

INPATIENT MEDICAL REHABILITATION

An Integral Part of the Healthcare System

HIGHLIGHTS

- Patients treated in inpatient rehabilitation hospitals and units:
 - Have better outcomes, go home earlier and live longer*
 - Achieve better clinical outcomes in a shorter time and use less facility-based care*
 - Have less emergency room visits, readmitted to hospitals less often, and have a lower risk of death*
 - Are more likely to return to work**

*Compared to SNF patients

**Compared to SNF and LTCH patients

IRH/U PATIENTS VS. SNF PATIENTS

- According to a study by Dobson DaVanzo et al., inpatient rehabilitation hospital and unit patients clinically comparable to skilled nursing facility patients, on average*:
 - Returned home from their initial hospital rehabilitation stay **two weeks earlier**
 - Remained home nearly **two months longer**
 - Stayed alive nearly **two months longer**
 - Showed an **8 percent lower mortality rate**
 - Patients with 5 of the 13 diagnostic conditions – amputation, brain injury, hip fracture, major medical complexity and pain syndrome – had **significantly fewer hospital readmissions**
 - Had **5 percent fewer emergency room visits per year**

*Over a 2 year study period

KEY FINDINGS ON THE VALUE OF IRF CARE
(SOURCE: DOBSON DAVANZO STUDY)

AMPUTATION IRH/U CARE

- Patients with limb loss treated in IRH/Us compared to those treated in SNFs, on average:
 - Returned home from their initial hospital rehabilitation stay **16 days earlier**
 - Remained home nearly **three months longer**
 - Stayed alive more than **2 1/2 months longer**
- Individuals with limb loss treated in IRH/Us also experienced (compared to SNF patients):
 - **12 percent lower mortality rate**
 - **16 percent fewer emergency room visits per year**
 - **43 percent fewer hospital readmissions per year**

BRAIN INJURY IRH/U CARE

- Brain injury patients treated in IRH/Us compared to those treated in SNFs, on average:
 - Returned home from their initial rehabilitation hospital stay **17 days earlier**
 - Remained home more than **three months longer**
 - Stayed alive more than **three months longer**
- Brain injury patients treated in IRH/Us also experienced (compared to SNFs):
 - **16 percent lower mortality rate**
 - **4 percent fewer emergency room visits per year**

HIP FRACTURE IRH/U CARE

- Hip fracture patients treated in IRH/Us compared to those treated in SNFs, on average:
 - Returned home from their initial hospital rehabilitation stay **19 days earlier**
 - Remained home nearly **2 months longer (53 days)**
 - Stayed alive more than **three months longer**
- Individuals with hip fracture treated in IRH/Us also experienced:
 - **11 percent lower mortality rate** than skilled nursing facility patients
 - **4 percent fewer emergency room visits per year** than skilled nursing facility patients
 - **5 percent fewer hospital readmissions per year** than skilled nursing facility patients

IRH/U CARE IS COST EFFECTIVE

- Treating patients in a facility associated with better clinical outcomes, IRH/Us would have an additional average cost of \$12.59 / day for Medicare (compared to SNFs) while patients are alive
- Average Medicare Payment per Day for Initial Rehabilitation Stay and Post-Rehabilitation Period: Matched IRF and SNF Patients
 - Condition Specific Costs for Medicare per day (IRF minus SNF difference):
 - Amputation: \$3.74
 - Brain Injury: \$21.86
 - Hip Fracture: \$9.77

ADDITIONAL RESEARCH COMPARING IRH/U CARE TO OTHER PAC SETTINGS

STROKE IRH/U PATIENTS VS. STROKE SNF PATIENTS

- According to a study by Hong et al., inpatient rehabilitation hospital and unit stroke patients clinically comparable to skilled nursing facility stroke patients, on average:
 - Mobility functional scores were higher by 5 to 10 points on average
 - Self-care functional scores were higher by 8 to 12 points on average

Source: Hong, I., Goodwin, J. S., Reistetter, T. A., Kuo, Y. F., Mallinson, T., Karmarkar, A., ... & Ottenbacher, K. J. (2019). Comparison of Functional Status Improvements Among Patients With Stroke Receiving Postacute Care in Inpatient Rehabilitation vs Skilled Nursing Facilities. *JAMA network open*, 2(12), e1916646-e1916646.

BURN PATIENTS IN IRH/U VS OTHER PAC SETTINGS

- According to a study by Espinoza et al., IRH/U burn patients compared to propensity score-matched SNF and LTCH burn patients:
 - Had **more severe** injuries
 - **More likely** to have inhalation injuries
 - **More likely** to undergo an amputation
 - Were nearly **10 times more likely** to successfully return to employment*
 - **In other words, IRH/U patients were sicker yet had better outcomes**

*12 months post-injury

Source: Espinoza, L. F., Simko, L. C., Goldstein, R., McMullen, K. A., Slocum, C., Silver, J. K., ... & Kowalske, K. (2019). Postacute Care Setting Is Associated With Employment After Burn Injury. Archives of physical medicine and rehabilitation, 100(11), 2015-2021.

RETURN TO EMPLOYMENT- A COMPELLING OUTCOME MEASURE

- A return to employment represents a significant return to community participation
- Among people with disabilities who are employed:
 - **Lower** rates of smoking
 - **Better** patient-reported quality of life
 - **Lower** Medicaid and Medicare costs
- Among burn survivors who are employed:
 - **Lower** rates of mental distress & psychosocial concerns
 - **Lower** rates of patient-reported pain

IRH/Us LEAD TO BETTER OUTCOMES

- Trauma patients treated at IRH/Us have significantly **increased functional independence & likelihood of discharge to home**
- Trauma patients treated at IRH/Us have **decreased mortality** 1 year post-injury, while SNF care is associated with increased mortality
- Stroke patients discharged from IRH/Us have **improved physical and cognitive function** compared to those discharged from SNFs

REFERENCES:

- DaVanzo, D., El-Gamil, A., Li, J. W., Shimer, M., Manolov, N., & Dobson, A. (2015). Assessment of Patient Outcomes of Rehabilitative Care Provided in Inpatient Rehabilitation Facilities (IRFs) and After Discharge: Final Report. 2014.
- Espinoza, L. F., Simko, L. C., Goldstein, R., McMullen, K. A., Slocum, C., Silver, J. K., ... & Kowalske, K. (2019). Postacute Care Setting Is Associated With Employment After Burn Injury. *Archives of physical medicine and rehabilitation*, 100(11), 2015-2021.
- Hong, I., Goodwin, J. S., Reistetter, T. A., Kuo, Y. F., Mallinson, T., Karmarkar, A., ... & Ottenbacher, K. J. (2019). Comparison of Functional Status Improvements Among Patients With Stroke Receiving Postacute Care in Inpatient Rehabilitation vs Skilled Nursing Facilities. *JAMA network open*, 2(12), e1916646-e1916646.