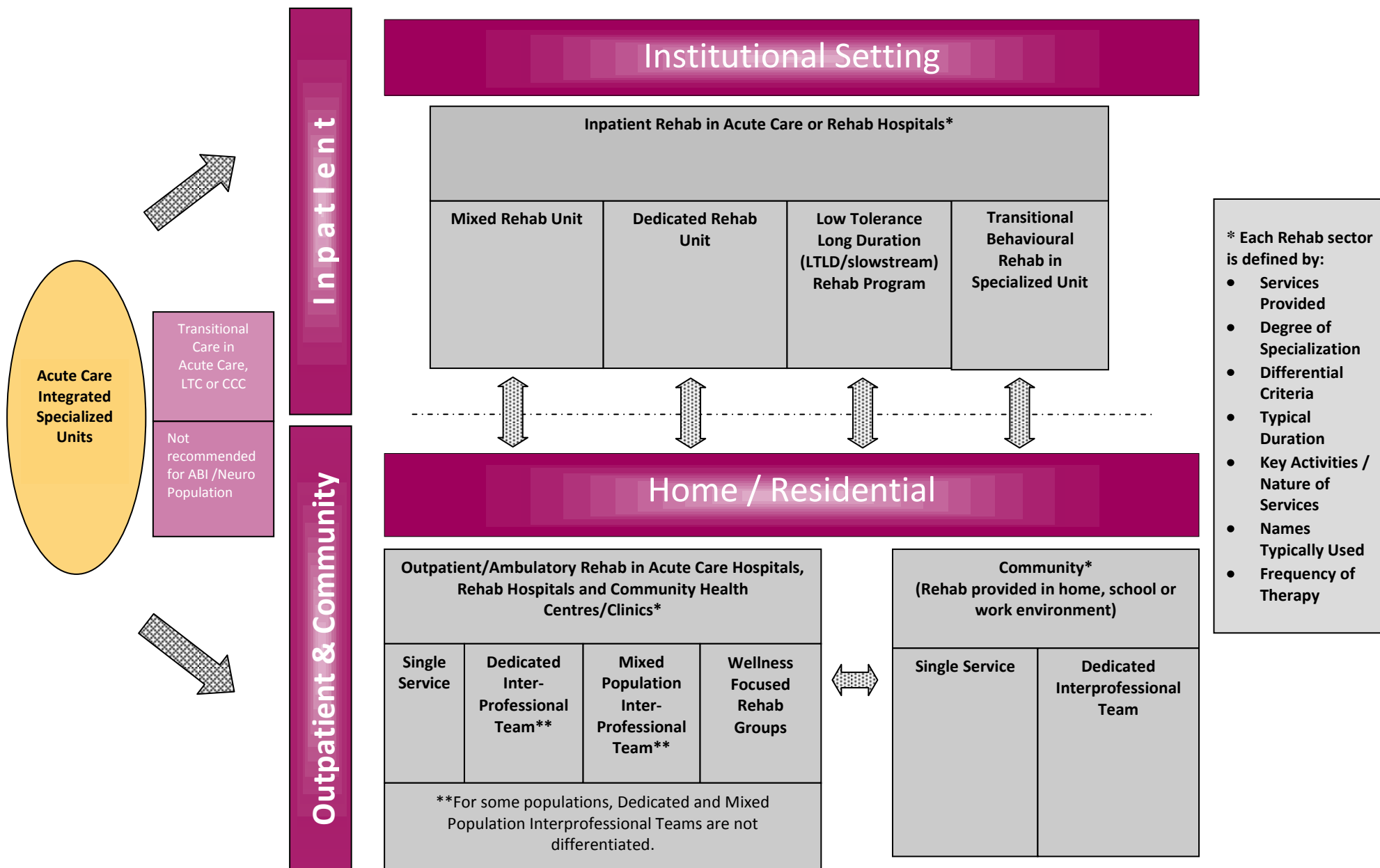


## ABI Rehab Definition Framework



## GUIDING PRINCIPLES

### Objectives:

#### **I. Increase clarity and consistency in the forms of cognitive and physical rehab across the continuum by:**

1. Clarifying the distinctions between and across institutional and community-based rehab programs.
2. Classifying programs with consistent terminology.
3. Describing the key features of institutional and community-based rehabilitation programs based on the services provided, the degree of specialization, differential/critical criteria, duration, and the primary focus of the rehab program/service.

#### **II. Inform planning and performance measurement through the development of standards for rehab program components against which rehab programs can be benchmarked.**

### Guiding Principles:

1. The Rehab Definitions Conceptual Framework presupposes the World Health Organization's definition of "rehabilitation" as "*a progressive, dynamic, goal-oriented and often time-limited process, which enables an individual with an impairment to identify and reach his/her optimal mental, physical, cognitive and/or social functional level. Rehabilitation provides opportunities for the individual, the family and the community to accommodate a limitation or loss of function and aims to facilitate social integration and independence.*"
2. The Rehab Definitions Conceptual Framework refers to cognitive and physical forms of rehabilitation across the continuum of care (including Acquired Brain Injury behavioural programs and geriatric psychiatry). The rehab conceptual diagram refers to acute care, inpatient rehab programs within institutional settings and outpatient and community-based rehab for clients residing at home or in a residential setting. The use of bi-directional arrows in the schematic reflects the flow of patients and continuity of care across these settings.
3. The framework identifies key features of rehab programs based on evidence-based practices where available to define the "gold standard" of rehab care (e.g. rehab beds are clustered together). In most instances these key features reflect current practices; however, some organizations may be required to implement changes within their organizations to achieve consistency with the criteria set out in the framework.

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4. The term “patient” is used for individuals receiving rehabilitation in a hospital setting. The term “client” is used to refer to individuals receiving community rehab services.
5. The Rehab Definitions Conceptual Framework uses categories that have been defined based on the rehab needs of the patient and the typical services provided. Length of stay or the type of facility in which the rehab is provided is not considered essential to defining rehab sectors.
6. The Rehab Definitions Conceptual Framework is based on the assumption that clients participating in the programs described have rehab potential and rehab goals. For criteria regarding rehab potential, medical stability and rehab readiness for inpatient rehab, refer to the GTA Rehab Network’s Inpatient Rehab Referral Guidelines ([www.gtarehabnetwork.ca](http://www.gtarehabnetwork.ca)).
7. The framework uses terminology that is consistent with the MOHTLC guidelines for inpatient rehabilitation beds and can be applied to community and ambulatory service delivery.
8. While it is appreciated that much of rehabilitation occurs in third-party payer assessment centres or private clinics, the framework refers to publicly-funded rehabilitation. However, it is hoped that the framework will promote consistency in standards of care and equitable access across all rehab programs.
9. Input from healthcare providers representing acute care, regional rehab centres and community-based organizations that provide adult (including geriatric) and paediatric rehab has been obtained to validate the Rehab Definitions Conceptual Framework.

### GLOSSARY OF REHAB COMPONENT TERMS

**Dedicated Interprofessional Team (Community):** Rehab provided in the home, school or work environment by an interprofessional team using a coordinated, integrated approach for specific rehab populations or to reduce the impact of a particular disability.

**Dedicated Interprofessional Team (Outpatient/Ambulatory Rehab):** Outpatient rehab provided by an interprofessional team with expertise in the treatment and assessment of a particular patient population. Outpatient/Ambulatory dedicated interprofessional teams are located in acute care hospitals, rehab hospitals and community health centres/clinics. They provide rehab to patients who require more than one rehab service and a coordinated rehab approach.

**Dedicated Rehab Unit:** An inpatient rehab unit located in acute care and rehab hospitals that serves a single patient population group and provides intensive rehabilitation. Some units may specialize in more than one diagnosis in related populations (e.g. Cardio/Respiratory, Orthopaedic/Amputation, etc.). A dedicated rehab unit is suitable for individuals who require 24-hour hospital care and who are in need of an interprofessional rehab program using a coordinated rehab approach.

**Low Tolerance Long Duration (LTLD/slowstream) Rehab Program:** Suitable for individuals in need of an interprofessional rehab approach to address specific rehab goals who also have chronic/complex conditions requiring 24-hour hospital care and who are expected to benefit from a slower-paced rehab program for a longer duration than is offered in dedicated or mixed rehab programs. LTLD rehab is most commonly delivered in a complex continuing care bed but may also be provided in a designated rehab bed. LTLD rehab programs may be located in acute care, rehab or complex continuing care hospitals.

**Mixed Population Interprofessional Team (Outpatient/Ambulatory Rehab):** Outpatient rehab provided by an interprofessional team, which typically assesses and treats patients from a variety of patient population groups. Outpatient/Ambulatory mixed population interprofessional teams are located in acute care hospitals, rehab hospitals and community health centres/clinics. They provide rehab to patients who require more than one rehab service and a coordinated rehab approach.

**Mixed Rehab Unit:** Formerly referred to as a General inpatient rehab unit, this type of unit is located in acute care and rehab hospitals, provides intensive rehabilitation and serves a variety of patient population groups. The mixed rehab unit is suitable for individuals who require 24-hour hospital care and are in need of an interprofessional rehab program using a coordinated approach.

**Single Service (Community):** Individual rehab services that are usually provided through Community Care Access Centres. Single rehab services are suitable for individuals who are in need of one or more rehabilitation services in single specialty area(s)/profession(s) provided in the home, school or

## ABI Rehab Definition Framework

work environment. Although clients may receive more than one service, a coordinated approach is not used as rehab providers typically work as individual providers. However, some communication with other health providers may occur on an as-needed basis.

**Single Service (Outpatient/Ambulatory Rehab):** An outpatient rehab service located in acute care hospitals, rehab hospitals and community health centres/clinics that is suitable for individuals who are in need of an outpatient rehabilitation service in a single specialty area/profession. Clients may receive more than one rehab service; however, the services are not provided by way of a coordinated rehab approach. Services may include assessment only or assessment and treatment. Services may be provided during a one-time visit or multiple visits.

**Wellness Focused Rehab Groups:** These groups are provided in an outpatient/ambulatory setting and led by an individual rehab provider or team or rehab specialists to enhance an individual's ability to cope with a particular disability or impairment. These time-limited groups are publicly-funded although a small fee may be charged for materials.

<b>ACUTE CARE</b>	
<b>Integrated Specialized Neurology/Neurosurgical Units</b>	
<b>Names Typically Used</b>	<ul style="list-style-type: none"> <li>• Neurology/Neurosurgical Unit; Trauma Unit, Neurotrauma Unit</li> </ul>
<b>Services Provided</b>	<ul style="list-style-type: none"> <li>• Core team typically includes: Medical (MD), Neurosurgeon (NS), Nursing (RN), Physiotherapy (PT), Occupational Therapy (OT), Speech Language Pathology (SLP), Pharmacy, Nutrition (RD), Social Work (SW), and Respiratory Therapy (RT). Consultation available by Psychiatry, (Neuro)psychology as required</li> <li>• Diagnostic testing/imaging. The current investigation of choice for acute clinically important brain injuries is CT imaging of the head. CT scans should be immediately requested for adults when clinically indicated (e.g., deterioration in condition, GCS less than 13, GCS 13-14 two hours after injury)<sup>1</sup>.</li> </ul>
<b>Specialization vs. Non-Specialization</b>	<ul style="list-style-type: none"> <li>• Specialized: Core dedicated interprofessional team has expertise in neurological/neurosurgical care</li> </ul>
<b>Differential Criteria</b>	<ul style="list-style-type: none"> <li>• Acute traumatic or non-traumatic brain injury (does not include damage caused by a congenital disorder, a developmental disability or a process which progressively damages the brain).</li> </ul>
<b>Typical Duration</b>	<ul style="list-style-type: none"> <li>• Until discharged home, accepted into alternate level of care or shows no evidence of rehab potential</li> <li>• Should be transferred directly to rehabilitation as soon as client is ready.</li> </ul>
<b>Key Activities/Nature of Service</b>	<ul style="list-style-type: none"> <li>• Prevention of complications from brain injury (e.g., intervention to reduce intracranial pressure)<sup>2</sup></li> <li>• Management of any post surgical complications</li> <li>• Focussed multi-disciplinary assessment to determine breadth of deficits and rehab intensity required;</li> <li>• Initiate rehab intervention as soon as possible and provide rehab to the extent that it is needed and the patient is able to tolerate<sup>3</sup> Frequency varies from 1 – 2x per day to weekly depending on staffing and patient need.</li> <li>• Initiate referral to appropriate ABI rehab program as soon as possible and facilitate referral to support smooth and timely transition.</li> </ul>

**Transitional Care in Acute Care, CCC or LTC (for discharge to rehab or home)**  
**NOT APPROPRIATE FOR PATIENTS WHO HAVE SUSTAINED AN ABI AND WHO ARE DEEMED APPROPRIATE FOR INPATIENT REHAB. PATIENTS TO BE TRANSFERRED DIRECTLY FROM ACUTE CARE TO INPATIENT REHAB UNIT<sup>4</sup>.**

<b>INPATIENT REHAB</b> Admission to inpatient rehabilitation results in functional improvements <sup>5</sup> Early admission to specialized, interprofessional ABI care is recommended to reduce overall length of stay and maximize rehabilitation gains. <sup>6</sup>					
<b>Mixed Rehab Inpatient Units in Acute Care and Rehab Hospitals</b> (mixed populations including non-neurological populations)		<b>Dedicated Inpatient Rehab Units in Acute Care and Rehab Hospitals</b> (this can include dedicated ABI beds within Neuro Rehab Unit)		<b>Low Tolerance Long Duration Inpatient Rehab Program in CCC and Rehab Hospital</b>	<b>Transitional Behavioural Rehab in Specialized Unit</b>
<b>*Not suitable for ABI patient with moderate to severe cognitive/behavioural impairment.</b>					
Suitable for individuals in need of an interprofessional rehab program who also require 24-hour hospital care. <b>May be suitable for patient with MILD cognitive impairment as long as there is access to appropriate cognitive assessment/intervention.</b>		Suitable for individuals in need of an interprofessional rehab program and who also require 24-hour hospital care.		Suitable for individuals in need of an interprofessional rehab program who may also have a chronic/complex condition requiring 24-hour hospital care over an extended period of time and who are expected to benefit from low intensity, long duration rehab.	Suitable for individuals in need of specialized behavioural rehabilitation and who also require 24 hour hospital care.
<b>Names Typically Used</b>	<ul style="list-style-type: none"> <li>• General Rehabilitation or Medical Rehabilitation</li> <li>• Inpatient Neuro Rehab Program</li> </ul>	<ul style="list-style-type: none"> <li>• Inpatient ABI Rehabilitation Program</li> </ul>		<ul style="list-style-type: none"> <li>• LTLD rehab; Slow-Stream; Slow-to-Recover, Neuroactivation</li> </ul>	<ul style="list-style-type: none"> <li>• Acquired Brain Injury Behaviour Services</li> </ul>
<b>Services Provided</b>	<ul style="list-style-type: none"> <li>• Intensive rehab program of a minimum of 240 minutes of therapeutic/ rehab activity under direction of a rehab professional is available to the patient 5-7 days per week as tolerated by the patient (including task oriented nursing activity)</li> </ul>	<ul style="list-style-type: none"> <li>• Intensive rehab program<sup>7</sup> of a minimum of 240 minutes of therapeutic/rehab activity under direction of a rehab professional is available to the patient 5-7 days per week as tolerated by the patient (including task oriented nursing activity)</li> <li>• No more than half of direct therapy time is provided by an OTA or PTA</li> <li>• Rehab programming is individualized according to patient need (not necessarily 1:1)</li> </ul>		<ul style="list-style-type: none"> <li>• A low to moderately intensive rehab program is offered that provides an average of 30 minutes, 2 sessions per day, 3x per week as tolerated by the patient. Therapeutic activity includes professional therapy (e.g. Occupational Therapy, Physiotherapy, OTA/PTA services under the guidance of an OT/PT and/or Speech-Language Pathology) and nursing activities.</li> <li>• No more than half of direct therapy time is provided by an OTA or PTA<sup>7</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Intensive behavioural rehab program based on principles of applied behavioural analysis</li> <li>• Expectation that patient is unable to effectively participate in traditionally resourced rehab program due to behaviours.</li> <li>• Core team typically includes; Physician, Psychologist, Behaviour Therapist, Nurses, Rehabilitation</li> </ul>

<b>INPATIENT REHAB</b> Admission to inpatient rehabilitation results in functional improvements <sup>5</sup> Early admission to specialized, interprofessional ABI care is recommended to reduce overall length of stay and maximize rehabilitation gains. <sup>6</sup>					
Mixed Rehab Inpatient Units in Acute Care and Rehab Hospitals (mixed populations including non-neurological populations)		Dedicated Inpatient Rehab Units in Acute Care and Rehab Hospitals (this can include dedicated ABI beds within Neuro Rehab Unit)	Low Tolerance Long Duration Inpatient Rehab Program in CCC and Rehab Hospital	Transitional Behavioural Rehab in Specialized Unit	Therapists, Social Worker, consultant Occupational Therapist and Physiotherapist. • Access to consultation with Psychiatrist if warranted. • Staff ratios should approach 1:1 to support therapy required and assure patient and staff safety.
*Not suitable for ABI patient with moderate to severe cognitive/behavioural impairment.					
<b>Services Provided</b>	<ul style="list-style-type: none"> <li>• No more than half of direct therapy time is provided by an OTA or PTA</li> <li>• Rehab programming is individualized according to patient need (not necessarily 1:1)</li> <li>• Core team* typically includes: Physician, Psychiatrist, Nursing, Physiotherapy, Occupational Therapy, Social Work, Pharmacy, Speech-Language Pathology.</li> <li>• Consultation** available from psychologist with expertise in neuro/behavioural assessment and treatment if warranted.</li> </ul>	<ul style="list-style-type: none"> <li>• Core team* typically includes: Physician, Psychiatrist, Nursing, Physiotherapy, Occupational Therapy, Social Work, Pharmacy, Speech-Language Pathology, Behaviour Therapy, and Psychologist with expertise in neuro/behavioural assessment and treatment.</li> <li>• Access to consultation** is available if warranted with Psychiatrist with expertise in neuro/ behavioural assessment and treatment.</li> <li>• Nurses will participate in the therapeutic process outside of formal therapy time.</li> <li>• Staffing ratios should support the minimum amount of individualized therapy recommended<sup>8</sup>.</li> </ul>	<ul style="list-style-type: none"> <li>• Core team* typically includes: Physician, Psychiatrist, Nursing, Physiotherapy, Occupational Therapy, Social Work, Pharmacy Consultation Speech-Language Pathology, Clinical Dietician, Therapeutic Recreation, Chaplaincy/Pastoral Care,</li> <li>• Access to consultation** if warranted with Behaviour Therapist, Psychologist and/or Psychiatry with expertise in neuro/behavioural assessment and treatment.</li> <li>• Staffing ratios should support the minimum amount of therapy recommended<sup>9</sup>.</li> </ul>		

<b>INPATIENT REHAB</b> Admission to inpatient rehabilitation results in functional improvements <sup>5</sup> Early admission to specialized, interprofessional ABI care is recommended to reduce overall length of stay and maximize rehabilitation gains. <sup>6</sup>			
Mixed Rehab Inpatient Units in Acute Care and Rehab Hospitals (mixed populations including non-neurological populations)	Dedicated Inpatient Rehab Units in Acute Care and Rehab Hospitals (this can include dedicated ABI beds within Neuro Rehab Unit)	Low Tolerance Long Duration Inpatient Rehab Program in CCC and Rehab Hospital	Transitional Behavioural Rehab in Specialized Unit
<p><b>*Not suitable for ABI patient with moderate to severe cognitive/behavioural impairment.</b></p>			
<p><b>Specialization vs. Non-Specialization</b></p>	<ul style="list-style-type: none"> <li>Rehab providers assess/treat a variety of diagnostic/rehab population groups.</li> <li>Specialization is encouraged for rehab population group where there is a sufficient *critical mass (i.e. minimum of 7 beds) to support the development and maintenance of clinical expertise among nursing, allied health and medical staff and the acquisition of special equipment and other resources required to treat the</li> </ul>	<ul style="list-style-type: none"> <li>ABI Team is dedicated to provide rehabilitation services for ABI patients.</li> <li>Some programs may specialize in more than one diagnosis in related populations (e.g. ABI/stroke, ABI/MS, etc.)</li> <li>A critical mass of 7 beds within the unit is required to support the development and maintenance of clinical expertise among nursing, allied health and medical staff and the acquisition of special equipment/resources required to treat ABI patients.</li> <li>Geographically clustered beds.</li> </ul>	<ul style="list-style-type: none"> <li>Dedicated interprofessional team, including physician, with expertise in acquired brain injury.</li> <li>Typically specialized in persons with severe disability arising from neurological conditions (e.g. Stroke, ABI, MS, Guillian Barre, Spinal Cord Injury, West Nile virus). Admission is not limited to these diagnoses and may include patients who have experienced a recent multi-system illness or fractured hip. Typically degenerative disorders are excluded.</li> </ul>

\* Core team refers to the team members who are essential, actively involved in the assessment and treatment (if required) of acquired brain injury patients on the unit and who participate regularly in team rounds.

\*\* Consultation is expected to be available within 48 hours

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<b>INPATIENT REHAB</b> Admission to inpatient rehabilitation results in functional improvements <sup>5</sup> Early admission to specialized, interprofessional ABI care is recommended to reduce overall length of stay and maximize rehabilitation gains. <sup>6</sup>						
Mixed Rehab Inpatient Units in Acute Care and Rehab Hospitals (mixed populations including non-neurological populations)		Dedicated Inpatient Rehab Units in Acute Care and Rehab Hospitals (this can include dedicated ABI beds within Neuro Rehab Unit)		Low Tolerance Long Duration Inpatient Rehab Program in CCC and Rehab Hospital	Transitional Behavioural Rehab in Specialized Unit	
*Not suitable for ABI patient with moderate to severe cognitive/behavioural impairment.						
		patient. <ul style="list-style-type: none"> <li>Familiarity with ABI at least in the medical staff is facilitated.</li> </ul>				
<b>Differential Criteria</b>		<ul style="list-style-type: none"> <li>Programs serve a variety of diagnostic population groups.</li> <li>Coordinated team approach with regular team meetings/conferences.</li> <li>Expectation is that patients will either be discharged home or to their preferred accommodation in the community or to a more specialized rehabilitation program.</li> </ul> <p>Family/significant others are recognized as key to enabling client function</p>		<ul style="list-style-type: none"> <li>Designated interprofessional team, including physician, with specialization in acquired brain injury.</li> <li>Coordinated team approach with regular team meetings/conferences.</li> <li>Focus on cognitive interventions critical component of rehab program for individuals with ABI.<sup>11</sup></li> <li>Expectation is that patients will either be discharged home or to their preferred accommodation in the community or to a more specialized rehabilitation program.</li> <li>Service Providers should be given specialized training to develop competencies in evaluation and management related to ABI. This should be provided on an ongoing basis<sup>12</sup>.</li> </ul> <p><b>Security:</b></p>	<ul style="list-style-type: none"> <li>Patients require a slower-paced rehab program for a longer duration to maximize rehab potential.</li> <li>Patients may also have a chronic and a complex condition that requires care over an extended period of time and who are expected to benefit from low intensity, long duration rehabilitation</li> <li>Coordinated team approach with regular team meetings/conferences.</li> <li>Geographically clustered beds</li> <li>Critical Mass of 7 neuro (not ABI) beds is required is required to support the development and maintenance of clinical expertise among nursing, allied health and medical staff.</li> <li>The expectation is that patients will return to home or a community residential setting following LTLD rehab.</li> </ul>	<ul style="list-style-type: none"> <li>Program appropriate for individuals with challenging behaviours which interferes with ability to participate in rehabilitation and/or preclude access to community living options/services.</li> <li>The expectation that individuals can be discharged to appropriate community living environment on conclusion of intervention.</li> </ul> <p>Family/significant others are recognized as key to enabling client function and attainment of rehab goals and are included throughout the rehab process:</p> <ul style="list-style-type: none"> <li>Families/caregivers, with patient consent, are included in discussions around key treatment decisions</li> <li>Families (and patients) are encouraged to participate in team</li> </ul>

<b>INPATIENT REHAB</b> Admission to inpatient rehabilitation results in functional improvements <sup>5</sup> Early admission to specialized, interprofessional ABI care is recommended to reduce overall length of stay and maximize rehabilitation gains. <sup>6</sup>			
Mixed Rehab Inpatient Units in Acute Care and Rehab Hospitals (mixed populations including non-neurological populations)	Dedicated Inpatient Rehab Units in Acute Care and Rehab Hospitals (this can include dedicated ABI beds within Neuro Rehab Unit)	Low Tolerance Long Duration Inpatient Rehab Program in CCC and Rehab Hospital	Transitional Behavioural Rehab in Specialized Unit
<b>*Not suitable for ABI patient with moderate to severe cognitive/behavioural impairment.</b>			
<p>and attainment of rehab goals and are included throughout the rehab process:</p> <ul style="list-style-type: none"> <li>• Families/caregivers, with patient consent, are included in discussions around key treatment decisions</li> <li>• Families (and patients) are encouraged to participate in team meetings</li> <li>• Mechanisms for communication of goals and plans to patients and families/caregivers are established.</li> </ul>	<ul style="list-style-type: none"> <li>• Self-contained unit with secure access is recommended.</li> </ul> <p>Family/significant others are recognized as key to enabling client function and attainment of rehab goals and are included throughout the rehab process:</p> <ul style="list-style-type: none"> <li>• Families/caregivers, with patient consent, are included in discussions around key treatment decisions</li> <li>• Families (and patients) are encouraged to participate in team meetings</li> <li>• Mechanisms for communication of goals and plans to patients and families/caregivers are established.</li> </ul>	<ul style="list-style-type: none"> <li>• LTLD rehab is typically offered in complex continuing care; however, it may also be available in rehab hospitals (e.g. Slow to recover ABI Rehab) and Long-Term Care (e.g. LTLD Rehab).</li> <li>• Patients may be exempt from co-payment when located in CCC while the realistic goal for them remains returning to the community.</li> <li>• Service Providers should be given specialized training to develop competencies in evaluation and management related to ABI. This should be provided on an ongoing basis<sup>13</sup>.</li> </ul> <p>Family/significant others are recognized as key to enabling client function and attainment of rehab goals and are included throughout the rehab process:</p> <ul style="list-style-type: none"> <li>• Families/caregivers, with patient consent, are included in discussions around key treatment decisions</li> <li>• Families (and patients) are encouraged to participate in team meetings</li> </ul>	<p>meetings</p> <ul style="list-style-type: none"> <li>• Mechanisms for communication of goals and plans to patients and families/caregivers are established.</li> </ul>

## ABI Rehab Definition Framework

<b>INPATIENT REHAB</b> Admission to inpatient rehabilitation results in functional improvements <sup>5</sup> Early admission to specialized, interprofessional ABI care is recommended to reduce overall length of stay and maximize rehabilitation gains. <sup>6</sup>					
Mixed Rehab Inpatient Units in Acute Care and Rehab Hospitals (mixed populations including non-neurological populations)		Dedicated Inpatient Rehab Units in Acute Care and Rehab Hospitals (this can include dedicated ABI beds within Neuro Rehab Unit)		Low Tolerance Long Duration Inpatient Rehab Program in CCC and Rehab Hospital	Transitional Behavioural Rehab in Specialized Unit
<b>*Not suitable for ABI patient with moderate to severe cognitive/behavioural impairment.</b>					
				<ul style="list-style-type: none"> <li>Mechanisms for communication of goals and plans to patients and families/caregivers are established.</li> </ul>	
<b>Typical Duration</b>	<ul style="list-style-type: none"> <li>2-8 weeks; some rehab units located in acute care hospitals have 3-14 day length of stay.</li> </ul>	<ul style="list-style-type: none"> <li>49-101 days<sup>14</sup> (7-15 weeks).</li> </ul>		<ul style="list-style-type: none"> <li>Typical duration is usually around 3-6 months.</li> </ul>	<ul style="list-style-type: none"> <li>Targeted LOS is 6-9 months</li> </ul>
<b>Key Activities / Nature of Service</b>	<ul style="list-style-type: none"> <li>Rehabilitation programs are suitable for individuals requiring an intensive interprofessional rehab program.</li> <li>Follow-up with Outpatient/ Community ABI services should be facilitated to ensure appropriate ongoing assessment/intervention and to facilitate re-integration to community and return</li> </ul>	<ul style="list-style-type: none"> <li>Specialized Rehabilitation programs are suitable for individuals requiring an intensive interprofessional rehab program.</li> <li>Care coordinators/key workers should be assigned to ensure consistency of care<sup>15</sup></li> <li>Treatment should be guided by clinical assessment/protocols based on Glasgow Coma Scale<sup>16</sup>/ Injury Severity Measures.</li> <li>Those with moderate to severe brain should be referred to neuropsychology, occupational therapy, and speech and language pathology to evaluate cognitive functioning.</li> <li>Those with brain injury should be assessed for functional deficits in activities of daily</li> </ul>		<ul style="list-style-type: none"> <li>LTLD rehab is suitable for individuals in need of an interprofessional rehab program, who require an extended period of rehab to maximize recovery.</li> <li>Treatment should be guided by clinical assessment/protocols based on Glasgow Coma Scale<sup>20</sup>/ Injury Severity Measures.</li> <li>Those with moderate to severe brain should be referred to neuropsychology, occupational therapy, and speech and language pathology to evaluate cognitive functioning.</li> <li>Those with brain injury should be assessed for functional deficits in activities of daily living and be assessed in following areas<sup>21</sup></li> </ul>	<ul style="list-style-type: none"> <li>Behavioural Rehabilitation focuses on understanding causes for behaviour and devising strategies to minimize challenging behaviours.</li> <li>Patient usually requires skill training to relearn ADL skills, and community social skills.</li> <li>Patients usually have severe cognitive and physical impairments and co-morbid medical and psychiatric disorders that require physiotherapy, occupational therapy, and medical management.</li> <li>Many patients have limited capacity</li> </ul>

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<b>INPATIENT REHAB</b> Admission to inpatient rehabilitation results in functional improvements <sup>5</sup> Early admission to specialized, interprofessional ABI care is recommended to reduce overall length of stay and maximize rehabilitation gains. <sup>6</sup>				
Mixed Rehab Inpatient Units in Acute Care and Rehab Hospitals (mixed populations including non-neurological populations)	Dedicated Inpatient Rehab Units in Acute Care and Rehab Hospitals (this can include dedicated ABI beds within Neuro Rehab Unit)	Low Tolerance Long Duration Inpatient Rehab Program in CCC and Rehab Hospital	Transitional Behavioural Rehab in Specialized Unit	
<p><b>*Not suitable for ABI patient with moderate to severe cognitive/behavioural impairment.</b></p>				
	to work/activities of daily living.	living and be assessed in following areas <sup>17</sup> <ul style="list-style-type: none"> <li>• Cognitive function</li> <li>• Psychosocial/Emotional function</li> <li>• Behavioural function</li> <li>• Physical function</li> <li>• Medical status</li> </ul> <ul style="list-style-type: none"> <li>• Within and between services, there should be a case management or equivalent system, which gives persons with brain injury an identified advocate/navigator through the continuum of care<sup>18</sup>.</li> <li>• Transitional living services should be available as a component of inpatient rehabilitation<sup>19</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Cognitive function</li> <li>• Psychosocial/Emotional function</li> <li>• Behavioural function</li> <li>• Physical function</li> <li>• Medical status</li> </ul>	for rehabilitation, and cannot be discharged to available public facilities for long-term residential care. There is a need to create specialized behavioural residential facilities for a few patients who cannot be discharged from a specialized behavioural unit.

<b>OUTPATIENT/AMBULATORY REHAB PROGRAMS</b> There is limited evidence that access to outpatient day programs is associated with a decrease in depressed mood and has been demonstrated to be effective in assisting people in return to competitive employment <sup>22</sup>				
	<b>Single Service in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</b>  *Not suitable (in isolation) for client with moderate – severe brain injury and/or cognitive/behavioural impairment.  Single Service: Suitable for individuals who are in need of an outpatient rehabilitation service in a single specialty area/profession. Services may include assessment only or assessment and treatment. Services may be provided during a one-time visit or multiple visits.	<b>Dedicated Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</b>  Outpatient Rehab: Suitable for individuals in need of an interprofessional rehab program	<b>Mixed Population Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</b>  Not appropriate for clients with moderate-severe brain injury and/or cognitive/behavioural impairments.  Outpatient Rehab: Suitable for individuals in need of an interprofessional rehab program	<b>Wellness Focused Rehab Groups</b>  Groups offered in an outpatient setting.
<b>Names Typically Used</b>	<ul style="list-style-type: none"> <li>● Outpatient + profession (e.g., Outpatient Physiotherapy, Outpatient Occupational Therapy).</li> <li>● Outpatient specialty area (e.g. Outpatient Hand Program, Seating Clinic, Augmentative Communication Clinic, Gait Clinic or Hearing Clinic).</li> </ul>	<ul style="list-style-type: none"> <li>● Specialized ABI Rehabilitation Program, Therapeutic Day services or Day Hospital</li> </ul>	<ul style="list-style-type: none"> <li>● Day Treatment Program, General Rehab Day Hospital Program</li> </ul>	<ul style="list-style-type: none"> <li>● Self-Management Groups</li> <li>● Living Well with ABI</li> </ul>
<b>Services Provided</b>	<ul style="list-style-type: none"> <li>● Varies depending on specialty areas within institution.</li> <li>● Health professionals provide:                             <ul style="list-style-type: none"> <li>(a) a specialty service for a specific impairment or disability (e.g. gait, mobility, hearing) or</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Patients are expected to tolerate a minimum of 45 - 60 minutes of therapy per session.</li> <li>● Care is provided by an interprofessional team.</li> <li>● Core team** depends on client needs but typically includes: Physician, Physiatrist, Nursing, Physiotherapy, Occupational Therapy,</li> </ul>	<ul style="list-style-type: none"> <li>● Patients are expected to tolerate a minimum of 45 - 60 minutes of therapy per session.</li> <li>● Care is provided by an interprofessional team.</li> </ul>	<ul style="list-style-type: none"> <li>● Groups are led by an individual rehab provider or team of rehab specialists</li> <li>● Classes offered may include education</li> </ul>

\* Core team refers to the team members who are essential, actively involved in the assessment and treatment (if required) of spinal cord injury patients on the unit and who participate regularly in team rounds.

<b>OUTPATIENT/AMBULATORY REHAB PROGRAMS</b> There is limited evidence that access to outpatient day programs is associated with a decrease in depressed mood and has been demonstrated to be effective in assisting people in return to competitive employment <sup>22</sup>					
Single Service in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics		Dedicated Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics		Mixed Population Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics	Wellness Focused Rehab Groups
*Not suitable (in isolation) for client with moderate – severe brain injury and/or cognitive/behavioural impairment.				Not appropriate for clients with moderate-severe brain injury and/or cognitive/behavioural impairments.	
	(b) general profession-specific assessment, treatment plan recommendations or implementation of treatment plan and/or referral to other service providers  Note: Specialty service may use an interprofessional approach (e.g., Hand Clinic, Seating Clinic)	Social Work, Pharmacy, Speech-Language Pathology, Clinical Dietician, Therapeutic Recreation. Consultation is available if warranted with Behaviour Therapy, (Neuro)psychology, (Neuro)psychiatry.  • Within and between services, there should be a case management or equivalent system, which gives persons with brain injury an identified advocate/navigator through the continuum of care <sup>23</sup> . • Outpatient therapy should be available as soon as possible (ideally within 5 business days)		• Core team typically includes one or more of the following: Physician, Nursing, Physiotherapy, Occupational Therapy and some programs may have access to Social Work, Pharmacy Consultation Speech-Language Pathology, Clinical Dietician, and Therapeutic Recreation.	and/or an psychosocial support or a combination of both
<b>Specialization vs. Non-Specialization</b>	• Some services serve a particular specialty area (e.g. Seating Clinic or Gait Clinic).	• Care is provided by an interprofessional ABI rehab team with expertise in ABI rehab.(See Footnote 1)		• Non-specialized. Rehab providers assess/treat patients from a variety of	• Groups focus on enhancing an individual’s ability to

<sup>1</sup> Clinical expertise is defined as “the proficiency and judgment that clinicians acquire through clinical experience and clinical practice.” (*British Medical Journal* 1996; 312:71-2) Clinicians rely on their expertise to balance the patient’s clinical state and circumstances, evidence-based research and patient preferences in their clinical decision-making and provision of treatment. (*Evidence-Based Medicine* 2002; 7:36-38). Rehab providers must carry a caseload of ABI patients on a regular basis to develop/maintain clinical skills to address problems with visual perception, communication, mobility, cognition and/or other impairments.

## ABI Rehab Definition Framework

<b>OUTPATIENT/AMBULATORY REHAB PROGRAMS</b> There is limited evidence that access to outpatient day programs is associated with a decrease in depressed mood and has been demonstrated to be effective in assisting people in return to competitive employment <sup>22</sup>					
<b>Single Service in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</b>  <b>*Not suitable (in isolation) for client with moderate – severe brain injury and/or cognitive/behavioural impairment.</b>		<b>Dedicated Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</b>		<b>Mixed Population Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</b>  <b>Not appropriate for clients with moderate-severe brain injury and/or cognitive/behavioural impairments.</b>	<b>Wellness Focused Rehab Groups</b>
	<ul style="list-style-type: none"> <li>Other services are profession specific which may or may not be specialized for particular interventions or diagnostic groups.</li> </ul>	<ul style="list-style-type: none"> <li>Some programs may specialize in more than one diagnosis in related populations (e.g. ABI/stroke, ABI/MS, etc.)</li> </ul>		diagnostic population groups	cope and live with a particular disability or impairment.
<b>Differential Criteria</b>	<ul style="list-style-type: none"> <li>Patients are residing in the community with a specific rehab need which may be an impairment or participation issue that requires assessment and/or treatment by a health professional.</li> <li>Patients may not have required an inpatient rehab program or other outpatient rehab programs.</li> <li>Some patients may be discharged from an inpatient rehab program or from acute care (if deemed appropriate by patient need not program capacity) and require ongoing rehab to achieve higher functional goals.</li> </ul>	<ul style="list-style-type: none"> <li>Suitable for patients already residing in the community who no longer need 24-hour hospital care and require less intensive therapy than provided in inpatient unit. .</li> <li>Dedicated interprofessional team, including physician, with specialization in ABI rehab population.</li> <li>Co-ordinated services with regular team meetings/conferences.</li> <li>Typically, these are community patients who are responsible for arranging their own transportation to and from their outpatient appointments.</li> </ul>		<ul style="list-style-type: none"> <li>Suitable for patients already residing in the community who no longer need 24-hour hospital care.</li> <li>Coordinated services with regular team meetings/conferences</li> <li>Typically, these are community patients who are responsible for arranging their own transportation to and from their outpatient appointments.</li> </ul>	<ul style="list-style-type: none"> <li>These groups are led by one or more professional rehab providers.</li> <li>Groups are time-limited and goal-oriented to increase coping with an impairment or disability.</li> <li>Groups are publicly funded through the healthcare system.</li> </ul>

<b>OUTPATIENT/AMBULATORY REHAB PROGRAMS</b> There is limited evidence that access to outpatient day programs is associated with a decrease in depressed mood and has been demonstrated to be effective in assisting people in return to competitive employment <sup>22</sup>						
<b>Single Service in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</b>  *Not suitable (in isolation) for client with moderate – severe brain injury and/or cognitive/behavioural impairment.		<b>Dedicated Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</b>		<b>Mixed Population Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</b>  Not appropriate for clients with moderate-severe brain injury and/or cognitive/behavioural impairments.	<b>Wellness Focused Rehab Groups</b>	
<b>Typical Duration</b>		<ul style="list-style-type: none"> <li>Varies depending on the type of service/program.</li> <li>Specialty clinics may provide one or a few visits until the problem is resolved or managed. Other profession specific treatment programs may occur once or several times a week for 6 – 12 weeks of longer.</li> </ul>		<ul style="list-style-type: none"> <li>Typical 6-12 weeks, 2-3 times per week</li> </ul>	<ul style="list-style-type: none"> <li>6-12 weeks, 2-3 times per week</li> </ul>	<ul style="list-style-type: none"> <li>8 – 16 weeks</li> </ul>
<b>Key Activities / Nature of Service</b>		<ul style="list-style-type: none"> <li>Specialized focussed assessment and/or treatment to resolve a functional or psychological issue and to promote re-integration to normal living or to maximize functional level.</li> <li>These services/programs may be publicly funded or privately funded.</li> </ul>		<ul style="list-style-type: none"> <li>Specialized focussed assessment and/or treatment to resolve a functional or psychological issue and to promote re-integration to normal living or to maximize functional level.</li> <li>Programs are time limited and goal directed.</li> <li>The program could be delivered in a group format or on an individual basis.</li> <li>Those with moderate to severe brain should be referred to neuropsychology, occupational therapy, and speech and language pathology to evaluate cognitive functioning.</li> </ul>	<ul style="list-style-type: none"> <li>Programs are time limited and goal directed.</li> <li>The program could be delivered in a group format or on an individual basis.</li> </ul>	<ul style="list-style-type: none"> <li>Groups provide health education, goal setting, behaviour change principles and practices to promote health and wellbeing of the individual</li> <li>Secondary prevention may be offered.</li> </ul>

<b>OUTPATIENT/AMBULATORY REHAB PROGRAMS</b> There is limited evidence that access to outpatient day programs is associated with a decrease in depressed mood and has been demonstrated to be effective in assisting people in return to competitive employment <sup>22</sup>			
Single Service in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics  *Not suitable (in isolation) for client with moderate – severe brain injury and/or cognitive/behavioural impairment.	Dedicated Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics	Mixed Population Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics  Not appropriate for clients with moderate-severe brain injury and/or cognitive/behavioural impairments.	Wellness Focused Rehab Groups
		<ul style="list-style-type: none"> <li>• Those with brain injury should be assessed for functional deficits in activities of daily living and be assessed in following areas<sup>24</sup> <ul style="list-style-type: none"> <li>• Cognitive function</li> <li>• Psychosocial/Emotional function</li> <li>• Behavioural function</li> <li>• Physical function</li> <li>• Medical status</li> </ul> </li> </ul>	

## ABI Rehab Definition Framework

<b>COMMUNITY</b> (Rehab is provided to client in home, school or work environment) Community based rehab results in greater independence, higher social activity levels and less need for care support <sup>25</sup>		
Community – Single Service		Community Based – Dedicated Interprofessional Team
<b>Names Typically Used</b>	Community Care Access Centre (CCAC)	Outreach (Behavioural, Geriatric, School), ABI CCAC
<b>Services Provided</b>	<ul style="list-style-type: none"> <li>• May include OT, PT, SLP, SW, Nursing, Case Management, and Physician.</li> <li>• Clients may receive more than one service.</li> <li>• Rehab providers typically work as individual providers; however, communication with other health providers occurs on an as-needed basis.</li> <li>• CCACs provide in-home rehab services through contracts with Provider Agencies and manage clients through a Case Management collaborative model.</li> </ul>	<ul style="list-style-type: none"> <li>• Interprofessional team: OT, PT, SLP, SW, Nursing, Case Manager. May include: MD, Child Youth Worker, Family Facilitators.</li> <li>• (Neuro) Co-ordinated team conferences.</li> <li>• Services may include assessments, individualized programs, brief interventions, consultative assistance, and educational sessions to parents, families and professionals.</li> <li>• ABI Behavioural Outreach provides a specialized service for a period of one year or longer as indicated.</li> <li>• Consultation is available if warranted with Behaviour Therapy, (Neuro)psychology, Psychiatry/Neuropsychiatry.</li> </ul>
<b>Specialization vs. Non-Specialization</b>	<ul style="list-style-type: none"> <li>• Health professionals may have experience in a particular diagnostic group or area (e.g. MSK, paediatrics).</li> </ul>	<ul style="list-style-type: none"> <li>• Programs are specialized to treat one diagnostic/rehab population group (ABI).</li> <li>• Some programs may specialize in more than one diagnosis in related populations (e.g. ABI/stroke, ABI/MS, etc.)</li> <li>• Some programs may specialize in TBI rather than more inclusive ABI.</li> </ul>
<b>Differential Criteria</b>	<ul style="list-style-type: none"> <li>• Service is provided in the environment that is most appropriate (e.g. client is home-bound; services are focussed on school re-integration or vocational return).</li> </ul>	<ul style="list-style-type: none"> <li>• Clients may be:               <ol style="list-style-type: none"> <li>1. Home-bound or have limited tolerance potential; or</li> <li>2. Require focussed assessment, intervention or consultation within natural environment (e.g. home, school or work).</li> </ol> </li> <li>• Dedicated interprofessional team with expertise in ABI.</li> <li>• Core team typically includes: Physician, Nursing, Physiotherapy, Occupational Therapy, Social Work, Pharmacy, Speech-Language Pathology, Clinical Dietician, and Therapeutic Recreation.</li> <li>• Coordinated services with regular team meetings/conferences.</li> </ul>
<b>Typical Duration</b>	<ul style="list-style-type: none"> <li>• Varies depending on program. Typically 1 -2 visits per week</li> <li>• CCAC involvement typically offered for 6 weeks – 12 weeks</li> </ul>	<ul style="list-style-type: none"> <li>• Varies depending on service provided.</li> </ul>
<b>Key</b>	<ul style="list-style-type: none"> <li>• Assessment, treatment, discharge planning to</li> </ul>	<ul style="list-style-type: none"> <li>• Assessments, treatment, consultation, discharge planning to community activities.</li> </ul>

<b>COMMUNITY</b>		
(Rehab is provided to client in home, school or work environment)		
Community based rehab results in greater independence, higher social activity levels and less need for care support <sup>25</sup>		
Community – Single Service		Community Based – Dedicated Interprofessional Team
<b>Activities/Nature of Service</b>	community activities; (e.g. CCAC)	<ul style="list-style-type: none"> <li>PsychoSocial and behavioural rehab</li> <li>Vocational Rehab<sup>26</sup></li> <li>Anger management<sup>27</sup></li> <li>Social skills training<sup>28</sup></li> </ul>

### Endnotes

#### Levels of Evidence used to assess research findings:

<sup>1</sup> There is Level 1 evidence supporting the use of CT imaging of the head to diagnose clinically important brain injury. See ABIKUS

<sup>2</sup> There is Level 1 and 2 evidence supporting the use of various acute interventions to reduce intracranial pressure and improve clinical outcomes. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. (Module 15) 2006

<sup>3</sup> There is Level 2 evidence that early rehabilitation is associated with better outcomes such as shorter comas, reduced length of total hospital stay, higher cognitive levels at discharge, better FIM scores, and greater likelihood of discharge home. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. (Module 3) 2006

<sup>4</sup> There is Level 2 evidence that early rehab is associated with better outcomes such as shorter comas, length of stays, higher cognitive levels at discharge, better FIM scores and a greater likelihood to be discharged home. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. (Module 3) 2006

<sup>5</sup> There is Level 2 evidence that inpatient rehabilitation significantly improves self care, mobility and functional outcome, as measured by FIM. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. (Module 3) 2006

- <sup>6</sup> There is some evidence that earlier admission to specialized interprofessional care is associated with reduced length of total hospital stay, higher cognitive levels at discharge and better FIM scores. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. (Module 3) 2006.
- <sup>7</sup> There is moderate evidence that increased intensity reduces length of stay and improves functional outcome as measured by FIM at 2-3 months post discharge. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. (Module 3) 2006.
- <sup>8</sup> Currently, there is no evidence-based literature to support the amount of staffing required.
- <sup>9</sup> Currently, there is no evidence-based literature to support the amount of staffing required.
- <sup>10</sup> There is level 2 evidence that a behavioural approach using antecedent management and/or feedback of consequences reduces undesirable behaviours. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. (Module 6) 2006.
- <sup>11</sup> There is moderate to strong evidence that specific memory strategies and cognitive retraining result in improved outcome. All comprehensive interventions provide benefit. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. (Module 6) 2006.
- <sup>12</sup> Bayley, M; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>
- <sup>13</sup> Bayley, M; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>
- <sup>14</sup> Bayley, M; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>
- <sup>15</sup> Bayley, M; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>
- <sup>16</sup> Bayley, M; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>
- <sup>17</sup> There is level B evidence that stipulates the basic requirements of assessment for ABI rehabilitation. (ABIKUS)
- <sup>18</sup> There is level C evidence. Bayley, M; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>
- <sup>19</sup> There is level 2 evidence that a transitional setting during the last weeks of inpatient rehab results in greater independence with activities of daily living than inpatient rehabilitation alone. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. (Module 3) 2006.
- <sup>20</sup> Bayley, M; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>
- <sup>21</sup> There is level B evidence that stipulates the basic requirements of assessment for ABI rehabilitation. (ABIKUS)

<sup>22</sup> See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. 2006.

<sup>22</sup> Bayley, M.; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>

<sup>23</sup> Bayley, M.; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>

<sup>24</sup> There is level B evidence that stipulates the basic requirements of assessment for ABI rehabilitation. Bayley, M.; Colantonio, A. Cullen, N., Teasell, R., Marshall, S., The Acquired Brain Injury Knowledge Uptake Strategy. See <http://www.onf.org/knowledge/OutcomeResults.aspx>

<sup>25</sup> Level 2 evidence See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. 2006.

<sup>26</sup> There is level 2 evidence that vocational rehabilitation results in fair-good adjusted outcomes for the majority and more than 50% become gainfully employed. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. 2006.

<sup>27</sup> There is moderate evidence (level 1b) that anger management reduces aggressive behaviour. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. 2006.

<sup>28</sup> There is limited evidence (2) that social skills training reduces aggressive behaviour. See Teasell R, Bayona N, Marshall M, Cullen N, Bayley M, Chundamala J, Hellings C, Villamere J, Mackie D, Rees L, Hartridge C, Lippert C, Hilditch M, Welch-West P, Weiser M, Ferri C, McCabe P, McCormick A, Aubut J, Comper P, Salter K, van Reekum R, Collins D, Foley N, Fullington N, Jutai J, Speechley M. Evidence Based Review of Moderate to Severe Acquired Brain Injury. 2006.