

# Role of Ugandan Neurorehabilitation Services in Acute Hospital Discharge for Traumatic Brain Injury and Spinal Cord Injury: A Mixed-Methods Study

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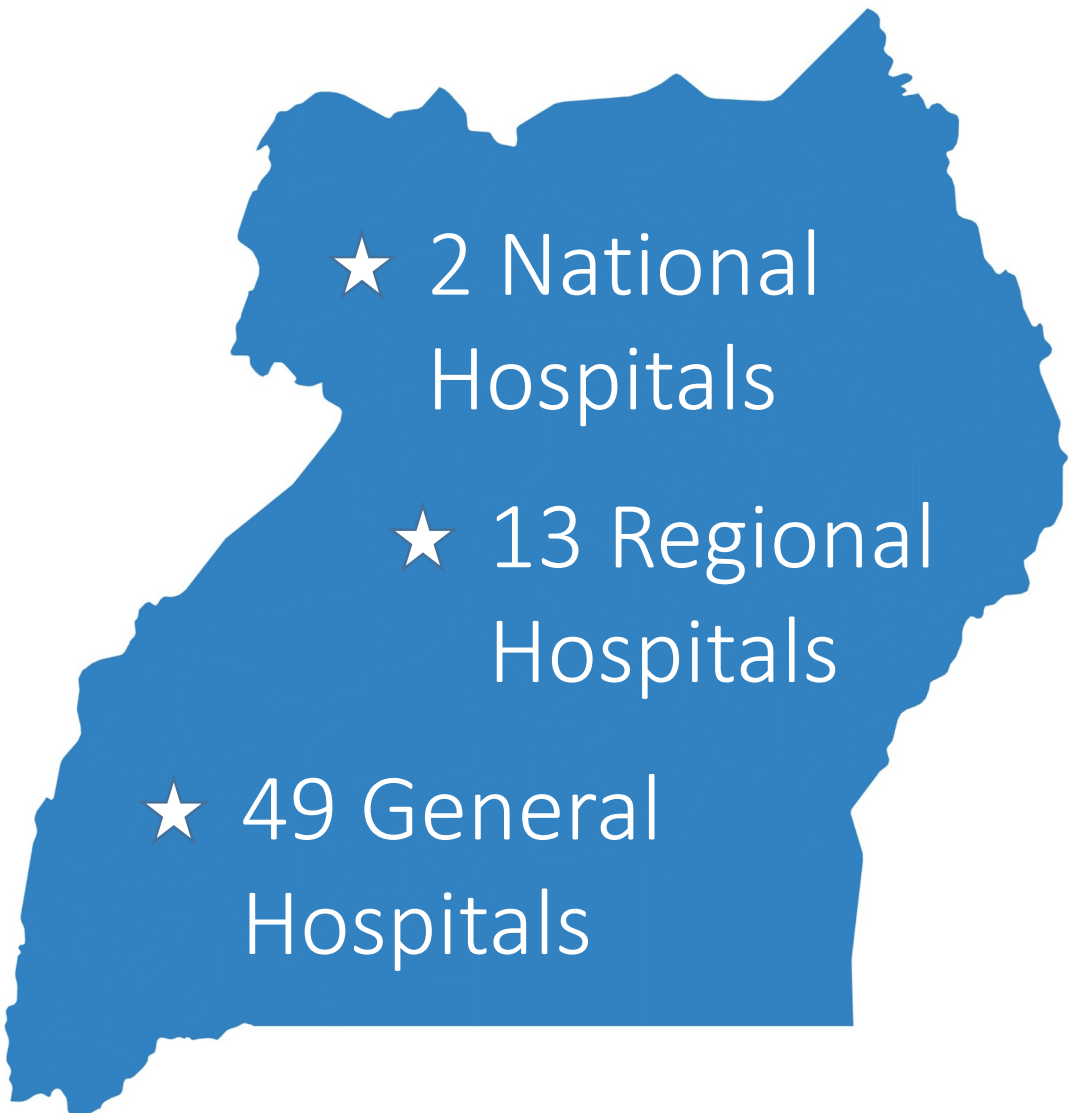


### Background

- Neurotraumas secondary to Road Traffic Accident (RTA), including Traumatic Brain Injury (TBI) and Spinal Cord Injury (SCI), are leading causes of hospital admissions in Uganda.<sup>1</sup>
- TBI and SCI related hospitalizations can result in a need for rehabilitation services across the care continuum to recover functional mobility and/or manage new or worsened disability.<sup>2</sup>
- Discharge planning is advised during care transitions to optimize patient adherence to care instructions and referrals along the care pathway.<sup>3</sup>
- Limited information exists to advise rehabilitation service involvement in discharge planning, with no resources specific to a Ugandan context.<sup>4</sup>
- Ugandan hospital-based rehabilitation services primarily include physiotherapy (PT) and occupational therapy (OT), with limited speech language therapy (SLT)<sup>5</sup>

Rehabilitation Services: UGANDA

46 Million People  
43% of PTs in Public Hospitals  
375 PTs & OTs  
55% of PTs in Capital District



### Purpose & Objectives

**Purpose:** To assess the current state of rehabilitation service utilization within discharge planning from acute neurosurgical wards in Uganda for patients with a TBI or SCI secondary to a RTA.

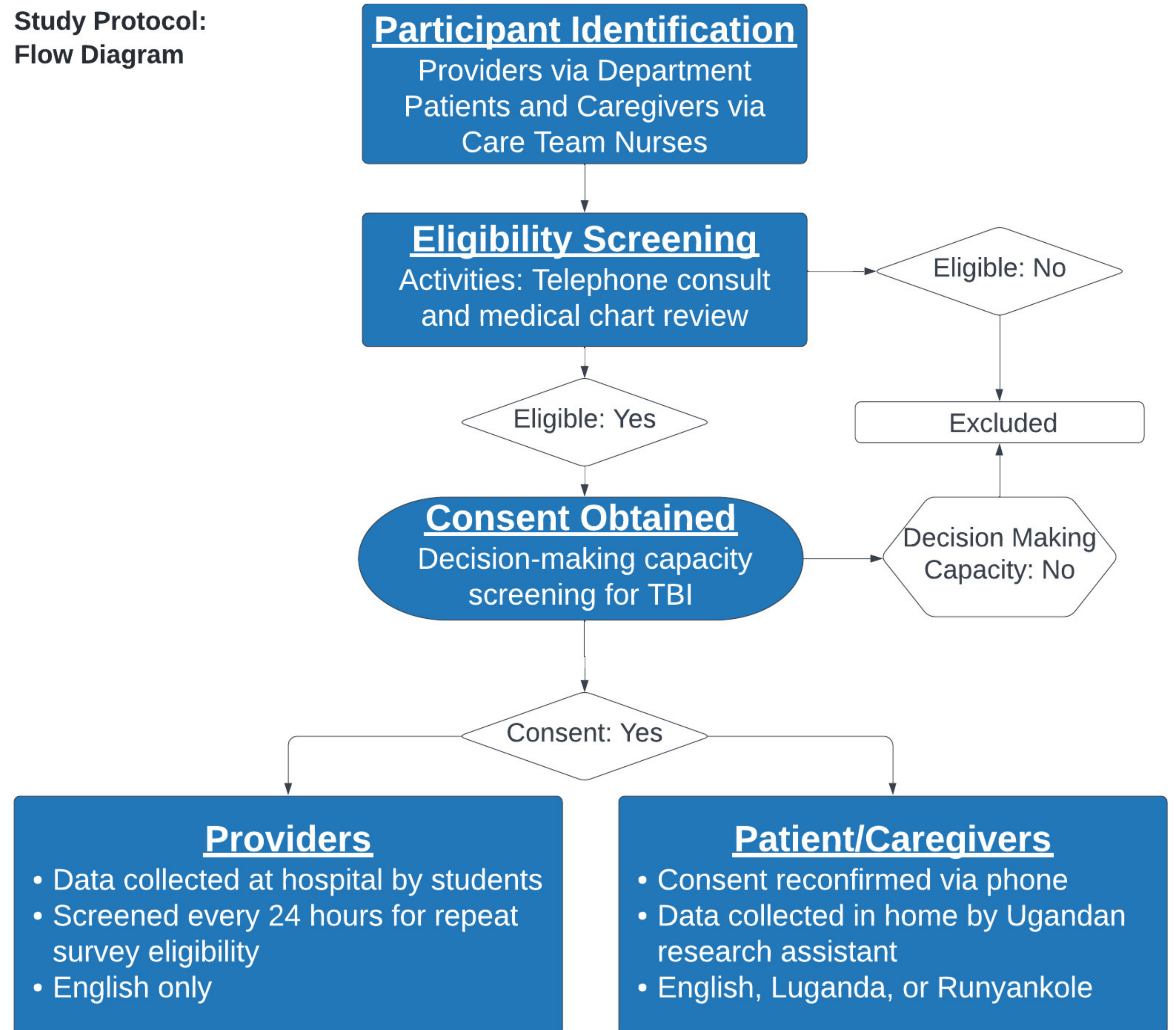
**Objectives:**

- To describe process steps occurring during discharge planning for medical providers, rehabilitation providers, patients, and caregivers.
- To describe experiences of discharge planning from the perspectives of medical providers, rehabilitation providers, patients, and caregivers.
- To examine knowledge, attitudes and beliefs of medical providers, rehabilitation providers, patients, and caregivers as to the inclusion of rehabilitation services in discharge planning.

### Methods

- Stratified, purposive sampling of TBI and SCI Medical Providers, Rehabilitation Providers, Patients and Caregivers
- Mixed-method, multisite study at Mulago National Referral Hospital (MNRH) and Mbarara Regional Referral Hospital (MRRH)
- Cross-sectional, observational survey and semi-structure interview guides developed through literature review, expert opinion consultation and participatory action research methods
- Targets: 300 Survey Observations and 32-40 Interviews
- Inclusion Criteria:
  - Medical and Rehabilitation Providers:** Currently licensed and discharged RTA-related TBI and/or SCI patient within 24 hours
  - Patient and Caregivers:** Age ≥ 18 years old with RTA-related TBI or SCI admission and informed of pending discharge
  - TBI Patients:** Glasgow Coma Score 15/15 within 48 hours
  - SCI Patients:** Does not require supplemental oxygen
  - Caregivers:** Identified by patient or family as primary caregiver during admission and present on day of discharge

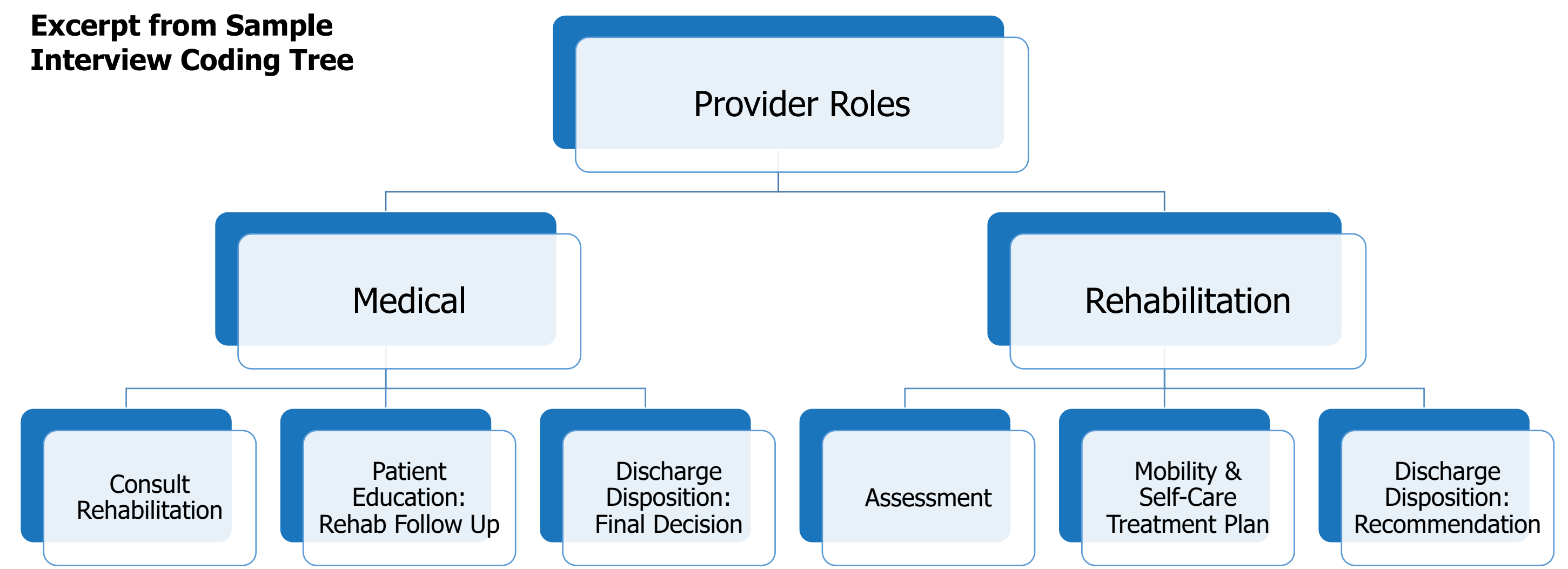
Study Protocol: Flow Diagram



### Study Tools & Data Analysis

- Early instrument testing with providers at MNRH and MRRH
- Translation and back translation of patient-facing documents and instruments
- Descriptive statistics utilized for observational survey
- Inductive thematic analysis of interviews for emergent themes regarding experiences, knowledge, attitudes and beliefs

Excerpt from Sample Interview Coding Tree



### Potential Implications

Results of this study will inform:

- Understanding of current care transition practice for TBI and SCI patients from acute care in Ugandan hospitals
- Creation of Uganda-specific guidelines for rehabilitation involvement in discharge planning for neurotrauma cases
- Educational interventions regarding care transitions for healthcare providers, patients and caregivers
- Feasibility of utilizing survey instrument to assess rehabilitation discharge planning steps at Ugandan hospital facilities
- Future research needs to promote healthcare service access and utilization by TBI and SCI patient populations throughout the care continuum

### References

- Zia N. et al. Trauma Surg Acute Care Open. 2019; 4(1): e000259
- Chua KSG. et al. Ann Acad Med Singap. 2007; 21(2): pp 113-132
- Snow V. et al. J Hosp Med. 2009; 4(6): pp 364-370
- Smith BA. et al. Phys Ther. 2010; 90(5): pp 693-703
- Allied Health Professional's Council Uganda. Accessed March 3, 2022