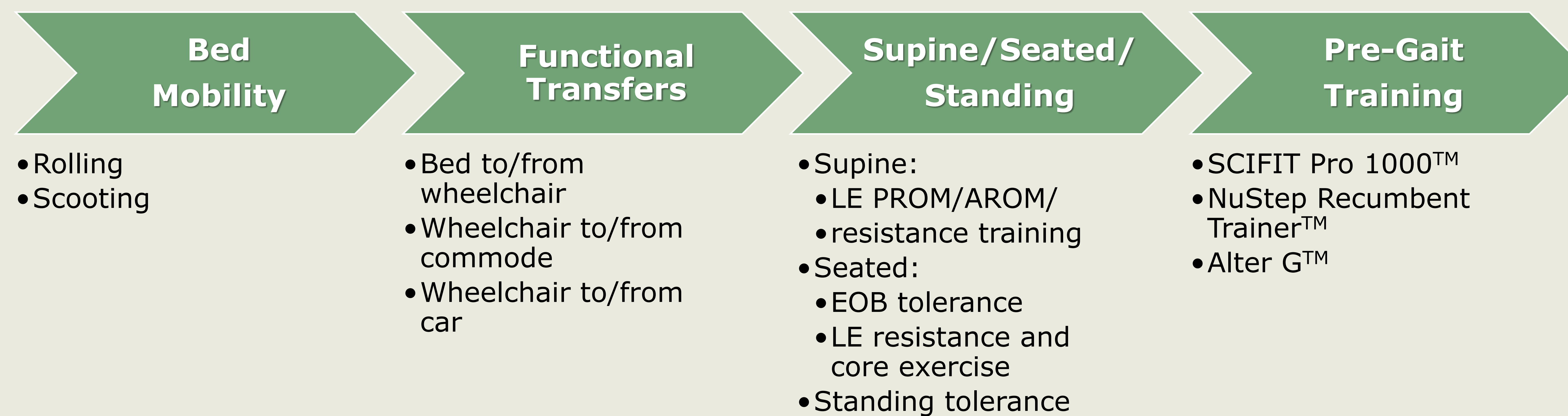


Figure 2. Interventions: **A.** Addressing impairments in sitting EOB tolerance in preparation for transfer to wheelchair and wheelchair tolerance training. **B.** Addressing impairments in standing tolerance while adhering to non-weight bearing orders for right lower extremity in preparation for future ambulation. **C.** AlterG gait training allows the therapist to adhere to weight bearing restrictions while preparing the patient for ambulation.

Outcomes

- Increased independence in all aspects of functional mobility
- Limited by non-ambulatory status, pain, non-compliance to weight bearing orders, decreased motivation
- CARE Items Mobility Assessment Score significantly improved
- Discharged following 10 weeks and 4 days at SNF

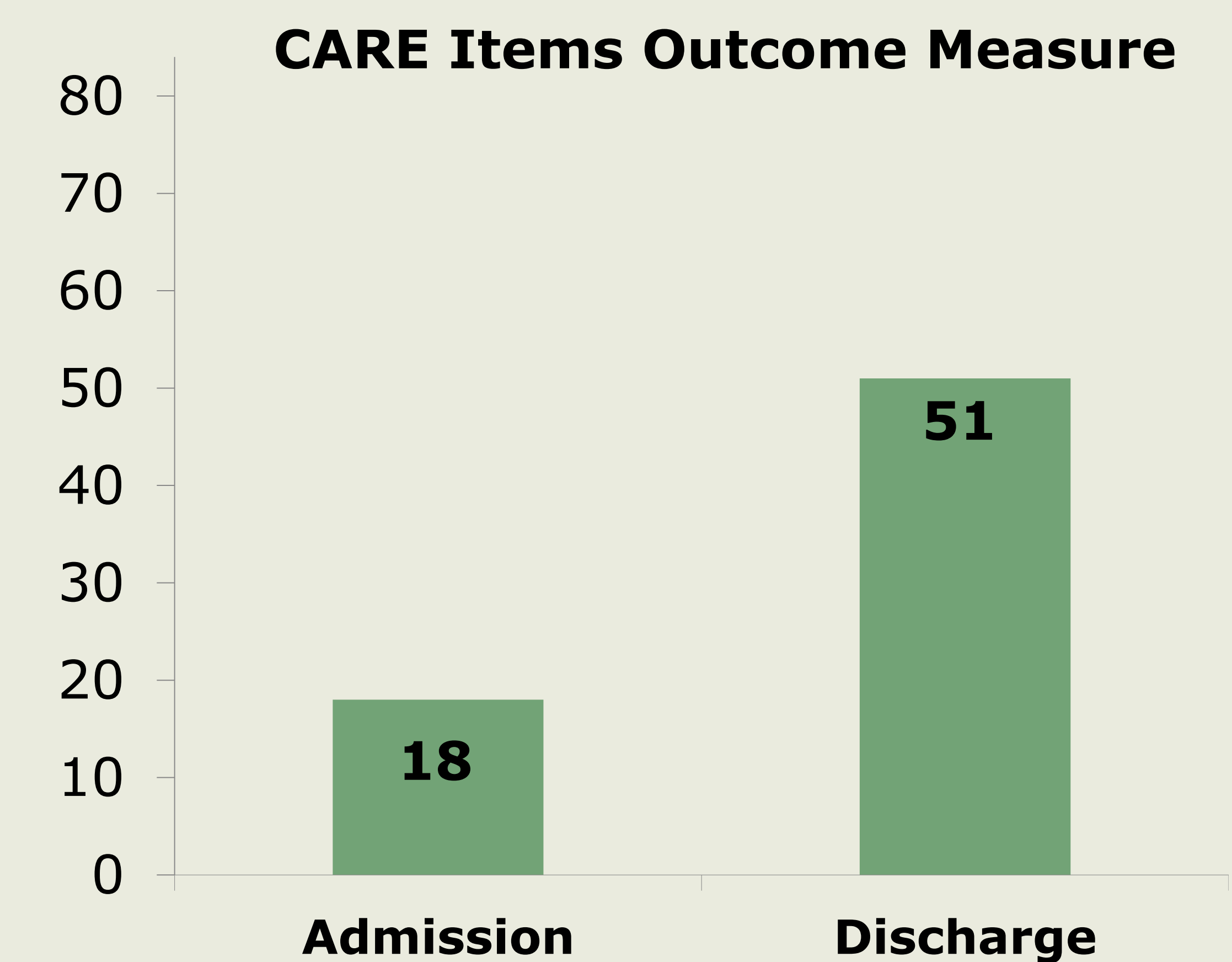


Figure 3. CARE Items Outcome measure is out of 84 possible points with higher scores relating to improved functional mobility.

Discussion

- Functional mobility gains were noted through course of care
- Improved outcomes and increased levels of independence may be due to consistent and appropriate progression of interventions
- Factors possibly affecting recovery and discharge status: non-ambulatory status, pain, non-compliance to weight bearing status, motivation to participate in skilled interventions, family/caregiver support, and severity of injuries
- Appropriate intervention prescription is an important aspect of providing patient centered care
- Young adult patients following traumatic injuries may benefit from receiving physical therapy services at a SNF

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