



Government of **Western Australia**
North Metropolitan Health Service
Mental Health, Public Health and Dental Services



Model of Care

State Head Injury Unit



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Literature Review

The State Head Injury Unit provides a comprehensive community based Case Coordination and rehabilitation service for patients with an acquired brain injury aged 16-65 years. This is based on the Comprehensive Enhancement Practice: An Implementation Model Reference: *Rothman J and Sager JS, Case Management: Integrating Individual and Community Practice, 2nd Ed, 1998. (Fig. 1)*

In updating the SHIU model of care, national and international specialised brain injury rehabilitation service model literature was reviewed. The evidence outlined in these reviews consistently reported that effective brain injury rehabilitation models have the following key characteristics:

- An individualised, goal based approach with early and ongoing assessment for needs identification. ABI rehabilitation should be holistic to match the strengths and needs of patient and modified over time.
- Flexible entry and exit points with patients needing access services at different times as they progress through their rehabilitation and recovery.
- The rehabilitation model is non-linear with patients needing to re-visit rehabilitation along the continuum of care as their recovery progresses and new challenges emerge. Clear communication and information sharing between services is required to support this process.
- Delivered by a collaborative interdisciplinary team with care coordinated to match the individual and complex needs of patients.
- Effective evidence based rehabilitation interventions are commenced early and deliver continuous tailored care of the right intensity.
- The involvement of care-givers in ensuring support and education to care-givers and family members.

The SHIU model of care incorporates these characteristics through the case coordination and interdisciplinary rehabilitation model. Case Coordination is a collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual's health needs through communication and available resources to promote quality cost-effective outcomes. Patients are referred for interdisciplinary rehabilitation as needed along the care continuum.

Case coordination involves a phased and systematic process with sequential and overlapping functions to enable the provision of seamless, integrated care and improved patient outcomes across the continuum. A comprehensive case coordination approach provides appropriate, flexible and coordinated support.

The SHIU model of care allows flexibility of service delivery through the referral pathways and allowing re-referral to the service following discharge. Linkages with key stakeholders prior to referral and during SHIU program promote information sharing and timely access to services. The SHIU registration streams allow for flexibility of service delivery to best meet patient needs in a timely and cost effective manner.

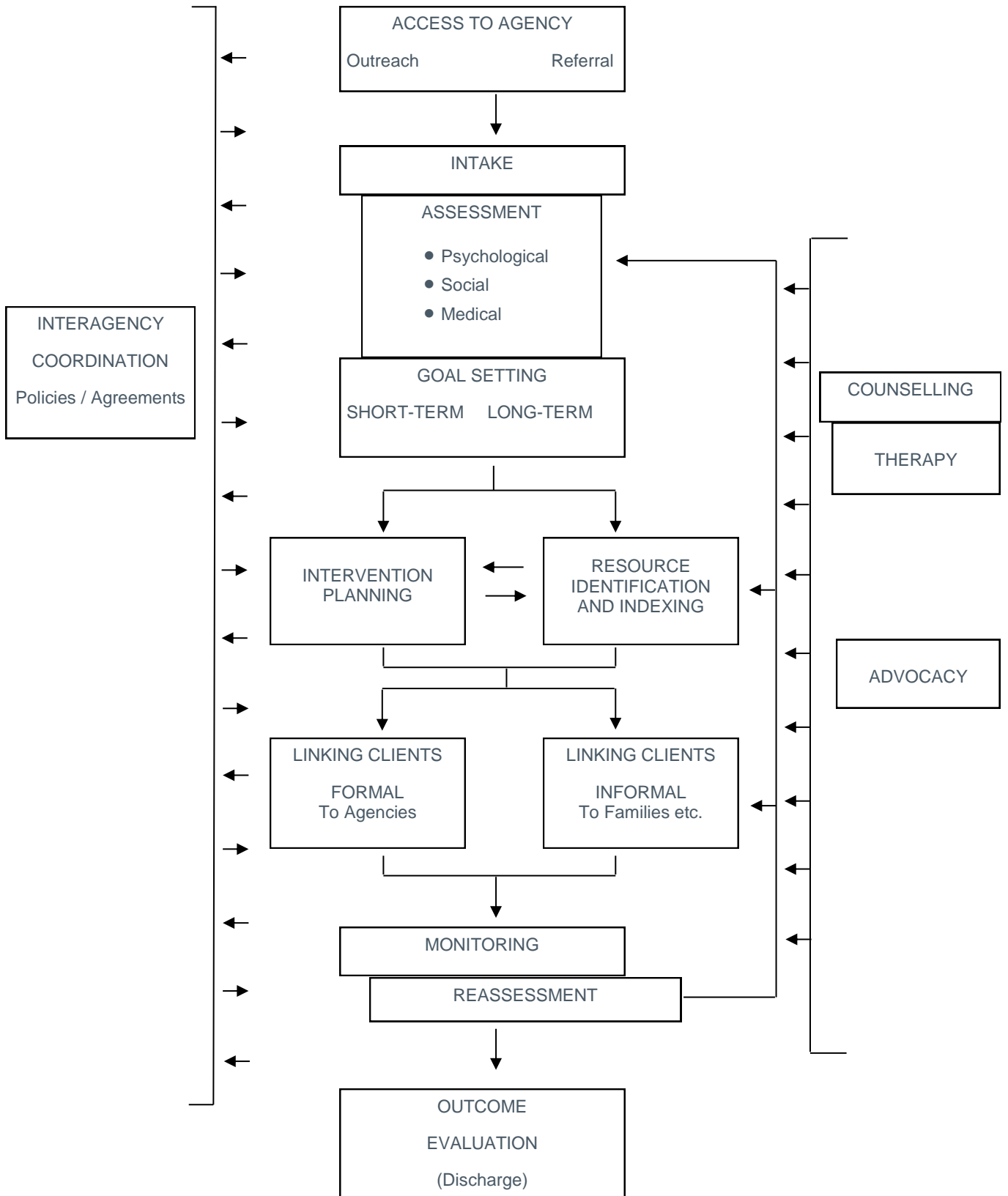


Fig. 1: Comprehensive Enhancement Practice: An Implementation Model
 Reference: Rothman J and Sager JS, *Case Management: Integrating Individual and Community Practice*, 2nd Ed, 1998.

References:

- Comprehensive Enhancement Practice: An Implementation Model Reference: *Rothman J and Sager JS, Case Management: Integrating Individual and Community Practice, 2nd Ed, 1998.*
- Rehabilitation Models: A scoping review. Dr Beth Costa/ Dr Kate Gibson. April 2017 Evidence Review. Institute for Safety, Compensation and Recovery Research Victoria.
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- Interdisciplinary Approaches to Facilitate Return to Driving and Return to Work in Mild Stroke: A Position Paper. Suzanne Perea Burns, Jaclyn K Schwartz, Shannon L Scott, Hannes Devos, Mark Kovic, Ickpyo Hong, Abiodun Akinwuntan. American Congress of Rehabilitation Medicine. Archives of Physical Medicine and Rehabilitation. 2018; 99;2378-88

SHIU Model of Care

The SHIU, as an interdisciplinary team, have adapted Rothman and Sager's Comprehensive Enhancement Practice: An Implementation Model to include the assessment and rehabilitation pathways the client undertakes upon referral to the SHIU (refer Fig. 2). This adapted model includes the principles and pathways of Rothman and Sager's model, adding processes undertaken at each stage and Goal Completion prior to Outcome Evaluation.

Registration type within the SHIU is dependent upon the information provided on referral.

Comprehensive Registration (CR): Clients with moderate-severe brain injury, triaged as requiring case coordination and access to therapy services

Telephone Registration (TR): Clients with mild brain injury or concussion, triaged as requiring case coordination but who may not require therapy services; or country-based clients

Therapy Only (TO): Triaged as only requiring discipline-specific intervention (i.e. no case coordination required).

Discrete Registration (DR): Clients re-referred to SHIU triaged as only requiring targeted, short-term Case Coordination support/intervention.

Clients are allocated a Case Coordinator and Therapy Services are accessed on an as needs basis as identified by Case Coordination, client and / or family as part of a collaborative process. As SHIU is a community based rehabilitation services, therapies are provided in the home, workplace and community or at the Unit, when indicated. The SHIU also has access to Telehealth services for rural / country based clients, as well as liaison with WACHS as a consultancy service.

Length of program is determined by the clients identified needs and goals, and progress towards these. Goals are reviewed on a regular basis through the Client Review Meeting (for CR clients) and programs revised as needed. Nearing completion of their SHIU program, if long term supports are identified, referrals to appropriate services are made (i.e. NDIS) with clinical handover provided. Treating medical practitioners are also advised of the discharge plan (whether linked with further services or not). (Refer Appendix 1)

If issues related to ABI arise following discharge from the service, the SHIU will continue to be available as a resource to clients, family and community supports. This could include provision of information, referral on to other relevant agencies or targeted, time limited therapy services.

The SHIU also functions as an ABI resource service for the wider community. Information and guidance can be obtained by contacting the SHIU via telephone and accessing a Duty Officer.

The SHIU maintains partnerships with WA Tertiary Hospitals; Outpatient Rehabilitation Services; Rehabilitation in the Home; NIISWA; NGO's (e.g. Synapse; private Allied Health providers; Explorability; Stroke Foundation); GP networks; NDIS; ICWA; and WA Universities with respect to students and research programs.

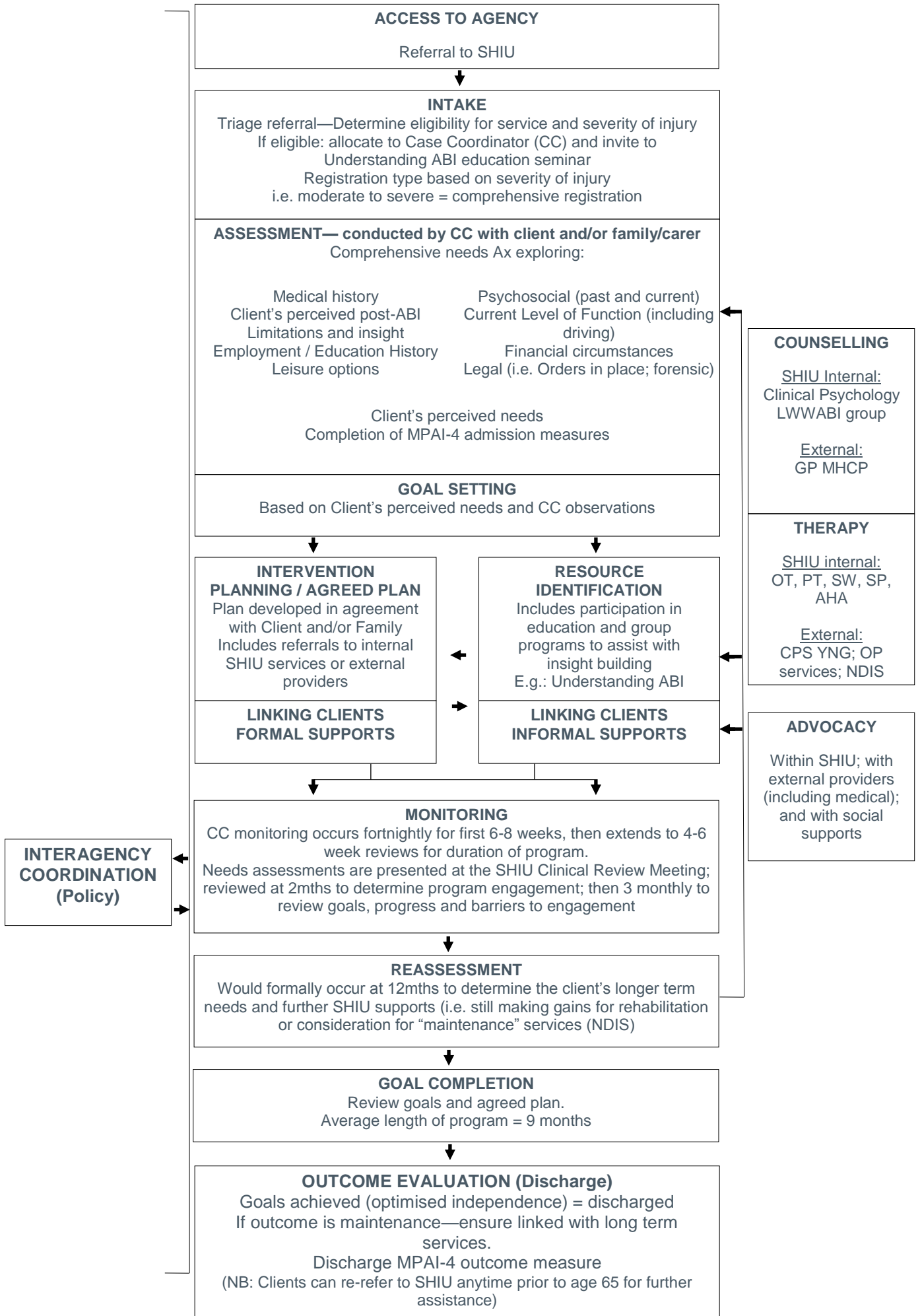


Fig. 2 – Adapted Model

Inclusion Criteria

To be eligible to receive Case Coordination and Community Rehabilitation Services from the SHIU clients must meet the following criteria:

- Aged 16 to 65 years
- Sustained a recent ABI. E.g. trauma; stroke; severe concussion; tumour; infection/abscess; hypoxia; encephalopathy etc.
- Long-standing injuries may be considered dependent upon circumstances

Of note:

- Individuals receiving compensation or NDIS funding prior to SHIU referral who require ABI specific intervention will be considered on a case by case basis.
- As the SHIU is a community based service, clients whereby referral indicates current significant drug and / or alcohol use are required to engage in a program of support through Drug and Alcohol services prior to being considered for SHIU.
- Clients with a tumour diagnosis who are undergoing intensive chemotherapy and / or radiotherapy are considered for SHIU program following this treatment.

Discharge Criteria

The average SHIU length of program is 9 months, however this is determined by the client's goals, engagement in their rehabilitation, and future support requirements.

Discharge pathways for clients of the SHIU include:

- Completion of all goals, no further services required, discharge from service with GP and / or treating specialist advised.
- Further supports required, therefore linking with services such as:
 - NDIS for maintenance therapy and long term support needs
 - Disability Employment Service providers
 - Advocacy services: e.g. for clients requiring legal, financial, accommodation supports
 - University student programs which enable clients to receive ongoing support whilst not requiring 1:1 intervention: e.g. ECU Speech Pathology; Curtin Cockburn Clinics

As demonstrated in our Model of Care, following discharge clients and / or family members are welcome to contact the SHIU at any time. Should the need arise for re-engagement with SHIU services, the client /family member is able to re-refer.

Services for Aboriginal Clients with ABI

During 2020, the SHIU has partnered with NMHS Aboriginal Health to improve access to ABI rehabilitation services for this cohort. Gaps have been identified with Aboriginal clients not being referred to SHIU services with reasons for this unknown.

A project commenced in July 2020 with the development of a dedicated abbreviated referral for use by Sir Charles Gairdner Hospital (SCGH) Aboriginal Liaison Services, in conjunction with a culturally appropriate SHIU brochure. On finalisation of these documents (end of October 2020), the project will aim to target this population with SHIU able to meet with clients who are still on the SCGH ward at time of referral to explain not only SHIU services, but also the rehabilitation

pathways. The goal of which is to increase engagement with rehabilitation services; educate clients, family and community regarding ABI recovery; and improve functional outcomes overall.

Services for Country Based Clients

The SHIU is a state-wide service, and thus, provides services to country, rural and remote clients and / or families. This is achieved through:

- TeleHealth appointments – both for individual assessment and therapy sessions; and group education programs
- Regular contact via telephone to monitor progress and work towards goals
- Provision of resources via email; online links; or postal services
- Linking the client with local providers
- Provision of an ABI consultancy service to locally based service providers who may not have ABI experience

Services for Paediatric Clients

As mentioned in the inclusion criteria, the SHIU accepts clients from the age of 16. However, a project is underway to provide transition support to clients with ABI from age 15 with the Perth Children's Hospital, as part of their transition to adult services. This has been identified as an area of need and will progress further in 2021. Clients aged 16 and 17 have access to all SHIU services as would any another client. Support is also provided to their family members and / or carers.

More specifically for this cohort, the SHIU currently provides community rehabilitation and vocational support including:

- Liaison with education services (High School; TAFE; University with respect to young adults)
- Consultancy with Disability Support Officer services to ensure effective strategy implementation and accommodations for persistent difficulties impacting on functional recovery
- Cognitive rehabilitation
- Assistance with returning to previous roles (e.g. apprenticeships)
- Linking with Disability Employment Services
- Engagement with voluntary roles
- Explore return to sport, leisure and recreational activities.

Evaluation of Service Provision

The SHIU uses various outcome measures and surveys to obtain client and family member / carer feedback and inform service delivery.

Outcome measures include:

1. Mayo-Portland Adaptability Inventory – 4th Revision (MPAI-4)

The MPAI-4 is an outcome measure designed primarily to represent the sequelae of recent ABI and is administered at admission to and discharge from SHIU. The MPAI-4 indicates a client's improvement (or decline) in the areas of: Ability, Adjustment and Participation as well as an overall score. The T-scores provide an indication of whether the client's level of

impairment is considered: Good Outcome; Mild Impairment; Mild to Moderate Impairment; Moderate to Severe Impairment; or Severe Impairment.

The MPAI-4 is administered for every comprehensively registered client at SHIU (unless unable to engage in program or re-referral / long standing injury). The Mayo-Portland Participation Index (MPPI), which assesses changes in participation only, is administered for telephone registrations and clients with a diagnosis of concussion.

2. Clients with a diagnosis of concussion are administered the Rivermead Post-Concussion Symptoms Questionnaire (RPCSQ).

3. Client Satisfaction Surveys

Client and / Family Member Satisfaction Surveys are sent to clients following completion of their SHIU program. At this time, these surveys are not sent to clients with short (i.e. <3mth programs) due to the nature of the survey, and alternatives are being explored to capture this data.

4. Understanding ABI / Support Worker and Carer Training Day Surveys / Living Well with ABI group

Surveys are provided to all attendees at SHIU education programs, following which data is collated and used to inform future sessions.

The SHIU has a strong focus on improving the quality of services and has a number of projects underway as part of the annual Operational Plan (e.g. evidence based therapy protocols; data analysis; and quality improvement projects), in which client and family member / carer feedback / participation will contribute.

Workforce

The SHIU workforce comprises the following:

1.0FTE	Head of Department
1.0FTE	Program Manager
4.0FTE	Case Coordinators (1 fulltime and 5 part-time staff)
1.4FTE	Clinical Psychologists (2 part-time staff)
2.0FTE	Occupational Therapists (1.0 Senior job share; 1.0 Occupational Therapist)
1.0FTE	Senior Physiotherapist
1.6FTE	Social Work (1.0 Senior; 0.6 Social Work)
0.2FTE	Senior Speech Pathology
1.0FTE	Allied Health Assistant (2 part-time staff)
1.0FTE	Administration Assistant

Appendices

SHIU Comprehensive Registration Pathway: [SHIU CR Pathway 202000805.pdf](#)

**This document can be made available in alternative formats
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