

Statewide adult spinal cord injury health service plan 2016-2026

System, Policy and Planning Division

November 2016

Statewide adult spinal cord injury health service plan 2016-2026

Published by the State of Queensland (Queensland Health), April 2016



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Summary

Spinal cord injury (SCI) is a medically complex and life-disrupting condition with costly consequences both for individuals and society. People suffering a SCI are often left dependent, are sometimes excluded from educational opportunities and are less likely to be employed. However, with the right health care and policy responses it is possible to live, thrive and contribute to society. The World Health Organisation acknowledges that 'whilst SCI will always be life-changing, it need not be a tragedy and it need not be a burden'.¹

The care requirements of a person who has sustained a SCI are considerable and complex. The initial period of hospitalisation is lengthy and patients require ongoing rehabilitation and long term follow-up. In addition, health services for a person with SCI are generally of such a highly specialised or costly nature that broad geographic provision is unrealistic.

In 2011, Queensland Health published the *Queensland Spinal Cord Injuries Model of Care*² providing a framework for the delivery of healthcare for individuals with SCI. Developed by the Queensland Spinal Cord Injuries Service (QSCIS), the model was designed to meet the challenges of providing healthcare to the SCI population, assisting individuals to achieve their maximum physical, social and psychosocial rehabilitation potential across their lifespan.

The *Statewide adult spinal cord injury health service plan 2016–2026* (the Plan) builds on this work by identifying opportunities for improving services for people with SCI, their families and the community. The delivery of SCI services in Queensland will be enhanced by:

- **encouraging outcomes-focused, patient-centred care**
- **reaffirming the role of the QSCIS** as the only specialised SCI inpatient (acute and subacute) service
- **optimising access** to services with the establishment of a transition, outpatient and outreach service at The Townsville Hospital enhancing the delivery of SCI services to residents of North Queensland, closer to home
- **growing health service capability** in local non-specialty services to assist in the delivery of appropriate and consistent care as the prevalent SCI population ages
- **fostering strong clinical leadership** in the delivery of SCI services
- **planning for the future** needs of people with SCI, including integrated and coordinated care and the continuing refinement of existing healthcare and support services
- **guiding the purchase** of high quality services that represent value for money.

The Department of Health anticipates Hospital and Health Services will enable the conversion of the identified service directions into service enhancements through further local planning.



Spinal Cord Injury Rehabilitation Services Plan



FUTURE PLAN

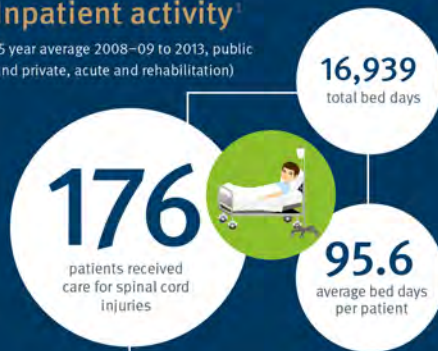


Specialised Spinal Cord Injury inpatient services are provided solely at the Princess Alexandra Hospital. Specialised outpatients, transition to community and ongoing lifelong care for persons with spinal cord injury will now be provided at two locations in Queensland; Princess Alexandra Hospital and The Townsville Hospital.

CURRENT STATE

Inpatient activity¹

(5 year average 2008–09 to 2013, public and private, acute and rehabilitation)



Rate of injury by HHS residency¹

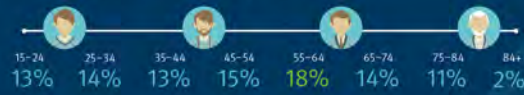


Outreach services³



Patient age¹

(5 year average between 2008–09 to 2012–13)



Cause of impairment

of the patients treated at the specialist spinal cord injury unit



Sources:

1. Queensland Hospital Admitted Patient Data Collection 5 year average 2008–09 to 2012–13, extracted May 2014.
2. AIHW: Norton L 2010. Spinal cord injury, Australia 2005–06 to 2007–08. Injury research and statistics series no.52. Cat. no. INICAT 128. Canberra: AIHW.
3. Spinal Outreach Team local data collection 2008–09 to 2012–13. March 2014.



1. Introduction

In 2014, approximately 90 people in Queensland were diagnosed with SCI through injury or medical causes. SCI can occur at any age, from early childhood, during adolescence or as an adult. Due to medical advances most people living with SCI now have a near normal life expectancy. Whilst a positive outcome, survival results in progressive complexity for people and their life-long self-management.

The Department of Health, System Planning Branch (SPB), was engaged by Metro South Hospital and Health Service (Metro South Health), to develop a consultative health service plan for the QSCIS under the guidance of a project steering committee. Background to the planning project is available at Appendix 1.

The resulting ten-year plan promotes outcomes-focused, patient-centred service delivery by healthcare professionals and services throughout the health system for people experiencing or living with a SCI. The Plan recognises the pivotal role of individuals being empowered to make informed decisions about their own healthcare, and the role of all health professionals in the identification of patient needs and in supporting the delivery of high-quality SCI care.

The service directions and actions within this plan are aligned with the Queensland Government's commitment to strive for Queenslanders to be as healthy as possible for as long as possible. For detail regarding the policy context at a Commonwealth and State level refer to Appendix 2.

1.1 Planning principles

The future direction for the delivery of SCI care outlined in this plan was informed by core principles based on an analysis of key issues and evidence that impact on the organisation and delivery of SCI services. Services will:

- have a person-centred focus and a wellness approach extending across the continuum of care and throughout the patient's life
- improve in consistency and quality to maximise outcomes for people with SCI and their families
- deliver care utilising an interdisciplinary team
- enable coordination and communication
- empower caregivers and/or family members
- provide education and information tailored to an individual's needs, learning styles and capacity
- provide best practice in SCI care, including collecting and analysing data to identify areas for improvement, monitoring of clinical outcomes, supporting education and training and enabling research focussing on SCI, and
- support the development of systems to maximise participation in society.

1.2 Scope exclusions

The scope, purpose and methodology are detailed in Appendix 1. The Plan does not address the specific issues associated with specialised SCI services for:

- children (0 to 18 years of age)¹ which will be considered as part of a statewide plan for paediatric services, including needs and issues associated with adolescents transitioning from paediatric services to adult services.
- older adults (above 70 years of age) with a SCI . The Department of Health (DoH) is currently developing a statewide plan for older persons in which the general needs of older people in public health facilities will be considered.

2. Spinal cord injury

SCI results from damage to the spinal cord as a result of traumatic injury, vascular disruption or a disease process that may be immediate or insidious in onset. The consequence is a loss or reduction in voluntary motor function, sensory deprivation and disruption of involuntary functions such as bowel and bladder control, temperature regulation and breathing.

The Australian Institute of Health and Welfare estimates that the population of patients living in Australia with SCI will increase to between 10,500 and 12,000 by 2021, with about 300-400 new cases of SCI admitted to spinal units each year. The majority of those (79 per cent) have sustained a traumatic injury.³

Life expectancy for people with SCI is influenced by the level and extent of injury, with the greatest reduction at the highest level of injury. Projected mean life expectancy for people with complete tetraplegia is estimated to be 70 per cent of the average life expectancy.⁴ People with SCI are also at risk of a range of medical complications throughout life, and the effects of ageing, particularly with respect to the musculoskeletal system, can be profound.

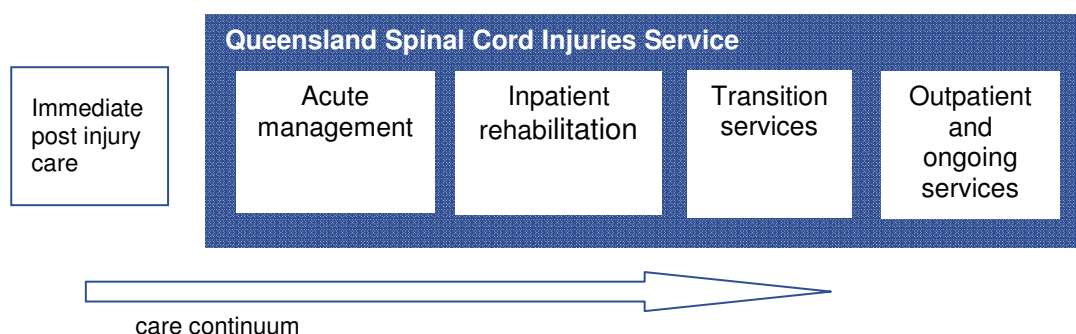
Though relatively rare, SCI has a significant impact upon public sector services and resources. In 2008, the health and lifetime care costs of SCI in Australia were estimated to be \$2 billion. The lifetime cost per incident case of SCI was estimated to be \$5.0 million per case of paraplegia and \$9.5 million per case of tetraplegia.⁵

3. Current SCI services in Queensland

The cornerstone of a successful SCI service is that it is patient-centred and goal-orientated. The model of care for patients with a SCI is optimal when it empowers the patient, is devised in consultation with them, and provides individualised rehabilitation that focuses on their motivation, integrity and dignity.

¹ Children (aged 16-18) are included in activity analysis associated with this plan

Figure 1 Model of SCI care in Queensland



In Queensland, SCI adult services across the continuum - from acute care to lifelong care in the community - are provided by Queensland Health on a statewide basis through the QSCIS, located at the Princess Alexandra Hospital (PAH) with governance provided by Metro South Health. The QSCIS is separated into three distinct services:

1. Spinal Injuries Unit (SIU) providing acute care and specialist rehabilitation
2. Transition Rehabilitation Program (TRP) supporting integration back into the community
3. Spinal Outreach Team (SPOT) delivering ongoing lifelong support.

The core mission of the QSCIS is to 'provide a statewide service that enables people with SCI to achieve maximum potential' via the achievement of identified individualised goals.² Goals are holistically focussed and generally fall within the core areas of physical functioning, activity levels, social participation, environmental access and interpersonal factors.

Whilst it is recognised that the QSCIS is the sole provider of specialised inpatient SCI care in Queensland, specialised SCI care in the community is also provided at The Townsville Hospital (TTH) through the North Queensland Spinal Service (NQSS). In addition, care across the continuum is provided by non-specialised SCI services, including in regional and rural areas, delivering access to SCI care closer to home. There is also a variable range of community services provided to individuals with SCI by other government, non-government and private organisations.

In Queensland, over the five year period 2008–09 to 2012–13, an average of 176 patients received SCI care per year with an average 95.6 bed days per patient. Of these, 118 patients were treated in the SIU. The majority of patients sustained SCI through traumatic causes, due most often to transport related accidents and falls. Trends in activity are difficult to establish due to the relatively small number of patients, but demand appears essentially stable. Current and projected future service activity for SCI services is detailed in Appendix 3.

3.1 Summary of needs and issues in the current provision of SCI services

The QSCIS actively strives to provide the highest quality services to enable Queenslanders with spinal cord injuries to achieve their maximum potential in life.

Previous reviews in 2008 and 2012⁶ identified a range of challenges and issues and consultation indicated that many of these remain today.

Current overarching service delivery issues are organised into key themes summarised below. Consultation also highlighted a number of patient groups that present additional issues for service planning, specifically, patients ageing with a SCI, ventilation dependant patients and the management of pressure injuries in patients with a SCI. Further detail on service needs and issues and consideration of approaches to deliver appropriate care in specific patient groups is detailed in Appendix 4.

Access

- access to inpatient and outpatient specialised SCI services needs to be improved for those living outside the south east corner of Queensland or who are aged 65 years or over to deliver equity of access
- specific access issues for patients requiring isolation (e.g. due to infection risk), specialised equipment or for those with a non-traumatic SCI or dual diagnosis (e.g. spinal and brain injured patients)
- access for admission to the specialised service may be delayed as a result of delayed discharge of other patients currently utilising the service due to lack of community support or appropriate accommodation
- need to provide enhanced access to transition and outreach services (which are currently centralised), due to geographic dispersion of patient base and the patient's desire to return home.

Clinical

- need to expedite early transfer to specialised service and prioritise SCI for acceptance for admission to an intensive care unit
- need to improve capacity and capability of health professionals across the system and community based care agencies to provide services for SCI patients
- provision of interdisciplinary and specialist psychological outpatient services at the specialised service does not meet current needs.

Support services

- dietician and weight management services available in the public sector are insufficient to assist with the management of bariatric SCI patients
- need to enhance the provision of vocational rehabilitation, education and training programs within the QSCIS
- improve timely access to seating services, rehabilitation engineering services and prosthetic and orthotic services.

Communication

- greater education and communication of the admission criteria, referral pathways and transfer guidelines to access the QSCIS is needed to improve understanding of service provision
- little support and information from community or health services to assist in describing points of access or linkages to primary care services.

Networking and coordination

- need to improve partnerships and collaboration between higher and lower level services across the continuum to support capacity building and patient care.

Education and training

- need to develop formal processes and establish linkages between the experienced staff at SIU and professionals in general rehabilitation services or regional and remote services to share and provide education, information, support and advice
- need to enable the healthcare workforce access to education opportunities as an integral part of their employment.

4. Future SCI services in Queensland

The management of SCI is both complex and challenging, requiring a specialised and coordinated interdisciplinary approach across the continuum of care from immediate post injury through to life in the community. Delivery of health services and support plays an important role in determining the quality of day-to-day life. The best outcomes are achieved when care is focussed on the individual; services are tailored to meet physical and emotional needs, support is provided to family and carers and independence and community participation is enabled.

The *Queensland Spinal Cord Injuries Model of Care*², developed in 2011, describes the aims and principles of service delivery, evidence based practices and frameworks used within the QSCIS and the flow of patient services as progress is made along the continuum of care for people with SCI. A review of recent SCI policy and practice literature (Appendix 2) confirmed the model of care is grounded in current best evidence based care for people with a SCI.

The model for the future delivery of SCI services in Queensland has been structured to achieve maximum recovery, function and community re-integration, reduce preventable complications and assist people who retain limited function following SCI to live, thrive and contribute (Table 1).

Table 1 The future delivery of SCI services

Component	providing:
Spinal Cord Injuries Services Advisory Group	<ul style="list-style-type: none">• a forum to:<ul style="list-style-type: none">– drive service improvement– share knowledge– promote service integration
Queensland Spinal Cord Injuries Service Princess Alexandra Hospital Metro South Health	<ul style="list-style-type: none">• sole specialised SCI inpatient service in Queensland with expertise in acute treatment and specialist rehabilitation for people with a traumatic SCI and people with non-congenital, non-traumatic SCI with significant potential for positive rehabilitation outcomes• a transitional rehabilitation program and outreach service enabling successful and continued community integration• specialist outpatient services to review and monitor the health of SCI patients• consultation advice and support to other health services to

	<p>optimise the capability of mainstream services to provide safe and effective care for people with SCI</p> <ul style="list-style-type: none"> • health maintenance guidelines, information regarding specialised equipment and education and training programs and resources • establishment of a central data register to enable monitoring of service performance and patient outcomes.
<p>North Queensland Spinal Service The Townsville Hospital Townsville Hospital and Health Service</p>	<ul style="list-style-type: none"> • a transitional rehabilitation program and outreach service enabling successful integration into the community • specialised outpatient services to review and monitor the health of SCI patients.

4.1 Future SCI services across the care continuum

The following section outlines the future of SCI services in Queensland. Information is provided for each phase within the care continuum and includes a description of services as described in the literature, an overview of the aspects of the future service in Queensland and a summary of apparent changes from the current service.

Care of patients with a new SCI generally follows a consistent pathway that incorporates five phases of the continuum:

- immediate post injury care
- acute management
- inpatient rehabilitation
- transition services, and
- outpatient and ongoing management and support.

4.1.1 Immediate post injury care

Early referral and transfer of patients with a new SCI to a specialised service is essential.

In the immediate post-injury phase, care is focussed on managing significant accompanying trauma, preventing secondary complications and increasing chances of survival. Optimal care requires an integrated and responsive approach involving collaboration and coordination between ambulance, emergency and trauma services, intensive care units and specialised SCI services.

Several studies have shown that early referral of a patient with a new SCI to specialised services, preferably within 24 hours of injury, is associated with reduced mortality and secondary complications (such as pressure sores), shorter lengths of stay and improved neurological outcomes.⁷⁻¹⁰

Future service

- access to specialised SCI care provided by the QSCIS will be prioritised for all patients with a newly acquired SCI supported by the *Criteria for Early Notification of Trauma*¹¹ and the *Trauma By-Pass Clinical Practice Procedure*¹²
- care may be provided directly by admission to the QSCIS or via consultation with the QSCIS consultant as an in-reach service

- benefits of early transfer need to be reinforced with services that transfer patients, those that manage patients immediately post injury i.e. major trauma centres and those that manage access to intensive care and SCI acute beds at the PAH.

How is this different to the current service?

- specialised care to be prioritised
- in-reach care to be expanded as clinically appropriate.

4.1.2 Acute management

Early emergent treatment in an acute specialised SCI service allows for early interdisciplinary care and is associated with faster transfers to rehabilitation, fewer medical secondary complications, greater efficiency in functional gains and reductions in overall mortality.

Dedicated acute management services for adults with newly acquired SCI focus on interdisciplinary treatment of the injury to the spinal cord and associated traumatic injuries, prevention and treatment of secondary complications, and the establishment of early rehabilitation goals.

Prevention of complications and early rehabilitation interventions are essential to minimise length of stay and maximise patient outcomes.^{7,9}

Future service

- utilisation of acute beds within the SIU will be optimised to ensure access for those patients requiring specialised acute care
- in-reach services are provided by SIU staff to support the care of patients prior to their transfer to the SIU
- people with SCI may be readmitted to the specialised service on a planned or emergency basis if their condition is assessed as requiring specialised care, where clinically appropriate
- local health facilities will be supported by the QSCIS in their delivery of care for SCI patients who do not require admission to the SIU through consultation with specialist inpatient (SIU) and outreach (SPOT) services and through the establishment of community partnerships.

How is this different to the current service?

- patients who have a new suspected traumatic SCI are transferred to the SIU promptly
- SIU are informed of SCI patients awaiting transfer and are able to provide advice regarding immediate care (in-reach service)
- people suffering a SCI from a non-traumatic cause are provided appropriate care within their local Hospital and Health Service (HHS) unless the severity of injury requires care within the specialised service. Admission is via current criteria or at clinician discretion.

4.1.3 Inpatient rehabilitation

Inpatient rehabilitation aims to maximise independence for each patient within the context of their individual goals, environment and level of injury.

The interdisciplinary rehabilitation team focusses on maximising function including activities of daily living and mobility, and begins to establish linkages with health care providers in the community to aid the journey towards independent living.^{1,2}

The Australian Faculty of Rehabilitation Medicine (AFRM) published *Standards for Adult Rehabilitation Medicine Services in Public and Private Hospitals*¹³ (the Standards) in 2011 to ensure the provision of comprehensive high quality care. The Standards recommend an adequate number of professional and support staff to allow the service to provide contemporary, evidence-based rehabilitation management in a safe, effective and efficient manner in collaboration with expertise from other clinical specialties as required.

A co-ordinated process of appropriate discharge planning is established including consideration of care requirements and equipment needs. Key issues arising at the time of discharge may include access to personal care and psychological support, home or workplace modifications and available community services.

Future service

- SIU deliver specialised inpatient rehabilitation services based on a collaborative, interdisciplinary, holistic care model where the patient's rehabilitation program considers many factors, including adjustment and maintenance in relation to physical health, psychological wellbeing, social and vocational roles
- goal directed and time limited rehabilitation program, aimed at an individual patient for the achievement of maximal independence
- discharge planning is initiated to achieve optimal length of stay
- care program is developed in collaboration with the patient and their family
- service follows the AFRM Standards establishing a core interdisciplinary rehabilitation team, enhanced by consultation with other health professionals as required
- peer support mentors are available on site
- connections with community services and government agencies are established and a program of vocational education and training is discussed
- patients who do not need acute care or specialist rehabilitation provided at the QSCIS are admitted to general rehabilitation units throughout Queensland, including within the private sector.

How is this different to the current service?

- enhanced interdisciplinary rehabilitation team, including the addition of psychological services, nutrition advice and a clinical nurse consultant, affording ongoing improvements in the provision of care
- a program of psychological review and intervention, assisting with adjustment to a different lifestyle, will be provided to assist in the effectiveness of rehabilitation and ongoing social integration¹⁴
- vocational education and training services are assessed and provided.

4.1.4 Transition service

Transitional rehabilitation programs bridge the gap between inpatient rehabilitation and the community with the main aim of assisting patients to achieve independence.

A successful TRP combines the professional skills of an interdisciplinary care team with the support and encouragement of family, friends and partners and results in progression towards achieving goals set by the patient.^{15,16}

The period of transition should be time limited and, as well as facilitating achievement of a patient's goals, should also promote a health and wellbeing approach.

Future service

- TRP is an interdisciplinary, goal-directed rehabilitation program assisting people to transition to the community
- specialised TRP programs are provided in two locations across Queensland, the PAH and TTH
- patients residing within reasonable driving distance of TTH and PAH will receive transition services in their own home whilst those outside this boundary will complete the TRP program utilising existing facilities, i.e. independent living units within TTH or in homes located close to the PAH, prior to a return home
- specialised rehabilitation medicine support is provided by the SIU medical team and by a dedicated community rehabilitation registrar
- TRP is time limited and generally runs for four to eight weeks
- collaborative partnerships are developed with local health practitioners, community services, non-government organisations and other government departments to enable effective transition to community services
- a program of vocational education and training, established during inpatient rehabilitation, is continued.

How is this different to the current service?

- TRP expanded to be delivered at TTH
- linkages with community services are strengthened to include a program of vocational training and education.

4.1.5 Outpatient and ongoing management and support

Outpatient and ongoing care is focussed on health promotion, self-management and the establishment of links with primary care providers and community services to promote social integration and healthy lifestyles.

These services relate to the later phases of the care continuum and provide ongoing review of health status with opportunities to embed health promotion, early intervention and preventative therapy whilst enabling continuation of community based living. A 2013 Consumer Perspectives Report noted long-term follow up is necessary to ensure people with SCI did not feel abandoned in the community and were provided with ongoing opportunities to improve their quality of life. In addition, as someone with SCI ages, individual needs change. An annual review provides a chance to proactively identify and manage emerging issues.¹⁷

Future service

- specialist-led outpatient clinics at the PAH and TTH review new referrals, follow-up existing patients and provide specialised care
- telemedicine mechanisms will be utilised to provide outpatient clinics closer to where a patient lives and may include families, carers and local health professionals to enable training opportunities
- SPOT and the NQSS will cooperatively provide interdisciplinary outreach and lifelong follow up services in the community focussed on health promotion and self-management and/or supported independence²
- outreach and lifelong follow up services will include education sessions or workshops for HHS staff, in collaboration with clinicians from the SIU.

How is this different to the current service?

- expansion of specialist-led outpatient clinics to enable access to expert interdisciplinary assessment, review and therapy and new specialty clinics, e.g. sex and fertility and psychology
- continued and expanded collaborative education and training for health professionals to extend the number of people with skills to provide appropriate care and to minimise the occurrence of secondary complications.

5. Future directions—Queensland spinal cord injury services

The *Statewide adult spinal cord injury health service plan 2016–2026* identifies three overarching service directions that aim to strengthen the capability and capacity of Queensland health services to respond to the needs of those experiencing or living with a SCI and achieve the vision of the future service as defined above. Within each service direction a number of actions outline the steps that may be taken to coordinate and optimise services that support people with SCI.

A range of system level actions will require implementation by the DoH. Due to the focus of the Plan on the statewide SCI service, Metro South Health and Townsville HHS have a number of targeted actions that will require implementation if the Plan is to succeed.

Strategy, Policy and Planning Division in conjunction with the Project Steering Committee has recommended the establishment of a project team, based at the PAH, to commence implementation planning for short term actions over the next two years.

All other HHS have responsibilities, as outlined in the service agreements, to utilise referral criteria which ensure appropriate use of the statewide service, accept patients

² Northern New South Wales (NNSW) patients returning home from the PAH SCI Unit should be linked with local services for community follow-up. The Rural Spinal Cord Injury Service (RSCIS) provides outreach services across the entire NNSW Local Health District (NNSW LHD).

returning from specialised care at a statewide service in a timely manner, and supply ongoing local health care as required.

5.1 Service direction 1 – Grow capacity and capability

Grow health service capacity and capability for people with a spinal cord injury at the statewide and local level, improving the consistency and quality of services to achieve outcomes-focused, patient-centred care.

Limited capability and confidence in care provision among clinical staff outside of the statewide service was identified as a recurrent theme throughout the development of the Plan. A return to local communities following intensive, specialist rehabilitation highlights, in some instances, the lack of available support and the increased risk of secondary complications for people with SCI. This is becoming increasingly important as the prevalent population of people with SCI grows.

Providers of healthcare in less populated areas may also need to consider the fragmentation of care that can result from attitudinal differences, limitations in physical and staff resources and transportation deficiencies, which may all hinder access to quality community based care.

This service direction aims to encourage a service environment that continues to develop the expertise of the statewide service whilst growing the level of competency of all staff caring for SCI patients to better enable individuals to achieve their goals.

Service actions

Short-term (1–2 years)		Responsibility	Funding Source
1.1	Develop and disseminate a communication package which articulates the role of the QSCIS and outlines service elements including admission criteria, referral pathways and transfer guidelines.	QSCIS	Project Team
1.2	Provide a consultative and educational role to all QH service facilities that infrequently care for SCI patients to enhance local capability, including, for example: <ul style="list-style-type: none"> • access to health professional consultation and advice including medical rehabilitation physician • broad mix of education programs • web based educational materials/resources hub • identified and documented support systems and networks. 	SIU, QSCIS	Within existing
1.3	Develop capacity to manage pressure injuries across the system to provide effective and timely treatment, including outside the QSCIS where appropriate, through the targeted up skilling of surgical specialists coordinated with an increase in the availability of preventative services.	QSCIS, HHS	Within existing
1.4	Assess the resource implications of providing an ‘in-reach’ service to Major Trauma Centres that are delivering immediate care to patients suffering a new traumatic SCI prior to transfer to the SIU.	SIU, QSCIS	Project team

Short-term (1–2 years)		Responsibility	Funding Source
1.5	Strengthen and/or formalise relationships with local community and primary health care professionals, in particular general practitioners and allied health professionals to promote and advocate for the provision of appropriate and consistent SCI care and management.	QSCIS	Within existing
1.6	Progress a transition rehabilitation program for adults with SCI at TTH, including development of: <ul style="list-style-type: none"> • a governance structure • service delivery standards • performance measures (applicable to all TRP services) • guidelines in the use of transitional accommodation (hospital and community based) • formalised collaborative relationships with the TRP service at the PAH. 	TRP, QSCIS and Townsville HHS	See 6.3 Table 2 <i>Transition Services</i>
1.7	Explore sustainable telemedicine models for the delivery of specialised advice and patient reviews or assessments, to promote partnership with local health providers and deliver services to patients in isolated or remote areas.	QSCIS	Within existing
1.8	Foster ongoing development of the SCI workforce via continuing education tailored to the needs of the specialist service, general service providers, primary and community healthcare providers and non-government organisations.	QSCIS	Within existing

Medium-term (3–5 years)		Responsibility	Funding source
1.9	Consider the development of best practice guidelines for the management of less complex SCI patients in non-specialist facilities.	QSCIS	Within existing
1.10	Implement an interdisciplinary clinical leadership model across disciplines, i.e. physiotherapy, occupational therapy, nursing, medical, via mentorship or formalised networks, to avoid professional silos.	QSCIS	Within existing
1.11	Consider providing opportunities for mentoring, job shadowing or staff rotation to enable the up skilling of healthcare professionals from facilities external to the QSCIS.	QSCIS, HHS	Within existing

Long-term (6-10 years)		Responsibility	Funding source
1.12	Evaluate the impact of the service actions in addressing issues related to providing SCI care and recommend improvements in collaboration with health care providers and SCI patients and their family.	Statewide Rehabilitation Clinical Network (SRbCN)	Within existing

5.2 Service direction 2 – Optimise integrated care across the continuum

Develop, optimise and promote integrated and coordinated SCI services to improve equity of access, flow across the care continuum and service efficiency, linking with private sector and non-government support services where practical.

The care of people with a SCI is complex and requires commitment from service providers to work together to achieve optimum care and maximise patient outcomes. A recurrent theme identified throughout the development of the Plan, both in consultation with key stakeholders and when reviewing policy and practice literature, was the need to ensure the flow of patients across the care continuum is effective and efficient.

The World Health Organisation highlights that inter-sectoral relationships between health and other sectors enables the achievement of health outcomes in a way that is more effective, efficient and sustainable than could be achieved by the health sector working alone.¹⁸

This service direction supports a collaborative approach to the provision of SCI services that ensures an integrated and seamless transfer of care across acute, rehabilitation and community settings.

Service actions

Short-term (1–2 years)		Responsibility	Funding Source
	Governance		
2.1	Explore the possibility of establishing a SCI advisory group, as a subgroup of the Statewide Rehabilitation Clinical Network to drive service improvement, collaboration and knowledge sharing.	SRbCN	Within existing
	Service delivery		
2.2	Promote established policies and protocols to ensure: <ul style="list-style-type: none"> early notification of and access to the acute specialised service where there is clinical evidence of isolated SCI early transfer of patients with SCI in association with major trauma to the acute SCI service the provision of an in-reach service as required and where feasible. 	QSCIS	Project Team
2.3	Investigate factors and common barriers contributing to acute and rehabilitation long length of stay and implement strategies to reduce non-value adding length of stay.	SIU, QSCIS	Within existing
2.4	Focus on the continued provision of rapid and reliable communication between health care services, staff, patients and carers across the care continuum and throughout the patient's life e.g. via integrated electronic Medical Record	QSCIS, HHS	Within existing

Short-term (1–2 years)		Responsibility	Funding Source
	Program (ieMR) or utilisation of patient held records.		
2.5	<p>Develop mechanisms to provide coordinated care between the QSCIS and other HHS for a patient:</p> <ul style="list-style-type: none"> • transitioning home • transitioning into the adult service from paediatric care. • readmitting to local services due to a secondary complication. 	QSCIS, HHS	Within existing
2.6	Consider opportunities for improving the delivery of integrated care e.g. review of interdisciplinary case conferences and mechanisms to access specialist support services.	SIU, QSCIS	Project team
	Linkages		
2.7	<p>Develop and maintain essential partnerships and collaborations across the continuum with other agencies, including the Department of Communities, Child Safety and Disability Services, Queensland Disability Advisory Councils and the Department of Aboriginal and Torres Strait Islander Partnerships, who provide care or services for individuals with a SCI with a particular focus on:</p> <ul style="list-style-type: none"> • developing an early supported discharge and rehabilitation clinical guideline and pathway that requires timely involvement of discharge services to ensure seamless transition to community living • addressing long term supported community housing needs to accommodate all SCI patients and specifically those who have severe respiratory impairment or are ventilator dependant • providing culturally appropriate services for Aboriginal and Torres Strait Islander populations • developing service linkages for older persons • providing links to appropriate community services, including consistent and practical peer support programs • establishing processes to facilitate timely home modifications to an individual's home • developing a well-resourced equipment lending pool or program that includes specialised equipment and technology • supporting SCI patients to prepare for and participate in meaningful activities of their choice including vocational education and training • evaluating the impact of the National Disability Insurance Scheme and the interface between health and community 	QSCIS, Townsville HHS and inter-sectoral agencies	Project team

Short-term (1–2 years)		Responsibility	Funding Source
	based disability support services.		

Medium-term (3–5 years)		Responsibility	Funding source
2.8	Pursue transfer of patients to mainstream services as early as possible to enable confident care for SCI patients closer to home, following the development of staff skills and local service maturity.	SIU, QSCIS	Within existing
2.9	Standardise and improve care transition processes and systems that coordinate the distribution of information between community care, primary care and HHS.	QSCIS	Within existing
2.10	Integrate and coordinate established TRP and SPOT/NQSS so that care is delivered at an appropriate time and in the appropriate setting, avoiding duplication of services.	TRP, SPOT and NQSS	Within existing

Long-term (6–10 years)		Responsibility	Funding source
2.11	Evaluate the performance of all parts of the integrated team to identify continuing challenges and recommend improvements as required.	QSCIS (lead)	Within existing

5.3 Service direction 3 – Maximise the quality of care

Continue to deliver SCI services that are provided by an interdisciplinary workforce, utilising evidence based practices delivering measurable outcomes.

This service direction seeks to emphasise the importance of a SCI service that is provided by appropriately qualified staff, uses best possible processes and procedures and has in place mechanisms to measure its own performance.

Monitoring the effectiveness of SCI services and the quality of care delivered enables evaluation of the operation of the system and identification of areas for change.

Service actions

Short-term (1–2 years)		Responsibility	Funding source
	Service delivery		
3.1	Develop and actively promote use of standardised, formalised and evidence-based guidelines, pathways and resources to support consistent best practice in the delivery of SCI services.	QSCIS	Project Team
3.2	Enable timely and appropriate access to specialist consultants, (e.g. urology, plastics, and orthopaedics) and support services (e.g. rehabilitation engineering and seating) to facilitate comprehensive care and maximise	HHS	Within existing

Short-term (1–2 years)		Responsibility	Funding source
	recovery outcomes.		
3.3	Support and enable the provision of a program of psychological review and intervention.	QSCIS	Within existing
3.4	Assess the merits of the inclusion of a vocational rehabilitation program to promote adjustment to life in the community.	TRP, QSCIS	Project Team
	Workforce		
3.5	Evaluate staffing levels of medical, nursing and allied health and recommend workforce and skill mix which reflects unit capacity and workload, guided by the Australasian Faculty of Rehabilitation Medicine Standards ¹³	HHS	See 6.3 Table 2 <i>Spinal Injury Unit</i>
3.6	Develop a local strategy for staff recruitment, deployment and retention within QSCIS, NQSS and community services.	QSCIS, TTH HHS	Within existing
3.7	Explore options to rotate staff from general rehabilitation units (all disciplines) through the specialist service.	QSCIS, HHS	Within existing
	Education and research		
3.8	Identify opportunities for staff to access professional development to increase capability and embed in local policy.	HHS	Within existing
	Performance and improvement		
3.9	Implement a performance improvement program for statewide SCI services including: <ul style="list-style-type: none"> continued participation in the Australian Rehabilitation Outcomes Centre data collection—describing inpatient episodes of rehabilitation from Australia and New Zealand—to enable national benchmarking and comparative public reporting to occur continued participation in the reporting of data to the Australian SCI Register quarterly reporting of outcome data to clinicians to allow clinical outcomes to be monitored, practices to be reviewed and to inform clinical decision making. 	QSCIS, Service Agreement Management Unit, HCQ	Within existing

Medium-term (3–5 years)		Responsibility	Funding source
3.10	Review spinal care training options for graduate nurses and identify options for the provision of specialist spinal nursing or advanced spinal skills for general nurses.	QSCIS, HHS	Within existing
3.11	Actively support research and development activities to facilitate continuous improvement of SCI services, guided to ensure a clear strategic direction for research to improve patient/service outcomes.	QSCIS (lead) HHS	Within existing
3.12	Develop a formalised data collection framework incorporating, in the first instance, a minimum	QSCIS	TBC

Medium-term (3–5 years)		Responsibility	Funding source
	data set (e.g. International Spinal Cord Injury Core Data Set ¹⁹) to guide service improvement, policy and further planning and development.		
3.13	In consultation with information technology services, design a database for the collection of SCI data in Queensland, following the developed data collection framework.	QSCIS, Health Services Information Agency	Within existing (departmental)
3.14	Monitor and review standardised key performance indicators and suggest new measures as required.	Metro South Health, QSCIS	Within existing
3.15	Implement a performance improvement program for statewide SCI services incorporating standardised key performance indicators, to evaluate access, quality of care, adverse event counts, and service efficiency.	QSCIS, Healthcare Purchasing and System Performance Division.	Within existing
3.16	Review the data framework to ensure that the correct information is being collected to: <ul style="list-style-type: none"> • support clinical outcomes and performance monitoring • provide data for benchmarking and research activities • guide service improvement • inform policy and future planning. 	QSCIS	Project Team
3.17	Advocate for the development of a facility planning and design project, including: <ul style="list-style-type: none"> • establish a clear and compelling vision and expectation for the facility project (acute and rehabilitation facility) • assess current operations to identify opportunities for improvement • undertake a structured, operations-driven facility planning process • liaise with Infrastructure Strategy Branch • foster broad participation and ownership in the planning process • align with future development (master planning) of the PAH site. 	Metro South Health, Infrastructure Strategy Branch, QSCIS	Within existing

Long-term (6–10 years)		Responsibility	Funding source
3.18	Expand on the collection of data beyond the first stage of a minimum data set to target specific issues and challenges, in consultation with key clinicians across the state.	QSCIS, HHS	TBC

6. Implementation, monitoring and review

This Plan articulates a ten year vision outlining service directions to enhance service provision and facilitate the delivery of care which is evidenced-based, safe and sustainable and improves functional outcomes for people living with SCI in Queensland. A range of system level actions will require implementation by the DoH whilst others are highlighted as HHS responsibilities.

6.1 Hospital and Health Service responsibilities

In accordance with the *Hospital and Health Boards Act 2011* (the Act), once the DoH has endorsed the Plan, the responsibility to 'undertake further service planning that aligns with the statewide plans' rests with each HHS.²⁰

Metro South Health and Townsville HHS, due to the focus of the Plan on the statewide SCI service, have a number of targeted actions that will require implementation if the Plan is to succeed.

Strategy, Policy and Planning Division has undertaken the development of two statewide plans that focus on specialised rehabilitation, the Statewide adult brain injury rehabilitation health service plan 2016–2026 and this plan, supporting people with a SCI. Synergies have been identified between the two plans resulting in the recommendation to establish a project team, based at the PAH, to commence implementation planning for short term actions across both plans over the next two years. Funding for this project team will be sourced following endorsement of both plans.

All other HHS have responsibilities, as outlined in the service agreements, to utilise referral criteria to ensure appropriate use of the statewide service, accept patients returning from specialised care at a statewide service in a timely manner and supply ongoing local health care as required.

6.2 Risk to successful implementation

The success of the Plan relies on each responsible entity determining an approach to implementing local plans and actions aligned with the service directions. Risk was assessed using the *Metro South Health Integrated Risk Management Framework*.²¹ Possible risks to the successful implementation of the Plan include:

- development of new services may trigger a reorientation of present services or the expansion of existing services which may be hindered given finite resources
- sufficient workforce may not be available to increase training programs to address workforce capability requirements
- change in the management of patients may be undesirable to some clinical groups precluding timely transition to new service delivery
- communication of the role of the statewide SCI service may increase expectation of health services and SCI patients which in some circumstances may not be met, and

- inability to capture accurate, reliable and representative data leading to poor performance measurement and lack of ability to provide focussed service improvement.

6.3 Resource implications of implementation

The three overarching service directions outlined in this Plan are collectively aimed at strengthening the capability and capacity of Queensland health services to respond to the needs of those experiencing or living with a SCI. The proposed configuration of SCI services will require changes to the present service. Changes that the Statewide Rehabilitation Clinical Network (SRbCN) has responsibility for may require additional funding, to be factored into the total resources required for the Plan’s implementation.

A summary of the changes to the service, resource implications and funding mechanisms is provided in Table 2.

Table 2 Summary of resource implications 2016 to 2026

Future Service	Resource implications	Funding mechanism
Spinal Injury Unit (acute and subacute care)		
<ul style="list-style-type: none"> • delivered at the PAH • delivering acute care and specialised rehabilitation for people with new SCI as well as readmission of patients with established SCI with significant potential for positive rehabilitation outcomes • 40 bed unit • advocates for the care of patients at a facility closer to home (where clinically appropriate) and supports health professionals in the delivery of SCI services 	<ul style="list-style-type: none"> • workforce expanded (as appropriate and in line with the AFRAM Standards¹³) • future demand projected to equate to 20 acute beds (6,466 bed days) and 32 subacute beds (10,391 bed days) to a total of 52 bed unit (12 additional beds) by 2026 	<ul style="list-style-type: none"> • additional workforce funded at the discretion of the HHS based on purchased activity via Activity Based Funding • presently no current built capacity for additional beds within SIU to allow for future growth. New fit for purpose infrastructure will be required in the long term
Outpatient Services		
<ul style="list-style-type: none"> • delivered at the PAH and TTH • providing interdisciplinary and specialist led clinics including upper limb and sex and fertility 	<ul style="list-style-type: none"> • workforce increased to support additional outpatient clinics 	<ul style="list-style-type: none"> • outpatient services will be funded at the discretion of the HHS based on purchased projected activity via Activity Based Funding
Transition Services		
<ul style="list-style-type: none"> • delivered at the PAH and TTH • transition services act to build relationships between the patient’s general practitioner, carers, nurses, other therapists as well as family and friends 	<ul style="list-style-type: none"> • expansion of workforce <ul style="list-style-type: none"> – establishment of transition service at TTH – supporting role within the QSCIS (time limited) 	<ul style="list-style-type: none"> • transition services, historically block funded, are now to be purchased based on projected activity via Activity Based Funding (as hospital in the home type services)—negotiation as to mechanism to capture activity and price will be via the service agreement

Future Service	Resource implications	Funding mechanism
		development process <ul style="list-style-type: none"> • funding of specialised equipment for transition service at TTH • a review of delivery of service at TTH utilising current infrastructure should be undertaken within five years
Ongoing management and support ^(a)		
<ul style="list-style-type: none"> • delivered by: <ul style="list-style-type: none"> – SPOT at the PAH in the form of a post-discharge 12 month follow up service and life-long care in the community – NQSS at TTH delivering SCI care in the community 	<ul style="list-style-type: none"> • workforce at PAH enhanced to include <ul style="list-style-type: none"> – a training position (rehabilitation registrar) to provide care across the outpatient and outreach service – a project officer (time limited) to establish a central data register for Queensland to monitor service performance and patient outcomes • workforce and equipment at TTH increased as deemed appropriate for delivery of a community service 	<ul style="list-style-type: none"> • community services, historically provided via block funding, are now to be purchased based on projected activity via Activity Based Funding—negotiation as to mechanism to capture activity and price will be via the service agreement development process^(a) • project team

(a) A significant component of this service is providing education and training not only to the individual patient but also to health care professionals. In acknowledgement of this pivotal role, a change to the definition (provided by the National Performance Agreement) for an Occasion of Service may be made to now read; *for the purposes of this reporting activity an Occasions of Service (OOS) will be defined as “an interaction between one or more health care provider(s) **with or about** one non-admitted patient. A service must contain therapeutic/clinical content and result in a dated entry in the patient/clients medical record”.*

6.4 Monitoring, review and evaluation

Monitoring and evaluating implementation of the Plan, including reporting on progress towards achieving the identified service actions, completes the cycle of health service planning. The result of proposed changes to SCI service provision in Queensland can only be assessed if there is a process of monitoring and review to evaluate the benefit to patients and system effectiveness, with ongoing identification of areas for improvement.

6.4.1 Monitoring

Careful monitoring during the implementation phase is critical to ensure plans are operationalised as intended, risks identified, remedial actions set and expected timeframes met. Implementation will commence on the date the plan is endorsed and published.

From this date, the Department will require information from the relevant HHS at specific intervals throughout the life of this Plan to adequately monitor progress. From commencement of implementation reporting will include:

- short progress/status reports, to monitor progress against each service action, **every six months**, during the life of the Plan,
- a formal report, to monitor progress towards the Plan's overall objectives, within a timeframe deemed appropriate by the Department (**i.e. 2, 5 and 10 years**) during the life of the Plan,
- a short report, at **any time** during the life of the Plan, if a major issue, requiring urgent attention is identified during implementation.

The level of detail provided in the above reports will be proportionate to the role of the HHS in implementation but sufficiently informative to provide a clear picture of progress against relevant service actions (section 7). All HHS reports will be collated by the Department and progressed and disseminated as appropriate.

6.4.2 Review and evaluation

The Department will undertake a formal review of the Plan, at a timeframe deemed appropriate by the Department. This report will primarily be based on information provided in earlier reports however additional information may be required upon request. Based on the outcomes of the review, a full or partial revision of the Plan may be justified. This report will be provided to the Department's executive and disseminated to the SRbCN and all HHS.

It is anticipated the Department will evaluate the Plan at ten years (end of the Plan's timeframe) to help inform future activities. Specifically it will evaluate whether the original objectives of Plan were achieved and examine the process to achieve them. The level of detail provided in this final report will be at the Department's discretion.

Appendices

Appendix 1 Background to the planning project

Scope, purpose and methodology

The Plan informs Queensland Health and key stakeholders on the preferred way to provide SCI services across the health continuum with a ten year outlook.

The Plan identifies the delivery of SCI services across the health continuum, from dedicated acute management services to ongoing community based life-long care for people aged 16 years and over. The scope of the project included:

- acute inpatient services—specialising in the acute management of SCI patients
- inpatient rehabilitation services—specialising in rehabilitation of SCI patients with a focus on a collaborative, interdisciplinary, holistic care model that aims to maximise independence for each patient within the context of their individual goals, environment and level of injury
- transitional rehabilitation services—bridging the gap between inpatient rehabilitation and the community with the aim of assisting SCI patients to achieve independence
- ambulatory outpatient services—specialist outpatient clinics for SCI patients
- outreach services—focussing on the promotion of good health and self-management for SCI patients in the community as well as early intervention, consultancy and education services for SCI clients, their families and carers, and
- special requirements for complex SCI patients such as those who are ventilator dependant or have a dual diagnosis (e.g. SCI plus traumatic brain injury).

Links and relationships with services that provide care and support for SCI patients/clients but are not part of the statewide SCI service have been considered but detailed planning has not been undertaken.

The methodology used to develop the Plan included the following activities:

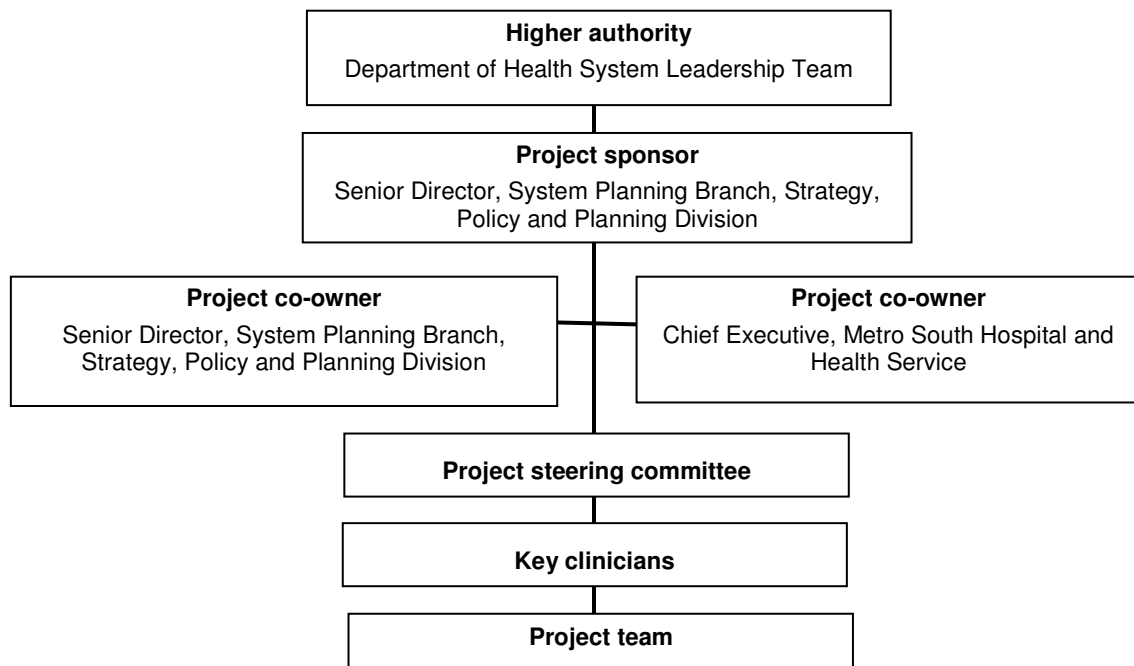
- reviewing and critically analysing national and international literature relating to SCI service delivery
- analysing Queensland data, including SCI service activity (both acute and rehabilitation), current service configuration and staffing profile, population and demographic environments
- projecting future service demand to 2026 and analysing the effect of this forecast on future service provision
- identifying specific populations that may benefit from changes to current service delivery models
- analysing service needs and issues and developing options for the delivery of SCI services over the next decade
- identifying changes that could be made to current service provision within existing resources and changes that would depend on the provision of additional human, physical and/or financial resources
- developing service directions for SCI services to deliver outcomes-focused, patient-centred care.

Governance process

Project governance arrangements were established to support consistency and effectiveness of project related decisions. The governance of the planning project (Figure 2) was led by:

- a project sponsor and two co-owners (a representative each from the DoH and MS HHS)
- a Project steering committee supported by a key clinician group
- a Project team.

Figure 2 Project governance structure



Consultation

Consulting with stakeholders was integral to the development of the Plan. Stakeholder engagement was undertaken:

- on an ongoing basis with key stakeholders as determined by the project team in line with project requirements
- more formally in a targeted consultation process to capture the views of stakeholders at key scheduled milestones.

Consultation allowed key stakeholders to validate quantitative data collected during the planning process, confirm identified service needs and issues relating to the delivery of statewide SCI services and review the options provided on the future configuration of services. Table 3 provides a list of stakeholder participants.

Table 3 Stakeholder participants

Project Steering Committee	
Medical Chair of Division of Rehabilitation	Princess Alexandra Hospital, Metro South Health
Senior Director, System Planning Branch	Strategy, Policy and Planning Division
Nursing Director, Division of Rehabilitation	Princess Alexandra Hospital, Metro South Health
Director, Spinal Injuries Unit,	Princess Alexandra Hospital, Metro South Health
Executive Director	Princess Alexandra Hospital-Queen Elizabeth II Hospital Health Network, Metro South Health
Consultant, Rehabilitation	The Townsville Hospital
A/Executive Director Clinical Support Services	Princess Alexandra Hospital, Metro South Health
Director, Health Services Research Analysis and Modelling	System Planning Branch
Key Clinician Group	
Professor of Traumatology	Princess Alexandra Hospital, Metro South Health
Spinal Injuries Unit, Outpatient Coordinator	Princess Alexandra Hospital, Metro South Health
Nurse Unit Manager, Spinal Injuries Unit	Princess Alexandra Hospital, Metro South Health
Manager, Transition Rehabilitation Program	Princess Alexandra Hospital, Metro South Health
Manager, Spinal Outreach Team	Princess Alexandra Hospital, Metro South Health
Senior Social Worker, Spinal Injuries Unit	Princess Alexandra Hospital, Metro South Health
<p>Chief Executives from every HHS were consulted at all stages of the project. In addition the following nominated key clinical and planning contacts were also consulted.</p>	
Hospital and Health Service — Key Contacts	
Cairns & Hinterland HHS	Regional Geriatrician and Clinical Director Older Persons Health Services
Central Queensland HHS	Executive Director Subacute, Ambulatory and Community Services
Central West HHS	A/Allied Health Team Leader
Children's Health Queensland HHS	Paediatric Rehabilitation Consultant
Darling Downs HHS	Team Leader General Rehabilitation
Gold Coast HHS	Clinical Director of Rehabilitation
Mackay HHS	Specialist in Rehabilitation Medicine
Mater Health Services	Director Strategic Planning
Metro North HHS	Director Geriatric Medicine, GARU
Metro South Health	Director Health Service Planning
North West HHS	Executive Director Corporate Services
South West HHS	Clinical Nurse Consultant Subacute

Sunshine Coast HHS	Director Planning and Commissioning
Torres and Cape HHS	Manager Strategy Planning and Performance
Townsville HHS	Consultant Rehabilitation Unit
West Moreton HHS	Speech Pathologist
Wide Bay HHS	Director of Allied Health
Hospital and Health Service — Planning Contacts	
Cairns & Hinterland HHS	Executive Director SPP & ATSI
Central Queensland HHS	Medical Contracts Project Manager
Central West HHS	Executive Director Nursing and Midwifery Services
Children's Health Queensland HHS	A/Executive Director Office of Strategy Management
Darling Downs HHS	A/Director Infrastructure and Planning
Gold Coast HHS	A/Executive Director Strategy and Service Planning
Mackay HHS	Chief Operations Officer
Mater Health Services	Director Strategic Planning
Metro North HHS	Team Leader Central Clinical Networks
Metro South Health	Director Health Service Planning
North West HHS	Executive Director Corporate Services
South West HHS	Chief Operations Officer
Sunshine Coast HHS	Director Planning and Commissioning
Torres and Cape HHS	Manager Strategy Planning and Performance
Townsville HHS	Chief Financial Officer Townsville HHS
West Moreton HHS	Senior Planning Officer
Wide Bay HHS	Executive Project Officer Planning

As the focus of this planning project was the statewide SCI service located at the PAH, broad consultation was undertaken with clinical areas from across the hospital including; all units of the QSCIS, critical care units, associated specialties including urology, plastics and orthopaedics and support services including seating service, rehabilitation engineering, and prosthetics and orthotics.

Consultation across the DoH was initiated with all Deputy Director-Generals, Health Service Chief Executives from every commercialised business unit as identified below. Additional consultation was undertaken with those whose work would affect the delivery of care for SCI patients in Queensland.

Department of Health	
Office of the Director-General	Deputy Director-General
Clinical Excellence Division	Chief Operations Officer Deputy Director-General Manager Policy and Clinician Engagement
Strategy, Policy and Planning Division	Deputy Director-General
Health Support Queensland	Chief Executive Officer
Health Services Information Agency	Chief Technology Officer Chief Health Information Officer

Queensland Ambulance	Commissioner
Corporate Services Division	Chief Finance Officer Chief Legal Counsel Chief Health Infrastructure Officer Chief Human Resource Officer
Contracting and Performance Management Branch	Director, HHS Costing and Funding Team
Medical Aids Subsidy Scheme	Director
System Planning Branch	Rural and Remote Team

Consultation with other key stakeholders, organisations, associations and universities listed below was undertaken by email, telephone or face-to-face meeting.

Key Stakeholder Participants

Other Government Agencies

Motor Accident Insurance Commission	Principal Policy Officer
NRMA Insurance	Senior Manager
Suncorp Group	Executive Manager
QBE Australia	Rehabilitation Manager, CTP Claims
Department of Communities, Child Safety and Disability Services	Director Disability Planning and Purchasing Secretariat SCIR Management Group Senior Program Officer, Disability Services
Medicare Locals	Sunshine Coast Medicare Local

Professional Organisations

Australian and New Zealand Society for Geriatric Medicine	Director Geriatric Medicine, Princess Alexandra Hospital
Australian Association of Social Workers	Social Policy Committee
Australian Physiotherapy Association	National Advisory Group
Dietitians Association Australia (Qld Branch)	Professional Services Cadet Dietitian
The Australian and New Zealand Spinal Cord Society	President
Australian Psychological Society	Executive Manager (Professional Practice)

Universities

Centre of National Research on Disability and Rehabilitation Medicine	Professor
Queensland University of Technology	Professor and Chair in Trauma

Consumer and other non-government organisations

Consumer/Expert opinion	Survey response and interview
Queensland Disability Advisory Council (QDAC)	Council (attended Council meeting)
Spinal Injuries Australia	General Manager Peer Support Services
Spine Society of Australia	President and Secretary
Sporting Wheelies and Disabled Association	General Manager (Services)
Surgical Engineering Queensland	Company Director

Appendix 2 Policy and Practice context

Commonwealth Policy

National Health Reform

In the 2014 Federal Budget (the Budget), funding guarantees under the *National Health Reform Agreement* were replaced with a Commonwealth contribution indexed by the Consumer Price Index and population growth from 1 July 2017²². Funding stream responsibilities between the Commonwealth and States and Territories remain otherwise unchanged as do the nine national health priority areas, amongst them the priority area of injury prevention and control.

The Budget also adopted review recommendations made to replace Medicare Locals with Primary Health Networks (PHNs) from 1 July 2015. PHNs are aligned with HHS and have increased authority to engage directly with them, as well as increased purchasing powers. There is uncertainty as to the level of influence these networks will have in improving the health of people with SCI however the key objective of all PHNs is to *'increase the efficiency and effectiveness of medical services for patients, particularly those at risk of poor health outcomes; and improve coordination of care to ensure patients receive the right care in the right place at the right time'*.²³

National Disability Strategy

The *National Disability Strategy 2010–2020*²⁴, endorsed by the Council of Australian Governments in 2011, represents a unified approach by all state and local governments to work together with business and community toward the vision of an inclusive Australia. The national strategy outlines six priority areas for action: inclusive and accessible communities; rights protection, justice and legislation; economic security; personal and community support; learning and skills, and health and wellbeing. In response to this, the Queensland Government developed the *Queensland Disability Plan 2014–19: Enabling choices and opportunities*²⁵.

National Disability Insurance Scheme

Following a Productivity Commission recommendation in August 2011²⁶, the Commonwealth Government developed two insurance schemes—the National Disability Insurance Scheme (NDIS) and the National Injury Insurance Scheme (NIIS). The NDIS and NIIS are designed to provide long-term care and support for people with lifelong disabilities, which manifest before the age of 65, who are not covered by existing insurance arrangements.

Under a Heads of Agreement with the Commonwealth signed in May 2013, Queensland has committed to the introduction of the NDIS from 1 July 2016, with full implementation by 1 July 2019. In future, services which fall within the scope of the NDIS will be available to people through this scheme rather than through current funding models. Queensland Health has committed \$73.4M from 2016-17 to the State contribution of \$2.03B to the NDIS. Program areas identified as being potentially in scope for the NDIS include aids and equipment, community mental health, high cost

home support and services provided to long stay younger people with disability in public health facilities.

Transition arrangements for specific in-scope Queensland Health services and programs are yet to be determined and will depend upon the design and approach to the roll out of the scheme.

The NDIS covers people with disabilities that are non-traumatic in origin whilst the parallel NIS covers catastrophic trauma-related injuries caused by four types of accidents: motor vehicle accidents; workplace accidents; medical accidents, and general accidents (occurring in the home or community). Work continues on the development of the NIS with a date for its introduction in Queensland yet to be decided.

Queensland Policy

The *Health of Queenslanders 2014* report²⁷ highlights the requirement for health promotion and ill health prevention, underpinned by community health literacy to enable promotion of messages related to disease and injury prevention and the management of chronic conditions. Effective preventive health is likely to require a shared responsibility for policy implementation between government, business, community groups and individuals, whilst encouraging personal responsibility for healthy lifestyle choices.

As well as striving for Queenslanders to be as healthy as possible for as long as possible, Queensland Health has a responsibility to provide public health services with as much equity of access as can be effectively and efficiently achieved. This requires ongoing attention to rural and remote health service provision. In addition, public health services need to support innovation and research to enable continual service improvement and the system should be underpinned by a strong governance framework to measure success, identify challenges and ensure accountability and responsibility where it is required.

Queensland Disability Plan 2014–19: Enabling choices and opportunities

In late 2013, the Queensland Government launched the *Queensland Disability Plan 2014–19: Enabling choices and opportunities* (QDP)²⁵ which set the policy direction for government agency disability services plans until 2019. The QDP has two key aims:

- to prepare Queensland for the NDIS, and
- to promote the rights of people with a disability to enable them to lead valued and fulfilling lives.

Metro South Health Service Policy

The *Metro South Health Strategic Plan 2012-2016*²⁸, revised in 2014, states the purpose of Metro South Health is to '*deliver high quality health care through the most efficient and innovative use of available resources, using planning and evidence-based strategies*'. The Strategic Plan is supported by a number of health service plans to provide key direction for clinical service streams. Of specific relevance is the *Aged*

*Care and Rehabilitation Services Health Service Plan*²⁹ which identifies twelve service directions to drive service enhancements for aged care and rehabilitation services.

The Plan has been developed in response to one of these identified service directions which states:

Metro South Health will advocate to the Department of Health for a review of statewide rehabilitation services (i.e. QSCIS) to assess need for additional statewide services in other Queensland locations. In doing so a review should also assess demand and future demand for services at the Princess Alexandra Hospital location and the potential impact on bed numbers.

Aged Care and Rehabilitation Services Health Service Plan (page 11)

Practice themes

The following core practice themes common to most policy papers can be categorised into:

- **Patient centric approach**—provide a personal service, sensitive to the physical, psychosocial and emotional needs of the patient and their family.
- **Empower caregivers and/or family members**—by providing support, education, and involvement.
- **Maximise patient function**—provide focused care to enable SCI patients to reach their full potential, maximising functioning, independence, overall well-being and community integration.
- **Service coordination and communication**—provide effective coordination, communication and information sharing between specialist services, hospitals and community services as patients progress from immediate post-injury to life-long care.
- **Interdisciplinary team care**—provide a coordinated, interdisciplinary team of people from a range of different disciplines.
- **Consistent service delivery**—follow a consistent model of care independent of location of SCI patients.
- **Early peer support**—provide peer-counselling and peer support services for patients with a newly acquired injury.
- **Collect and analyse data**—follow a consistent data capture process to inform and facilitate an evidence-based, responsive, cost-efficient system-wide service.
- **Disability policies and conventions**—develop systems and supports to maximise participation in society for all people with a disability.

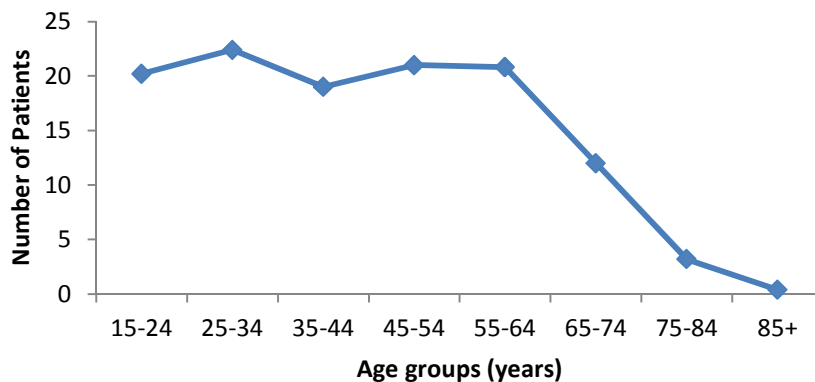
Appendix 3 Service Activity

Current patterns of service use

According to the latest available information from the Australian Spinal Cord Injury Register, the annual average incidence of SCI from traumatic causes in Queensland in the financial years 2005–06 to 2007–08, was 15.2 cases per million people, similar to the national average (15.0 cases per million people).³ In Queensland in 2014 there were approximately 90 new cases of SCI from traumatic and non-traumatic causes combined.

The SIU (acute and subacute inpatient facility) recorded an annual average of 118 admitted patients between 2008–09 and 2012–13 inclusive, comprising both new and established SCI patients. The majority of patients resided in South East Queensland, (66 per cent), with a further 12 per cent residing in North Queensland. Most patients were in the 25–34 year age group, with an annual average of 22.4 patients. As presented in Figure 3 patients were relatively equally spread across the 15–64 ten year age groups and then fell with increasing age.

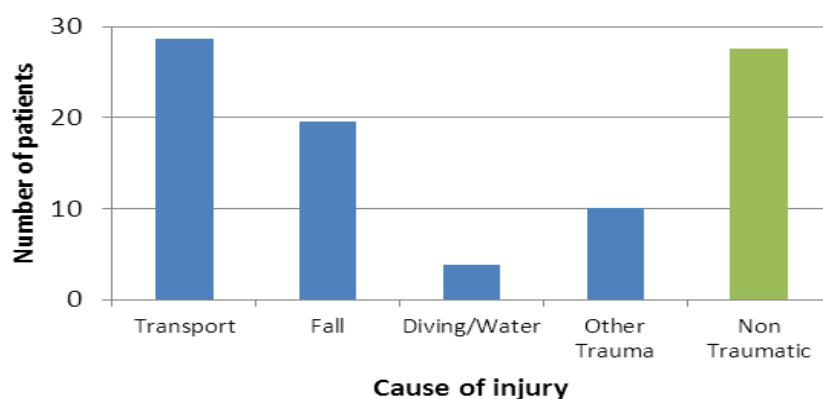
Figure 3 Annual average counts of SCI patients by age group, Queensland SIU 2008–09 to 2012–13



Source: Queensland Hospital Admitted Patient Data Collection, extracted May 2014

Patients admitted to the SIU received injuries that were predominantly traumatic in origin, with only 24 per cent being due to non-traumatic SCI similar to the national figure for non-traumatic causes (Figure 4).³

Figure 4 Cause of injury for adult SCI separations from Queensland SIU, on average per year 2008–09 to 2012–13



Source: Queensland Hospital Admitted Patient Data Collection, extracted May 2014

Inpatient rehabilitation

The SIU provides intensive, specialised rehabilitation to those patients with a newly acquired SCI following discharge from the acute service, as well as to established SCI patients requiring specialised rehabilitative care. People with an SCI may also receive time limited inpatient general rehabilitation in hospitals across Queensland with a focus on maximising function.

Analysis of rehabilitation activity in Queensland has been undertaken by evaluating bed days classified under the Australian National Sub and Non-Acute Patient (AN-SNAP) Classification System³⁰ which enables patient episodes to be coded based on care type. ‘Spinal Cord Dysfunction’ is the AN-SNAP code for episodes of care for people with a SCI where it is the primary reason for the current episode of rehabilitation care. A patient with established SCI who is admitted for medical care for a condition unrelated to SCI and where specialised SCI care is not indicated, such as a chest infection, would not be coded under the ‘Spinal Cord Dysfunction’ AN-SNAP code. This distinction allows the exclusion of activity which does not require specialised SCI rehabilitation, thereby enabling a more accurate calculation of specialised service activity and infrastructure requirements.

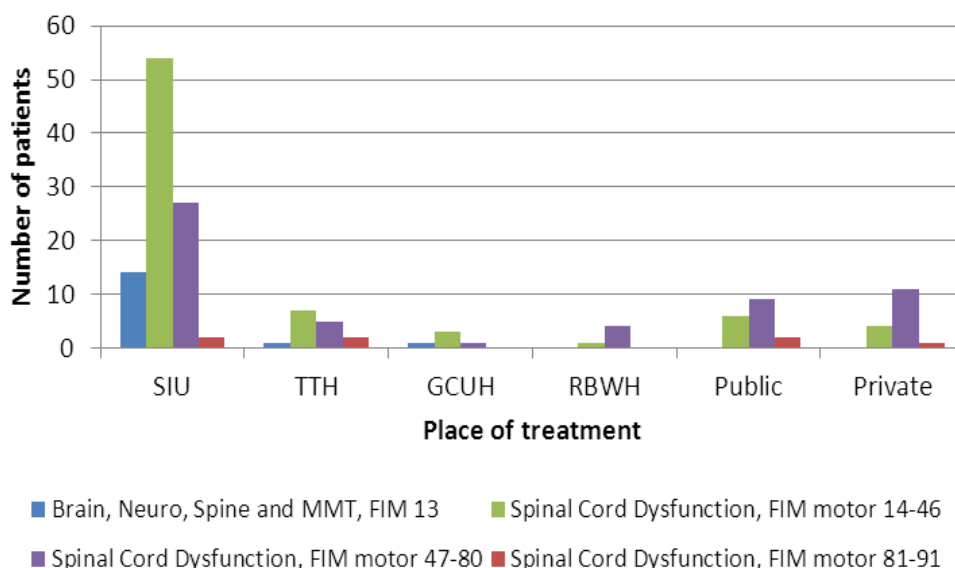
The addition of the Functional Independence Measure (FIM) scale to the AN-SNAP code enables further categorisation, as by assessing physical and cognitive disability an evaluation may be made of the probable burden of care. The higher the FIM score the greater the level of independence and the less the burden of care.

The SIU treated an average of 97 patients annually for the period 2008–09 to 2012–13 inclusive, classified under the AN-SNAP rehabilitation code of ‘Spinal Cord Dysfunction’ or ‘Brain, Neuro, Spine and MMT FIM 13’—a classification for major multiple trauma resulting in brain and/or SCI.

Figure 5 shows total rehabilitation episodes of care across Queensland for the period 2008–09 to 2012–13 inclusive by place of treatment for the same AN-SNAP codes grouped by FIM score. The data demonstrates that the majority of those patients with the highest level of dependency are being treated within the SIU with smaller amounts of activity outside the specialised service. Further analysis would be necessary to establish the reason for care provision outside the SIU, but may include justifications

such as newly injured patient awaiting transfer, accessing care as a readmission, a non-traumatic SCI rather than traumatic, advanced age of the patient or poor functional capacity.

Figure 5 Queensland adult rehabilitation episodes by AN-SNAP code and place of treatment, five year patient average (2008–9 to 2012–13)



Source: Queensland Hospital Admitted Patient Data Collection, extracted May 2014

- SIU Spinal Injuries Unit
- TTH The Townsville Hospital
- GCUH Gold Coast University Hospital
- RBWH Royal Brisbane and Women’s Hospital
- Public Other Queensland Public Hospitals
- Private Queensland Private Hospitals

Transition service

Activity data from the transitional rehabilitation program indicates an average of 62 patients accessed services annually during the five year period 2008–09 to 2012–13. Data is not available to indicate place of residence of these patients so no further analysis can be completed to determine if patients who normally reside outside the south east corner accessed these services or if, as anecdotal evidence suggests, these patients return home without accessing this further level of support.

Outpatient ongoing management and support

The SIU provides a number of specialist outpatient clinics which may include an examination, consultation or other service for SCI patients requiring urology, plastics, spasticity, upper limb or general spinal injury services. In the calendar years from 2008 to 2012 the SIU provided an average of 193 new and 974 review outpatient occasions of service (OOS) annually. Of these, general SCI clinics provided almost half the new OOS (48 per cent) and more than three quarters (78 per cent) of the review OOS.

SPOT has more than 2,050 registered SCI patients who have been referred to the service for care. The majority of these patients (60 per cent) reside in South East Queensland. SPOT provided an average 7,223 OOS to 518 individuals annually during

the period 2008–09 to 2012–13. The primary issues SPOT encountered were related to equipment, skin care and posture and seating.

In the same five year period, on average, 122 patients were seen annually in the course of 13 regional visits conducted by SPOT. These regional visits serve a dual purpose; to provide clinical care to the patient, their family and carers and to provide a learning opportunity for health professionals associated with the care of the patient. Further education opportunities are provided by SPOT in the form of education seminars; in the 2012–13 financial year alone, 387 health professionals and service providers accessed education seminars or in-service programs delivered by SPOT.

Future demand for adult spinal cord injury services

Acute inpatient projections

Although the incidence of SCI in Queensland is fairly stable, the demand for readmission to acute beds is changing as the prevalent SCI population ages and the manner in which care is provided evolves.

The planning tool endorsed by the DoH for inpatient activity projections is the Acute Inpatient Modelling (AIM) tool which projects expected demand by service grouping, building in various measures likely to affect activity levels in the future. However, the lowest clinical category used in AIM is the Enhanced Service Related Group (ESRG). Patients with a SCI are embedded within an ESRG level and may not be separately extracted. It is therefore not possible to use the AIM tool for projecting SCI activity.

An alternative method to project the future demand of SCI services was developed based on the identification of an admitted patient journey using data from the Queensland Hospital Admitted Patient Data Collection (QHAPDC). This approach constructs the projection based on acute inpatient episodes within the SIU, of the QSCIS. All subacute care has been excluded from this analysis.

Inpatient data from QHAPDC was identified for the period 2008–09 to 2012–13. Episodes were selected where the inpatient activity was categorised as acute (excluding sub and non-acute episodes of care) and the patient journey included admission to the SIU at the PAH. Both newly injured and readmitted patients were included. The results of this analysis are presented in Table 4.

Table 4 Acute inpatient activity, patient number and bed days, treated at the Spinal Injury Unit, 2008–09 to 2012–13

	2008–09	2009–10	2010–11	2011–12	2012–13	5 year average
Patient number	103	101	122	108	111	109
Beddays	3,900	5,157	4,912	4,761	5,040	4,754

Source: Queensland Hospitals Admitted Patient Data Collection

To calculate the estimated number of beds required to meet future demand, the algorithm detailed in the health service planning guidelines for rehabilitation services, was used to convert projected activity (in bed days) into required bed numbers.³¹

Required beds = annual bed days ÷ annual days of operation ÷ target occupancy

where:

annual bed days = overnight bed days (actual and projected)

annual days of operation = assumed to be 365 days

target occupancy = 0.90 (i.e. 90%)

Bed days are the chosen measure of activity, opposed to separations, as they provide a more accurate representation of service and capacity requirements due to long lengths of stay. To provide consistency in the development of projections this algorithm was considered appropriate when projecting required bed numbers for acute activity as well as subacute activity within the SIU. The results are given in Table 5.

Table 5 Projected acute SIU beds

1.	2. average beddays per year 2008–09 to 2012–13 (actual)	3. 2016 (projected)	4. 2021 (projected)	5. 2026 (projected)
Beddays	4,754	5,366	5,927	6,466
Estimated beds	10	17	19	20

Source: Queensland Hospitals Admitted Patient Data Collection

An estimated total of 20 acute SIU beds will therefore be required by 2026, for both newly injured and readmitted patients at the PAH, an increase of 10 beds over the current acute SIU bed base.

Important demand issues for acute beds identified by key stakeholders include the increasing proportion of readmissions due to an ageing population, changes in life expectancy of a SCI patient, secondary complications such as pressure injuries and an element of ‘bed block’, where the discharge of patients is delayed resulting in patients remaining in the acute unit awaiting transfer to subacute care i.e. rehabilitation.

There is current confidence that there is no unmet need within the acute service for people suffering a new traumatic injury as no patients are transferred out of the state and beds are utilised in a flexible manner within the SIU accommodating variations in patient numbers across a 12 month period.

Subacute inpatient projections

The majority of patients discharged from the acute service receive specialised subacute care within the SIU. Where care needs can be adequately met by non-specialised SCI services, patients may receive their rehabilitative care within general rehabilitation units, including in the private sector.

To project the future demand of subacute SCI services, a method was developed similar to that for acute beds based on the identification of an admitted patient journey using data from QHAPDC. The approach constructs the projection based on subacute bed days classified by the AN-SNAP rehabilitation code of ‘*brain, neurology, spinal and major multiple trauma, FIM 13*’ and ‘*spinal cord dysfunction*’. The results of this analysis are presented in Table 6.

Table 6 Subacute inpatient activity, patient number and bed days by AN-SNAP classification, treated at the Spinal Injury Unit, 2008–09 to 2012–13

6.	2008–09	2009–10	2010–11	2011–12	2012–13
Patient number	91	82	110	101	115
Beddays FIM 13^a	699	1,787	2,323	2,421	2,715
Beddays FIM 14-46^b	5,240	4,504	4,798	4,630	8,150
Beddays FIM 47-80^c	1,292	2,120	1,901	1,073	771
Beddays FIM 81-91^d	85	46	92	63	Nil
Total beddays	7,316	8,457	9,114	8,187	11,636

Source: Queensland Hospitals Admitted Patient Data Collection 2008–09 to 2012–13.

a. AN-SNAP classification—Brain, neurological, spinal and major multiple trauma, FIM 13

b. AN-SNAP classification—Spinal cord dysfunction, FIM motor 14-46

c. AN-SNAP classification—Spinal cord dysfunction, FIM motor 47-80

d. AN-SNAP classification—Spinal cord dysfunction, FIM motor 81-91

The health service planning guideline for rehabilitation services³¹ was used to convert projected activity (in bed days) into required bed numbers (see algorithm as detailed in Section 10.1). The results are detailed in Table 7.

Table 7 Projected subacute SIU beds

	average beddays per year 2008–09 to 2012–13 (actual)	2016 (projected)	2021 (projected)	2026 (projected)
Beddays	8,942	9,319	9,806	10,391
Estimated beds	30	29	30	32

Source: Queensland Hospitals Admitted Patient Data Collection

On this basis, projected subacute beds for the specialised rehabilitation unit are for approximately two additional beds by 2026.

Recognition needs to be made that with the changing demand for readmission to acute beds the subacute service may on occasion have less bed availability due to the flexible use of beds within the SIU. This could potentially contribute to some unmet need at times of high acute care demand.

Appendix 4 Summary of needs and issues in the current provision of SCI services

The QSCIS, through a strategy for quality improvement, actively strives to provide the highest quality services to enable Queenslanders with spinal cord injuries to achieve their maximum potential in life. The *External Review of the PAH Spinal Injuries Unit, 2008* and *Queensland Spinal Cord Injuries Service Spinal Advancement Project 2012*⁶ identified a range of challenges and issues that remain today.

Current service delivery issues, identified during consultation and organised into key themes are outlined below.

Service needs and issues

Access and equity

- Inequitable provision of inpatient and outpatient specialised SCI services to Queenslanders living outside the south east corner of Queensland or who are aged 65 years or over
- Limited understanding of the admission criteria, referral pathways and transfer guidelines for SIU or SPOT in some HHS.
- Delayed admission to the SIU for a patient with a new SCI due to availability of beds, especially if the incoming patient requires isolation, specialised equipment or has a dual diagnosis.
- Bed availability can be reduced if discharge of existing patients is delayed due to lack of community supports or appropriate accommodation.
- There is no equity in access to Spinal Cord Injury Response funding for patients who are provided treatment for their SCI outside of the QSCIS.

Access and triage

- Fewer people with new isolated SCI are coming direct to PAH. Some patients with new SCI are being transferred from a Major Trauma Service later than clinically appropriate—and often after spinal surgery. These practices cause delays in commencement of rehabilitation which impacts upon patient outcomes⁹ and affect the maintenance of an adequate volume of spinal surgery required to sustain a viable specialised service and individual surgeon skills.

Access and specialist services

- Consultation suggests that an increase in the provision of outpatient services (i.e. interdisciplinary, psychological) may assist in facilitating early discharge, reintegration into the community and prevent readmissions.
- Limited dietician and weight management services are available in the public sector, which may be significant due to the increasing number of bariatric SCI patients.

- Limited access to vocational rehabilitation, education and training is available within the QSCIS despite the majority of individuals experiencing SCI being of working age (16 to 64 years).
- Current practice in the delivery of specialised support services, including changes to models of care, funding capacity and workforce availability has resulted in a lack of timely access to services such as seating services, rehabilitation engineering services and prosthetic and orthotic services.

Access and community services

- Limited capacity and capability of community based care agencies to provide services for SCI patients, exacerbated by funding limitations within disability and aged care services. Frequently, morbidity minimisation and preventative measures cannot be implemented to avert the need for hospitalisation.
- Limitations of the provision of TRP and SPOT due to competing demands and the increase in patient numbers and expectation.
- There is a paucity of services in the community for individuals who are ageing with a SCI or who experience a SCI when they are 65 years or older.
- There is minimal support and information from community or health services to assist in describing points of access or linkages to primary care services.

Networking and coordination

- HHS providing health services to SCI patients have a perception that the QSCIS provides limited, if any, advice to assist in the co-ordinated care of an individual patient.
- There are limited formal or informal networks to provide specialist consultancy services that act to improve delivery of services to the SCI patient.
- There is limited collaboration between higher and lower level services (as recommended in the Clinical Services Capability Framework v3.2³²) to support capacity building and patient care.
- Building of relationships with community services and non-government organisations is impacted due to reorganisation and staff retention, which makes sustaining connections a challenge.

Education and training

- No formal processes or linkages exist between the experienced staff at SIU and professionals in general rehabilitation services or regional and remote services to share and provide education, information, support and advice.
- There are limited opportunities or networks established for primary and community based care providers, including general practitioners, to increase their knowledge and understanding of SCI treatment and management.
- Continuing professional development needs to be an integrated part of specialist staff work, e.g. managing dual diagnosis or patients at the extremes of age, expertise in the treatment of bariatric patients and new research developments.
- Given the specialty area of SCI, attendance at conferences/seminars, which assists in ensuring a sound understanding of best practice, the most recent research and

- enables the establishment of professional networks, should be encouraged and supported.

Additional issues for service planning

Pressure injuries in people with SCI

Individuals with SCI have high rates of unplanned hospital readmissions, often for conditions that are potentially preventable, e.g. urinary tract infections, respiratory conditions and pressure ulcers. Once readmitted, they often require additional rehabilitation therapy to regain strength, endurance, and function lost while hospitalised. Rehospitalisation can be disruptive, undermine rehabilitation gains, diminish an individual's ability to live actively and independently, create emotional stress on the patient and family and increase health care costs.^{33, 34}

Research has identified that, while initial inpatient rehabilitation certainly must emphasise education in order to minimise the occurrence of preventable secondary health complications such as pressure injuries, it is also essential to identify at risk individuals and provide targeted follow-up. The prevention of pressure injuries warrants special attention to enable the identification of personal characteristics and potential risk factors of these recidivists. Analysis of data over the five year period from 2008-09 to 2012-13 indicated that on average the SIU, via the Skin Management and Rehabilitation Team (SMART), treated 10 patients annually (eight per cent of all admitted patients) due to complications relating to a pressure injury with an average of 109.2 bed days per patient in acute and 38.0 bed days per patient in rehabilitation care.³⁵

A strong correlation has been demonstrated between skin problems and poorer adjustment such as the presence of self-destructive behaviours i.e. smoking ,alcohol abuse and risk taking.³⁶ Suggestions have also been made that the presence of a pressure injury may relate to poorer coping skills, diminished social support and being more vulnerable to depression, consequently failing to exercise due diligence in self-care and nutrition.³⁷

The specialised SMART team within the QSCIS provides targeted care for the treatment of pressure injuries but is vastly oversubscribed and presently has a waiting list which can result in a delay of access to the service of up to 18 months.

The QSCIS is not the only service to experience difficulty in providing timely care for people suffering a pressure injury. In 2014 the New South Wales Agency for Clinical Innovation published the *Model of Care for Prevention and Integrated Management of Pressure Injuries in People with Spinal Cord Injury and Spina Bifida* with six recommendations to achieve a consistent approach to pressure injury prevention and management in the individual:

- provide support systems to enable people with SCI, carers and clinicians access to information, expertise and tools to support prevention and appropriate management of pressure injuries
- provide timely access to care and equipment
- develop systems and processes that facilitate integrated care with effective communication across all sectors

- develop systems and processes that facilitate self-management and enhance psychosocial support
- develop multilayered educational strategies for pressure injury prevention and management, and
- integrate clinical information and data management systems for care coordination, monitoring and outcome evaluation.³⁸

These recommendations are recognised as desirable directions to embed in the service. The SMART service recognises that development of networks with local health care providers is key in enabling advocacy of prevention and early intervention initiatives supported through a system of routine follow-up by specialised spinal outpatient and outreach services.

In addition, there may be opportunities to improve efficiency and resource utilisation in the future through novel initiatives such as developing shared care arrangements with local general practitioners, particularly in the early identification and management of pressure injuries and with general hospital services for early management of pressure injury.³⁹

Older persons and ageing with a SCI

Ageing is another step along the continuum of life with SCI, equal in importance to initial rehabilitation, returning to work, developing relationships and engaging in other life activities. Anecdotally, the age of people acquiring SCI is increasing and people with SCI are living longer and therefore ageing with a SCI. Older persons with SCI are not excluded from specialist care at the QSCIS. However, additional consideration needs to be taken when providing treatment, rehabilitation and on-going management of their needs, including the ability to remain independent and control determinants of life satisfaction (unique to each individual).

The literature states there needs to be a proactive approach to identify and implement strategies which effectively manage ageing with SCI. Strategies may include:

- systematic surveillance by an experienced interdisciplinary SCI team to identify potential problems early
- ongoing education for health care providers, about the physical, psychological, social and environmental consequences of ageing on people with SCI e.g. musculoskeletal changes, and
- understanding the changes in the immediate environment which may include alterations in family and support structures, ageing caregivers and potential depletion of economic resources.⁴⁰

Ventilation dependence

Successful acute management of SCI results in a greater number of people surviving despite severe injury. A number of these people, though small, will require ventilation support—Ventilator Dependent Tetraplegia (VDT). The human and financial costs of this dependence are substantial. People with VDT have a longer length of hospital stay, due in part to complexity of care needs and difficulties in obtaining suitable accommodation to enable discharge once medically stable.⁴¹ Following discharge,

patients require an extensive care package that provides long term medical, nursing and physiotherapy support.⁴²

Comprehensive discharge planning is essential and five key elements are recommended to assist in achieving sustainable, safe and effective care in the community:

- assessment of the environment; is the place of residence appropriate for the needs of the patient
- assessment of resources; equipment needs met
- assessment of caregivers; carers sufficiently experienced in the care of a ventilator dependent patient, mix of carers (nursing, nurse assistants, family and friends)
- education and training; available to increase capability of caregivers and improve knowledge of health professionals, and
- development of a care plan in collaboration with specialised and community services, the patient and their family and friends.⁴³

Consideration should be given to building capability within the local hospital if patients are discharged outside of the specialised SCI service catchment.

Dual diagnosis

Patients with a dual diagnosis of traumatic brain injury (TBI) and SCI present a challenge to the rehabilitation professional. The cognitive impairments related to the diagnosis of TBI can prevent smooth progress through a conventional SCI rehabilitation programme and severely impact goal attainment, functional outcome and discharge back into the community. In the months and years to come, health maintenance may also be profoundly affected.⁴⁴

Challenges in the treatment of a patient with a dual diagnosis begin immediately as the diagnosis of TBI, especially mild TBI, can cause difficulties in the initial emergency/trauma phase of care for a patient with a suspected SCI. Achieving a complete diagnosis is hindered by the fact that SCI and associated paralysis may prevent the completion of a cognitive test requiring motor performance and in the reverse cognitive defects could impede the ability of the patient to follow instructions affecting the evaluation of motor performance.

In the treatment of a patient with a dual diagnosis, it is essential that the cognitive behavioural deficits of a patient are assessed and the staff and caregivers are educated about the results. Lack of assessment and education may lead to misinterpretation of symptoms by staff resulting in the perception of the patient as noncompliant, having an inability to learn, demonstrating maladaptive reactions to SCI and poor motivation.^{44, 45}

Identification of the cognitive and behavioural sequelae in concurrent TBI and SCI combined with modifications to the traditional rehabilitation process will allow for a more successful long-term outcome. Modifications may include:

- shorter but more frequent therapy sessions with scheduled rest breaks
- therapy activities which are basic, functional and meaningful to the patient including basic activities of daily living and familiar simple leisure interests

- communication being provided in a calm manner using short one-step commands allowing time for processing, and
- distractions kept to a minimum to reduce external stimuli which could cause outbursts or agitation.⁴⁴

Bariatric patients

There has been an increase in the prevalence of obesity in Queensland with about 1.1 million Queensland adults designated as obese (based on the Body Mass Index (BMI)) in 2011–12.²⁷ As obesity becomes more prevalent in the general population, rehabilitation facilities are likely to admit a higher number of patients with a new SCI and comorbid obesity.

Research suggests people with acute SCI who are obese have lower FIM score gains and more medical complications during acute rehabilitation. It is also recognised that obesity in combination with acute SCI poses challenges in care provision and necessitates selection of appropriate equipment to maintain the safety of both patient and staff during inpatient rehabilitation.⁴⁶

Obesity is also common after SCI. Strategies that may be used in the management of obesity include:

- interventions designed to modify the proportions or reduce fat in the diet
- addressing exercise and physical activity (essential due to known low levels of physical activity for people with SCI and for the associated improvement in mood and reduction in depressive symptoms and anxiety)
- harnessing support of family, friends and carers in promoting and supporting participation in exercise/sport activities, and
- individualised physical activity programs based on injury level and completeness, individual preferences, fitness level and options available.^{47, 48}

Culturally appropriate SCI services

Strategies to address diversity of the population are important in the development of services for individuals experiencing a SCI. It can be difficult, due to language and communication barriers, to ensure Aboriginal and Torres Strait Islander peoples and persons from culturally and linguistically diverse backgrounds have the appropriate intervention and access to SCI services appropriate to their needs.

People living outside of metropolitan areas have further issues that need to be addressed including isolation and access to appropriate interpreters/carers.

Strategies to address identified needs could include:

- improved access to interpreters and Indigenous Hospital Liaison Officers who can work collaboratively with the SCI service to facilitate delivery of appropriate services and support discharge into the community
- development of culturally appropriate variations to SCI services across the continuum such as educational materials in different languages or pictorial based and establishing partnerships with culturally specific organisations to facilitate service provision

- consideration of mechanisms for providing follow up care which can be challenging due to distances and difficulty with communication, and
- training to promote awareness to cultural specific needs in the workforce delivering care.

Abbreviations

AIM	Acute Inpatient Modelling
AN–SNAP	Australian National Sub-Acute Patient Classification
CSCF	Clinical Services Capability Framework for Public and Licensed Private Health Facilities
DoH	Department of Health
ESRG	Enhanced Service Related Group
FIM	Functional Independence Measure
HHS	Hospital and Health Services
NDIS	National Disability Insurance Scheme
NIIS	National Injury Insurance Scheme
NQSS	North Queensland Spinal Service
OOS	Occasions of service
PAH	Princess Alexandra Hospital
QHAPDC	Queensland Hospital Admitted Patient Data Collection
QSCIS	Queensland Spinal Cord Injuries Service
SCI	Spinal Cord Injury
SIU	Spinal Injuries Unit
SMART	Skin Management and Rehabilitation Team
SPB	System Planning Branch
SPOT	Spinal Outreach Team
SRbCN	Statewide Rehabilitation Clinical Network
TBI	Traumatic Brain Injury
TRP	Transitional Rehabilitation Program
TTH	The Townsville Hospital
VDT	Ventilator Dependent Tetraplegia

Glossary

Activity Based Funding	Activity Based Funding (ABF) purchases activity from hospitals by funding them for the expected number and mix of patients they treat based on historical trends in activity. If a hospital treats more patients, it receives more funding. Because some patients are more complicated to treat than others, ABF also takes this in to account. ⁴⁹
Australian National Sub-Acute and Non-Acute Patient Classification (AN-SNAP)	A casemix classification for subacute and non-acute care provided in a variety of treatment settings. Version 3, introduced in January 2012, is used in this report. ³⁰
Body mass index	A surrogate measure of body fat, estimated by dividing an individual's weight by his or her height. ⁴⁸
FIM score	Assesses physical and cognitive disability by combining scores from 18 individual items, of which 13 are physical domains and 5 are cognitive. Each item is scored from 1 to 7 based on level of independence, where 1 represents total dependence and 7 indicates complete independence. ³⁰
Incidence of SCI	A direct measure of SCI risk, generally reported as several new SCI cases per million population per year. Incidence data reflects how many people have become spinal cord injured in a given population over a specified period of time. ¹
In-reach	A range of services provided to non-specialist physicians, hospitals or wards upon referral or notification by health professionals linked to a specialist service. Services may include client specific care planning, education, joint clinical reviews and consultations or telephone advice. ⁴¹
Interdisciplinary care	Integrates separate discipline approaches into a single consultation. That is, the patient assessment, diagnosis, intervention planning and development of short- and long-term management goals are conducted by the team, together with the patient, at the same time. The patient is intimately involved in any discussions regarding their condition or prognosis and the plans about their care. ⁵⁰
Non-traumatic spinal cord injury	Any damage to the spinal cord from a non-traumatic cause, e.g. congenital/genetic malformations such as spina bifida or acquired damage caused by infection, loss of blood supply (infarction), compression by a cancer or tumour, or by slow degeneration of the vertebrae because of osteoarthritis. ⁵¹
Occasion of Service	Any examination, consultation, treatment or other service provided to a non-admitted patient in a functional unit of a health service facility.
Paraplegia	Impairment or loss of motor and/or sensory function in the thoracic, lumbar or sacral (but not cervical) segments of the spinal cord, due to damage of neural elements within the spinal canal. ³
Prevalence	Number of people in the population living with SCI at a given point in time. Prevalence can be used as an

	indicator of the effectiveness of secondary prevention and the need for health care and support and is measured as number per million population. ¹
Sequelae	Consequences of disease or injury. ¹
Telehealth	The delivery of health-related services and information via telecommunication technology. Telehealth is the umbrella term used to describe clinical encounters between patients and healthcare providers at distant locations and may be used for preventative, diagnostic, educational, and/or therapeutic intervention. ⁵²
Tetraplegia	Impairment or loss of motor and/or sensory function in the cervical segments of the spinal cord due to damage of neural elements within the spinal canal. ³
Traumatic brain injury	Damage to living brain tissue caused by an external, mechanical force. It is usually characterised by a period of altered consciousness (amnesia or coma) that can be very brief (minutes) or very long (months/indefinitely). The specific disabling condition(s) may be orthopaedic, visual, aural, neurologic, perceptive/cognitive, or mental/emotional in nature. ⁵³

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