THE HOPE NETWORK ACUITY SCALE (HAS): Development, Validation and Applications of a Neuro Rehabilitation Acuity Measure

OVERVIEW
Required caregiver effort in neurological rehabilitation encompasses both demands for caregiving needs and protective supervision supports. To quantify this unique dimension of care, the Hope Network Acuity Scale (HAS) was developed. This study provides preliminary analysis of the psychometric properties of the HAS in post-acute brain injury and neurological rehabilitation settings. The HAS can potentially facilitate staffing, supervision and placement decisions and serve as a relevant functional outcome measure.

METHOD
• The HAS is an 8-item measure composed of two 4-item subscales (Behavioral and Medical Acuity).
• Reliability (internal and interrater), validity (construct, discriminant and concurrent) and sensitivity to change were investigated with data collected from current transitional/long term post-acute residential clients.

SAMPLE (N = 240)
• Post-acute transitional or long-term residential rehabilitation setting
• Mean Age = 48.0 years old; 66.7% male
• A smaller cohort of 105 consecutive transitional residential patients assessed at admission and discharge to assess concurrent and discriminant validity and sensitivity to change.
• Mean LOS = 76.7 days
• Median time from injury to admission = 47 days (range = 9 – 2,144). About 75% of cases were admitted within 3 months from injury.

RESULTS – CONCURRENT VALIDITY
• The HAS Total Score significantly correlated with the Supervision Rating Scale (Boake, 1996) at admission (r = .53, p < .001) and discharge (r = .46, p < .001).
• The HAS Total Score significantly correlated with the Mayo-Portland Adaptability Inventory (Malec, 2005) at admission (r = .80, p < .001) and discharge (r = .81, p < .001).

RESULTS – ADMISSION & DISCHARGE SCORES
Paired t-tests found statistically significant change from admission to discharge for Total Acuity (t(101) = 7.04, p < .001) as well as Medical (t(101) = 8.27, p < .001) and Behavioral (t(101) = 4.28, p < .001) Subscales.

RESULTS – DISCRIMINANT VALIDITY/SENSITIVITY TO CHANGE
In addition to demonstrating sensitivity to change from admission to discharge, HAS discharge scores showed overall discrimination between discharge placements (Kruskal Wallis: H = 26.42, p < .001) with those in specialized residential homes having significantly higher discharge acuity than those living with family (p = .001) or independent living (p < .001). Those living with family had significantly higher discharge acuity than those in independent living (p = .042).

RESULTS – DESCRIPTIVES AND CONSTRUCT VALIDITY

RESULTS – CONSTRUCT VALIDITY (EFA) CONT.

CONCLUSIONS
• Preliminary development of the HAS shows it to be a promising measure of demand on caregiver effort in post-acute neurological rehabilitation treatment and a practical measure of outcome.
• While more work is needed, initial results indicate the HAS displays generally sound psychometric properties and potential clinical utility for staffing, supervision, and placement decisions.
• Currently available functional measures quantify functional ability, but are only indirectly related to work demand.
• The use of the HAS can improve clinical communication and resource allocation by providing a standardized, quantifiable descriptor of actual required care and supervision demands in neurological rehabilitation.