

# **Content analysis to locate assistive technology in Queensland's motor injury insurance rehabilitation legislation and guidelines**

## **Abstract**

Reforms to Australia's disability and rehabilitation sectors have espoused the potential of assistive technology as an enabler. As new insurance systems are being developed it is timely to examine the structure of existing systems. This exploratory study examined the policies guiding assistive technology provision in the motor accident insurance sector of one Australian state.

**Methods:** Policy documents were analyzed iteratively with set of qualitative questions to understand the intent and interpretation of policies guiding assistive technology provision. Content analysis identified relevant sections and meaningful terminology, and context analysis explored the dominant perspectives informing policy.

**Results and discussion:** The concepts and language of assistive technology are not part of the policy frameworks guiding rehabilitation practice in Queensland's motor accident insurance sector. The definition of rehabilitation in the legislation is consistent contemporary international interpretations that focus on optimizing functioning in interaction with the environment. However, the supporting documents are focused on recovery from injuries where decisions are guided by clinical need and affordability.

**Conclusion:** The policies frame rehabilitation in a medical model that assistive technology provision from the rehabilitation plan. The legislative framework provides opportunities to develop and improve assistive technology provision as part of an integrated approach to rehabilitation.

## **Background**

The World Health Organization (WHO) recognizes that in addition to medical treatments that remediate illness and impairment, rehabilitation interventions are critical for enabling participation of people with disability (World Health Organization & World Bank, 2011). A range of rehabilitation services are provided for different populations in different jurisdictions in Australia. Significant reforms in the disability sector, including the rollout of a National Disability Insurance Scheme (NDIS) and the introduction of a National Injury Insurance Scheme (NIIS) propose to spread the lifetime insurance cost across the Australian population and fund individuals based on their need for supports including personal assistance, assistive technologies and home modifications.

Australia's new schemes emphasize the necessity of policies and practices that are evidence-based and able to demonstrate social and economic outcomes ("National Disability Insurance Scheme Act 2013," 2013). While rehabilitation is acknowledged to be reasonable and necessary to regain functioning and promote quality of life, translation of research into evidence-based policy and practice is challenging (Johnston, Sherer, & Whyte, 2006; Tse, Lloyd, Penman, King, & Bassett, 2004). This study is part of a larger project exploring different perspectives on the principles and policies guiding assistive technology provision in Australia.

Research has highlighted inequities and inadequacies in access to rehabilitation services for people injured in Australia (Harrington, Foster, & Fleming, 2015) and gaps in evidence for rehabilitation services provided (Foster, Allen, & Fleming, 2015). An assessment of the quality of rehabilitation services requires data not only on outcomes, but also the structures

and processes guiding practice (Donabedian, 1988). While there is recognition of the importance of 'aids and equipment' in rehabilitation in Australia, little is known about how assistive technology is understood in current insurance systems, or how it is proposed to be addressed in reforms (Australian Rehabilitation Alliance, 2011).

In the Australian state of Queensland, a Compulsory Third Party (CTP) scheme provides insurance for motor vehicle owners, drivers and passengers injured by, or in connection with the use of the insured vehicles. It funds services for eligible individuals, including rehabilitation. The scheme operates under the regulatory authority of the Motor Accident Insurance Commission (MAIC), which also promotes systemic change through activities including road safety initiatives and research. This study examined where assistive technology is located and how it is understood in the legislative and policy framework of Queensland's motor accident insurance scheme, providing data to contextualize the translation of knowledge into policy and practice.

## **Methods**

This study adopted an interpretive approach and qualitative methodology, to take account of the multiple stakeholders involved in assistive technology provision and their differing perspectives (Lopez & Willis, 2004; Yanow, 2007). Many activities in assistive technology provision, from referrals and requests for funding to evaluation reports, involve policy interpretation, so document analysis was chosen as the method of analysis.

Documents provide an accessible source of data that would otherwise be difficult to access via interviews or observations (Bowen, 2009; Freeman & Maybin, 2011). Policy documents are particularly important as they represent formal communications that allow the

researcher to examine the intent of law and policy and its implementation (Miller & Alvarado, 2005). The document analysis was completed by the author, an occupational therapist with a PhD in law and managerial experience writing and revising policy and implementing legislation. Ethics approval was not required as this study used data freely available in the public domain.

Relevant legislation and policy documents published by MAIC were identified (see Table 1) and analyzed qualitatively in a systematic and iterative process of content and context analysis (Miller & Alvarado, 2005). The documents were approached with a set of questions in mind to guide the initial reading and screening to identify meaningful sections or passages (Bowen, 2009).

Content analysis began by reading each document to identify meaningful sections and pertinent information related to assistive technology and rehabilitation (or proxy terms) (Bowen, 2009). Each document was then re-read more carefully, applying pre-defined codes from preliminary questions (see Table 2). This generated further questions that were used for the second and third reading and coding of the documents.

The context analysis of the documents focused more on the hierarchy of the documents, and comparison between the documents and related research and policy literature. This required examination of the language to interpret the implicit and explicit intentions and priorities of the documents' authors, and consideration of underlying assumptions or perspectives (Miller & Alvarado, 2005). Several conceptual lenses were applied to identify the dominant perspectives on rehabilitation and assistive technology (e.g. rehabilitation from a clinical perspective that aims to remediate impairment or rehabilitation from an holistic perspective that aims to optimize quality of life). Descriptions of the meaningful

sections identified in the content analysis are presented in the results section of this paper, followed by a discussion of the context analysis and implications for policy and practice.

## **Results**

### Locating 'rehabilitation' and 'assistive technology'

The three documents all referred to and use the same definition for the term 'rehabilitation' but diverged in their interpretations. The term 'assistive technology' was not found in any of the documents, but proxy terms were identified. This section describes how the terms are used in each document in order of hierarchy.

People injured in motor vehicle accidents in Queensland may receive rehabilitation if covered by insurance. Rehabilitation is regulated under the Motor Accident Insurance Act (hereafter referred to as 'the Act'), which provides for a CTP insurance scheme, including the "rehabilitation of claimants who sustain personal injury because of motor accidents" ("Motor Accident Insurance Act 1994," 2013, p. Section 3(f)).

Section 51 of the Act sets out the obligation of insurers to provide rehabilitation, defined in Section 4 as "the use of medical, psychological, physical, social, educational and vocational measures (individually or in combination)—

(a) to restore, as far as reasonably possible, physical or mental functions lost or impaired through personal injury; and

(b) to optimize, as far as reasonably possible, the quality of life of a person who suffers the loss or impairment of physical or mental functions through personal injury."

To ensure compliance with Section 51, MAIC has authority to issue standards and guidance for assessment and monitoring of rehabilitation providers, and issued the Rehabilitation Standards for CTP insurers in 2007 (Motor Accident Insurance Commission, 2007). The Standards set out principles of rehabilitation, roles of stakeholders and criteria for service delivery. While intended to promote best practice and support a consistent approach to obligations under the Act, the Standards interpret rehabilitation differently to the Act. Although including the Act's definition of rehabilitation in the "Explanatory notes" on p.9, the Standards commence with a list of "Principles of rehabilitation in the CTP insurance scheme" that state, "The aim of rehabilitation is to optimize recovery of those injured in motor vehicle accidents" (p. 6).

Within the Standards, the principles also state that "Rehabilitation within the CTP scheme is based on a medical model where medical information is sought to validate the relationship of the injury to the motor vehicle accident, to define the nature and extent of the injury and to provide rehabilitation recommendations. The medical practitioner, from the outset of completing the medical certificate, is well placed to determine if the treatment proposed is likely to be of benefit and may consider the need for alternative treatment or further investigation if there is limited progress." (p. 6). Despite this emphasis on the role of the medical practitioner in rehabilitation, medical practitioners are not mentioned in the section of the Standards titled, "Role of Stakeholders" which includes: claimant, insurer, claims officer, rehabilitation adviser/injury management adviser (referring to health professionals), rehabilitation provider, and legal representative (p.7-8).

In addition to the Act and the Standards, MAIC published Guidelines for CTP Rehabilitation Providers (hereafter referred to as 'the Guidelines') in 2012, to promote

understanding of the scheme and facilitate communication between rehabilitation providers and insurers. The Guidelines also cite the Act's definition of rehabilitation (Part III, p.4), interpreted in a list of rehabilitation services including "aids and equipment to improve the claimant's independence" and "home/vehicle modifications" (Motor Accident Insurance Commission, 2012, p. 4).

#### Justifying interventions and measuring outcomes

The documents were also analyzed to understand how rehabilitation and assistive technology devices and services are identified and evaluated. Insurers are obliged under Section 51 of the Act to make "reasonable and appropriate rehabilitation services" available to claimants ("Motor Accident Insurance Act 1994," p. 65). The Standards outline principles for rehabilitation that explicate factors to be weighed when determining what is reasonable, stating "Balance needs to be maintained between (i) the provision of an appropriate level of rehabilitation to achieve improved quality of life outcomes for injured persons, and (ii) community affordability of the CTP scheme" (p.6).

The Guidelines set out the obligations of providers to justify their rehabilitation interventions with functional goals and measureable outcomes that reflect research evidence or clinical guidelines (p. 6). A process is described, beginning with assessment and formulation of an initial plan to be approved. After a plan has been approved, providers are expected to submit regular progress reports and notification of discharge to insurers, "to ensure equipment, modifications and services (if required) are in place prior to discharge" (p. 9).

With respect to the provision of "aids, equipment, home & vehicle modifications", the Guidelines suggest that consideration be given to the most cost-effective options available

and that requests include details about requested equipment, justified on the basis of “clinical need” and “supporting medical documentation” (p. 11). A suggested format for requests is provided in Form D (‘Equipment / Prosthesis Request’), with fields to provide information on the item, supplier, cost (separating components and labor costs) and the clinical need for the equipment, and the option to provide comparative information for other items investigated or trialed.

## **Discussion**

### A lack of clarity regarding the aims of rehabilitation

The document analysis found inconsistent interpretations of rehabilitation between the three policy documents, with implications for practice, including assistive technology provision. The Act sets out obligations for insurers to provide rehabilitation to restore functioning and optimize quality of life. Part (b) of the Act’s definition of rehabilitation resonates with contemporary international interpretations of the term, most notably from the World Report on Disability (World Health Organization & World Bank, 2011, p. 96), which defines rehabilitation as “a set of measures that assist individuals, who experience or are likely to experience disability, to achieve and maintain optimum functioning in interaction with their environments”. Rehabilitation practices aligned to the WHO and World Bank’s definition would include efforts to improve access to and functioning in pre-injury environments and activities through a combination of products and services. This may involve accessorizing or modifying devices already owned and used by an individual claimant (e.g. phone, computer), introducing assistive technology devices (e.g. wheelchair),

and integrating these with modifications to a home, workplace and/or vehicle, with consideration given to individual claimants' informal supports and psychosocial factors.

The Standards and Guidelines that were developed to support insurers in meeting their obligations are influenced by a medical perspective that frames rehabilitation in terms of medical treatment and recovery, without including optimization of functioning and quality of life. The focus in the Standards on 'treatment' and 'recovery' emphasizes rehabilitation as restoration of function, adopting only the first part (a) of the Act's definition. The term 'treatment' is associated with remediation of illness or impairment, in contrast to rehabilitation, which more broadly aims to improve functioning, reduce impairments, and prevent complications (World Health Organization & World Bank, 2011). Framing rehabilitation within a medical discourse has implications for the types of assistive technology devices and services likely to be funded by insurers.

#### Restricting the scope of assistive technology within rehabilitation

Assistive technology is recognized by the WHO as a critical element of rehabilitation, and could therefore be interpreted to be within the scope of rehabilitation provided under the Act. If interpreted in this way, rehabilitation practices would likely include consideration of assistive technology devices and services along with frequently used parallel interventions such as redesign of the environment or activity and use of personal assistance (Smith, 2005). In contrast, if practicing in accordance with the medical model of the Standards, rehabilitation would probably include medical devices and equipment, but exclude most assistive technology devices and services. For example, rehabilitation for someone with a spinal cord injury may involve medical technologies or surgery aimed at remediating neurological damage or improving neuromuscular function in the lower limbs. This

treatment would be led by medical practitioners and is consistent with the medical model described in the Standards, but inconsistent with the obligation to provide rehabilitation as set out in the Act.

Contemporary approaches to rehabilitation focus on optimizing functioning while recognizing the inherent interdependence of people, regardless of their health status. Yet the Guidelines adopt the medical model from the standards in listing “aids and equipment to improve the claimant’s independence” as a rehabilitation service (Motor Accident Insurance Commission, 2012, p. 4). A focus on interventions that improve independence can exclude consideration of assistive technologies that promote quality of life but involve human assistance. For example, a wheelchair docking station in a vehicle to fit a wheelchair and tie-downs requires human assistance on each occasion of use, but significantly increases options for transport and therefore access to activities outside one’s own home. Likewise, a person may be able to shower themselves independently but expend so much energy on this activity that they are unable to participate in or enjoy other activities on the same day. Installation and use of an assistive solution, such as a shower chair and hand-held shower hose combined with personal assistance, can enable one to conserve energy for other meaningful activities, including leisure and productive occupations. Thus, while intended to promote best practice and support a consistent approach to rehabilitation obligations under the Act, the Standards contradict the Act and risk excluding effective rehabilitation strategies, including assistive technologies to optimize quality of life.

#### Provision of assistive technology devices separate to the rehabilitation plan and services

Assistive technology was not referred to in the policy documents, but proxy terms were found in the Guidelines, which make reference to ‘aids and equipment’ and ‘home/vehicle

modifications'. This is in the context of widespread and continued use of the terms 'aids' and 'equipment' in Australia (Aids and Equipment Action Alliance, 2014), in contrast to the terminology of 'assistive technology' that was adopted by most other countries in the 1990's (Heerkens, Bougie, & de Kleijn-de Vrankrijker, 2010). This implies a focus on devices designed specifically for people with disability, potentially excluding universally-designed products that may be more cost-effective and less socially stigmatizing (Bauer & Elsaesser, 2012).

The terminology of 'aids and equipment' risks errors of omission and poor outcomes from assistive technology provision by neglecting assistive technology services (Friesen, Theodoros, & Russell, 2016; Harvey et al., 2012). Assistive technology services seek to address each individual's personal and psychological situation (Wessels, Dijcks, Soede, Gelderblom, & De Witte, 2003) and may be required over the lifecycle of an assistive solution to ensure ongoing use. The Guidelines separate the provision of aids and equipment from the primary rehabilitation plan and do not make reference to assistive technology services such as trialing, fitting and customizing devices. Such information is important for comparing the cost-effectiveness of proposed interventions, as the assistive technology services may be sourced from more than one provider and cost more than the devices or components purchased. Researchers have suggested that greater emphasis on assistive technology services may reduce rates of non-use (Scherer, 1996; Strong, Jutai, Plotkin, & Bevers, 2008) and promote effective allocation of funding for assistive technology devices and other resources (Lenker, Harris, Taugher, & Smith, 2013; Sund, Iwarsson, Andersen, & Brandt, 2013). The rehabilitation described in the Guidelines is time-limited, with no mention of planning and provision of follow-up and maintenance services to support ongoing assistive technology use.

## **Conclusion**

This study explored the legislative and policy framework for assistive technology provision in Queensland's motor accident insurance sector as a preliminary step toward assessing quality, in the context of sector-wide reforms and policy development. The key findings relate to the inconsistent interpretations of the term 'rehabilitation' in the documents, and the separation of assistive technology devices from the rehabilitation plan and associated services. While only an exploratory study, these findings highlight the importance of language and potential for different interpretations of legislation that affect rehabilitation practices and outcomes.

The definition of rehabilitation in the legislation is consistent with contemporary international interpretations that focus on optimizing functioning in interaction with the environment. However, the supporting guidelines and standards are explicitly framed by a medical model focused on recovery from injuries, where decisions are guided by clinical need and affordability. This may limit the range of interventions considered and exclude strategies likely to promote quality of life, including assistive technology devices and services and universally designed products. Aids and equipment, home modifications and vehicle modifications are being provided as part of rehabilitation, but there is not a framework or monitoring capacity for the assessment of needs, coordination and implementation of interventions, follow-up and maintenance, or measurement of outcomes.

The language of assistive technology and concepts of devices and services are not part of the legislative or policy frameworks guiding rehabilitation practice in Queensland's motor

accident insurance sector. The absence of assistive technology from rehabilitation services is also apparent in Australian proposals for rehabilitation reform (Australian Rehabilitation Alliance, 2011). However, the legislative framework in Queensland under the MAI Act provides opportunities to develop and evaluate outcomes from assistive technology provision as part of an integrated approach to rehabilitation. The Act provides a broad definition of rehabilitation that includes all interventions aimed at reducing or remediating impairment and optimizing quality of life. It also frames the provision of rehabilitation in an economic discourse of “reasonable and appropriate”, obliging service providers to consider the costs and effectiveness of proposed interventions. With its authority to issue guidance and standards and its monitoring powers, MAIC could play a more active role in ensuring minimum standards for AT provision and promoting practice improvements.

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Table 1: Policy documents analyzed in hierarchical order

Document title	Year published	Short name
Motor Accident Insurance Act 1994	1994	the Act
Rehabilitation Standards for CTP insurers	2007	the Standards
Guidelines for CTP Rehabilitation Providers	2012	the Guidelines

Table 2: Questions developed iteratively to analyze policy documents

<b>Preliminary questions</b>	<p>Are the following terms mentioned in the documents? Where?</p> <ul style="list-style-type: none"> <li>▪ Rehabilitation</li> <li>▪ Assistive technology</li> </ul> <p>Are these terms explicitly defined in the documents?</p>
<b>Secondary questions</b>	<p>What proxy terms are used to relate to rehabilitation or assistive technology?</p> <p>Is the use of the term assistive technology related to devices?</p> <p>Is the use of the term assistive technology related to services?</p> <p>Is there reference to specific examples of assistive technologies?</p> <p>Are there specific actions recommended for assistive technology provision?</p>
<b>Tertiary questions</b>	<p>Are there unexpected or unusual ideas about rehabilitation or assistive technology that appear?</p> <p>How does assistive technology intersect with other rehabilitation services?</p> <p>How are rehabilitation and assistive technology devices and services identified and evaluated?</p>