

# NSW Rehabilitation Model of Care

## *NSW Health Rehabilitation Redesign Project*

Final Report – Model of Care

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**PLEASE NOTE: This Model of Care has been superseded by the Principles to support rehabilitation care (2019).  
Please refer to the new document [https://aci.health.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0014/500900/rehabilitation-principles.pdf](https://aci.health.nsw.gov.au/__data/assets/pdf_file/0014/500900/rehabilitation-principles.pdf)**

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# Executive summary

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## Executive summary

This report is the culmination of the NSW Rehabilitation Redesign project. The report presents the NSW Rehabilitation Model of Care and outlines recommendations for next steps.

### The imperative for rehabilitation redesign

Rehabilitation services are fundamental in enhancing patients' functional independence and play an integral role in patient flow across the health care continuum. The provision of effective rehabilitation services requires a diverse range of health professionals, services and external agencies to work together and overcome system challenges such as separate funding, administration and reporting structures.

The setting in which rehabilitation takes place is principally defined by the patient's changing needs over time and the availability of rehabilitation services in particular areas. It is worth acknowledging that a rehabilitation patient journey is not a linear process and pathways are individually determined based on functional impairment, medical acuity and prognosis and access to rehabilitation services. Rehabilitation clients require different levels of care at different points in their rehabilitation journey. Patient flow considerations include those from the acute care setting to the sub-acute care setting and patient flow from the sub-acute care setting into an ambulatory care setting and ultimately the patient's return to the community and home (where possible).

The future of rehabilitation care must be considered within the context of the overarching health system and its future evolution. The changing nature of the health system together with the ageing population provides an ideal opportunity to develop a consistent model of care for rehabilitation services. Imminent systemic changes such as Local Health Networks (LHNs), activity based funding (ABF) and ehealth initiatives will be supported by the implementation of a consistent model of care. Such a model will move NSW toward transparency and meeting or exceeding national benchmarks in relation to nationally consistent classification, counting and costing.

Rehabilitation services have the opportunity to reshape service delivery, patient outcomes, efficiencies and collaboration with health care providers across the health system through the implementation of a NSW Rehabilitation Model of Care founded on good practice principles and innovation.

### Rehabilitation Redesign Project

The Rehabilitation Redesign project ran from September to December 2010. The project reviewed existing adult rehabilitation services in NSW to inform the development of a consistent model of care for application across metropolitan, regional and rural areas of NSW.

The focus of the project was adult rehabilitation services and the primary rehabilitation impairments considered were stroke, orthopaedic, re-conditioning impairment and high impact areas (such as amputees). Specialty rehabilitation units including brain, spinal and burns along with paediatric rehabilitation services were deemed out of scope for this project,

however consideration has been given to the requirements to support the post traumatic/longer term care of these population groups when treated in general regional or rural rehabilitation services.

The project team worked closely with NSW Health and experts from the rehabilitation and aged care sector through the NSW Rehabilitation Redesign Working Group. The Rehabilitation Redesign Working Group included representation from rehabilitation and aged care sectors, the Agency of Clinical Innovation and included Rehabilitation Physicians, Geriatricians, Directors of Allied Health and Rehabilitation Nursing. The Rehabilitation Redesign Working Group provided guidance on the nature and needs of rehabilitation services and the design of the NSW Rehabilitation Model of Care.

The Rehabilitation Redesign project was structured into four key phases:

- **Phase 1: Project initiation** – project mobilisation, agreement of the project plan and communications plan and confirmation of site visit locations and stakeholders.
- **Phase 2: Assess phase** – operational review of ten sites, a literature scan, interstate and international comparisons and stakeholder workshops
- **Phase 3: Design phase** – Solutions Design workshop where the key components of the model of care were discussed and drafted and a wider consultation phase that tested the model with key stakeholders
- **Phase 4: Reporting** – refinement of the model of care and preparation of the final report.

## NSW Rehabilitation Model of Care

A 'model of care' is a multifaceted concept, which broadly defines the way in which health care is delivered including the values and principles; the roles and structures; and the care management and referral processes. Where possible the elements of a model of care should be based on best practice evidence and defined standards and provide structure for the delivery of health services and a framework for subsequent evaluation of care.

The model of care has a facilitating role between the strategic direction for the health system and the delivery of care at local rehabilitation services. The NSW Rehabilitation Model of Care presented in this report provides guidance towards achieving equity of access, appropriateness of care and consistency of service quality – from the variable starting points of current care delivery across NSW. The model of care is not prescriptive in terms of work practices and instead allows local services the flexibility to design practices that suite their needs, leaving room for innovation in service delivery.

The information gained through the activities undertaken in the course of the project culminated in three streams of evidence regarding:

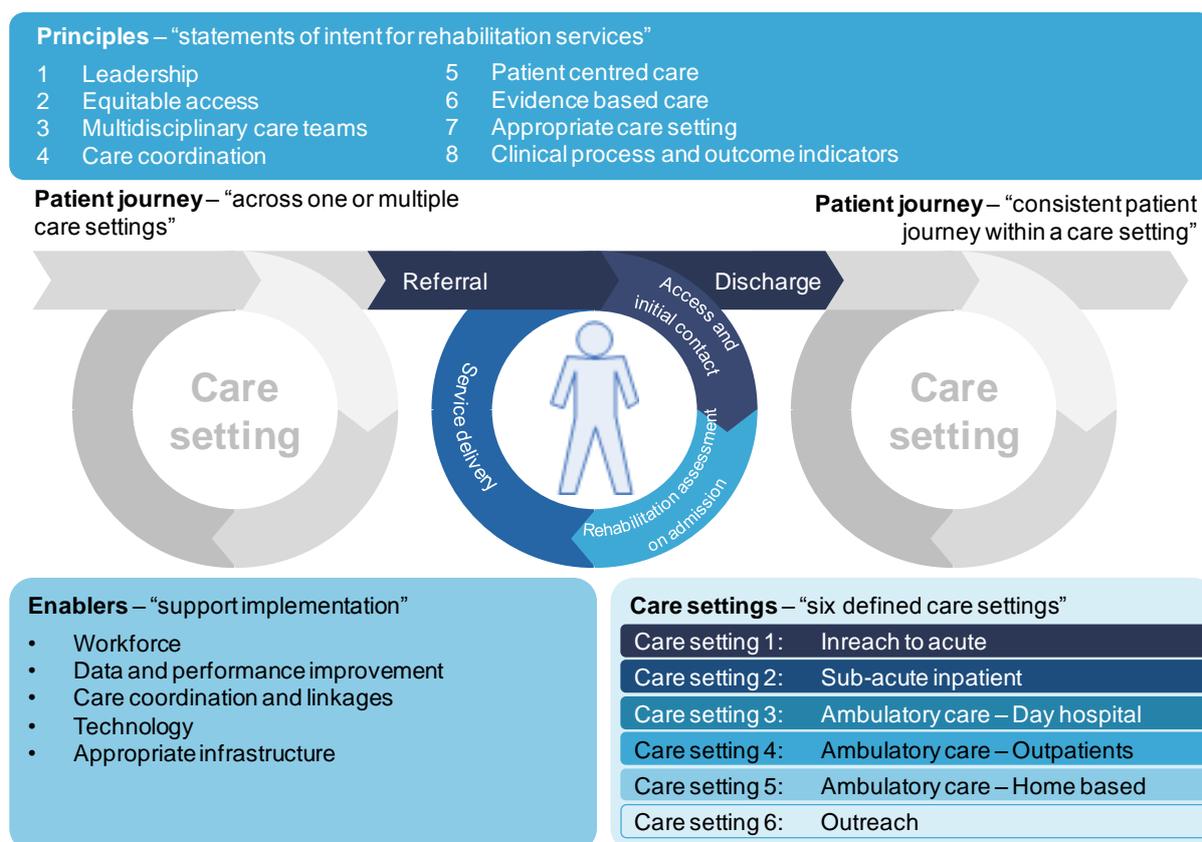
- current practice in NSW (through operational site visit reviews and consultation)
- international and interstate practices (through consultation and literature scan)
- rehabilitation service activity (through data analysis as provided by NSW Health).

The collective streams of evidence informed the development of the NSW Rehabilitation Model of Care (Figure 1). The model of care consists of:

- definition of rehabilitation;
- guiding principles;
- elements of a patient journey;
- six defined care settings; and
- enablers of rehabilitation services.

The complete model of care and descriptions of the components of this model are presented in the Section entitled *NSW Rehabilitation Model of Care* of this report.

**Figure 1: NSW Rehabilitation Model of Care**



The NSW Rehabilitation Model of Care supports rehabilitation services to:

- work with acute services to promote patient independence and an enablement model of care;
- integrate aged care and rehabilitation services to maximise independence and minimise ongoing health care needs of the ageing population;
- integrate assessment and care coordination of patients to create a better flow of patients across the continuum and between settings;
- provide ambulatory care services to potentially avoid hospitalisation for some impairments, enable transfer of care at an earlier date from the sub-acute rehabilitation unit and facilitate an earlier discharge from hospital;

- provide ambulatory care services enabling a structured program and the continuation of care following a stay in the acute or sub-acute setting;
- establish hub and spoke models and work collaboratively with rural neighbouring hospitals to provide rehabilitation services facilitating ongoing goal attainment;
- utilise care coordinators or case managers to support the patient journey across the continuum and involve primary care and community services at an earlier stage of this journey; and
- integrating research and educational and quality activities to improve efficiencies of introducing new evidence based care.

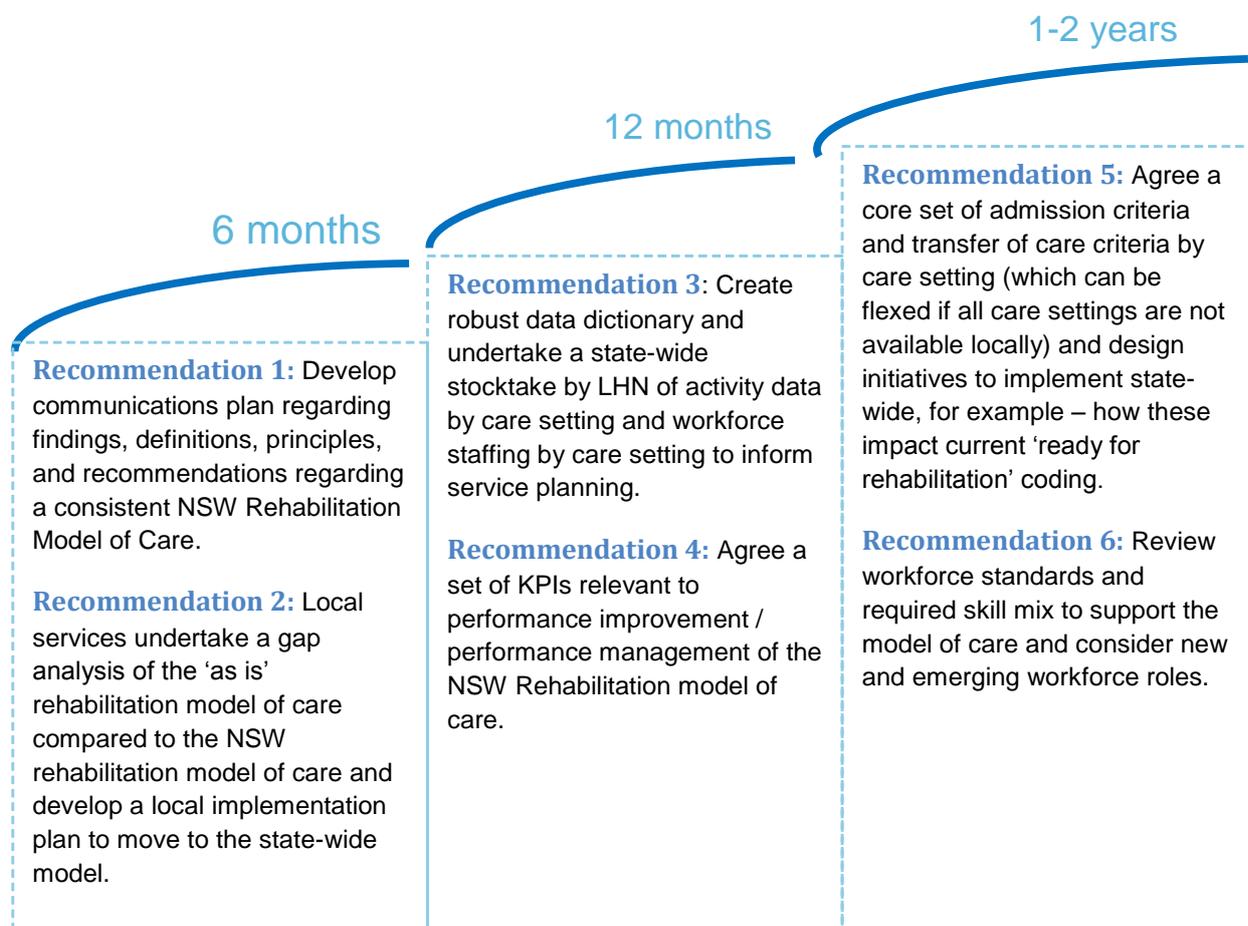
Relevant evidence and case studies to support the NSW Rehabilitation Model of Care have been provided in the body of this report.

## Recommendations for next steps

Six recommendations have been provided for consideration in progressing towards the implementation of the NSW Rehabilitation Model of Care (Figure 2). The purpose of the recommendations is to provide the context for discussion between NSW Health and the Rehabilitation Redesign Working Group on the steps required for implementation.

The recommendations are informed by: the body of evidence and key findings resulting from the project; guidance provided by the expert reference group and industry stakeholders; and the data analysis undertaken by NSW Health.

Figure 2: Recommendations for steps towards implementation of the NSW Rehabilitation Model of Care



It is important to note that the project gained considerable exposure across NSW with a high level of engagement from rehabilitation stakeholders through structured project activities and in response to project communications. This emphasised the interest of stakeholders in the future of rehabilitation care and the importance of considered communication of the NSW Rehabilitation Model of Care in the first stages of implementation.

## Overview of the report

This body of the report draws together the evidence and analysis resulting from the project and providing the support for the NSW Rehabilitation Model of Care and recommendations for next steps. The following table provides an overview of the structure of the report.

Heading	Description
<b>Rehabilitation practice in NSW</b>	This section of the report provides the background to the project and details the methodology. Data specific to NSW Health rehabilitation services are presented to provide context and describe the current landscape for rehabilitation services across NSW.
<b>Model of care for Rehabilitation Services in NSW</b>	This section of the report presents the NSW Rehabilitation Model of Care.

Heading	Description
Implementation next steps	This section of the report brings together the evidence and key findings to form recommendations for next steps towards implementation of the rehabilitation model of care.
Appendices	Appendix 1: Glossary Appendix 2: Linking key findings and the model of care Appendix 3: Survey/ consultation feedback Appendix 4: National comparisons Appendix 5: International comparisons Appendix 6: Literature scan Appendix 7: Acute care to rehabilitation scenarios

## Concluding comments

The NSW Rehabilitation Model of Care and recommendations provide the basis for embracing change and implementing consistent approaches for rehabilitation services across NSW. Successful implementation will be dependent on:

- considered implementation planning and continued focus;
- effective communication strategies to build on successful engagement during the project;
- progression of data collection, performance reporting and management;
- learning from and replicating good practice and innovations in service delivery; and
- defined strategic direction for rehabilitation services across LHN and NSW.

# Rehabilitation practice in NSW

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## Rehabilitation practice in NSW

This section of the report provides the background to the Rehabilitation Redesign Project and provides an overview of rehabilitation practices in NSW, interstate and internationally. Data specific to NSW Health rehabilitation services are presented to provide context and describe the current landscape for rehabilitation services across NSW.

### Project overview

The NSW Department of Health (NSW Health) engaged PricewaterhouseCoopers (PwC) to develop a consistent model of care for adult rehabilitation services in NSW. Running from September to December 2010, the Rehabilitation Redesign project was conducted using a redesign methodology. This employed a framework for improving clinical processes in collaboration with frontline staff to identify issues across the patient journey, consider design solutions and prioritise options for implementation.

A Rehabilitation Redesign Working Group was convened by NSW Health to connect with key experts within the Rehabilitation field and engage them in providing advice to the project team.

### Scope

The focus of this project was adult rehabilitation services provided by NSW Health. The primary rehabilitation impairments considered were stroke, orthopaedic, re-conditioning impairment and high impact areas (such as amputees).

Specialist rehabilitation services such as Spinal, Burns and Traumatic Brain Injury were not the focus of this project, however the requirements for post traumatic/longer term care of these population groups when treated in general regional or rural rehabilitation services were considered.

### Methodology

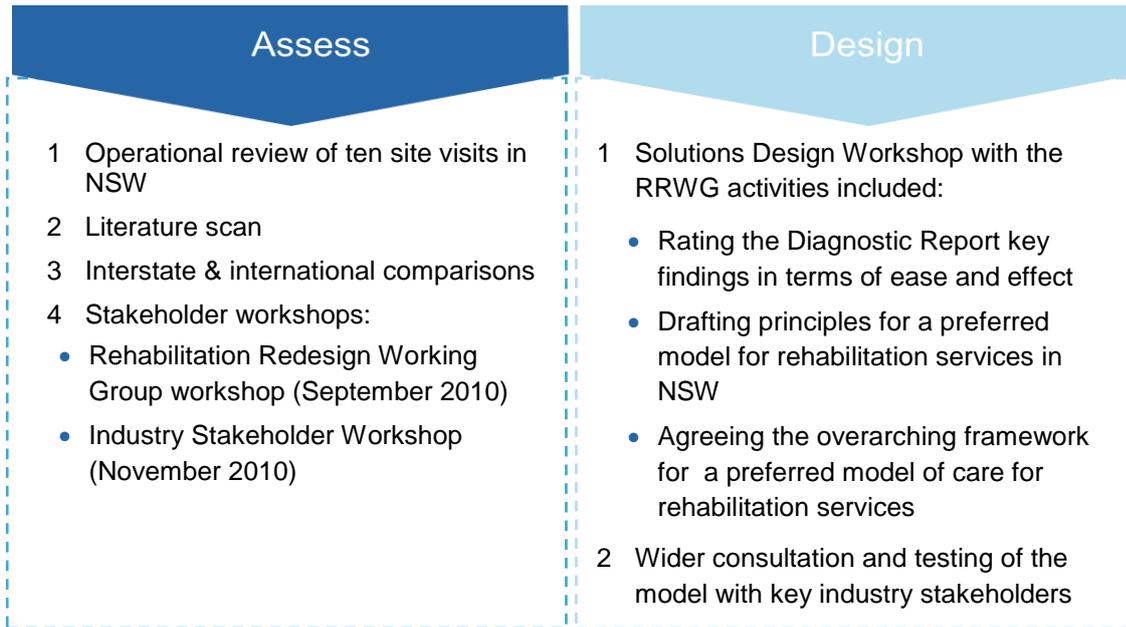
The Rehabilitation Redesign project methodology consisted of four phases and progressed as scheduled culminating in Reporting (see Figure 3).

Figure 3 Phases of the project



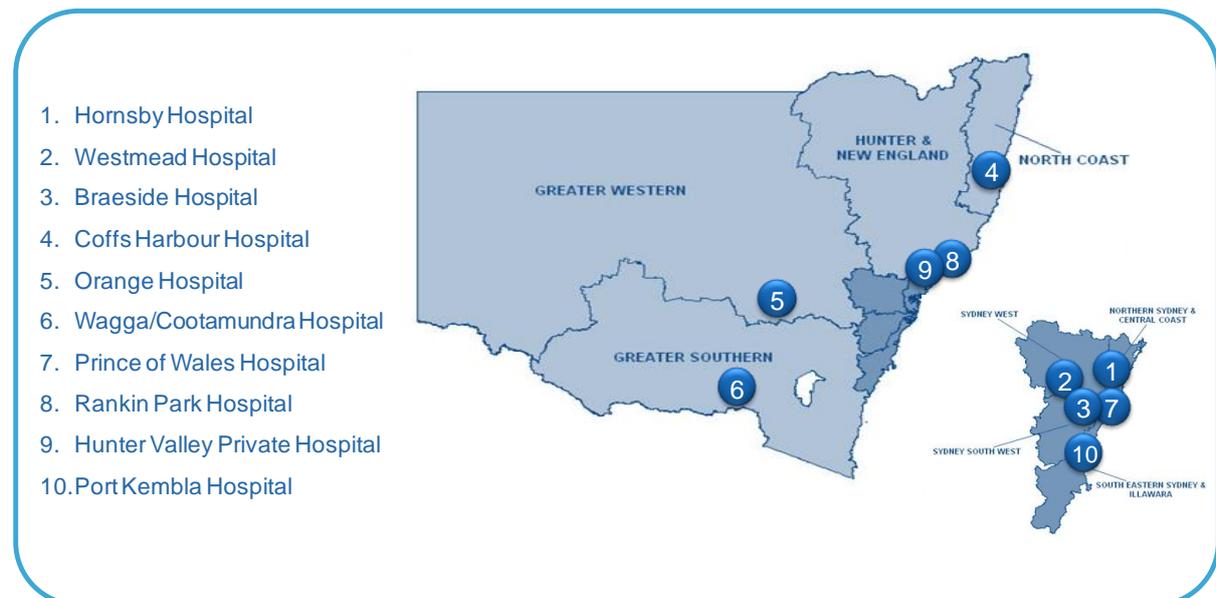
The key activities in the Assess and Design phases are listed in Figure 4 below.

Figure 4: Key project activities of the Assess and Design phases



During the ‘Assess’ phase of the project, in order to gain insights into current rehabilitation services in NSW, ten rehabilitation services were selected for participation in the project, in consultation with the Rehabilitation Redesign Working Group. The selected rehabilitation services represented a cross-section of services from metropolitan, regional and rural locations providing care in a range of settings including acute, sub-acute and ambulatory settings. The ten participating rehabilitation services are listed in Figure 5.

Figure 5: Rehabilitation sites in NSW visited during the project



In addition, NSW Health visited Royal Rehabilitation Centre Sydney, Mater at Crows Nest and Greenwich Hospital. The information gained through the activities undertaken through the Assess and Design phases culminated in three streams of evidence, which have

collectively informed the NSW Rehabilitation Model of Care and recommendations presented in this report.

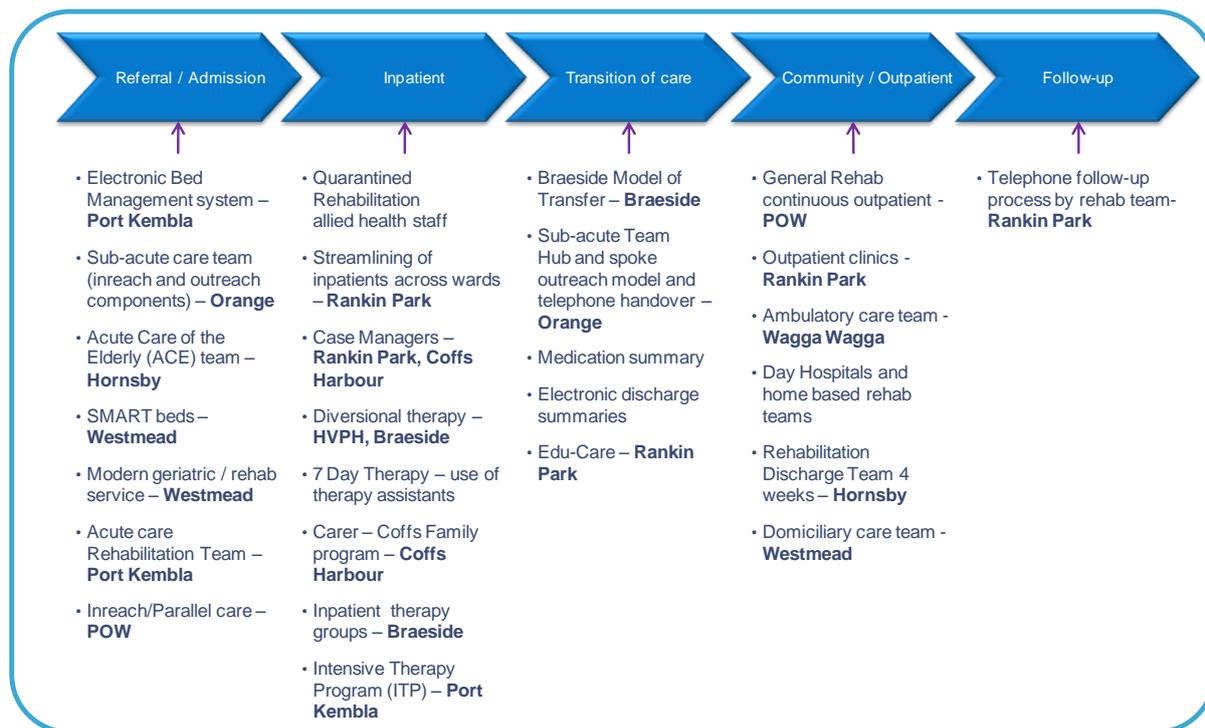
The three streams of evidence consisted of:

- 1 Evidence from current practice in NSW, collected through site visits and consultations
- 2 Evidence from the literature scan and consultation with international and interstate jurisdictions
- 3 Evidence from rehabilitation data collection and analysis as provided by NSW Health.

## Current practice: NSW

The ten sites visits and additional NSW Health visits, during the Assess phase of the project illustrated a range of good practices and innovations throughout the patient journey. Figure 6 below identifies these practices and innovations across the continuum of care. Further detail regarding current rehabilitation practice in NSW can be found in the Rehabilitation Redesign Diagnostic Report delivered to NSW Health in November 2010.

Figure 6: Good practice and innovations



In addition to the site visits a workshop for industry and agency stakeholders was held during the Assess phase of the project. A diverse range stakeholders were invited to attend the workshop. In summary the stakeholder participants included representatives from: professional associations, specialised rehabilitation groups, providers of community services/packages, providers of equipment, funders, NSW Health representatives and consumers and carers. Information gleaned from this workshop informed industry interaction and linkages with rehabilitation services, identified what works well and barriers and challenges and potential ways forward.

## Current practice: international and interstate

### Literature scan

The primary objective of the literature scan was to provide a body of information regarding good practice to inform the future development of rehabilitation services in NSW. A desktop review of key documents including published literature and grey literature, was completed to gather information across the key themes of rehabilitation care.

The key themes gleaned from the literature included the following:

- Acute and sub-acute care
- Multidisciplinary care teams and multimodal intervention
- Community based rehabilitation
- Functional improvement and activities of daily living,
- International and interstate Models of Care and clinical pathways
- Rehabilitation goal setting
- Proactive care management and discharge planning
- Early supported discharge programs/ambulatory care
- Healthy ageing
- Therapeutic nursing and enablement
- Access in regional, rural and remote areas
- Workforce – skills, demand, supply.

The complete literature scan document was submitted to NSW Health as a component of the Diagnostic Report and is attached as Appendix 6.

### Consultation with international and interstate jurisdictions

The aim of the international and interstate consultations was to provide cross-jurisdictional comparisons to support and enhance the evidence identified through the literature scan.

These consultations focused on gaining an understanding of practices across other jurisdictions along with identifying innovative national and international rehabilitation models across a spectrum of settings (sub acute, inpatient and ambulatory care) and a range of provider models (public and private).

Members of the Rehabilitation Redesign Working Group and NSW Health staff were invited to participate in the international and interstate consultations.

### Considerations for international and interstate comparisons

When making interstate and international comparisons it is important to take into account several factors and the context in which rehabilitation services operate across these different jurisdictions.

The first of these factors is the cultural context; meaning a societies shared set of attitudes, values, goals, and practices. The Netherlands, for example, has a well adapted and strong culture of social inclusion. The high level of community care for rehabilitation patients supports this cultural value to improve quality of life beyond basic care and facilitate return to work. In NSW the primary focus of most rehabilitation services is to return the patient back home safely and enable independence in basic activities of daily living.

The second factor relates to access to services. Access ensures that people can obtain health care at the right place and right time irrespective of income, physical location and cultural background. Access however, differs for a number of reasons. The number of hospital beds per thousand people varies considerably both between jurisdictions and within jurisdictions. Access to various care settings (ie inpatient or community care) is further determined by the funding model of these jurisdictions and the requirement to provide rehabilitation services in particular settings.

Access is also influenced by geography. In reading the findings from the consultations it is important to be mindful of the individual geographical regions and the tyranny of distance. In particular, Victoria and the Netherlands are both much more densely populated regions. Thus the value of therapy in the home diminishes when there are greater and impractical distances to travel, for example in rural NSW. The figures below indicate the size and populations of these regions:

Table 1: Comparison size and population table

	Size km <sup>2</sup>	Population
NSW	800,642	7.2 million
Victoria	227,416	5.5 million
Netherlands	41,526	16 million

Finally the capacity of individual health care systems and the enablers underpinning these systems such as workforce and infrastructure, determine where the majority of a patients care is provided. These issues again relate directly to the service types and funding models inherent across the different jurisdictions.

Further exploration of these factors is required before implementing or recommending any one model for NSW services.

## Interstate jurisdictions

### Victoria

*Planning the Future of Victoria's Sub-acute Service System - a Capability and Access Planning Framework* was developed in response to the need for an evidence based approach to service planning in Victoria. The framework aims to ensure that the level and

mix of existing and future rehabilitation and Geriatric Evaluation and Management (GEM) services is targeted appropriately. The Framework develops explicit expectations about service standards and capability requirements for all Victorian public sub-acute services.<sup>1</sup>

### Admitted services and funding arrangements

The VicRehab episode based funding model is for designated sub-acute rehabilitation units with 20 or more rehabilitation beds. The Casemix and Rehabilitation Funding Tree (CRAFT), which underpins the VicRehab funding system, categorises Level 2 rehabilitation patients into 16 groups and a short stay category according to clinical and functional levels, most of which are funded on an episode basis as Rehabilitation Weighted Units (RWU). CRAFT categories that cover amputee, major head injury, spinal and burns patients are referred to as Special Level 2 and are funded on a per diem basis at the Rehabilitation Level 2 bed day rate. Payments are also provided for Level 1 services (first post acute rehabilitation episode for amputee, major head injury and spinal patients) on a per diem basis.<sup>2</sup>

### Non admitted services

Sub-acute Ambulatory Care Services (SACs) in Victoria includes community rehabilitation (centre-based and home-based) and specialist clinics. SACS in the community provides a person and family-centred, interdisciplinary model of care supported by flexible service delivery in a range of settings, and is directed at improving and maintaining clients' functional capacity and maximising their independence. SACS are available to people of all ages and may follow a hospital stay, hospital day attendance, or may be accessed directly from the community. SACS extend and complement inpatient services and can be delivered in a client's home or at an ambulatory care centre.

The SACS consolidated funding streams (State non-DVA), SACS funding and DVA SACS funding) enable health services to use the funds to deliver flexible services in a range of care settings in response to clients' identified needs. Health services will need to ensure that clients requiring SACS on transition from a hospital stay have priority of access to these services and the client's continuum of care is effectively maintained.

Victoria's future strategic emphasis will be on:

- Implementing the Service Capability Framework and establishing regional self sufficiency to deliver appropriate mix of rehabilitation services
- Establishing Rehabilitation Models of Care and clinical pathways
- Expanding ambulatory rehabilitation services to support inpatient services through identifying opportunities to direct care into ambulatory care settings areas

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<sup>1</sup> Victoria Department of Health (2009) *Planning the Future of Victoria's Sub-acute Service System - a Capability and Access Planning Framework*

<sup>2</sup> Victorian health services policy and funding guidelines 2010-11

## Queensland

In Queensland telehealth has been successfully used to provide specialist outreach rehabilitation and geriatric services to more rural hospitals. In this model specialist advice on assessment and treatment plans as well as ward rounds are undertaken via video conference. The initial assessment is undertaken by a nurse (or other trained professional on site) and this is provided to the Geriatrician or Rehabilitation Physician who prepares the care plan. Weekly telehealth rounds are undertaken via mobile wireless on site supported by a nurse and or local doctor.

## International jurisdictions

Overall the international comparisons with the Netherlands and the United States revealed a number of similarities in practice as well as common challenges. However, there were a number of key areas where international practice differed from practices in NSW and these included: a greater intensity of therapy, the presence of weekend therapy and a greater focus on ambulatory care.

On the whole it did not appear that the funding structures across the jurisdictions (private funding at Kaiser in the United States and centralised funding through the government in the Netherlands) accounted for any particular differences in relation to good practice or challenges faced by rehabilitation services.

## Netherlands

In the Netherlands 90% rehabilitation care is delivered in an ambulatory care setting. Care focuses on improving the quality of life and supporting a person's return to work and an active lifestyle. Home based services are available for those that are house-bound and cannot attend the rehabilitation centre.

Essential elements of Netherland's rehabilitation services:

- Dedicated allied health staff (workforce guidelines / standards – including staffing guidelines).
- Home based rehabilitation – this is supported with home care for example cleaning, help at home, personal care, basic care treatment, activities of daily living.
- The community personal care provider is different to the rehabilitation provider. Care is provided in parallel with rehab care.

## United States of America

There are multiple levels of rehabilitation care provided in the US, these are described below:

- **Rehabilitation in acute care hospitals** – minimum rehabilitation is provided in acute facilities where patients are treated for another primary need. Some physiotherapy may be provided.
- **Inpatient rehabilitation facilities (IRF)** - may be subacute rehabilitation or skilled nursing for patients without significant medical complications. Diagnoses treated may include

stroke, other neurological disorders, pneumonia and orthopaedics. Intense therapeutic intervention by physical, occupational and speech therapists are 3 hours per day for a minimum of 5 days per week. Funding is driven by acuity through Resource Utilisation Groups and facilities must meet specific criteria to be eligible for funding.

- **Transitional step-down units** - skilled needs, such as cardiac recovery, oncology intervention and wound care, are usually provided. Therapy intensity is less than that provided in an IRF facility, approximately 2-2.5 hours per day. Funding is driven by acuity through Case Mix Groups and facilities must meet specific criteria to be eligible for funding.
- **Community care / home care and outpatient settings** - home based services are provided for patients who meet specific criteria and are house bound. Home based services follow the criteria as stipulated by the Home Health Resource Groups. Outpatient services are provided on a fee-for-service basis.

The output from the international and interstate comparisons is attached as Appendix 4 and 5.

## Design phase

The purpose of the Design phase of the project was to build a NSW Rehabilitation Model of Care. This phase brought together outputs and analysis from the Assess phase, building on engagement with stakeholders to develop, in partnership, a model for NSW rehabilitation services.

Key activities in this phase included:

- a Solution Design Workshop to determine an operational definition, design principles and a draft NSW Rehabilitation Model of Care
- a Consultation Week to seek wider feedback on the draft NSW Rehabilitation Model of Care and its components

Following the Solution Design Workshop a Consultation document was developed. This document presented the key findings as identified through the Assess phase and a high level draft model of rehabilitation care for NSW.

Feedback and consultation to validate findings regarding designing the NSW Rehabilitation Model of Care was sought in the form of an online survey. The survey findings are presented throughout this report and in Appendix 3. There were 120 responses to the online survey.

## Rehabilitation data analysis

The development of a NSW Rehabilitation Model of Care is contingent upon understanding the current state of rehabilitation services along with the demand and supply issues.

The availability of objective data to define the existing rehabilitation services was considered in order to better assess current patient pathways for rehabilitation. The data analysis presented in this section of the report has been undertaken by NSW Health. Commentary provided has also been verified by NSW Health.

## National rehabilitation data

Rehabilitation impairment types vary significantly by patient demographic. However across all impairment categories (as defined by The Australian National Sub-Acute and Non-Acute Patient Classification, ANSNAP), the average age is 74.0 years and the majority of patients (58%) are female. The private sector delivers 64% of all sub-acute inpatient rehabilitation episodes of care with the remainder being delivered by the public sector. The data suggest that private rehabilitation is heavily weighted towards elective orthopaedics and length of stay is therefore considerably shortened. For rehabilitation, the average length of stay was 5.6 days in private hospitals and 18.1 days in public hospitals.<sup>3</sup>

Whilst the largest contributor to rehabilitation volume (public and private) in Australia is orthopaedic impairment (joint replacements 50%, orthopaedic fractures 36%). Orthopaedic impairment makes up only 35% of all public hospital rehabilitation episodes.

The majority of growth in rehabilitation volume in recent years has been in the reconditioning impairment group (AN-SNAP classification previously referred to as debility).<sup>4</sup> For the second consecutive year, this group has grown by more than half, such that the number of episodes doubled from 2006 to 2008 making it now the second largest sub-acute inpatient rehabilitation volume contributor.<sup>5</sup> The average age of patients in this category is 79 years with an average length of stay (ALOS) of 17.6 days.

## NSW Health rehabilitation data

There are two NSW Health data sets available that provide information about patients receiving rehabilitation care. These are:

- the NSW Health Information Exchange (HIE) data set, extracting data pertaining to inpatients with an 'episode of care type' recorded as 'rehabilitation'; and
- the sub and non-acute patient (SNAP) data set, extracting data pertaining to inpatients who are admitted to a designated rehabilitation unit.

These two data sets provide a complementary and overlapping picture of rehabilitation services. The data described refer to activity in terms of separations, bed-days and volume. These terms can be further defined as follows:

Separation is the term used to refer to the episode of admitted patient care, which can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). 'Separation' also means the process by which an admitted patient completes

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<sup>3</sup> Australian Institute of Health and Welfare 2010. Australia's hospitals 2008–09 at a glance. Health services series no. 37. Cat. no. HSE 89. Canberra: AIHW.

<sup>4</sup> The AROC Annual Report ; the state of rehabilitation in Australia 2007

<sup>5</sup> The AROC Annual Report ; the state of rehabilitation in Australia 2008

an episode of care by being discharged, dying, transferred to another hospital or by a change of care type.

Bed-days – The AIHW<sup>6</sup> describe bed-days in terms of patient days. The definition for patient days is the total number of days for patients who were admitted for an episode of care and who separated during a specified reference period. A patient who is admitted and separated on the same day is allocated one patient day. Patient day statistics can be used to provide information on hospital activity that, account for differences in length of stay (unlike separation statistics).

Volume – Volume can be described in terms of either separations or bed-days (patient days).

The use of these terms and the data described below demonstrate that inconsistency in measurement exists and definitions are often not clearly defined. Further discussion in relation to data definitions and KPIs occurs later in this report. It should also be noted that the activity data reported exclude the following data elements specialist rehab services, mental health and drug and alcohol, children under 16 and cardiac and pulmonary rehabilitation.

Further to the data analysis provided below, specific scenarios describing acute care to rehabilitation patient journey for different patients is attached as Appendix 7.

### Inpatient service demand and supply

In 2009/10 NSW public health services recorded 17,635 overnight rehabilitation care episodes and delivered 353,308 days of inpatient rehabilitation care (i.e. inpatient bed days).

State-wide, there has been a 1.4% per annum growth in inpatient (overnight) bed days over the last two years. Considering this growth is not proportional to the growth in acute activity nor growth in the aged population in the same period, it is likely to be a result of fixed system capacity rather than decreasing population need.

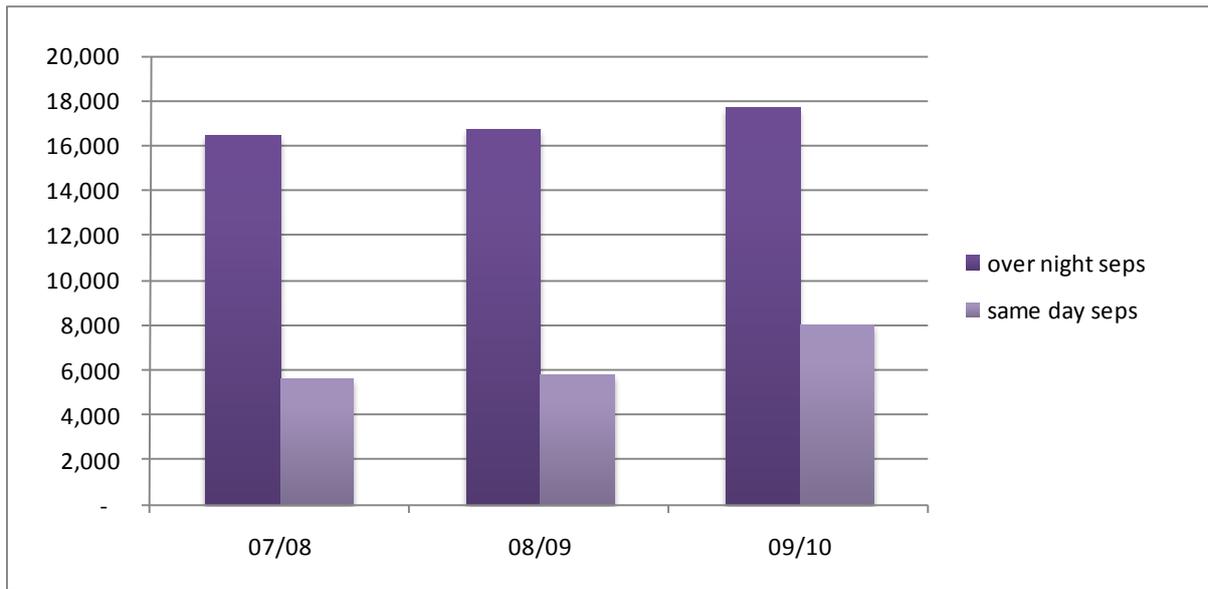
Figure 7 below suggest that while the number of separations have grown, Figure 8 suggests that bed days have not grown at the same rate, together these figures suggest more inpatient episodes with shorter lengths of stay. In fact, the average length of stay has slightly decreased from 20.8 days to 20.0 days across all diagnoses for overnight separations between 2007/08 and 2009/10.<sup>7</sup>

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<sup>6</sup> Australian Institute of Health and Welfare 2010. Australian hospital statistics 2008–09. Health services series no. 17. Cat. no. HSE 84. Canberra: AIHW.

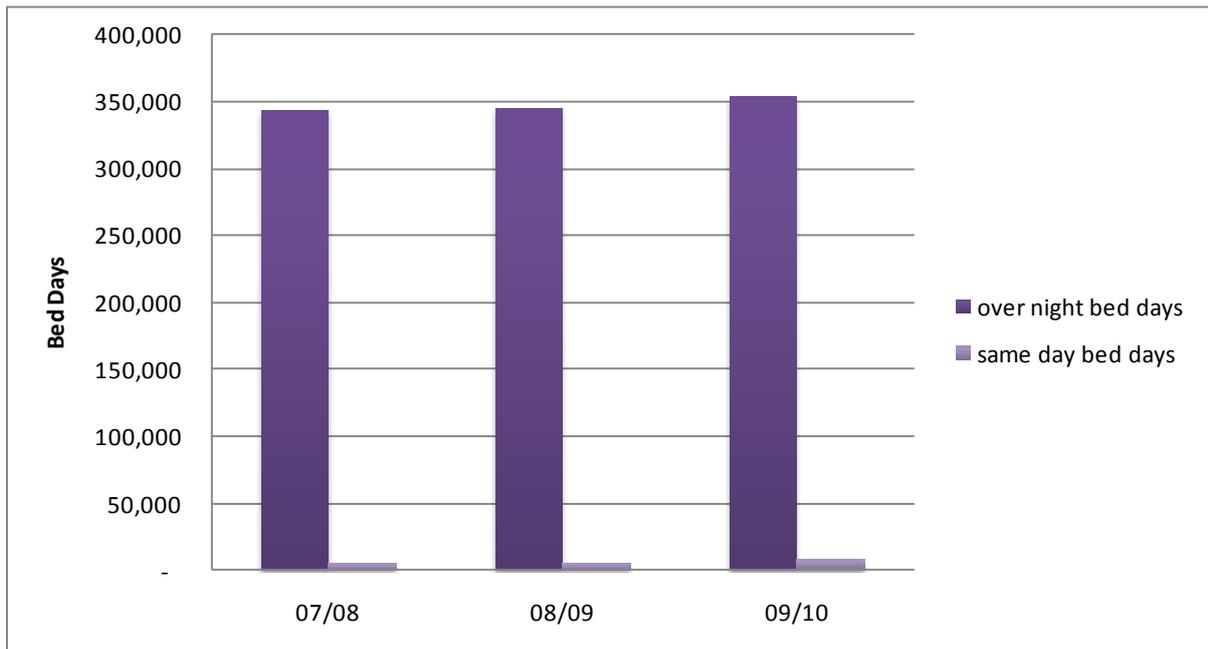
<sup>7</sup> Source Department Performance Evaluation NSW Health, Nov 2010

Figure 7: Trends in growth of rehabilitation activity by number of separations



(Source: HIE data, Demand and Performance Evaluation Branch NSW Health, Nov 2010)

Figure 8: Trends in growth of rehabilitation activity by total bed-days

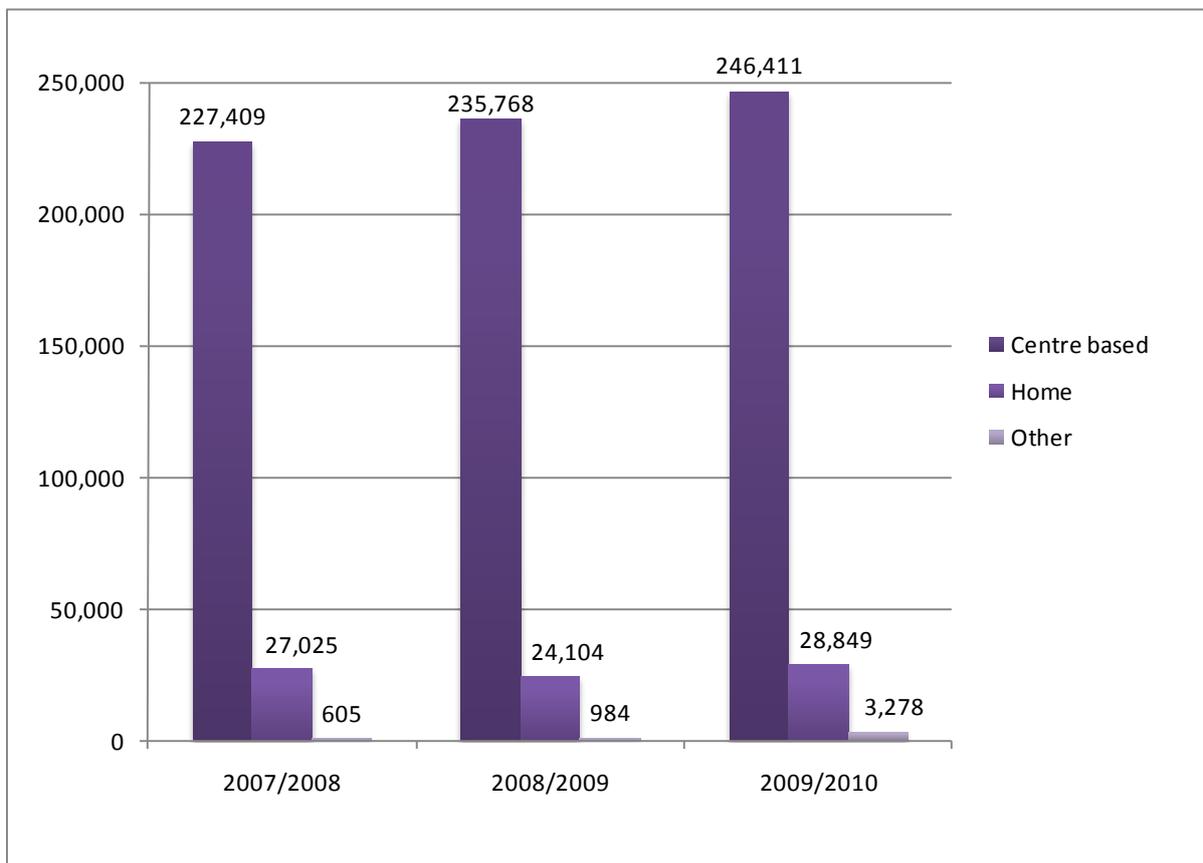


(Source: HIE data, Demand and Performance Evaluation Branch NSW Health, Nov 2010)

## Ambulatory care services demand and supply

Non-admitted patient services have been largely excluded from this analysis due to data limitations. However, some high level figures are useful to indicate activity of these services. Figure 9 below highlights the growth and type of non-admitted rehabilitation activity in NSW over the last three years. It is clear from these data that the majority of non-admitted patient services occur in a centre-based setting followed by home-based and 'other' settings. This trend in growth of non-admitted rehabilitation activity however, may be more significant than initially perceived. There is an increasing tendency for non admitted rehabilitation programs shift towards group therapies rather than one-to-one therapy. The data shows that the number of group sessions went up from 295 in 2008/09 to 486 in 2009/10. As such, an occasion of service delivered by one or two therapists may in fact be delivered to half a dozen or more patients. In this instance we can conclude that the actual number of patient episodes is under-represented as the trend towards more group therapy sessions increases.

Figure 9: Trends in growth of non-admitted rehabilitation activity (Occasions of Service)



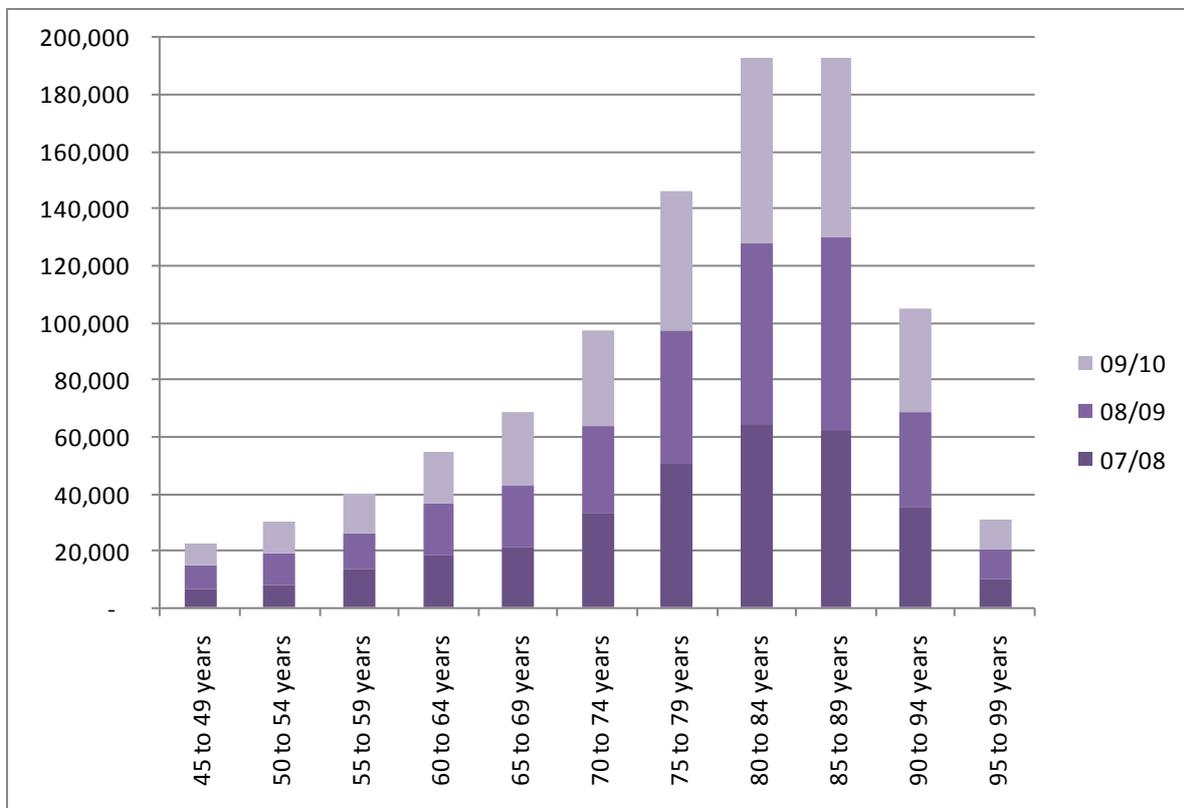
(Source: Web DOHRS, Nov 2010)

## Describing patient type and patient need

With a strong focus on restoring function after an acute hospitalisation older people are the largest users of rehabilitation services. This patient population tends to take longer to recover, especially after hospitalisation, and requires an enhanced focus on continuity of care and follow-up in the community to avoid further decline. Currently programs such as Transition Aged Care Program (TACP) go some way to supporting this pathway.

Figure 10 below shows the age profile of rehabilitation patients in NSW in 2007/8, 2008/9 and 2009/10, respectively. This depicts the high proportion of patients between 75 and 89 years of age as well as the slight growth in the size of these patient cohorts over the three years.

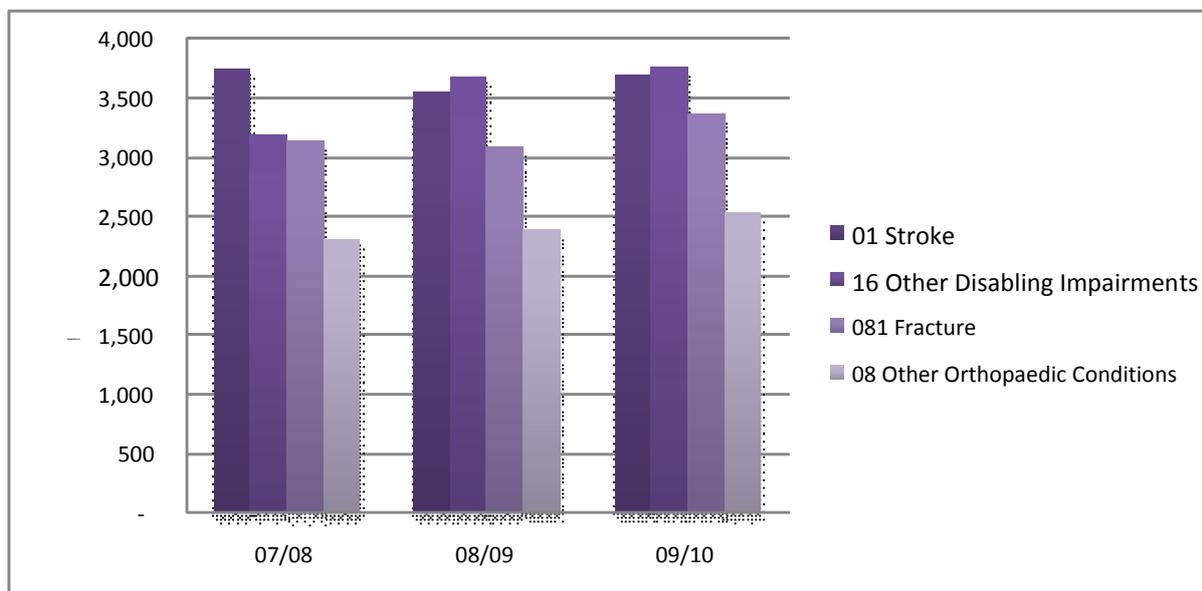
**Figure 10: Rehabilitation patient age profile in NSW over three years**



(Source: HIE data, Demand and Performance Evaluation Branch NSW Health, Nov 2010)

Figure 11 below shows the changes in number of separations over three years for each for the top four impairment types, highlighting the relative volume of activity for each type of care. Of these patients, the highest volume of patients in terms of separations relates to 'other disabling impairments', stroke and fractures. This information pertains to overnight inpatient activity only.

Figure 11: Separations by top four impairment types for in-patient over-night rehabilitation



(Source: HIE data Demand and Performance Evaluation Branch NSW Health, Nov 2010)

In terms of bed-days the highest volume of patient activity for the period 2009/10 can be attributed to: stroke representing 25%, fractures representing 19% and 'other disabling impairments' representing 18% of all inpatient public rehabilitation bed-days.

To further add context to the health needs of rehabilitation patients in NSW, the following co-morbidities are most frequent:<sup>8</sup>

- Cardiac related diagnoses (including ischemic heart disease and atrial fibrillation and cardiac failure); these were the primary co-morbid conditions recorded for 19% admissions.
- Arthritis and osteoporosis; these were the primary co-morbid conditions recorded for 12% admissions.
- Other chronic and complex care conditions (including CAL/chronic obstructive pulmonary disease, renal failure, asthma); these were the primary co-morbid conditions recorded for 5% admissions.
- For 5% of admissions, diabetes was recorded as the primary co-morbid condition.

<sup>8</sup> Source: SNAP data; Intergovernmental Funding Strategy NSW Health Nov 2010

Frequent complications experienced by rehabilitation patients in NSW include urinary tract infection and wound infections, however, the majority of rehabilitation inpatients (56%) did not experience complications.<sup>9</sup>

### Measuring quality and outcomes

One useful indicator of the effectiveness of rehabilitation care is the number of patients discharged to their previous place of residence (whether this is a nursing home or independent residence). NSW Health data for 2009/10 (source: HIE data) highlights that 66% of rehabilitation patients were discharged back to their usual place of residence.

Perhaps the most useful indicator of rehabilitation effectiveness is the change in Functional Outcome Measures (FIM). Table 2 below shows both average length of stay and the average FIM change for all rehabilitation units in NSW last year for orthopaedic fractures, orthopaedic impairments and stroke.

**Table 2: Average length of stay and average change in FIM 2009 – 2010**

	Average of LOS	Average FIM change
Stroke	30.6	20.0
Orthopaedic conditions	21.8	17.5
Other disabling impairments	20.8	13.8

(Source: SNAP data; Intergovernmental Funding Strategy NSW Health Nov 2010)

Variation in length of stay and FIM change appears across the state. Without a greater understanding of the casemix of patients across individual AHS's, it is difficult to make further comment on this variation. As an example of the variation that appears across the state in terms of length of stay and change in FIM, Table 3 below highlights these averages by area health service for stroke services (patients who died or were admitted for assessment only are excluded).

**Table 3: Average length of stay and change in FIM for stroke by AHS 2009 – 2010**

AHS	Average of LOS	Average FIM change
Sydney SW	32.3	19.3
South Eastern Sydney Illawarra	31.3	19.1
Sydney West	30.1	22.4
Northern Sydney Central Coast	39.6	22.6
Hunter New England	30.7	20.2
North Coast	28.6	20.4

<sup>9</sup> Source: SNAP data; Intergovernmental Funding Strategy NSW Health Nov 2010

Greater Southern	26.2	18.3
Greater Western	23.7	17.5
State-wide average	30.6	20.0

(Source: SNAP data; Intergovernmental Funding Strategy NSW Health Nov 2010)

A significant change in FIM suggests effective rehabilitation services. Table 4 below highlights the top ten SNAP classes where the greatest FIM changes were achieved, state-wide, last year.

**Table 4: Average change in FIM for select impairment codes by 2009 – 2010**

	Average FIM change
Maj Mult Trauma, FIMTot 19-43	52.9
Maj Mult Trauma, FIMTot 44-73	36.4
Stroke, Mot 14-46, Age<=74	28.6
Brain Dysfnc, mot 24-55	26.9
Brain Dysfunction, mot 14-23	25.1
Mult Trauma,FIMTot74-100/Burns	24.0
Orth, Replcmnt, Mot 14-48	23.4
Neurological, mot 18-48	23.0
Spnl Cord Dys,Mot14-46,Age<=32	22.7
Orth, Other, Mot 14-52	22.0

(Source: SNAP data; Intergovernmental Funding Strategy NSW Health Nov 2010)

### NSW SNAP data submission

To provide a summary of SNAP data coverage across NSW the following data have been identified through the Synpatix database:

- 59 facilities reported more than 1000 overnight rehabilitation patient bed days in the admitted patient data collection
- 46 facilities submitted SNAP data (two facilities had only one record each in SNAP data)
- Of the above 46 facilities, coverage of SNAP data collection varied from 0.2% to 77.9%.
- Overall coverage at the state level was 48.8%. This figure has been derived from the number of records in the SNAP data collection divided by number of records in admitted patient data collection for 45 facilities that submitted SNAP data in 2009/10.

### Future projections

SiAM is a medium- to long-term projection tool that allows users (typically health service planners in conjunction with clinicians) to model future demand for sub and non acute (collectively referred to as subacute) inpatient care. SiAM uses historical trends of

hospitalisation and projected population growth and structure to project future hospital admission rates and length of stay by age group, sex, Local Government Area of residence and clinical specialty.

In summary the SiAM projections indicate:

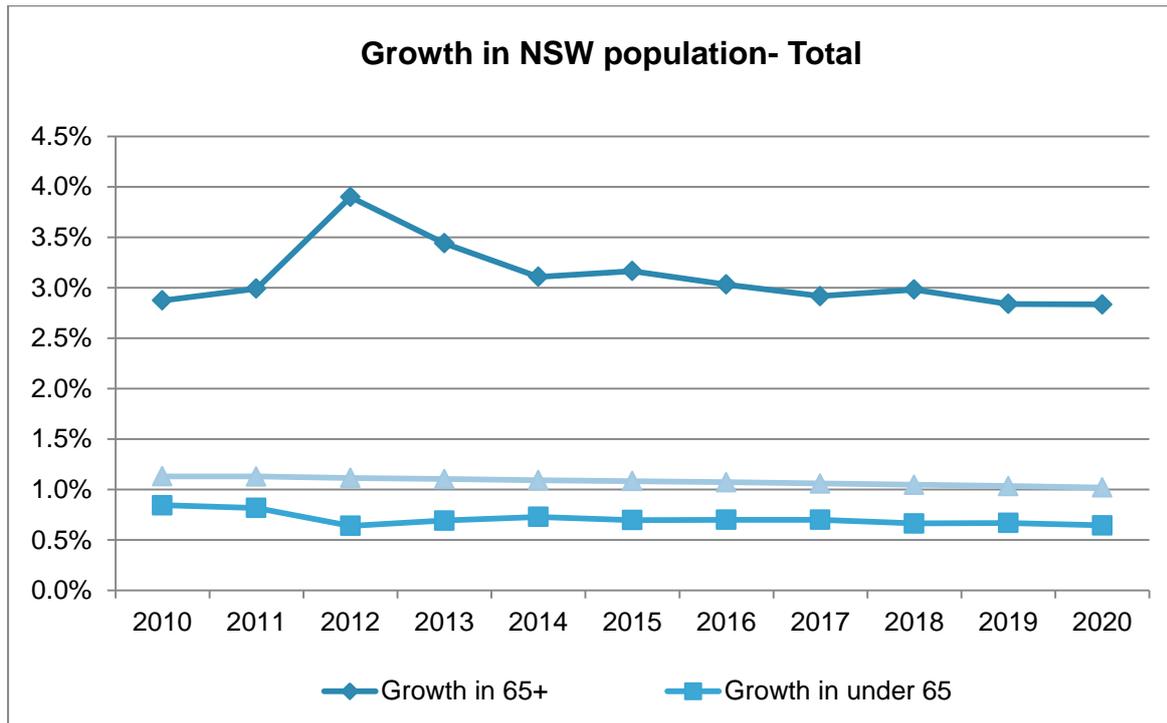
- that there will be a significant growth in subacute active episodes (both day only and overnight) and patient days over the next two decades, and a slight decrease in average length of stay;
- in the public sector, overnight active episodes are projected to increase from 37,900 to 54,700 between 2008-09 and 2021-22, an annual average growth rate of 3.1 per cent
- in the public sector in 2008-09, day only episodes contributed 7,400. By 2021-22, this is expected to increase to approximately 11,800, a 4.0 per cent average increase per annum; and
- the highest levels of growth in active episodes will occur for people aged 70-84 years and for people aged 85 years and over.

In addition, the growth in the NSW population is being driven by growth in the 65+ age group. The 65+ age group is projected to grow at about 3%, peaking at about 4% in 2012 before falling to 2.8% in 2020. Average growth from 2010-2020 is 3.1% p.a. This is well above the average 0.7% p.a. growth rate for the under 65 year olds.<sup>10</sup> In the next decade the proportion of the population that makes up the 65+ age group will increase from 14.3% (2010) to 17.5% (2020).<sup>10</sup> This adds more than an extra 350,000 people in NSW in this age range which are the most frequent users of rehabilitation services. This population may also choose to move away from metropolitan areas at this point, therefore increasing demand in regional areas.

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<sup>10</sup> <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3222.02006%20to%202101?OpenDocument>. 3222.0 - Population Projections, Australia, 2004 to 2101

Table 5: Growth in NSW population – Total



NSW Health together with LHNs and local services will be responsible for ensuring the provision of adequate rehabilitation services to meet this future demand. In terms of the ageing population aged care rehabilitation models together with ambulatory rehabilitation models that keep people out of hospital will contribute significantly to easing the burden placed on the acute health sector and maintaining the wellness and functionality of the population.

### Data findings and issues

In summary, the data component of this project identified a number of issues and implications. These findings are derived from a variety of sources including the site visits, consultations and the NSW Health data analysis.

- Data that describe the rehabilitation settings in NSW are available through two main data sources, SNAP data (Intergovernmental Funding Strategy NSW Health Nov 2010) and the NSW Health Information Exchange (HIE) (Demand and Performance Evaluation Branch NSW Health, Nov 2010) data set. These two data sets are held in two separate branches of NSW Health. It is therefore difficult to measure activity accurately. In addition SNAP data only represent a proportion of rehabilitation provided as not all rehabilitation is captured in the data set.
- There is a significant variation of rehabilitation service utilisation rates between AHSs that are not easily explained by the demographics of the catchment areas. Without a greater understanding of the casemix of patients across individual AHS's, it is difficult to make further comment on this variation.

- Existing state-wide reporting for rehabilitation in NSW is not currently designed to identify patients receiving rehabilitation and hospital data collections do not necessarily capture all information required to describe patient pathways.
- Data collected do not currently link patients across care settings. This finding has important implications for whether data are captured in particular care settings.
- Services provided in care settings other than the inpatient setting are captured as occasions of services and are not necessarily attributed to a particular patient. On the whole there is an absence of data available to describe patients receiving rehabilitation treatment in non-admitted settings.
- Data specific to non-inpatient services are only collected to a limited degree. Due to wide variation in admission practices (the same services are provided as outpatient by some sites and same-day admissions in others) the information is challenging to compare and has, for this reason, been mostly excluded from the analysis described in this report. The absence of quantifiable measures of either service capacity or quality in the ambulatory care sector represents a key challenge for developing and managing these services in future.
- Classifying and counting patients across settings (ie admitted, non-admitted) varies between services. However, tracking of an inpatients pathway from metropolitan to regional/rural services may be tracked from HIE data that capture actual facility codes for facilities that patients were transferred to and transferred from.
- There are inconsistent approaches to classifying and 'type changing' patients.
- While the SNAP data collection system goes some way to understanding the performance of sub-acute services, it is recognised that there are gaps in the current level of understanding of how many adult patients are accessing rehabilitation services in NSW, what their patient journey experience is and what patient outcomes are achieved.<sup>11</sup>
- SNAP data are only relevant for designated SNAP units and includes all sub-acute data. Data for patients receiving rehabilitation services outside these units are therefore not included. Also it does not include same day patients or outpatient activity.
- Sites visited during the consultation period were collecting and reporting data to NSW Health however it was indicated that no information was reported back to the facilities.
- In terms of an ambulatory rehabilitation services, AROC have developed an ambulatory data set. Data have already been collected from a limited number of services. The first report has just been published. As yet individual services are not being compared as data are limited. Perhaps with increased NSW Health funding better collection and reporting could be achieved to produce more useful reports reflecting activity and performance. Better tools to measure outcomes need more investigation and/or research.

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<sup>11</sup> NSW Health CSRP RFQ for Rehabilitation Services Model of Care

The Council of Australian Governments (COAG) National Partnership Agreement (NPA) on Hospital and Workforce Reform arrangements are likely to include initiatives to improve capture of subacute care, including that provided on a non admitted basis. It is also not apparent what the current drivers are for rehabilitation professionals in delivering the existing models of care and how this may change with the planned introduction of Activity Based Funding (ABF). With an increasing number of older patients presenting with co-morbidities and high level of impairment, proactive models of care that respond to these pressures are required.<sup>12</sup>

Implementing new services and models of care for rehabilitation in NSW requires an understanding of both *current* and *future* service requirements in terms of:

- demand (current and future);
- capacity (both volume and location);
- quality; and
- cost.

In terms of future demand and planning and the implementation of rehabilitation models of care, there is a need to develop robust data collection processes that can lead to benchmarking of services across the continuum of care. Data and performance measures are discussed in further detail later in this report.

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<sup>12</sup> Australasian Faculty of Rehabilitation Medicine Position Statement – A need for a National Rehabilitation Strategy 2009.

## Final report framework

The Final Report brings together evidence from the consultations, literature scan and data analysis. The purpose of this Final Report is to provide a NSW Rehabilitation Model of Care and recommendations for the implementation of the model of care. Opportunities for improvement have been to assist local services to standardise and improve current rehabilitation care and service delivery.

The final report is presented in three parts.

- Part 1: Provides the background to the project and details the methodology. Data specific to NSW Health rehabilitation services are presented to provide context and describe to current landscape for rehabilitation services across NSW.
- Part 2: Presents the NSW Rehabilitation Model of Care.
- Part 3: Brings together the recommendations outlining the next steps in the implementation of the NSW Rehabilitation Model of Care.

**PLEASE NOTE: This Model of Care has been superseded by the Principles to support rehabilitation care (2019).  
Please refer to the new document [https://aci.health.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0014/500900/rehabilitation-principles.pdf](https://aci.health.nsw.gov.au/__data/assets/pdf_file/0014/500900/rehabilitation-principles.pdf)**

# Model of Care for Rehabilitation Services in NSW

**PLEASE NOTE: This Model of Care has been superseded by the Principles to support rehabilitation care (2019).  
Please refer to the new document [https://aci.health.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0014/500900/rehabilitation-principles.pdf](https://aci.health.nsw.gov.au/__data/assets/pdf_file/0014/500900/rehabilitation-principles.pdf)**

## Model of Care for NSW Rehabilitation Services

This section of the report presents the NSW Rehabilitation Model of Care.

### The imperative for rehabilitation redesign

The provision of rehabilitation services in Australia continues to grow in volume, with 2008 seeing a 6.3% real increase in inpatient episodes<sup>13</sup> of rehabilitation provided. In addition consultation indicated that the casemix of patients requiring rehabilitation treatment is increasing in both acuity and complexity.

Rehabilitation services do not exist in isolation; rather they play an integral role within the health care continuum and therefore must be considered within the context of the overarching health system. Rehabilitation services are fundamental in enhancing patients functional independence and therefore must be considered in relation to broader patient flow issues. This includes patient flow from the acute care setting to the sub-acute care setting and patient flow from the sub-acute care setting into an ambulatory care setting and ultimately the client's return to the community and home (where possible).

In order to provide optimal levels of rehabilitation services a diverse range of health professionals, services and external agencies are required to work together despite having separate funding, administration and reporting structures.

The setting in which rehabilitation takes places is principally defined by the patient's changing needs over time and the availability of rehabilitation services in particular areas. It is worth acknowledging that a rehabilitation patient journey is not a linear process and pathways are individually determined based on:

- the patient's level of functional impairment (including ability to function safely in a given environment);
- medical acuity and prognosis; and
- access to rehabilitation services.

An inpatient rehabilitation journey most often commences with an acute presentation related to acute illness (eg stroke), trauma (eg fracture), elective surgery (eg joint replacement) or significant functional debilitation (eg decreased mobility due to chronic disease or ageing). This journey continues through to transfer of care to an alternate setting or discharge from rehabilitation either with or without further support services.

Rehabilitation clients require different levels of care at different points in their rehabilitation journey. For those admitted to hospital rehabilitation may commence as part of their inpatient stay and they may or may not be transferred to a rehabilitation unit for continuing treatment. As an individual's medical condition stabilises and their functioning improves they may transition to an ambulatory care setting for continuing rehabilitation treatment.

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<sup>13</sup> AROC Annual Report: The state of rehabilitation in Australia 2009.

As previously discussed, the ageing of the population together with the increase in chronic disease has seen an increase in the requirement for rehabilitation for patients requiring improvement in functioning and independence.

## A rehabilitation model of care

Rehabilitation services have the opportunity to reshape service delivery and work more collaboratively with health care providers across the continuum. A 'model of care' is a multifaceted concept, which broadly defines the way in which health care is delivered including the values and principles; the roles and structures; and the care management and referral processes. Through the development and implementation of a NSW Rehabilitation Model of Care founded on good practice and innovation, rehabilitation services have the opportunity to improve service efficiencies and patient outcomes. A consistent model of care for rehabilitation in NSW will support rehabilitation services to:

- work with acute services to promote patient independence and an enablement model of care, furthermore this allows for earlier assessment and an earlier transfer from the acute bed where relevant
- integrate aged care and rehabilitation services to maximise independence, minimise ongoing health care needs and minimise personal support needs of the ageing population
- integrate assessment and care coordination of patients to create a more efficient flow of patients across the continuum and between settings
- provide ambulatory care services to potentially avoid hospitalisation for some impairments, enable transfer of care at an earlier date from the sub-acute rehabilitation unit and facilitate an earlier discharge from hospital
- provide ambulatory care services enabling a structured program and the continuation of care following a stay in the acute or sub-acute setting
- put into practice hub and spoke models and work collaboratively with rural neighbouring hospitals to provide rehabilitation services facilitating ongoing goal attainment
- utilise care coordinators or case managers to support the patient journey across the continuum and involve primary care and community services at an earlier stage of this journey

The potential for efficiencies across the system is great and may include:

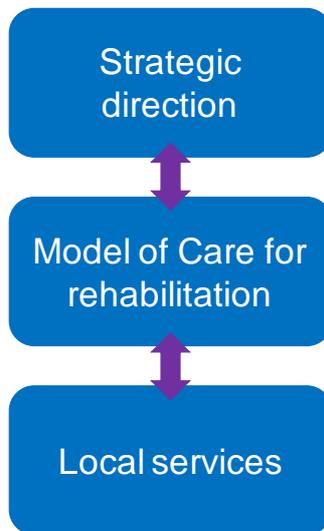
- reduction in re-admissions
- decrease in average length of stay
- decrease in patients requiring a sub-acute inpatient stay
- decrease in discharge delays due to early assessment and discharge planning
- decrease in complication rates for patients
- decrease in instances of 'exit block' from sub-acute rehabilitation services
- prevent functional decline during acute hospitalisation

- improved patient independence and overall functioning.

## The big picture for rehabilitation services

Rehabilitation services do not exist in isolation, rather they play an integral role within the health care continuum and therefore must be considered within the context of the overarching health system. The changing nature of the health system together with the ageing population provides an ideal opportunity to develop a consistent model of care for rehabilitation services. Figure 12 below illustrates the role of the NSW Rehabilitation Model of Care in the broader health system. The model of care provides the link between strategic direction, from the state and LHNs, to rehabilitation service delivery.

Figure 12: Context for model of care for rehabilitation services



Based this illustration, rehabilitation services are described below in terms of strategy, model of care and local services. In addition, the future context and its many implications have been considered.

### Strategic direction

The implementation of a NSW Rehabilitation Model of Care is congruent with the strategic focus for the NSW Health system. The model of care builds on this strategy by identifying appropriate rehabilitation service options across NSW Local Health Networks (LHNs) to meet the needs of the population.

Sub-acute services play an integral role within the health care continuum, supporting patients to maximise their independence and function and, in doing so, minimise long-term health and community care needs. The nature of sub-acute services is constantly evolving. Better aligning and integrating community-based programs to support transfer of care from admitted services and to prevent or substitute hospitalisation is a key focus of policy and program development across Australia.

The NSW Health rehabilitation strategy should consider the following key points to provide high quality patient care:

- supply and demand;
- integration of care and services; and
- access to and patient flow between care settings.

Continued growth in demand and the subsequent need for rehabilitation services will require considered planning for expansion of effective and efficient services to meet NSW Health's needs.

## Model of care for rehabilitation

As described earlier, a 'model of care' is a multifaceted concept, which broadly defines the way in which health care is delivered including the values and principles; the roles and structures; and the care management and referral processes. Where possible the elements of a model of care should be based on best practice evidence and defined standards and provide structure for the delivery of health services and a framework for subsequent evaluation of care.

The NSW Rehabilitation Model of Care presented in this report provides guidance towards achieving equity of access, appropriateness of care and consistency of service quality – from the variable starting points of current care delivery across the NSW.

The information gained in the Assess and Design phases through interviews, workshops, analysis and reviews has been distilled into a framework for the NSW Rehabilitation Model of Care. This model is described in detail in the following chapter and is comprised of the following components:

- **Definition** – an operational definition of rehabilitation which will enable consistency
- **Principles** – eight principles (statements of intent) that underpin the rehabilitation model
- **Care settings** – six care settings are described in terms of overview of scope of services, outcomes of the rehabilitation patient journey and implications for implementation
- **Patient pathway** – the key features of a good practice rehabilitation patient pathway
- **Enablers** – enablers required to support implementation.

The NSW Rehabilitation Model of Care seeks to encompass options that meet the varying care needs of people who require rehabilitation services as they move between levels in the care continuum (acute care, to sub-acute, ambulatory care and outreach services).

## Local services

It is important that any model of care developed is practical and is flexible enough to be applied locally and meet local needs based on supply and demand for rehabilitation services. The NSW Rehabilitation Model of Care presented in this report provides a planning guide towards achieving equity of access, appropriateness of care and consistency of service quality – from the variable starting points of current care delivery across the State.

The model of care is not prescriptive in terms of work practices and instead allows local services the flexibility to design practices that suite their needs, leaving rooms for innovation in service delivery.

## Future context

This section discusses key considerations for the future the NSW rehabilitation services, these include:

- Local Health Networks;
- activity based funding;
- e-health; and
- future population and service projections.

The consideration of the future context strengthens the overall model of care and contributes to the success and sustainability of rehabilitation services of the future.

## Local Health Networks

Local Health Networks (LHN) will be formally established across NSW on 1 January 2011. LHNs will comprise a single hospital or group of hospitals and other health services with geographical or functional links. They will work closely with Primary Health Care Organisations (Medicare Locals) which are to be established by the Commonwealth.

Where possible LHNs and Medicare Locals will have the same boundaries to enable increased integration and cross-governance of health services in a local area. LHNs will negotiate a Service Agreement with the NSW Government making it responsible for managing its own budget and developing and implementing a strategic plan to deliver.

LHNs will be given decision-making authority and a range of governance and management functions to enable them to meet their obligations to shape local health services within a state-wide framework.<sup>14</sup>

Given the reorganisation of NSW Area Health Services into LHNs the development of the NSW Rehabilitation Model of Care is timely. LHNs have the opportunity to work closely with NSW Health to reshape rehabilitation services and consider how the implementation of the model of care will be part of the broader LHN strategy to improve health outcomes in their community. The proposed linkages with the new Medicare Locals may also assist to strengthen current rehabilitation linkages between levels of care, ie with primary care and other community based organisations.

## Funding

The Council of Australian Governments (COAG) November 2008 National Partnership Agreement (NPA) on Hospital and Workforce Reform mandates each state enhance the capacity of sub-acute services to ease pressure on Public Hospitals. Under this agreement each state has developed a Subacute Care Reform Implementation Plan and NSW has

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<sup>14</sup> NSW Health: <http://www.health.nsw.gov.au/services/lhn/index.asp> Cited 10 December 2010.

subsequently received \$165 million for the specific enhancement of sub-acute care service volume and quality across rehabilitation, palliative care, geriatric evaluation and management (GEM) and psycho-geriatric care.

A key outcome measure for NSW Health under this agreement is to achieve 20% growth between 2009/10 and 2012/13. To do so each Area Health Service (AHS) has identified key strategies to enhance sub-acute care including rehabilitation services for which \$54 million has been committed.<sup>15</sup>

The introduction of a plan for nationally consistent funding of public hospitals based on Activity Based Funding (ABF) was established through the same NPA and subsequently the National Health and Hospital Network Agreement signed by all COAG members (except WA) in April 2010 agreed significant reorganisation and allocation of health resources and accelerated the timing of the implementation of ABF.

The agreed changes to the current federal/State funding split means the public health sector is entering a major process of re-design that is to be underpinned by a nationally consistent ABF model which will over time create transparency in casemix, activity and cost measures.

The future development of ABF in rehabilitation provides important context to the development of models of care. A consistent NSW Rehabilitation Model of Care based on the development of consistent definitions, coding, counting and performance measurement will be integral to success in an ABF environment. Furthermore, the structure of ABF together with any future rehabilitation strategy will largely determine the settings in which rehabilitation services are provided across NSW. For example, the activity based funding formula could be structured to create incentives to provide more rehabilitation services in lower cost ambulatory rehabilitation settings, where this is the most appropriate care setting.

## eHealth

The ehealth landscape will continue to evolve over the coming decade. The transition to new applications for personal health records and healthcare identifiers will assist to better enable data capture as well as communication across settings and providers (including community and primary care services eg ADHC) in relation to patient care.

The Australian Government is investing \$466.7 million over four years in the introduction of a personally controlled electronic health record system. From July 2010, the Australian Government will fund the delivery of core national infrastructure, governance, standards and tools to enable the personally controlled electronic health record system to be progressively available.<sup>16</sup>

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<sup>15</sup> A key outcome for NSW - Lee L, Eager K and Smith M (1998) Casemix: moving forward, Sub-acute and non-acute casemix in Australia, eMJA

<sup>16</sup> Building a 21<sup>st</sup> Century Primary Health Care System – Australia's First National Primary Health Care Strategy, Department of Health and Ageing 2010.

In addition the Australian Government intends to promote the use of Healthcare Identifiers, and has developed a legislative framework to support their use in health services. The legislation set up for Health Identifiers was passed by federal Parliament in June 2010.

The National E-Health Transition Authority (NEHTA) will continue to develop national eHealth foundations and standards through COAG funding of \$218 million to June 2012. Furthermore, in 2010-11 NeHTA will develop national eHealth standards to support the electronic transfer of prescriptions.<sup>17</sup>

The NSW Health ICT plan<sup>18</sup> incorporates ehealth initiatives across electronic health records, Patient Administration Systems, State Unique Patient identification system and corporate systems.

In terms of the NSW Rehabilitation Model of Care, ehealth initiatives will be a significant enabler of an integrated model of care - contributing to improved communication and consistency of information. As the evidence of ehealth grows, and an understanding of how best to use it develops, there needs to be capacity for change within the service delivery model.



Through the Solution Design consultation phase stakeholders were asked which future context elements they thought will impact the implementation of the model of care for rehabilitations services. A large majority of respondents felt that Activity Based Funding (86%), data (76%), Local Health Networks (71%) and E-Health (50%) would impact the implementation of a model of care. (For further detail regarding the consultation feedback please refer to Appendix 3)

## A model of care for rehabilitation services

The development of the NSW Rehabilitation Model of Care sought to build on existing good practice and care standards to define rehabilitation services and encompass: the values and principles of care; appropriate roles and structures; and the care management and referral processes. The project team worked closely with NSW Health and experts from the rehabilitation and aged care sector through the NSW Rehabilitation Redesign Working Group. The Rehabilitation Redesign Working Group included representation from rehabilitation and aged care sectors, the Agency of Clinical Innovation and included Rehabilitation Physicians, Geriatricians, Directors of Allied Health and Rehabilitation Nursing. The Rehabilitation Redesign Working Group provided guidance on the nature and needs of rehabilitation services and the design of the NSW Rehabilitation Model of Care. The model was developed to provide structure for the delivery of rehabilitation services, to

<sup>17</sup> Building a 21<sup>st</sup> Century Primary Health Care System – Australia's First National Primary Health Care Strategy, Department of Health and Ageing 2010.

<sup>18</sup> NSW ICT Plan 2006-11 Strategic Information Management version 2.2 Updated September 2008, NSW Priorities for eHealth (2006-2011)

be a vehicle for strategic direction for service planning and to provide a framework for evaluation of care.

Rehabilitation models of care are delivered across the continuum of care delivery settings including:

- Acute inpatient
  - Acute (admitted care) is defined as having a short period of time and relatively severe.<sup>19</sup>
- Sub-acute inpatient
  - Sub-acute care is defined in the NPA as “rehabilitation, palliative care, geriatric evaluation management, and psychogeriatric care as defined in the National Health Data Dictionary 14th ed. Australian Institute of Health and Welfare, 2008”. Sub-acute care is provided across a range of settings, (admitted and non-admitted), and potentially in more than one period of an episode of care. NSW Health uses classification for sub-acute care, AN-SNAP, which is not implemented nationally.
- Ambulatory care settings including day hospital centre based services, outpatient clinic services and home-based services.
  - Ambulatory care is available to people of all ages and may follow a hospital admission or may be accessed directly from the community. These services extend and complement admitted services through ongoing care either in a client’s home or at an ambulatory care centre, providing rehabilitation services and a range of specialist clinics that provide specialist assessment, diagnosis, management and education to clients.

In the context of this project, the NSW Rehabilitation Model of Care is underpinned by the patient rehabilitation journey across the continuum of care settings.

Fundamental to the rehabilitation philosophy of care delivery is an ‘enablement’ model – one which focuses on the physical, psychological, social and spiritual dimensions of human function and provides a supportive environment in which people are enabled to do for themselves within the limits of safety.<sup>20</sup>

This philosophy has been embedded in some rehabilitation services in training and education programs for rehabilitation staff, including rehabilitation nursing.

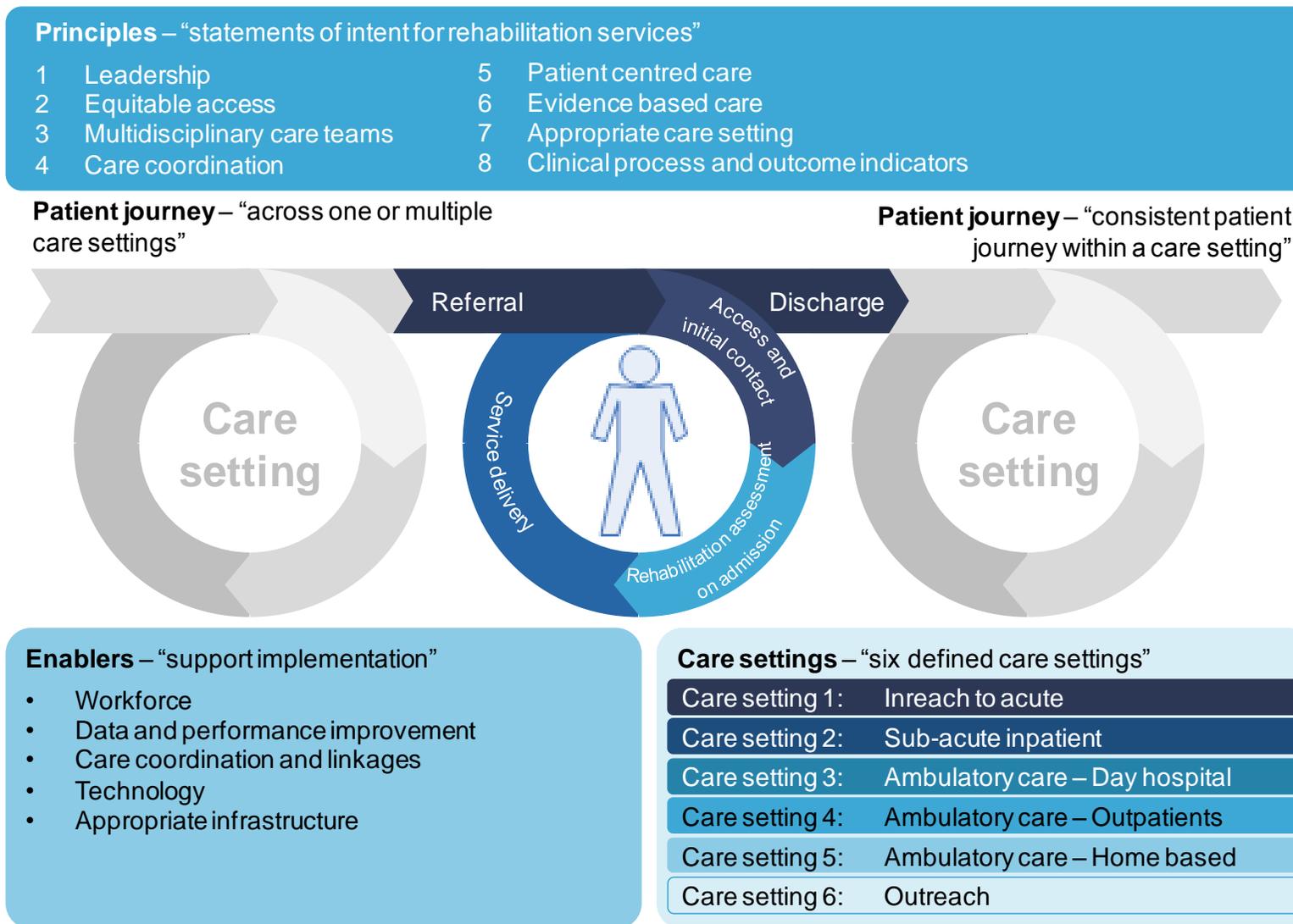
The figure on the following page illustrates the NSW Rehabilitation Model of Care.

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<sup>19</sup> Australian Institute of Health and Welfare 2010. Australian hospital statistics 2008–09. Health services series no. 17. Cat. no. HSE 84. Canberra: AIHW.

<sup>20</sup> Pryor, J. (1999) Goals and Focus in Pryor, J (ed) Rehabilitation A vital nursing function, Royal College of Nursing, Australia.

Figure 13: NSW Rehabilitation Model of Care



## Operational definition for rehabilitation

An operational definition has been adopted to support the development of a NSW Rehabilitation Model of Care that can be consistently operationalised and implemented.

Rehabilitation care in NSW is defined as the provision of care that aims to:

- restore functional ability for a person who has experienced an illness or injury
- enable regaining function and self-sufficiency to the level prior to that illness or injury within the constraints of the medical prognosis for improvement
- develop functional ability to compensate for deficits that cannot be medically reversed.



Through the Solution Design consultation phase stakeholders were asked to indicate their level of agreement with the rehabilitation definition. 86% of respondents strongly agreed or agreed with the definition for rehabilitation provided above.

## Principles

Principles – “statements of intent for rehabilitation services”

- |                                |   |
|--------------------------------|---|
| 1 Leadership                   | 5 Patient centred care                    |
| 2 Equitable access             | 6 Evidence based care                     |
| 3 Multidisciplinary care teams | 7 Appropriate care setting                |
| 4 Care coordination            | 8 Clinical process and outcome indicators |

For the purpose of the NSW Rehabilitation Model of Care a principle has been defined as *statement of intent* of what is to be achieved. Principles apply to every aspect of a rehabilitation service.

### Eight principles underpin the NSW Rehabilitation Model of Care:

1. **Leadership** – Leadership is displayed at all levels providing a strategic and operational direction, a sense of team and a commitment to the principles of rehabilitation care.
2. **Equitable access** – Patients receive equitable access to rehabilitation services in the most appropriate setting and in a timely manner.
3. **Multidisciplinary<sup>21</sup> care teams** – Patients have access to a ‘core’ multidisciplinary team who work collaboratively within an interdisciplinary<sup>22</sup> framework. Access to non-core team specialist services is available as required.

<sup>21</sup> Health care providers from different professions work together to collaboratively provide care and treatment, within their individual scope of practice and areas of competence.

<sup>22</sup> Interdisciplinary care crosses traditional boundaries and blends the practices and expertise of each discipline involved.

4. **Care coordination** – Patient care is communicated and coordinated between the multidisciplinary team and other care providers across the continuum of care. Patients and their carers are encouraged to participate in goal setting and care planning.
5. **Patient centred care** – Rehabilitation services are patient centred and delivered to promote an enablement model of care. Patient centred care ensures an ongoing understanding of an individuals needs and expectations.
6. **Evidence based care** – Processes to promote the implementation of evidence and best practice are in place to support safe and effective care. Evidence based practice is supported through professional development, teaching, quality research and quality assurance activities.
7. **Appropriate care setting** – Patients receive rehabilitation services in the most appropriate setting based on individual patient’s fit with the admission and discharge criteria for the relevant care setting and the potential to achieve rehabilitation goals.
8. **Clinical process and outcome indicators** – Consistent measurement processes across rehabilitation services are in place to monitor and demonstrate patient outcomes that contribute to enhanced functional independence.

Through the Solution Design consultation phase stakeholders were asked to indicate their level of agreement with the principles for rehabilitation. 87% - 97% of stakeholders strongly agreed or agreed with the principles for rehabilitation stated above. For more detail please see Appendix 3.

In relation to the principles of rehabilitation care, respondents were asked to determine ‘core’ and ‘non-core’ members of the rehabilitation multidisciplinary team. The results are shown in the table below. The blue highlights indicate the team members where 45% or more respondents agreed these were the ‘core’ members.

Clinician	Core	Specialist ('non-core' members)	N/A
Social Worker	99% (112)	1% (1)	0%
Rehabilitation Physician	98% (111)	1% (1)	1% (1)
Occupational Therapist	98% (112)	2% (2)	0%
Physiotherapist	97% (111)	2% (2)	1% (1)
Registered nurse	96% (110)	4% (4)	0%
Speech Pathologist	87% (97)	13% (14)	1% (1)
Care Coordinator/ case manager	75% (84)	22% (25)	3% (3)
Enrolled nurse	71% (79)	25% (28)	4% (4)
Dietician	65% (73)	35% (39)	0%
Psychologist	65% (73)	35% (40)	0%
Allied Health Assistant	54% (60)	42% (47)	4% (5)
AIN	49% (53)	41% (45)	10% (11)
Diversional Therapist	46% (52)	48% (54)	5% (6)
Neuropsychologist	36% (40)	64% (70)	0%
Geriatrician	30% (34)	63% (71)	6% (7)
Prosthetist	25% (28)	73% (81)	2% (2)
Orthotist	24% (27)	74% (83)	2% (2)
General Practitioner	23% (25)	71% (78)	6% (7)
Podiatrist	8% (9)	91% (101)	1% (1)

These eight principles need to be operationalised for each care settings. Examples of 'service checkpoints' which are indicative measures of compliance for each principle that underpins the model of care appear in the Table below.

**Table 6: Principles and service check-points**

Principle	Service check points
<b>Leadership</b>	<ul style="list-style-type: none"> <li>• Staff satisfaction with leadership</li> <li>• Performance of the unit overall – all KPIs</li> <li>• Implementation of innovations and best practice</li> <li>• Quality improvement practices</li> <li>• Client satisfaction</li> </ul>
<b>Equitable access</b>	<ul style="list-style-type: none"> <li>• Waiting list data to demonstrate reduction in waiting times</li> <li>• Data to demonstrate patients meet triage / ready for rehabilitation criteria</li> <li>• % patients discharged on an active rehabilitation program</li> <li>• Specialised services access (including rural access)</li> <li>• Benchmarking comparisons (eg # NOF)</li> </ul>
<b>Multidisciplinary care teams</b>	<ul style="list-style-type: none"> <li>• Staffing levels meeting AFRM<sup>23</sup> standards</li> <li>• Availability of therapy and data on therapy intensity</li> <li>• Evidence of multidisciplinary care planning (ie a single care plan – no duplication and a common goal)</li> <li>• Patient satisfaction</li> <li>• Utilisation of case managers</li> <li>• Evidence of communication between team</li> </ul>
<b>Care Coordination</b>	<ul style="list-style-type: none"> <li>• Evidence of linkages across care settings (including community and primary care eg ADHC)</li> <li>• Data to support the provision clinical handover information between settings</li> <li>• Client satisfaction</li> <li>• Utilisation of case managers</li> <li>• Evidence of communication between team</li> <li>• Evidence of transfer of care planning</li> <li>• 'patient life journey/ survey</li> <li>• Clinical information sharing</li> </ul>
<b>Patient-centred care</b>	<ul style="list-style-type: none"> <li>• Patient satisfaction with involvement in care planning and delivery</li> <li>• Health literacy scale</li> <li>• Achieved goals (ie short and long term goals, patient centric goals)</li> <li>• Evidence of patient/carer education programs and</li> </ul>

<sup>23</sup> Australian Faculty of Rehabilitation Medicine Royal Australian College of Physicians, Standards 2005 Adult Rehabilitation Medicine Services in Public and Private Hospitals, AFRM, 2005. Sydney, Australia

Principle	Service check points
	communication
<b>Evidence based care</b>	<ul style="list-style-type: none"> <li>• Reduction in adverse events</li> <li>• Improvement in patient outcomes</li> <li>• Implementation of and adherence to evidence based guidelines Participation in and outcomes from 'guidelines audits' eg stroke audit</li> <li>• Local processes for evaluating new practices and changes in care prior to implementation</li> <li>• Clinical governance processes</li> <li>• Continuing education for staff</li> <li>• Demonstrated participation in research and quality activities</li> </ul>
<b>Appropriate care setting</b>	<ul style="list-style-type: none"> <li>• Compliance with objective admission and discharge criteria across care settings</li> <li>• Implementation of care pathways across multiple care settings</li> <li>• % patients receiving care in the most appropriate setting</li> </ul>

One of the principles described focuses on evidence based care. In terms of intensity of therapy the following case study presents the evidence identified throughout this project.

### Case study 1: Therapy intensity

The total amount of time that a patient spends engaged in rehabilitation activities varies considerably, between units, institutions and countries. While a universally accepted definition of the term "intensity" does not exist, it is usually defined as number of minutes per day of therapy or the number of hours of consecutive therapy.<sup>24</sup> In general terms intensity equals duration multiplied by frequency.

Several studies internationally have reported on the low level of time rehabilitation patients are engaged in therapeutic activity in rehabilitation units.<sup>25, 26, 27</sup> Within Australia this has been shown to be true with patients, on average, received only 37 min of therapy per weekday, with stroke patients receiving considerably more (mean of 56 min per weekday).<sup>28</sup> In Australia there are currently no standards to govern the amount of therapy patients should receive. This is in stark contrast to the situation that exists in the USA,

<sup>24</sup> The Elements of Stroke Rehabilitation (2010). Accessed November 2010 at [http://www.ebrsr.com/reviews\\_details.php?The-Elements-of-Stroke-Rehabilitation-34](http://www.ebrsr.com/reviews_details.php?The-Elements-of-Stroke-Rehabilitation-34)

<sup>25</sup> Lincoln NB, Willis D, Philips SA, Juby LC, Berman P. Comparison of rehabilitation practice on hospital wards for stroke patients. *Stroke* 1996;27:18-23.

<sup>26</sup> De Weerd W, Selz B, Nuyens G, et al. Time use of stroke patients in an intensive rehabilitation unit: a comparison between a Belgian and a Swiss setting. *Disabil Rehabil* 2000;22:181-186

<sup>27</sup> De Wit L, Putman K, Dejaeger E, et al. Use of time by stroke patients: a comparison of four European rehabilitation centers. *Stroke* 2005;36:1977-1983.

<sup>28</sup> Poulos CJ (2010). Evaluating inpatient public rehabilitation in Australia using a utilization review tool developed in North America. *J Rehabil Med Preview*. Accessed at <http://jrm.medicaljournals.se/files/pdf/preview/1246.pdf>.

where Federal regulation has mandated that patients in inpatient rehabilitation facilities should receive a minimum of 3 hours of therapy per day for at least 5 days of the week.<sup>29</sup>

There is growing evidence suggesting that increasing the intensity of rehabilitation therapy may lead to improved efficiency and patient outcomes in some types of impairment. The best evidence exists for stroke<sup>30</sup>, but it is quite likely that patients with other impairments would also benefit from an increased intensity of therapy.<sup>31, 32</sup>

A study analysing the results of four meta-analyses, examined the effects of differing intensities of physical therapy on patient outcomes. The study showed significant improvements in activities of daily living (ADL) function and reduction of impairments with higher intensities of treatment.<sup>33</sup> Another study which included 8 RCTs and one non-randomised experiment found a small but statistically significant intensity-effect on ADL and functional outcome parameters.<sup>34</sup>

A comparative study has demonstrated that additional weekend therapy resulted in significant improvements in FIM efficiency as well as a reduction in length of stay.<sup>35</sup> The study compared the results of stroke patients admitted to a conventional stroke rehabilitation program 5 days per week and patients admitted to a Full-time Integrated Treatment (FIT) program 7 days per week. Both groups had similar FIM scores on admission; however, individuals in the FIT program group had significantly shorter lengths of stay (72.9 vs. 81.1 days) and were discharged with higher average FIM scores (97.1 vs. 105) and nearly double the FIM efficiency scores.

Weekend therapy was not a common feature of rehabilitation services visited for a number of reasons primarily the absence of staff to support this practice. International discussions revealed that weekend therapy was provided in both the Netherlands and the US and this was considered to be a part of standard care processes.

**In summary there is evidence to support that an increase in therapy intensity, including the addition of weekend therapy supports better patients outcomes through the achievement of a higher FIM score and shorter lengths of stay.**

A second principle focuses on patient centred care. Case studies 2 and 3 below are taken from a patient experience and describe the differences in patient centred care experienced from her perspective.

<sup>29</sup> Medical Inpatient Rehabilitation Criteria Task Force. Standards for Assessing Medical Appropriateness Criteria for Admitting Patients to Rehabilitation Hospitals or Units. Cited on 14/12/10: <http://www.aapmr.org/zdocs/hpl/MIRC0906.pdf>

<sup>30</sup> Kwakkel G, van Peppen R, Wagenaar RC, et al. Effects of augmented exercise therapy time after stroke: a meta-analysis. *Stroke* 2004; 35: 2529-2539.

<sup>31</sup> Chen CC, Heinemann AW, Granger CV, Linn RT. Functional gains and therapy intensity during subacute rehabilitation: a study of 20 facilities. *Arch Phys Med Rehabil* 2002; 83: 1514-1523.

<sup>32</sup> Slade A, Tennant A, Chamberlain MA. A randomised controlled trial to determine the effect of intensity of therapy upon length of stay in a neurological rehabilitation setting. *J Rehabil Med* 2002; 34: 260-266.

<sup>33</sup> Langhorne P, Wagenaar R, Partridge C. Physiotherapy after stroke: more is better? *Physiother Res Int* 1996;1:75-88.

<sup>34</sup> Kwakkel G, Wagenaar RC, Koelman TW, Lankhorst GJ, Koetsier JC. Effects of intensity of rehabilitation after stroke. A research synthesis. *Stroke* 1997; 28: 1550-1556.

<sup>35</sup> Sonoda S, Saitoh E, Nagai S, Kawakita M, Kanada Y. Full-time integrated treatment program, a new system for stroke rehabilitation in Japan: comparison with conventional rehabilitation. *Am J Phys Med Rehabil*. 2004;83(2):88-93.

### Case study 2: Patient story Part 1

Patient story, Female 49yrs, post meningococcal septicaemia – Rehabilitation Unit 1

“In intensive care I had a nurse, and daily visits with a physiotherapist and OT (as well as many other medical personnel). The physio spent a lot of time with me doing exercises with my hands as well as my feet. The OT also assisted with this.”

“The nursing and allied health staff at the acute hospital (rehabilitation ward) were fantastic and assisted me at all times when staffing numbers were adequate. It was when the numbers were low that I struggled. For example in the rehabilitation ward we would start off each day with 4 nurses to 16-20 patients but due to absentees in the more acute wards we often lost 2 and on several occasions we lost 3, meaning we had 1 nurse for 16-20 patients.”

“It was a similar situation with the allied health staff. For the first week I received physiotherapy 4 days out of the first 7 but they had to choose between my feet or my hands as they could not do both each day. There is no physio on weekends. After the first week I saw the physio about 3 times in 5 days. The OT came every weekday and worked on trying to get me to sit up. There was not enough staff to lift me in, and lift me back out of the water chair so although it remained in my room it was not used during my 4 weeks in the rehabilitation ward. I feel that this made me go backwards as I was so weak I stayed in bed the whole time laying down. I knew that I was not improving and was getting distressed about it because I wanted to go home and get back to work.”

“One day two physios and my OT came and helped me up to walk on a walking frame. After that, which was my last week there, I never saw a physio or OT again. It was as if they had ticked a box that I was on my feet and no longer needed any rehabilitation.”

### Case study 3: Patient Story Part 2

Patient story, Female 49yrs, post meningococcal septicaemia – Rehabilitation Unit 1

After transferring to a different rehabilitation unit: “My rehabilitation in the hospital (rehabilitation ward) was not helpful. Therapy was not consistent and I simply did not progress and lost more strength each day. I honestly think had I stayed in the hospital for my rehabilitation I would have deteriorated further and my recovery would have been much longer overall as a consequence. I felt like I was simply existing and not moving forward but going backward until I was moved.”

Goal setting –

“They gave me goals for walking a certain number of steps I met or exceeded them as I was anxious to go home to my family and get back to work.”

“On the second day after I arrived I was given a sheet with the goals my rehabilitation team had decided on. I was told that I would be going to the kitchen to “cook breakfast next Wednesday” which I thought was a long shot because I had seven fingers still heavily bandaged. But on the Wednesday there I was with plastic gloves on with the finger parts taped down and I cut up fruit to make a fruit salad. The following week I made

lunch – a cheese melt, and the week after that I cooked curry and microwave rice for dinner.”

## Care Settings

The NSW Rehabilitation Model of Care described in this report encompasses six care settings as identified below.

In this section of the report, each care setting is described below in terms of:

- Overview of the scope of services
- Outcomes for the rehabilitation patient journey
- Implications for implementation – factors such as structure, people, process
- Case studies are provided for illustration.

The discussion of each care setting: supports the implementation of a consistent NSW Rehabilitation Model of Care including the development of admission and discharge criteria, and enables flexibility for localities in NSW to adapt to limitations in local current capability and capacity, ie where a community does not have access to all six care setting the scope of services may need to be reorganised around existing care settings.

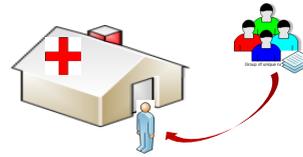
### Care settings – “six defined care settings”

Care setting 1:	Inreach to acute
Care setting 2:	Sub-acute inpatient
Care setting 3:	Ambulatory care – Day hospital
Care setting 4:	Ambulatory care – Outpatients
Care setting 5:	Ambulatory care – Home based
Care setting 6:	Outreach

## Care setting 1: Inreach to acute

### Overview of scope of services

- Early intervention - potential to maintain and improve function
- Integrated medical and rehabilitation multidisciplinary team
- Comprehensive assessment
- Shared care model between medical specialist groups
- Can treat acute illness and provide rehabilitation services in parallel



Early rehabilitation intervention by an MDT in the acute care setting

### Outcomes for the rehabilitation patient journey

- Enables early discharge planning
- Patient independence and an enablement model of care in the acute setting
- Prevention of functional decline during acute hospitalisation
- Integrated assessment of patients in an interdisciplinary environment
- Enhanced effectiveness in the patient journey as measured by: reduction in re-admissions, decrease in average length of stay, decrease in patients requiring a sub-acute inpatient stay, reduction in nursing home placement waiting times,
- Reduction in discharge delays due to early assessment and discharge planning

### Implications for implementation

- Admission and discharge criteria will be required to describe eligible patients in the acute sector who require and will benefit from inreach rehabilitation services
- Inreach services will need to be set up in a manner that prevents acute beds turning into sub-acute beds
- Protocols regarding adequate workforce provision to rehabilitation services will assist to ensure patient care and intensity of therapy aligns with best practice
- Good communication, collaboration and team work between the rehabilitation service and the acute care service will need to be developed
- Evolving a new model of rehabilitation will require that acute services (including health administrators) are educated in the role of Rehabilitation Services, and the importance of appropriate and early recognition of relevant patients. The concept of informing/educating/liasing with acute services must be one of the earliest steps taken. There is a high degree of dependence on the acute services to identifying patients who are relevant for rehabilitation

- Integration and communication across NGO, State government, Federal government and private services to support continuity of care, for example through interdepartmental /agency policies and programs
- The implementation of inreach services will involve collaboration and liaison with acute medical and nursing staff and the provision of information and education for the acute care staff to enable the successful integration of an inreach service

The case studies below provide examples of how inreach models of rehabilitation care have been implemented.

#### Case study 4: Acute care Rehabilitation Team

The Acute care Rehabilitation Team (ART) at Wollongong Hospital aims to provide early rehabilitation to appropriate patient while they remain in the acute setting. The ART is a standalone team providing multidisciplinary rehabilitation input on a consultation liaison basis with ART patients in addition to standard therapy offered to patients on an acute ward. The program supports the philosophy that rehabilitation should be viewed as a continuum that commences in acute care to prevent deconditioning that often results from bed rest and inactivity inherent in the acute hospital environment. The objective being that improving the functional status of patient s in the acute setting will lead to discharge directly from acute care where possible avoiding the need for a rehabilitation admission or leading to a shorter rehabilitation length of stay.

#### Case study 5: The Acute Care of the Elderly (ACE) Model

The Acute Care of the Elderly (ACE) Model is an aged care initiative undertaken by Hornsby Ku-Ring-Gai hospital. ACE is a shared care arrangement between the admitting Physician and a Geriatric Specialist, for patients aged 65 years and over who are admitted to ED. The model of care is based on the admitting physician working alongside the ACE team (which includes a geriatrician and a multi-disciplinary team) from day one of admission developing a comprehensive care plan. The patient has one episode of care (ie the patient is admitted from ED to the ACE ward and preferable discharged from this ward) which improves continuum of care, reduces patient confusion and usually reduces the average length of stay. The focus is on maintaining function, encouraging activity and independence through the acute phase of their illness.

Evaluation of the ACE Model has shown improved patient outcomes:

- Decreased re-admissions within 28 days for ACE patients reduced from 12.4%-3%. Average cost saving for 10 ACE patients NOT re 3%.
- Less numbers of patients require a stay within a rehabilitation facility from the ACE ward, prior to discharge
- However, if an ACE patient does require rehab, the ALOS = 11 days compared to a Non ACE patient ALOS = 21 days.

### Case study 6: Specialist Management with Acute Rehabilitation Treatment (SMART)

Early commencement of rehabilitation in the acute phase. Care with a joint focus on acute care and active rehabilitation. Westmead is in the process of commissioning a new rehabilitation model of care and a SMART ward model – which involves early intervention into orthopaedics, neurosurgery and trauma (the pilot is for 8 beds fully staffed with allied health in the surgery ward). A risk stratification tool will be utilised to identify patients on admission who are at risk of loss of function whilst in hospital, have 3 or more co-morbidities and would benefit from a rehabilitation approach. Patients enrolled in the pilot will commence rehabilitation while under the management of their specialist surgical team in the surgical ward. It is proposed to build into the project an evaluation of the SMART service to establish its potential impact on other hospitals and clinical specialties other than surgery. An evaluation plan will be developed in the first two months of project operation.

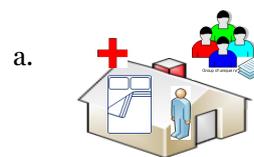
### Case study 7: Comprehensive Geriatric Medicine Service

Through the provision of a Comprehensive Geriatric Medicine Service at Westmead Hospital the above inreach programs are obviated by having such capacity inbuilt into the operational structure of the geriatric medicine services. The duality of inputs is replaced by having the attending physician skilled in both acute care and rehabilitation. The patient is admitted under the care of a geriatrician and associated interdisciplinary team. The patient undergoes a comprehensive assessment of their physical, psychosocial and functional needs. Care is focused on accurate diagnosis, optimising physiological and physical function and development of comprehensive care plan under the auspices of the service. There is a continuum of care provision through the acute, subacute and non-inpatient settings as required

## Care setting 2: Sub-acute inpatient

### Overview of scope of services

- Access to a core multidisciplinary care team (medical, nursing and therapist) and access to other specialised services as required in an inpatient setting
- Intensive multidisciplinary inpatient program for patients that require and can tolerate an intense rehabilitation program or who require the structured environment for safety reasons
- Provision of one-on-one therapy, group therapy and client self management / family involvement in the therapy program
- Dependant on the capacity and capability of the unit the following may be characteristics of the sub-acute care setting:
  - Streaming of care, where patients are grouped according to impairment type
  - Integrated care types for example: acute care and rehabilitation care (i.e. inreach teams and SMART beds); rehabilitation care and aged care (i.e. parallel care for orthogeriatrics).



Co-located: sub-acute rehabilitation unit located within the acute hospital



Standalone: sub-acute rehabilitation unit located separately to the acute hospital

### Outcomes for the rehabilitation patient journey

- Intensive multidisciplinary care leading to functional ability to be transferred to ambulatory care settings
- Streaming of care leads to specialisation and education of staff
- Integrated care promotes care coordination and improved flow of patients across the continuum of care.

### Implications for implementation

- Admission and discharge criteria will be required to describe eligible patients in the acute sector who require and will benefit from inpatient subacute rehabilitation services

#### a) Standalone sub-acute facilities

- Clear processes need to be defined for the management and admission of patients requiring a higher level of care back to the inpatient acute wards or facilities
- Availability of 24 hour (on-call or onsite) medical coverage
- Access to clinical services (eg X-ray, pathology, specialist appointments) not available on site.

## b) Colocated sub-acute facilities

- Protocols regarding adequate workforce provision to rehabilitation services will assist to ensure patient care and intensity of therapy aligns with best practice
- It will be possible to transfer patients directly to acute wards if required.

The case studies below provide examples of integrated model of care and the implementation of case managers.

### Case study 8: Orthogeriatrics and rehabilitation

There is evidence that inpatient rehabilitation specifically designed for geriatric patients compared with usual care results in improved functional status, decreased admission to nursing homes and decreased mortality.<sup>36</sup> Orthogeriatric services have provided the model on which the ACE, ART and SMART are based. Orthogeriatric services operate on the principle of comprehensive geriatric assessment and an interdisciplinary approach that encompasses the totality of the patient's medical, psychosocial and functional needs. For example, the orthogeriatric model is appropriate whilst patients are requiring the operative management of orthopaedic conditions. In this example a patient's medical and rehabilitation requirements are attended to by geriatric medicine. Such programs are common in larger teaching hospitals and rollout to district hospitals strongly supported by the ACI and NSW Health.

### Case study 9: Case managers

Case Managers/ Care Coordinators have been implemented in other patient groups such as cancer and chronic disease to improve the patient journey, in particular to facilitate the continuum of care, coordination of care, discharge planning/transfer of care, case management, integration of services and seamless care for patients.

Case Managers for rehabilitation have been implemented in a number of sub-acute facilities in NSW one example being Orange Hospital. The goals of case management at Orange Hospital include:

- To enhance and foster client-centred therapy where the patient and their family are included and central in the goal setting and discharge planning processes
- To improve the transition from acute care to rehabilitation to discharge destination. (Successful discharge should be well planned, timely, and coordinated).
- To increase and improve communication and information sharing between the treating team and the client and their family.

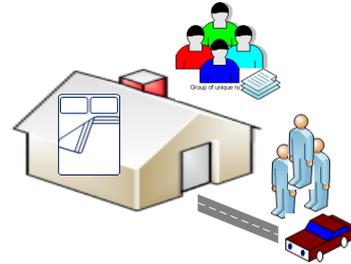
<sup>36</sup> Bachmann S, Finger C, Huss A, Egger M, Stuck AE, Clough-Gorr KM (2010). Inpatient rehabilitation specifically designed for geriatric patients: systematic review and meta-analysis of randomised controlled trials. *BMJ* 2010; 340:c1718 doi:10.1136/bmj.c1718

Orange Hospital seeks to allocate a case manager to patients within 48 hours of admission. The case manager is a member of the nursing staff and meets with the client at least once a week and the family is provided with the case manager's contact details. The case manager is the first point of contact for clients, families and other health professionals or service providers. The case manager is responsible for providing information, dealing with issues and assisting with transfer of care processes. The case manager also completes the goal planning sheet and discharge checklist.

## Care setting 3: Ambulatory care – Day hospital

### Overview of scope of services

- Intensive multi-disciplinary outpatient program for patients that requires two or more therapy appointments
- One-on-one therapy and/or group therapy treatment session



A comprehensive rehabilitation program conducted by an MDT in an outpatient setting

### Outcomes for the rehabilitation patient journey

- Access to intensive treatment across numerous disciplines in one 'outpatient session' over a half day or one day session of therapy. Many day hospitals now operate half day sessions. This contributes to the efficiency of the model and patient satisfaction
- Motivating social environment while patient continues to remain in usual place of residence
- Facilitates earlier discharge from hospital

### Implications for implementation

- Admission and discharge criteria will be required to describe eligible patients who require and will benefit from Day Hospital rehabilitation services
- Protocols regarding adequate workforce provision to rehabilitation services will assist to ensure patient care and intensity of therapy aligns with best practice
- Infrastructure: adequate space and equipment for a day hospital will be required to provide rehabilitation services
- Patient transport and/or parking is required to facilitate program uptake and continuation
- Ambulatory care can be provided in a range of settings. Ambulatory care should be delivered in the most appropriate setting dependant on patient need and availability. Consideration should be given to the type/s of ambulatory care setting/s that will be provided by one rehabilitation service or across the same LHN. Ambulatory care services should work in concert across settings to promote continuity of care for patients and avoid siloed care

The case study below provides an example a model of care in a day hospital setting.

## Case study 10: Day hospital

### Referral & Services:

- Referrals come from private and public hospitals, private and public sub-acute facilities, specialist private clinics, community GPs.
- Services run 5 hours/day 5 days/wk for group of approximately 12 patients per day
- Clients attend 1+ days/week for 6 week duration

### Baseline assessment on admission:

- Geriatrician/ Rehabilitation physician
- Allied Health team

### Activities include:

- Gym session with Physiotherapist and/or Therapy Aids and/or one-on-one
- Occupational Therapy group/one-on-one
- Speech Pathology sessions
- Hydrotherapy groups
- Communal dining with Dietician supervision and session
- Diversional therapy activities including Wii games and Tai Chi

### Goal setting and review:

- Goal setting is reviewed weekly with Case Manager
- Client is discussed at least monthly at a Multidisciplinary Team Case conference (including physician)

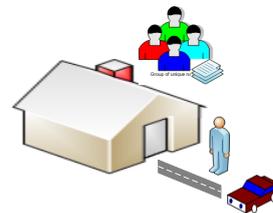
### Referral & follow-up

- Comprehensive GP discharge summary, support service contact, carer/family information handouts, Patient Information handouts
- Phone follow-up 2 weeks post-discharge

## Care setting 4: Ambulatory care – Outpatients

### Overview of scope of services

- One-on-one or group therapy - discipline specific outpatient therapy
- Access to a multidisciplinary team as required



Discipline specific therapy provided in an outpatient setting

### Outcomes for the rehabilitation patient journey

- Provides a structured program and the continuation of care following stay in acute/ sub-acute
- Enables transfer of care at an earlier date from the sub-acute rehabilitation unit
- Facilitates earlier discharge from hospital
- Enables access to rehabilitation services including timely medical review to prevent an admission to hospital
- Patient continues to remain in usual place of residence

### Implications for implementation

- Admission and discharge criteria will be required to describe eligible patients who require and will benefit from outpatient rehabilitation services
- Protocols regarding adequate workforce provision to rehabilitation services will assist to ensure patient care and intensity of therapy aligns with best practice
- Adequate space and equipment for multidisciplinary outpatient clinics will be required to provide rehabilitation services
- Patient transport and/or parking is required to facilitate patient attendance
- Linkage with outpatient clinics and addressing ways to communicate well where a patient attends two or more outpatient services
- Ambulatory care can be provided in a range of settings. Ambulatory care should be delivered in the most appropriate setting dependant on patient need and availability. Consideration should be given to the type/s of ambulatory care setting/s that will be provided by one rehabilitation service or across the same LHN. Ambulatory care services should work in concert across settings to promote continuity of care for patients and avoid siloed care

### Case study 11: Rehabilitation in the Netherlands

In the Netherlands 90% of rehabilitation care is delivered in an outpatient care setting. Care focuses on improving the quality of life and supporting a person's return to work and

active lifestyle. Home based services are available for those that are house-bound and cannot attend the rehabilitation centre.

## Care setting 5: Ambulatory care – Home based

### Overview of scope of services

- Provision of rehabilitation therapy within the home (usual place of residence) environment
- Individualised and task specific therapy



Rehabilitation services provided to patient in the home

### Outcomes for the rehabilitation patient journey

- Enhanced focus on targeted functional independence goals associated with usual place of residence including patients participating in therapy with the support of their family/carer
- Therapy available to those who cannot access centralised services
- Enables patients to access therapy who are not safe to access community transport to day hospital / outpatient therapy or where participation in day hospital therapy is too fatiguing or where goals are best met in the home setting, for example due to cognitive issues

### Implications for implementation

- Admission and discharge criteria will be required to describe eligible patients who require and will benefit from home based rehabilitation services, for example: the patient is 'homebound' and unable to tolerate transport to outpatient services
- Protocols regarding adequate workforce provision to rehabilitation services will assist to facilitate patient care and intensity of therapy aligns with best practice
- Staff travel and distances
- Ambulatory care can be provided in a range of settings. Ambulatory care should be delivered in the most appropriate setting dependant on patient need and availability. Consideration should be given to the type/s of ambulatory care setting/s that will be provided by one rehabilitation service or across the same LHN. Ambulatory care services should work in concert across settings to promote continuity of care for patients and avoid siloed care.

The case studies below provide examples and evidence supporting home based models of care.

## Case study 12: Home based rehabilitation case study

### Interstate and international use of a home based rehabilitation care setting

In NSW the provision of (publically funded) rehabilitation has mainly been provided in inpatient hospital settings. Internationally this is not the case with the emerging trend towards early discharge and the primary delivery of rehabilitation occurring in the community and home settings.<sup>37</sup> Evidence shows that home based rehabilitation is associated with improved outcomes for some clients and is more cost-effective than hospital based care.<sup>38</sup>

**Victoria:** Ambulatory rehabilitation is generally more widely available in Victoria than in NSW, with Victoria offering comprehensive outpatient public rehabilitation programs and the availability of home-based rehabilitation, typically for 2–6 weeks.<sup>39</sup> An evaluation of home-based rehabilitation in Victoria showed that clients and carers who had experienced home-based rehabilitation expressed a preference for home-based rehabilitation as did some of the inpatient rehabilitation clients who had not experienced home-based rehabilitation. Staff noted benefits of home-based rehabilitation such as, the applicability of therapy; the opportunity to involve the carer and other family members in the rehabilitation process; and the facilitation of the transition from hospital to home.

Public (Medicare and Medicaid) and private insurance funded home based rehabilitation services are also provided in the US for patients who meet 'homebound' criteria. Kaiser Permanente, a large private provider who offers rehabilitation services across the continuum of care has the highest number of physiotherapists associated with their home health program.

## Case study 13: Interface with aged care services – TCP

The federal government's recently established Transition Care Program offers 8–12 weeks of support with limited therapy to improve the functioning of patients at risk of residential aged care facility admission.<sup>40</sup> The program targets older people and an ACAT assessment is required.<sup>41</sup> There is wide variation in the implementation and provision of transition care across Australia. Transition care can be provided within the community or a residential care facility. It is particularly useful in rural areas where

<sup>37</sup> Grant, K.R. (1998). Women's health in a changing society: Changing women's health. *Australian Journal of Primary Health - Interchange*, 4(3): 20-39.

<sup>38</sup> Dow B, Black K, Bremner F (2003). Evaluation of home-based rehabilitation in Victoria. Draft Literature Review. Accessed in November 2010 at <http://www.health.vic.gov.au/subacute/dhre-litreview.pdf>.

<sup>39</sup> Peter W New and Christopher J Poulos (2008) Functional improvement of the Australian health care system — can rehabilitation assist? *MJA* 189 (6)

<sup>40</sup> Australian Government Department of Health and Ageing. Transition Care Program guidelines – 2005. Canberra: Department of Health and Ageing, 2005

<sup>41</sup> Australian Government Department of Health and Ageing. Transition Care Program guidelines – 2005. Canberra: Department of Health and Ageing, 2005

geriatric and rehabilitation services are not available, in this instance TCP have been used to provide input from allied health staff post hospitalisation.<sup>42</sup> TCP provides rehabilitation therapy, with the expectation of slow gains over time with good supportive care and minimal therapy. The TCP provides additional treatment and care options following hospitalisation that are highly valued by patients and their families. When compared with similar groups of frail older people discharged from hospital during the same time period, those who received Transition Care had fewer readmissions to hospital and were less likely to move into permanent residential aged care. A recent article highlighted concerns about the cost-effectiveness of this program compared with alternatives including rehabilitation.<sup>43,44</sup>

#### Case study 14: Evidence for cost-effectiveness of home based rehabilitation

Available studies of cost effectiveness have found that home based rehabilitation combined with early discharge to be cost effective compared with hospital care. The main reason for the reduction in cost was reduced length of stay in hospital. Studies have found that there was a reduction in hospital length of stay and that this was achieved without any adverse effects on health outcomes for clients.<sup>45</sup> The meta-analysis has calculated that the overall costs were approximately 15% lower for the early discharge interventions compared with conventional care.<sup>46</sup>

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<sup>42</sup> Cameron ID, Crotty M, Gray L, Kurrle SE, Peel NM, Monaghan N, Parker SG. Whither Transition Care. *Australasian Journal on Ageing*. 2010;29 (4):147-9.

<sup>43</sup> Gray LC, Travers CM, Bartlett HP, et al. Transition care: will it deliver? *Med J Aust* 2008; 188: 251-253

<sup>44</sup> <http://www.health.gov.au/internet/main/publishing.nsf/Content/ageing-transition-national-evaluation-report.htm~ageing-transition-national-evaluation-report-exec-sum.htm>

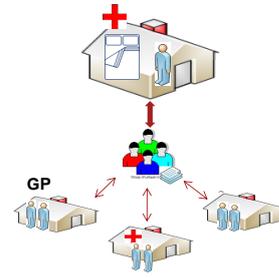
<sup>45</sup> Dow B, Black K, Bremner F (2003). Evaluation of home-based rehabilitation in Victoria. Draft Literature Review. Accessed in November 2010 at <http://www.health.vic.gov.au/subacute/dhre-litreview.pdf>.

<sup>46</sup> Anderson, C., Ni Mhurchu, C., Brown, P. M., & Carter, K. (2002). Stroke rehabilitation services to accelerate hospital discharge and provide home-based care: an overview and cost analysis. *Pharmacoeconomics*, 20(8), 537-552.

## Care setting 6: Outreach

### Overview of scope of services

- Hub and Spoke model between regional and tertiary hospitals or regional and smaller neighbouring rural hospitals
- The outreach model may be a Consultative Model (where the hub site provides advice and support to neighbouring hospitals as required) or a Collaborative Model (where the hub site and neighbouring hospitals work together to provide a rehabilitation program for patients). Both models may run simultaneously or separately
- Outreach coordinator and rehabilitation team collaborate with neighbouring hospital to facilitate ongoing rehabilitation and goal attainment
- Ongoing education from the hub site to spoke hospital staff (via various mechanisms including telephone, or onsite at either hospital)
- Collaborative rehabilitation care approach between the hub hospital and the neighbouring hospitals
- Involvement of the GP as a key coordination link for the client who is undertaking a rehabilitation program where there is limited access to Rehabilitation and Aged Care physicians.



'Hub' and 'Spoke' model in which rehabilitation is provided outside a specialised rehabilitation unit

### Outcomes for the rehabilitation patient journey

- Enhanced access to rehabilitation services (including goals and rehabilitation plan) closer to patients home.
- Greater likelihood of family/carer involvement in rehabilitation care

### Implications for implementation

- Good communication, collaboration and linkages between the hub and spoke hospitals will need to be developed
- Service planning for resources (staffing and equipment) at neighbouring hospitals to enable rehabilitation service provision
- Admission and discharge criteria will be required to describe eligible patients
- Education and liaison with neighbouring hospitals, local GPs and local specialists regarding the service and referral of appropriate rehabilitation patients

The case studies below provide examples and evidence supporting outreach models of care.

### Case study 15: Outreach Case Study

Orange Hospital has an outreach rehabilitation services. The “Hub Site” at Orange Base Hospital identifies patient goals by the sub-acute multidisciplinary team. If a patient requires intensive or specialised inpatient rehabilitation that will be transferred to a rehabilitation unit at Orange, Dubbo or Bathurst. If the patient goals are identified as suitable for management at a neighbouring hospital (ie less complicated patients, requiring fewer disciplines for treatment). The patient will be transferred to a neighbouring hospital (‘spoke site’) within Orange Health Service Area. An Allied Health Assistant (AHA) will assist with therapy and the goal orientated progress will be monitored, case conferenced and reviewed by local staff in collaboration with the rehabilitation outreach coordinator and / or “Hub team” staff.

If patients at neighbouring hospitals are identified by staff as potential rehabilitation candidates, the rehabilitation outreach coordinator acts as a liaison point between the Hub/Spoke site staff to provide advice, intervention or admission to a rehabilitation unit.

### Case study 16: South Eastern Australia Case Study

Evaluation of a innovative ‘outreach’ rehabilitation model in rural South Eastern Australia was effective in meeting the needs of a sparsely populated area covering five health services.<sup>47</sup> The rehabilitation program aimed to strengthen the link between inpatient (acute) care and community rehabilitation. With the new program, protocols were established including community staff attendance at inpatient rehabilitation case discussion meetings and communication of the client’s inpatient rehabilitation goals. Clients admitted to the program improved functionally at least as well as the Victorian State average for similar client groups (BI change 26.5 compared with 22.3 points), with a shorter LOS (13.8 compared with 22.3 days) but more were discharged to residential aged care (16.1% compared with 6%).

Key enablers to the success of the program included: collaboration between hospitals; a skilled and enthusiastic leader; recruitment of allied health staff; consistent medical leadership; access to training and support from a major regional rehabilitation centre; and access to funding to enable the program to establish itself and demonstrate outcomes for clients.

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<sup>47</sup> Dow B, Moore K, Dunbar JM, Nankervis J, Hunt S. (2010) A description and evaluation of an innovative rural rehabilitation programme in South Eastern Australia. *Disabil Rehabil.* 32(9):781-9.

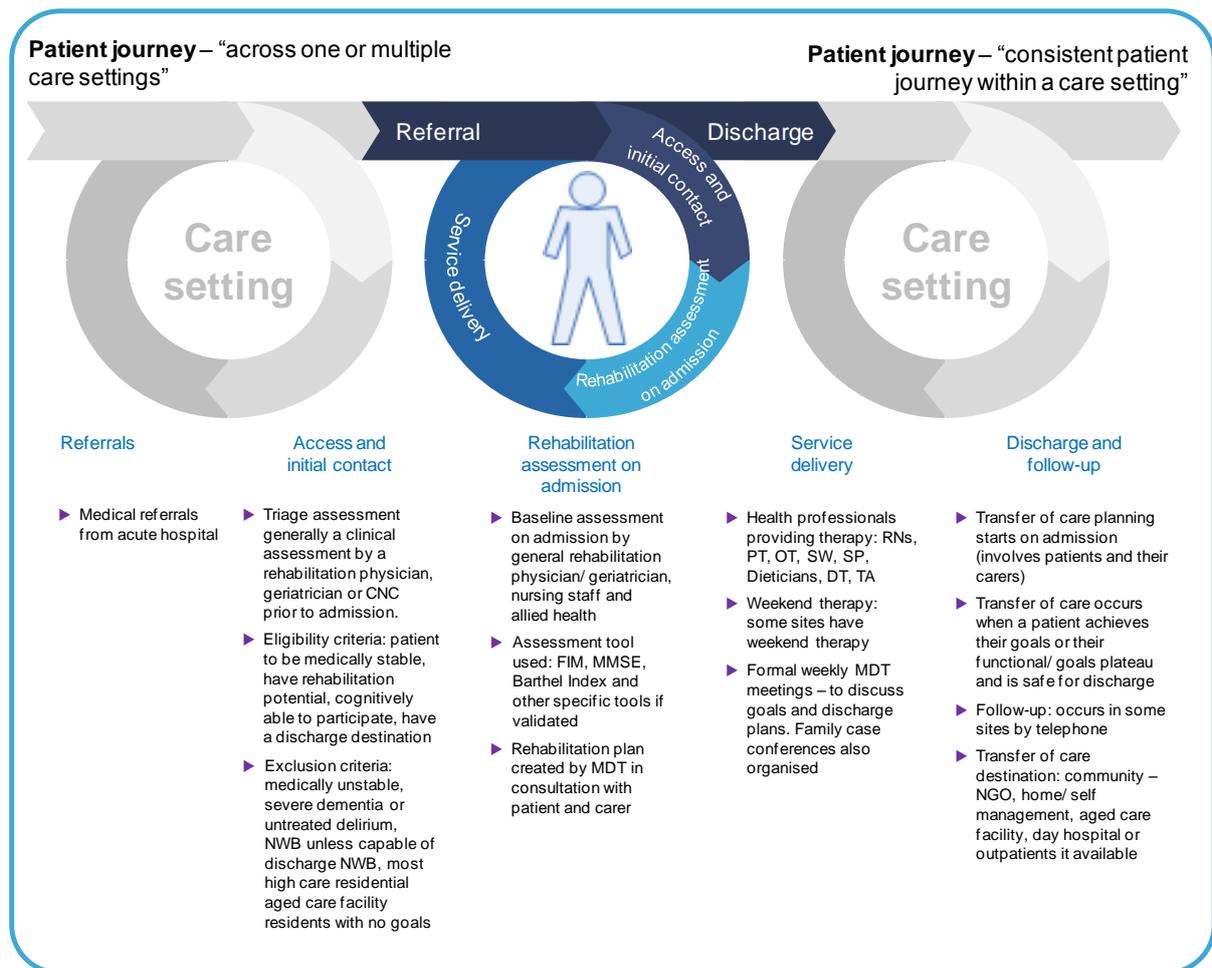
## Case study 17: Cootamundra Hospital

Cootamundra Hospital has allied health staff who work across the continuum of care. An allied health assistant has been trained to carry out rehabilitation programs in patient's homes and in the outpatient setting and to undertake home visits to assess specific home requirements. The assistant has clear directions from the therapist as to the therapy requirements which are reviewed by the therapist at regular intervals. This model allows the slim resource of the therapist to treat more patients and patients to return to their local communities from the inpatient rehabilitation centres, for example, from Wagga Wagga in a timely manner. The allied health staff at the hospital work closely with the local GPs and are looking forward to a "Health One" site further enhancing this relationship.

## The Rehabilitation patient journey

While there is currently not a consistent model of care for rehabilitation services in NSW and the patient journey across care settings is individual to that patient's needs, through the consultation process it has been established there are five key components of the patient journey common to all care settings. These common components appear in Figure 14 below.

Figure 14: Components of the rehabilitation pathway



The proposed model for rehabilitation services in NSW should be operationalised to support the consistent delivery of these common components of the patient journey across NSW. The further development of these components of care will build on the *NSW Health Essentials of Care* framework with an aim to enhance:

- rehabilitation patient care and outcomes
- teamwork within the rehabilitation service and across services
- individual work satisfaction.

Table 7 below provides a list of some examples of good practice in each of these five common components of the patient journey. Further detail on how these form part of the core Principles of the Model of Care is available in Appendix 2.

Table 7: Referral, access and initial contact

Referral, access and initial contact	
<b>Referral</b>	<ul style="list-style-type: none"> <li>• A standardised referral form and/or process for rehabilitation consultation and services</li> <li>• Early intervention practices for therapy to reduce functional decline</li> </ul>
<b>'Ready for rehabilitation' criteria</b>	<ul style="list-style-type: none"> <li>• Guidelines for establishing when patients are 'ready for rehabilitation' against each care setting</li> </ul>
<b>Eligibility criteria</b>	<ul style="list-style-type: none"> <li>• Eligibility refers to the extent to which services are provided only when they are needed. In the instance of rehabilitation services it requires an assessment of the value of rehabilitation in terms of the patient's potential for rehabilitation. Organisations are responsible for determining eligibility/admission criteria and a process for appropriateness of patient admission to rehabilitation.</li> <li>• Guidelines for a trial of rehabilitation</li> </ul>
<b>Waiting list management</b>	<ul style="list-style-type: none"> <li>• A process for rehabilitation services access management</li> </ul>
<b>Transfer of care</b>	<ul style="list-style-type: none"> <li>• A list of appropriate needs for the successful preparation for transfer of care to a rehabilitation service and within different rehabilitation care settings</li> </ul>
<b>Communication with patients and family</b>	<ul style="list-style-type: none"> <li>• Standards for effective communication</li> <li>• Approach to management of patient carer expectations</li> </ul>

### 'Ready for rehabilitation'

Defining 'ready for rehabilitation' is an ongoing challenge for services. The concepts of 'ready for rehabilitation' and 'admission criteria' are strongly linked however are not identical. A patient may be considered ready for rehabilitation, however may not meet the admission criteria for a specific service. 'Ready for rehabilitation' is patient centric and refers to a patient's suitability for rehabilitation. 'Admission criteria' are service specific and dependent on the care setting and capability of the service.

Consultation revealed that currently, 'ready for rehabilitation' is based on the clinical judgement of a number of doctors or health professionals. There are no agreed objective criteria for what constitutes 'ready for rehabilitation' or a clear and accountable decision-making process. Rehabilitation services are reliant on acute care teams and visiting medical officers to understand both 'ready for rehabilitation' and rehabilitation eligibility/admission criteria and make appropriate referrals.

The difficulty and appropriateness of defining 'ready for rehabilitation' was discussed at the Solution Design Workshop. Participants indicated the problematic nature of defining 'ready for rehabilitation' suggesting that it was not a one-size fits all checklist but rather is dependent on the individual patient.

The consultation survey asked respondents if the following criteria should be used when categorising a patient as 'ready for rehabilitation' (to a sub-acute setting). Respondents' agreement with the criteria is provided in the table below.

**Table 8: Survey results for criteria to be used when categorising a patient as ‘ready for rehabilitation’ to a sub-acute setting.**

Criteria	Favourable answer
Medically stable	90% (102)
No severe delirium or dementia	81% (92)
Have rehabilitation potential	93% (104)
Able to participate in rehabilitation	94% (106)
<i>Have a discharge destination</i>	<i>41% (46)</i>
Achievable goals identified	93% (103)
<i>Is weight bearing</i>	<i>39% (43)</i>

The five favourable ‘ready for rehabilitation’ criteria above (where 80% or more respondents agreed) can be used as the basis for further definition of ‘ready for rehabilitation’.

Admission to a service impacts patient flow between different settings and services. Admission criteria for a local service should be written collaboratively by the Rehabilitation team and the management of the service. Admission criteria by care setting must be defined locally and are dependent upon the number and types of care settings available. For a patient to be eligible for admission to a service it should be established that the capability of the service meets the care required, and the patient has potential for rehabilitation in the available setting.

The tables below provide further detail regarding components of the patient journey.

**Table 9: Assessment on Admission**

Assessment on Admission	
<b>Clinical handover</b>	<ul style="list-style-type: none"> <li>Clinical handover standards to support continuity of care and patient safety</li> </ul>
<b>Assessment</b>	<ul style="list-style-type: none"> <li>A standard process for assessment by core multidisciplinary teams</li> <li>Assessment tools covering physical, psychological and social needs.</li> <li>Referral process for specialist therapist consultations and levels of prioritisation for these services</li> </ul>
<b>Transfer of care</b>	<ul style="list-style-type: none"> <li>Inclusion of transfer of care planning in the initial assessment</li> </ul>

Table 10: Rehabilitation planning

Rehabilitation Planning	
<b>Case management</b>	<ul style="list-style-type: none"> <li>• Goal setting: patient centred and communicated in a tangible way time limited and regularly reviewed</li> <li>• Protocolised care plans for patients with similar conditions eg post hip and knee replacement</li> <li>• Case conferencing is multidisciplinary, documented, frequent and supported by other informal communication processes</li> <li>• Case coordinators or key person allocated to each client to coordinate care across the continuum. A single point of contact for the client, family, carer, the multidisciplinary team and other service providers</li> </ul>
<b>Patient &amp; carer involvement</b>	<ul style="list-style-type: none"> <li>• Guidelines for the provision of information and education to clients, their families and carers to assist them to understand and participate in their care</li> </ul>

Table 11: Service delivery

Service Delivery	
<b>Therapy</b>	<ul style="list-style-type: none"> <li>• Defined philosophy of therapy delivery that aligns to current good practice evidence, guidelines and standards</li> <li>• Manage intensity of therapy: <ul style="list-style-type: none"> <li>○ Type: one-on-one therapy, group therapy and self management</li> <li>○ Timing, duration and frequency</li> <li>○ Continuity across settings</li> <li>○ Continuity over the weekend</li> </ul> </li> </ul>

Table 12: Transfer of care, follow-up & re-entry

Transfer of care, follow-up & re-entry	
<b>Transfer of care</b>	<ul style="list-style-type: none"> <li>• Readiness for transfer criteria</li> <li>• Comprehensive discharge information for primary and community care services</li> </ul>
<b>Community support services and primary care</b>	<ul style="list-style-type: none"> <li>• Integration and communication across NGO, State government, Federal government and private services to support continuity of care</li> </ul>
<b>Follow-up</b>	<ul style="list-style-type: none"> <li>• Implementation of follow-up via appointment or telephone</li> </ul>
<b>Re-entry</b>	<ul style="list-style-type: none"> <li>• Planned vs unplanned: distinguishing between these two purposes and monitoring occurrences will inform future service delivery.</li> </ul>

## Enablers for implementation of NSW Rehabilitation Model of Care

Enablers describe the components of the model that are required to support implementation

### Enablers – “support implementation”

- Workforce
- Data and performance improvement
- Care coordination and linkages
- Technology
- Appropriate infrastructure

### Workforce

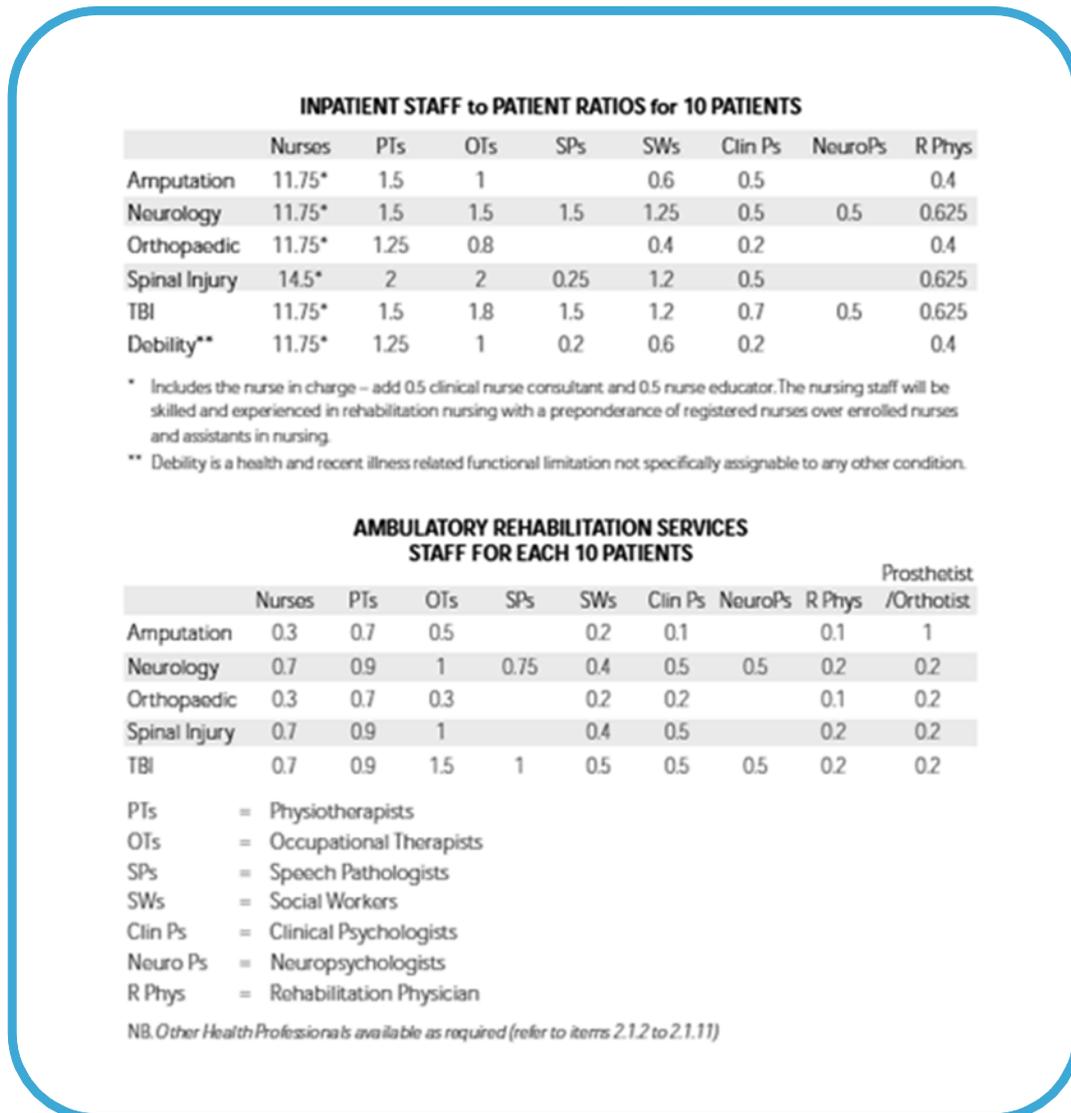
Rehabilitation requires a multidisciplinary workforce to enable improvement in patient functioning and successful achievement of goals. For all staffing categories (medical, allied health and nursing), the demand for services and the patient mix should determine the requirement for staff with particular qualifications and skills. Sufficient staffing to meet the demand and capability requirements of patients impacts directly on delivery of high quality patient care and intensity of therapy.

The Faculty of Rehabilitation Medicine has published standards<sup>48</sup> for acute rehabilitation medicine services in public and private hospitals. These include recommended inpatient and ambulatory staff to patient ratios for 10 patients.

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<sup>48</sup> Australian Faculty of Rehabilitation Medicine Royal Australian College of Physicians, Standards 2005 Adult Rehabilitation Medicine Services in Public and Private Hospitals, AFRM, 2005. Sydney, Australia

Figure 15: AFRM staffing ratios



Rehabilitation services are moving towards interdisciplinary teamwork where staff focus across multiple therapy disciplines and share a common patient population, common patient care goals and have responsibility for complementary tasks. The team is actively interdependent. Interdisciplinary care crosses traditional boundaries and blends the practices and expertise of each discipline involved. Interdisciplinary care can further enhance a patient centred care approach and reduce duplicative assessments.

Furthermore some health teams are transitioning to transdisciplinary care. This involves a team of professionals who work together to share knowledge and skills across disciplines.<sup>49</sup> Transdisciplinary teamwork improves communication and cooperation, and provides

<sup>49</sup> Rhee K. Creating a national, transdisciplinary community of clinicians who serve the underserved. *J Health Care Poor Underserved* 2004 March;15(1):1–3.

integrated care to the clinic's patients. The aspect of transdisciplinary care that distinguishes it from all other team models is its emphasis on cross-training.<sup>50</sup>

Rehabilitation services must consider how to use the skills and talents of the current workforce to their best advantage. Particular examples of workforce innovation or the implementation of less traditional workforce models are described below:

- **Assistants to allied health therapists:** Assistants to allied health therapists or therapy aids provide support in one or several disciplines in the areas of physiotherapy, occupational therapy or speech pathology. The advantages of this staffing model include increased therapy time for patients and the ability for allied health professionals to dedicate more time to the development of patient programs and care plans. The Royal Rehabilitation Centre Sydney is a Recognised Training Organisation and provides training to enable therapy assistants to gain a Certificate III or IV in Allied Health Assistance qualification. The qualification can be gained in physiotherapy, occupational therapy, speech pathology or a student may complete electives to achieve a multidisciplinary qualification.
- **Diversional therapists or activities officers:** Diversional therapy practitioners work with people of all ages and abilities to design and facilitate leisure and recreation programs. Activities are designed to support, challenge and enhance the psychological, spiritual, social, emotional and physical well being of individuals.<sup>51</sup> Through this role patients are provided with opportunities to participate in leisure and recreation activities contributing to their overall function, motivation and recovery. The benefits of diversional therapy are in keeping patients occupied and providing practical skills to enable them to return to previous leisure and recreation activities with modifications as required. Diversional therapists or activities officers were well regarded by rehabilitation staff interviewed during site visits, special mention was made of using these staff to provide therapeutic interventions over inpatient weekend stays.
- **Consultant allied health therapists:** In this model allied health therapists operate in a "consultant" capacity to neighbouring hospital sites. This model has particular relevance in the case of rural areas that do not have allied health staff. The implementation of consultant therapists allows nursing staff or therapy assistants at peripheral sites or newer allied health staff working independently to be provided with advice and clinical supervision through the allied health consultant at the "hub" site.

## Care coordination and linkages

As per the agreed definition, the primary goal of rehabilitation services is to support the restoration of function and self-sufficiency to the level prior to that illness or injury within the constraints of the medical prognosis for improvement. Linkages with support services that

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<sup>50</sup> Dawson Hobbs, M. The social worker on the medical transdisciplinary team. *Journal of Health Care for the Poor and Underserved* 16 (2005): 186–191.

<sup>51</sup> Diversional Therapy Australia website. <http://www.diversionaltherapy.org.au/> Accessed: 8/11/10

exist within the community are essential in safely transitioning a person back to their previous residence with functional independence.

Clear linkages and formal processes for coordination should cover the following categories:

### Clinical support services

- Access to support services including pathology, radiology and pharmacy are required to provide a clinical service. Where services are not colocated with the acute hospital or the acute hospital does not have onsite services, agreement with other services that can provide these supports is required. Services availability (including weekends and after hours) should be considered in terms of patient complexity and thus eligibility (admission) criteria. Appropriate arrangements for transport of patients (in the inpatient setting) to enable access to required services should be in place. Access to other support services to be considered includes orthotics, prosthetics and podiatry.

### External and community support services

- Building strong linkages across the acute and community services sector is a critical success factor to improving access to the envisioned NSW Rehabilitation Model of Care into the future.
- A primary goal for sub-acute services is to improve a patient's function with the aim of the patient returning home with as much functional independence as possible. Integration with community support services is essential in ensuring a patient's successful transition from hospital to home.
- Community support services include services such as the Transition Aged Care Program, Home and Community Care, ComPacks, Ageing Disability and Home Care, Aged Care Assessment Teams and primary health services.
- Arrangements should be made with other service providers prior to transfer and relevant patient information made available to those service providers.
- A state-wide view of availability of transport will support ease of transfer between city and country and tertiary and general rehabilitation services and enable care to be provided in the most appropriate setting
- Further timely access to home modification services and specific equipment is crucial to ensuring a patient's transition to home on the expected date. As far as possible where these services are required the process for modification or acquisition should be initiated on admission to prevent delay.
- Individual clinicians and team/units, work most effectively when links and networks are efficient and effective. Further to the linkages mentioned above, there are a range of other linkages which are invaluable in improving the quality of service, and the quality of patient experience. Examples include: consumer advocacy groups, universities/research institutions/teaching institutions, professional organisations (eg, Rehabilitation Nurses Association, Stroke Services NSW).

## Specialised services

- Specialised services provide support for patients with particular impairments or needs. In the case of patients with spinal or brain injury who are not treated in specialised units, access to spinal or brain injury outreach services and specialist medical expertise in these areas is required. Local services should build links with state-wide services in these areas are applicable.
- Specialised services such as driving assessments and sexuality clinics are presently only available in limited places. These specialised services assist patients with specific individual needs or goals. Access to these services can be costly and clear eligibility/admission criteria are essential. Access should not be determined by individual financial status. Referral to these services may be coordinated through the local service or at the LHN level where the patient is receiving treatment.

## Data and performance improvement

Information and data management are used to assist services to understand and meet their operational and strategic objectives. Furthermore information and data are used to effectively support and improve performance as related to rehabilitation care and service delivery.

Robust performance monitoring and evaluation processes are informed by data collection, analysis, and tracking over time. Data collection contributes to the development of an evidence-based understanding of the quality of a rehabilitation service by measuring it against common standards of care. The use of 'uniform outcomes measurement, group benchmarking and data-driven hospital-specific strategies for change' can facilitate continuous improvement.<sup>52</sup>

To determine the effectiveness and efficiency of a rehabilitation service there are a number of levels at which performance should be measured:<sup>53</sup>

- **The individual clinician level** – to measure and improve the care provided by a clinician. Individual clinicians can review their performance through several processes including clinical audit, peer review and patient outcome data that has been attributed to individual clinicians.
- **The clinical team or unit level** – teams should discuss the data collected on each indicator and identify areas of practice variation that require investigation. Clinical teams should review local performance and as far as possible compare this performance to other peer services and past performance. A review of data reported to AROC and the ACHS (via the rehabilitation clinical indicators) is one mechanism in which services can review performance and identify local outliers or issues and areas for improvement.

<sup>52</sup> SCHWAPPACH, D., BLAUDSZUN, A., CONEN, D., EBNER, H., EICHLER, K. & HOCKREUTENER, M. 2003. 'Emerge': benchmarking of clinical performance and patients' experiences with emergency care in Switzerland. *International Journal for Quality in Health Care*, 15, 473-485.

<sup>53</sup> AUSTRALIAN COUNCIL ON HEALTHCARE STANDARDS 2008. *Australasian clinical indicator report 2001-2008*. 10th ed. Sydney.

- **The hospital / organisation level** – data can flag issues that will need organisational investigation using a scientific method and protocol alteration. Services should report data to their local hospital or organisation as agreed. These data may include activity data (including: length of stay, occasions of service, impairment type, number of transfers), and performance data (including: adverse events, waiting for rehabilitation times, patient satisfaction).
- **State/territory and national levels** – for the purposes of identifying the need for improved government policy and strategies. NSW Health data collection for rehabilitation services is via Synaptix and HIE. Data is currently collected at a national level in relation to rehabilitation through AROC (via SNAP) for subacute rehabilitation units only. AROC have commenced collecting data for ambulatory care services and services should be encouraged to participate in this data collection and provide feedback to AROC in relation to their needs.

### Role of Research

Research occurring within Clinical Units has been demonstrated to improve the quality of clinical outcomes for patients treated in that unit. Teams undertaking research generally feel more pride in their work, and feel that they are part of a specialist or expert team. Knowledge of individual clinicians is improved, and networking opportunities are expanded. Having data collection infrastructure in a unit expands research opportunities for teams working in that unit. Rehabilitation clinicians and units should have a philosophy of considering/undertaking research activities, especially if they are undertaking interventions/processes which they believe are unique or innovative.

### Technology

Technology has a role in enhancing the effectiveness of rehabilitation service delivery in the future. Specifically this relates to:

- Use of video conferencing and teleconferencing to facilitate communication between health care professionals particularly in outreach models or where additional clinical expertise is required

#### Telehealth in Queensland

In Queensland telehealth has been successfully used to provide specialist outreach rehabilitation services to more rural hospitals. Tele-rehabilitation services have been developed using real-time videoconferencing, video recording and capture of still images over the Next G wireless network so that patients can receive specialist rehabilitation services while remaining in their local community.

In this model assessment and video conference ward rounds are utilised. The initial assessment is undertaken by a nurse (or other trained professional on site) and this is provided to the Rehabilitation Physician who prepares the care plan. The assessment provides the baseline functional levels.

Weekly telehealth rounds are undertaken via mobile wireless on site by a nurse and by a rehabilitation physician at an office in the city. Other ward rounds are carried out by the

local doctors (GP or specialist), but Rehabilitation Physician working remotes provides supervision for planning from a distance.

- Information and communication systems to support information sharing across care settings between service providers and across geographical boundaries. Information systems must support the collection of a minimum dataset for tracking patients and activity, and for collecting appropriate data to monitor the effectiveness and outcomes of rehabilitation services. The system should have links to the AHS/LHN systems and provide a way of tracking individual patients across different care settings and the broader health system.

### Electronic Waiting List System

In 1998 SESIAHS implemented an inexpensive information management system which provides clinical and business process support for clinicians and bed managers. The system has been used by an area rehabilitation and aged care service to manage inpatient consultations and patient flow across nine hospitals. The system enables clinicians to manage and track patient referral, consultation and transfer to rehabilitation and subacute beds. Read-only access to the system for clinicians and bed managers outside the rehabilitation and aged care service allows greater transparency.

Its introduction resulted in decreased time from referral to consultation and transfer and access to a rehabilitation or subacute bed.<sup>54</sup> The system is being updated on a continual basis and has functionalities that would benefit other Local Hospital Networks in the future.

## Infrastructure

We have received feedback that another enabler to implementation is infrastructure. Infrastructure includes the provision of buildings with suitable disabled access and gym space along with suitable equipment. The infrastructure and equipment required to provide effective rehabilitation will vary according to the patient mix and types of services provided. As the complexity of a service increases the range and level of equipment, infrastructure and therapy areas would be expected to increase. The setting in which the rehabilitation service is provided also impacts on the infrastructure and equipment required.

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<sup>54</sup> Poulos CJ, Gazibarich BM, Eagar K (2007) Supporting work practices, improving patient flow and monitoring performance using a clinical information management system. Australian Health Review. 31 (1): S79 - 85

# Implementation next steps

**PLEASE NOTE:** This Model of Care has been superseded by the Principles to support rehabilitation care (2019).  
Please refer to the new document [https://aci.health.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0014/500900/rehabilitation-principles.pdf](https://aci.health.nsw.gov.au/__data/assets/pdf_file/0014/500900/rehabilitation-principles.pdf)

## Implementation: next steps

This section of the report brings together the evidence and key findings to form recommendations for next steps towards implementation of the rehabilitation model of care.

The evidence and key findings for the project resulted from a range of observation and analysis activities: site visits; stakeholder consultations and workshops; international and interstate comparisons; and a literature scan. These activities included broad consultation with key rehabilitation informants including rehabilitation physicians, geriatricians, managers, nursing staff, allied health professionals, external service providers and consumers and carers. Key findings and initial model of care concepts were socialised with rehabilitation stakeholders to facilitate informed design and testing of model of care components.

The implementation of a NSW Rehabilitation Model of Care is congruent with the strategic focus for the NSW Health system. The NSW Rehabilitation Model of Care builds on this strategy by identifying appropriate rehabilitation service options across NSW LHNs to meet the needs of the population.

The six recommendations discussed below have been developed in the context of the implementation of a consistent NSW Rehabilitation Model of Care as described in the previous sections of this report. The recommendations are informed by: the body of evidence and key findings resulting from the project; guidance provided by the expert reference group and industry stakeholders; and the data analysis undertaken by NSW Health.

The recommendations focus on the NSW Rehabilitation Model of Care in terms of equity of access and consistency of service quality. The recommendations provide actions for which there is good evidence, widespread support, and clearly viable avenues for implementation. The purpose of the recommendations is to provide the context for discussion between NSW Health and the Rehabilitation Redesign Working Group on the steps required for implementation. The recommendations provide guidance to inform implementation of the NSW Rehabilitation Model of Care at the State level (with the exception of Recommendation 2).

## Strategic direction and recommendations

### Recommendation 1:

**Develop communications plan regarding findings, definitions, principles, and recommendations regarding a consistent NSW Rehabilitation Model of Care.**

*This recommendation is considered to be a short term recommendation that may be achieved within six months.*

There are opportunities to increase communication and build stronger relationships with key rehabilitation stakeholders including Chief Executives, General Managers, key Local Health Network contact staff, Patient Flow Managers, Rehabilitation staff and Aged Care staff. NSW Health project staff and the Rehabilitation Redesign Working Group are the key to engagement and the building of strong relationships with these stakeholders.

The development and implementation of a considered communication plan will assist to promote a shared understanding of the work undertaken to date regarding a consistent NSW Rehabilitation Model of Care.

### Recommendation 2:

**Local services undertake a gap analysis of the 'as is' rehabilitation model of care compared to the NSW Rehabilitation Model of Care and develop a local implementation plan to move to the state-wide model.**

*This recommendation is considered to be a short term recommendation that may be achieved within six months.*

The NSW Rehabilitation Model of Care supports the move towards standardised practice for rehabilitation services across NSW. While it is acknowledged that rehabilitation services operate in a variety of environments, the model of care aims to provide consistency and good practice guidance while allowing local services operational flexibility for innovation in work practices. The NSW Rehabilitation Model of Care outlined in this report (described in section entitled *NSW Rehabilitation Model of Care*), provides services with a framework on which to examine their current rehabilitation model of care and undertake a 'gap analysis'. The undertaking of a gap analysis will provide services with a starting point to achieve consistent rehabilitation practice and implement rehabilitation care in other settings identified as 'gaps'.

The NSW Rehabilitation Model of Care provides local services with guidance on six rehabilitation care settings. Not all rehabilitation services in all areas will be required to provide care across all settings. Consideration should be given to which care settings are most appropriate based on current service gaps and population demand.

### Recommendation 3:

**Create robust data dictionary and undertake a state-wide stocktake by LHN of activity data by care setting and workforce staffing by care setting to inform service planning.**

*This recommendation is considered to be a medium term recommendation that may be achieved within twelve months.*

A state-wide approach to measurement will require consistent definitions of rehabilitation. In developing definitions, consideration must be given to the objective and purpose of the definition in terms of identifying patient pathways, patient impairment and comorbidities, therapy type and intensity and streams of resource utilisation.

Agreed definitions, and support guidelines for use of these terms, should consider:

- rehabilitation 'care type change';
- episode of care, in both the inpatient and ambulatory care settings;
- classification of patients 'waiting for rehabilitation'; and
- therapy intensity.

Consistent and accurate activity data will inform decision making and allow strategic improvement at the service, LHN and state levels. A state-wide stocktake of rehabilitation services by LHN will provide useful insights into activity data by care setting and workforce staffing by care setting. This information will serve as a valuable foundation for planning, delivering and evaluating rehabilitation services in NSW in the future. In addition, accurate activity data will position NSW Health for the introduction of ABF and provide a framework for the evaluation of the NSW Rehabilitation Model of Care.

Furthermore, it is recommended that all ambulatory care settings (day hospital, outpatient services and rehabilitation in the home) collect and submit AROC data.

#### Recommendation 4:

##### **Agree a set of KPIs relevant to performance improvement / performance management of the NSW Rehabilitation Model of Care.**

*This recommendation is considered to be a medium term recommendation that may be achieved within twelve months.*

The development of an agreed set of consistent and comparable KPIs will provide a platform for performance improvement and management. The development of KPIs will be dependent on recommendation 3.

In identifying an agreed set of KPIs for rehabilitation services, it is important to consider the following:

- data collections already in place (for example the AROC data collection), and how the data will be used internally or externally
- the method by which data will be collected, where the data will be reported and the frequency of data collection.

The type of data required to identify meaningful trends in rehabilitation services demand may be classified as activity and performance data.

Currently NSW use the SNAP classification system to identify casemix. Casemix classification systems enable the measurement and comparison of activity and costs (resources) between providers; and facilitate transparency and equity in funding allocations.

The agreed changes to the current Federal/State funding split means the public health sector is entering a major process of re-design that is to be underpinned by a nationally consistent ABF model which will over time create transparency in casemix, activity and cost measures.

The domains of access, effectiveness and efficiency and relevant KPIs are underpinned by a system that adequately differentiates / classifies care across different care types and settings to a level that allows for variation in complexity and care needs between groups and homogeneity within groups.

The table below identifies the domains in which KPIs should be developed and provides example KPIs. These domains and KPIs are derived from casemix data.

Table 13: Performance measurement domains for rehabilitation services and example indicators.

Domain	Example KPIs
<p><b>Access</b></p> <p>Services should offer equitable access to health services on the basis of patient need, irrespective of geography, socio-economic group, ethnicity, age or sex. Access relates to the ability of people to obtain health care at the right place and right time.<sup>55</sup></p>	<ul style="list-style-type: none"> <li>• waiting times for entry to services</li> <li>• number of medical outliers in sub-acute rehabilitation beds (bed block)</li> <li>• number of patients unable to be discharged while waiting for other services eg home modifications</li> <li>• number of patients waiting in an acute bed for a sub-acute rehabilitation bed</li> <li>• number of days waiting in an acute bed for a sub-acute rehabilitation bed</li> <li>• number of occasions when nursing/allied staff are transferred to acute wards or unable to be replaced when on leave</li> </ul>
<p><b>Effectiveness</b></p> <p>Consumers of health services should be able to expect that the treatment they receive will produce measurable benefit. The effectiveness of health care relates to the extent to which a treatment, intervention or service achieves the desired outcome.<sup>55</sup></p>	<ul style="list-style-type: none"> <li>• quality of care measures – these may include clinical indicators as collected by the ACHS such as: <ul style="list-style-type: none"> <li>○ documented FIM score within 7 days</li> <li>○ presence of multidisciplinary care plan within 7 days</li> <li>○ presence of a discharge plan</li> <li>○ unplanned interruption to rehabilitation program</li> </ul> </li> <li>• therapy intensity by duration and frequency (by care setting and impairment code)</li> <li>• adverse events</li> <li>• patient satisfaction measures</li> <li>• ambulatory care: Goal Attainment Score, Lawton’s instrument</li> <li>• reduction in deconditioning impairment type in the acute setting (for inreach models)</li> <li>• compliance with protocolised care plans (for suitable patients)</li> </ul>
<p><b>Efficiency</b></p> <p>The economic concept of efficiency implies that choices in health care delivery and treatments should be made so as to derive the maximum total benefit from the available health care resources.<sup>55</sup></p>	<ul style="list-style-type: none"> <li>• length of stay by impairment and setting</li> <li>• number of separations</li> <li>• occasions of service by impairment and setting</li> <li>• re-hospitalisation rates – planned vs unplanned</li> <li>• AROC = FIM change/LOS</li> </ul>

<sup>55</sup> NSW Health. A Framework for Managing the Quality of Health Services in NSW. Sydney: NSW Department of Health. 1999.

The data analysis undertaken for this project by NSW Health confirmed that there is currently limited state-wide data that can be used to measure rehabilitation across settings in NSW. The data that are available are generally inconsistent and incomplete. The development of standardised KPIs following the development of a consistent data dictionary (recommendation 3) will provide consistent and comparable data for repeatable analysis of activity. Linkage of SNAP data to inpatient data systems will enable cross checking of data and validation. The data set should seek to identify the provision of rehabilitation services across all care settings.

In addition, communication of performance following reporting and availability of benchmarking data should be undertaken in a timely manner to enable effective use of the data for performance improvement and management.

Accurate data on program activity and performance will inform decision making and allow strategic improvement at the service, LHN and state levels. A standardised state-wide rehabilitation data set will provide useful insights into demand and supply as well as access and outcomes. This information will serve as a valuable foundation for planning, delivering and evaluating rehabilitation services in NSW in the future. In addition, NSW Health will be in a better position moving towards the introduction of ABF and enable evaluation of the model of care following the implementation.

#### Recommendation 5:

**Agree a core set of admission criteria and transfer of care criteria by care setting (which can be flexed if all care settings are not available locally) and design initiatives to implement state-wide, for example – how these impact current ‘ready for rehabilitation’ coding.**

*This recommendation is considered to be a medium- long term recommendation that may be achieved within one to two years.*

Admission and transfer of care to or from a service impacts patient flow between different settings and services and may have implication for funding. Admission to a rehabilitation service refers to the extent to which services are provided only when they are needed. In the instance of rehabilitation services it requires an assessment of the value of rehabilitation in terms of the patient’s potential for rehabilitation.

The development of standardised criteria for admission and transfer of care by care setting (which can be flexed if all care settings are not available locally) will:

- promote appropriate admissions and optimal use of allocated beds (for inpatient/sub-acute services);
- support services to manage patient flow between services and/or settings;
- provide a guideline for non-rehabilitation clinicians when assessing patients for transfer to a rehabilitation setting;
- assist in bed management issues and waiting list management; and

- promote the development of rehabilitation coordinators especially in the acute setting to facilitate the identification of appropriate patients that may benefit from rehabilitation services.

In general the information obtained through defined admission and transfer of care criteria may assist in determining the level of care required, transfer of care screening and planning the discharge destination with family support.

#### Recommendation 6:

##### **Review workforce standards and required skill mix to support the model of care and consider new and emerging workforce roles.**

*This recommendation is considered to be a medium- long term recommendation that may be achieved within one to two years.*

The rehabilitation workforce is formed by a range of staff with diverse skill sets, which can generally be defined to include rehabilitation medical, nursing and allied health professionals. Building a sustainable health workforce is a high priority.

While there are recommended staffing levels for inpatient subacute rehabilitation services, it is widely acknowledged within the public rehabilitation sector that these levels are often not achieved in practice and they do not take into account the non-clinical job demands placed on therapists, or the need for replacement during leave. Also, these recommended staffing levels are aimed at the unit level, and do not translate into an amount of therapy that individual patients should receive.

The evidence collected during this project highlights the importance of developing workforce capacity to respond to increases in demand for rehabilitation services. Any workforce strategy should be accompanied by appropriate workforce planning to provide sufficient resources for the delivery of future rehabilitation services.

Options for job redesign to better support service delivery have proved effective (such as the use of therapy assistants, diversional therapists and consultation therapists). New workforce roles such as these may also contribute to better meeting demand and increasing patient therapy. Changing clinical practice patterns and the evolution of new qualifications and flexible staffing practices warrants further consideration.

## Concluding comments

The recommendations presented above provide the next steps towards the implementation of the NSW Rehabilitation Model of Care. An indication of the short, medium and long term nature of these recommendations is illustrated in Figure 16.

Figure 16: Recommendations for steps towards implementation of the NSW Rehabilitation Model of Care



It is important to note that the project gained considerable exposure across NSW with a high level of engagement from rehabilitation stakeholders through structured project activities and in response to project communications. This emphasised the interest of stakeholders in the future of rehabilitation care and the importance of considered communication of the NSW Rehabilitation Model of Care in the first stages of implementation.

The NSW Rehabilitation Model of Care and recommendations provide the basis for embracing change and implementing consistent approaches for rehabilitation services across NSW. Successful implementation will be dependent on:

- considered implementation planning and continued focus;
- effective communication strategies to build on successful engagement during the project;
- progression of data collection, performance reporting and management;
- learning from and replicating good practice and innovations in service delivery; and
- defined strategic direction for rehabilitation services across LHN and NSW.

# Appendices

## Appendix 1: Glossary

Term/ acronym	Description
<b>ABF</b>	Activity Based Funding
<b>ACAT</b>	Aged Care Assessment Team
<b>ACBR</b>	Aged Community Based Rehabilitation
<b>ACE</b>	Acute Care of the Elderly team
<b>ACHS</b>	Australian Council on Health Care Standards
<b>ACI</b>	Agency for Clinical Innovation
<b>ACT</b>	Ambulatory Care Team
<b>ADL</b>	Activities of Daily Living
<b>AHA</b>	Allied Health Assistants
<b>AHS</b>	Area Health Service
<b>AIHW</b>	Australian Institute of Health and Welfare
<b>ALOS</b>	Average Length of Stay
<b>AN-SNAP</b>	The Australian National Sub-Acute and Non-Acute Patient Classification System
<b>AROC</b>	The Australasian Rehabilitation Outcomes Centre
<b>ART</b>	Aged care Rehabilitation Team
<b>ASET</b>	Aged-care Services in Emergency Team
<b>CBRE</b>	Community Based Rehabilitation for the Elderly
<b>COAG</b>	Council of Australian Governments
<b>CRAFT</b>	The Casemix Rehabilitation and Funding Tree
<b>DVA</b>	Department of Veterans Affairs
<b>FIM- FRG</b>	Functional Impairment Measures – Functional Resource Groups
<b>FIM</b>	Functional Independence Measure
<b>GEM</b>	Geriatric evaluation and management
<b>GP</b>	General Practitioner
<b>HIE</b>	Healthcare Inpatient Episode
<b>HOPE</b>	HealthCare for Older Persons Earlier (HOPE) Strategy
<b>ICF</b>	International Classification of Functioning, Disability and Health
<b>ICT</b>	Information and Communications Technology
<b>ITP</b>	Intensive Therapy Program
<b>KPI</b>	Key Performance Indicator
<b>LHN</b>	Local Hospital Networks

<b>MDT</b>	Multi-Disciplinary Team
<b>MRN</b>	Medical Record Number
<b>NeHTA</b>	National E-Health Transition Authority
<b>NPA</b>	National Partnership Agreement
<b>NSW Health</b>	The New South Wales Department of Health
<b>OPERA</b>	The Older Person's Evaluation Review and Assessment program
<b>OT</b>	Occupational Therapist
<b>PAS</b>	Patient Administration System
<b>PT</b>	Physiotherapist
<b>RDT</b>	Rehabilitation Discharge Team
<b>RRWG</b>	Rehabilitation Redesign Working Group
<b>RWU</b>	Rehabilitation Weighted Units
<b>SACS</b>	Sub-acute Ambulatory Care Services
<b>SiAM</b>	Sub and non acute projection tool
<b>SMART</b>	Specialist Management with Acute Rehabilitation Treatment
<b>TACP</b>	Transition Aged Care Program

## Appendix 2: Linking key findings and the model of care

Key findings were identified in the Diagnostic Report. These key findings were used as the basis for the development of the NSW Rehabilitation Model of Care and the principles underpinning this model of care.

The key findings were used in the Solution Design workshop to inform the development of principles and operational aspects of rehabilitation care. The workshop discussion focused on the key findings in terms of challenges to be considered in the design and implementation of a model of care.

The activity undertaken during the workshop discussed the key findings in terms of developing a consistent model of care and more specifically how easy it may be to change some of these key challenges and the related impact of these changes.

Based on evidence, the key findings have been presented in terms of the ease with which changes may be implemented and the impact of these changes. The key findings are in the tables below and provide local services with a guide to achieving consistent practice.

Evidence from the literature scan and interstate and international consultations has been incorporated throughout the report to balance and in some instances verify the qualitative information gathered.



represents findings from the literature scan



represents findings from the international consultations



represents findings from the interstate consultations

Easy to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p><b>Waiting list management</b></p> <p><b>Key Finding</b></p> <p>Waiting lists for both inpatient and ambulatory care rehabilitation services were generally managed locally (at the site or across a network of two or three hospitals).</p>	<p>1 Implement a standardised electronic waiting list system with defined business rules.</p>	<p> Literature suggests that one of the key elements to successful integration of an number of services is structured communication, whether through regular meetings or electronic media. Structured formal mechanisms of communication are essential for effective collaboration between rehabilitation services. Whether electronic or paper media are involved, a shared record containing all pertinent information is required.<sup>56</sup></p> <p> SESIAHS have reported on their 8 year experience utilising an inexpensive information management system which provides clinical and business process support for clinicians and bed managers. Providing information technology solutions to clinicians to support their work practices benefits clinicians, administrators and patients. Performance monitoring of the time from referral to consultation, the number, type and outcome of consultations, and the time taken to access a rehabilitation or subacute bed is also provided.<sup>57</sup></p>

<sup>56</sup> McColl MA, Shortt S, Godwin M, Smith K, Rowe K, O'Brien P, Donnelly C. (2009) Models for integrating rehabilitation and primary care: a scoping study. *Arch Phys Med Rehabilitation* 2009;90:1523-31.

<sup>57</sup> Poulos CJ, Gazibarich BM, Eagar K. (2007) Supporting work practices, improving patient flow and monitoring performance using a clinical information management system *Aust Health Rev.* 2007 Apr;31 Suppl 1:S79-85

Easy to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p><b>Workforce and service delivery</b></p> <p><b>Key Finding -</b></p> <p>Whilst Workforce planning by NSW Health is required to sustain rehabilitation services into the future there are some obvious areas impacting service provision at the practical level and minimising the therapy able to be delivered by current staffing.</p> <ul style="list-style-type: none"> <li>a Rehabilitation therapy staff are being diverted to acute care services leaving rehabilitation services short.</li> <li>b Highly qualified therapists are performing tasks that are able to be fulfilled by a less skilled workforce.</li> <li>c Staff leave and vacancies are remaining unfilled leaving gaps in service provision.</li> </ul>	<ol style="list-style-type: none"> <li>1 Quarantine rehabilitation staff to rehabilitation services for both inpatient and ambulatory services.</li> <li>2 Review current skill mix and identify opportunities to develop Therapy Assistant roles in local rehabilitation services.</li> <li>3 Provide appropriate support staff for administrative tasks.</li> <li>4 Provide service delivery seven day s/wk (inpatient services only) and leave cover for therapists in rehabilitation services.</li> </ol>	<p> Inpatient rehabilitation staffing levels varied across NSW sites visited. Facilities where staff were not quarantined to the rehabilitation unit faced ongoing difficulties with allied health staff being taken from the rehabilitation setting to fill gaps in acute services of the hospital. Improved outcomes and a positive culture was observed in facilities where staff were specifically allocated to rehabilitation services. Staffing challenges limiting the intensity of therapy appeared to be magnified in regional and rural areas.</p> <p> The Netherlands have moved to quarantine their therapy staff to specific settings for rehabilitation services. In addition the Netherlands are extending current workforce guidelines and standards for appropriate levels of staffing required to the rehabilitation setting.</p>
<p><b>Intensity and appropriateness of therapy</b></p> <p><b>Key finding-</b></p> <p>Intensity of therapy in NSW facilities is variable and mostly dependent on staff availability as opposed to patient need.</p>	<ol style="list-style-type: none"> <li>1 Guidelines for rehabilitation therapy should be developed and include decision making tools, protocols and care pathways in line with current best practice and/or currently accepted approaches to therapy. These may include standards</li> </ol>	<p> Available literature and evidence based practice for specific conditions supports the concept that rehabilitation can be more effective with increased intensity of therapy and further developing models of rehabilitation that provide alternatives to inpatient care.<sup>58</sup></p>

<sup>58</sup> New P W & Poulos C J (2008) MJA 2008; 189: 340–343.

Easy to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p>Rehabilitation services staff indicated that they would like to provide more therapeutic interventions across a wider range of service delivery modes. Specifically, therapists recognised that current therapy provision is below that of the suggested evidence.</p> <p>Patient therapy on the ward is limited by the availability of allied health staff and the workload of the nursing staff who are often caring for complex patients with multiple needs.</p>	<p>for minimum intensity of therapy and seven day service delivery.</p> <ol style="list-style-type: none"> <li>2 Client rehabilitation care should comprise a variety of service delivery types across various settings including one-on-one therapy, group therapy and self management.</li> <li>3 Protocols for shared treatment across therapy delivery and care settings should be developed to provide continuity of care for the client.</li> </ol>	<p>The literature also raises the need to consider the role of nurses in supporting and supervising therapy both during and after normal hours.<sup>59</sup></p> <p>Jette et al (2004) explored outcomes in 68 skilled nursing facilities and measured therapy intensity and nursing staff levels. Jette et al concluded that length of stay efficiency and discharge to the community were more likely with higher therapy hours <i>and</i> higher nursing hours.<sup>60</sup></p> <p> The US indicated that admission to the acute rehabilitation facility was dependent upon a patient's ability to withstand 4 hrs of therapy per day. Patients receiving rehabilitation care at Skilled Nursing Centre's receive 2-2.5hrs of therapy per day. Treatment intensity at a rehabilitation centre in the Netherlands ranges from 1 hr per day to several hours per day. Therapy intensity is determined by the Rehabilitation Physician.</p> <p>The Netherlands are in the process of developing standards that will be extended to rehabilitation centres in 2012.</p> <p>Weekend therapy was provided in both the Netherlands and the US and considered to be a part of standard care processes.</p>

<sup>59</sup> Kearney, P and Lever, S (2010) Rehabilitation nursing: invisible and underappreciated therapy, *International Journal of Therapy and Rehabilitation*, August 2010, Vol 17, No 8

<sup>60</sup> Jette DU, Warren RL, Wirtalla C (2004) Rehabilitation in skilled nursing facilities: Effect of nursing staff level and therapy intensity on outcomes. *Am J Phys Med Rehabilitation* **83**(9): 704–12

Easy to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
		 Victoria has recently moved towards weekend therapy across all rehabilitation
<p><b>Support and develop leadership</b> <b>Key finding –</b> Leadership was considered a key element of a rehabilitation services. The leadership structure was multifaceted extending from the AHS managers, professional leadership for specific clinical services and leaders within the rehabilitation service. The actual ‘leader’ of the rehabilitation service was considered less important.</p>	<ol style="list-style-type: none"> <li>1 Identify a strategy and key roles of leadership (formal and informal) at various levels relating to the rehabilitation service.</li> <li>2 Identify key initiatives and define responsibilities and accountabilities across each level of leadership</li> </ol>	 The importance of strong leadership in health care has been recognised in literature and reflected in broad hospital practice. According to NSW Health’s Leading Well policy (PD2008_041), strong leadership includes : <ul style="list-style-type: none"> <li>• promoting a set of positive values that focus on improving performance and respect for people as</li> <li>• individuals</li> <li>• ensuring that all staff understand the role and key strategies of their organisation,</li> <li>• helping staff recognise how they can personally contribute to the higher-level objectives of the</li> <li>• organisation</li> <li>• implementing effective change management</li> </ul>

Easy to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
		<p>processes that plan for and manage emerging</p> <ul style="list-style-type: none"> <li>challenges making the relevant information available to assess the performance of the organisation.<sup>61</sup></li> </ul>
<p><b>Clinical handover</b> <b>Key Finding -</b></p> <p>A challenge noted across all services was the absence of quality clinical handover from acute wards and to community services. There is currently no standardised process in place for referral or clinical handover to rehabilitation services and frequently communication about patients is challenging. Improving clinical handover was also a recommendation of the Special Commission of Inquiry into Acute Services in NSW Public Hospitals (2008).</p>	<p>Services should use the NSW Health policy documents to guide the following opportunities for improvement.</p> <ol style="list-style-type: none"> <li>Develop a checklist to guide staff in the preparation of patients for transfer of care to a rehabilitation service and between different rehabilitation care settings.</li> <li>Implement standardised processes for clinical handover that includes the provision of a comprehensive multidisciplinary summary identifying treatment and care to date</li> <li>Where possible clinical handover should be supported by a face-to-face or telephone conversation.</li> </ol>	<p> The Special Commission of Inquiry into Acute Services in NSW Public Hospitals (2008) described deficits in communication in the clinical setting that contribute to adverse events in patient care (Recommendation 56).</p> <p>In response a comprehensive work plan for Safe Clinical Handover was developed in in 2009 and 2010 and launched by the Director-General on 25 September 2009. A policy mandate was then released on 28 September 2009 (PD2009_060).<sup>62</sup></p> <p>Please also refer to NSW Health's:</p> <ul style="list-style-type: none"> <li>Discharge Planning: Responsive Standards</li> <li>Domains of Care</li> </ul>

<sup>61</sup> NSW Health (2008) Leading Well: Role of Leadership in Improving the Prevention & Management of Psychological Injury (PD2008\_041)

<sup>62</sup> NSW Health (2009) Safe Clinical Handover Program (PD2009\_060)

Easy to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p><b>Care coordinators</b></p> <p><b>Key finding -</b> Rehabilitation service staff identified the value of a nominated care coordinator or case manager. A key person allocated to each client to coordinate care across the continuum. This provided a single of contact for the client, family, carer, the multidisciplinary team and other service providers. The use of Case Coordinators at multiple sites was reported to enhanced patient centric care and led to improved outcomes. Family involvement in therapy was encouraged where patient and family interest was present, and family case conferences and collaborative goal setting was also essential.</p>	<ol style="list-style-type: none"> <li>1 Identify an appropriate position or positions to act in the capacity of a care coordinator (eg. nursing staff, therapy assistants).</li> <li>2 Develop guidelines to support the care coordination role including support structures and escalation processes for complex cases.</li> </ol>	<p> The World Health Organisation advises that patients (and carers) have a right to be given factual, supportable, understandable and appropriate information.</p> <p>Research suggests that barriers to a patient centred approach can be overcome through education of the patient and family regarding the nature of the injury and modification of communication between therapist and patient.<sup>63</sup> The care coordinator plays a key role in this process.</p> <p>Feelings of isolation and lack of knowledge about their care process have been reported to inhibit the recovery process for a patient and lead to a worsening of health problems including stroke recurrence.<sup>64</sup></p>
<p><b>Enablement</b></p> <p><b>Key finding -</b> Rehabilitation services are based on an</p>	<ol style="list-style-type: none"> <li>1 Develop an agreed set of principles that summarise the rehabilitation service's approach to enablement and how this is embedded in everyday care.</li> </ol>	<p> Literature supports that effective rehabilitation practice maximizes all opportunities for steps towards self-determination and increased function. For example use of the bathroom is seen as a one-to-one</p>

<sup>63</sup> Leach, E, Cornwell, P, Fleming, J & Haines, T (2009) Rehabilitation in Practice; Patient centered goal-setting in a subacute rehabilitation setting, Disability and Rehabilitation, 2010; 32(2): 159–172

<sup>64</sup> Rochette, A, Korner-Bitensky, N, Bishop, D, Teasell, R, White, C, Bravo, G, Côté, R, Lachaine, J, Green, T, Lebrun, L H, Lanthier, S, Kapral, M, and Wood-Dauphinee, S. (2010) Study protocol of the YOU CALL - WE CALL TRIAL: impact of a multimodal support intervention after a “mild” stroke BMC Neurology 2010, 10:3 <http://www.biomedcentral.com/1471-2377/10/3>

Easy to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p>enablement philosophy where therapy occurs at every point of contact with the patient. Continuous encouragement of patients to participate in this model, get dressed in the morning and strive towards functional improvement can be challenging.</p>	<p>2 Utilise these principles to:</p> <ul style="list-style-type: none"> <li>• Emphasise the enablement philosophy of the service</li> <li>• Educate acute care setting staff on the enablement model</li> <li>• Plan for and develop new rehabilitation services</li> <li>• Educate patients and carers on their responsibilities in relation to the rehabilitation journey</li> </ul>	<p>session of therapy in vivo, therapy that is focused and tailored to the achievement of meaningful tasks for individuals.<sup>59</sup></p> <p>Enablement philosophy seeks to shift the patient from being externally motivated to become more internally motivated towards their goals. Increased patient empowerment and motivation is well evidenced to therapy outcomes.</p>

Difficult to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p><b>Infrastructure</b></p> <p><b>Key finding -</b></p> <p>The infrastructure where rehabilitation services are provided is a challenge as facilities have not specifically been designed for a rehabilitation service.</p> <p>Primary limitations in terms of infrastructure relate to the size of the wards and room configurations; the inability to manoeuvre required equipment such as patient lifters; and the lack of space for common areas such as gyms, dining rooms and lounge areas.</p> <p>The infrastructure of some rehabilitation services impacted timely access for patients requiring single rooms in the case of infectious conditions or where same sex rooms were unavailable.</p>	<ol style="list-style-type: none"> <li>Future planning for rehabilitation facilities should consider: <ul style="list-style-type: none"> <li>Size and space requirements</li> <li>Bathroom facilities</li> <li>Common area facilities (eg. gyms and dining rooms)</li> <li>Storage facilities</li> </ul> </li> <li>In addition, planning for new facilities should support staff communication and privacy requirements.</li> </ol>	<p> A functional design of a health facility can promote skill, economy, conveniences, and comforts; a non-functional design can impede activities of all types, detract from quality of care, and raise costs to intolerable levels.<sup>65</sup></p> <p>The physical configuration of a hospital and its transportation and logistic systems are inextricably intertwined. Ideally, the design process incorporates direct input from the owner and from key hospital staff early on in the process. Good hospital design integrates functional requirements with the human needs of its varied users.<sup>65</sup></p> <p> New facilities should utilise the Australasian Health Facility Guidelines (AusHFG), an initiative of the Australasian Health Infrastructure Alliance (AHIA) (formerly HCAMC). The AusHFG enables health facilities throughout Australasia to use a common set of base elements as a guide and offers significant benefits including:</p> <ul style="list-style-type: none"> <li>Australasian best practice approach to health facility planning</li> <li>standard spatial components</li> <li>a highly flexible planning tool responsive to the dynamic changes in Health.<sup>66</sup></li> </ul>

<sup>65</sup> Carr, R (2010) National Institute of Building Sciences, Whole Building Design Guide – Hospital, USA <http://www.wbdg.org/design/hospital.php> Accessed: 16/12/10

<sup>66</sup> Australasian Health Infrastructure Alliance (AHIA) (2009) Australasian Health Facility Guidelines( AusHFG) Version 3.0

Difficult to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p><b>Equipment – bariatric patients</b></p> <p><b>Key finding -</b></p> <p>The availability equipment was cited as a challenge. In particular the growing cohort of bariatric patients and the availability of appropriate bariatric equipment was discussed.</p>	<p>1 Procurement services should consider the ability of general and specialist equipment to support the increasing complexity of patients and the growing cohort of bariatric patients.</p>	<p>In the past 7 years in NSW the proportion of overweight and obese people aged over the age of 16 years has grown at a rate of 1% per year. Based on the current population of NSW this suggests that approximately another 65,000 people aged over 16 yrs will be classified overweight or obese per year going forward.<sup>67</sup></p>
<p><b>Access to non-core specialist services</b></p> <p><b>Key finding -</b></p> <p>Rehabilitation services reported difficulty in accessing the full complement of health professionals required to be involved in patient care. Disciplines where access was most difficult included: neuropsychology, diversional therapy and interpreters.</p>	<p>1 Undertake a gap analysis to determine the specialist services currently available and the gaps. Work with LHNs to determine avenues for improving access to these services. Options to improve access may include sharing services, using private services or brokering services.</p> <p>2 Implement agreed referral and assessment processes to other disciplines (where a blanket referral was not in place) such as speech pathology, dietetics, psychology, neuropsychology and orthotics/prosthetics.</p>	<p>The role of a neuropsychologist in rehabilitation is to undertake a full psychological assessment and recommend learning approaches and behaviour management to therapists. This approach eliminates the trial and error of service delivery by therapists and results in a more timely and efficient delivery of appropriate therapy</p> <p>Diversional therapy practitioners work with people of all ages and abilities to design and facilitate leisure and recreation programs. Activities are designed to support, challenge and enhance the psychological, spiritual, social, emotional and physical well being of individuals.<sup>68</sup></p>

<sup>67</sup> NSW Health Chief Health Officers Report 2010 .

<sup>68</sup> Diversional Therapy Australia website. <http://www.diversionaltherapy.org.au/> Accessed: 8/11/10

Difficult to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p><b>Discharge delays</b> <b>Key finding -</b></p> <p>Challenges exist in relation to lengthy waiting lists for availability of equipment (for patients returning home) and level two home modifications. Patient length of stay can be impacted considerably in these cases where it is unsafe for the patient to return home without specific equipment or home modifications.</p> <p>A number of services identified the inability to access community services post rehabilitation, for example, HACC services, transitional aged care packages (TACP), home modifications. The inability to create linkages or refer patients to other services compromises patient access and overall outcomes.</p> <p>Extremely long lengths of stay, although less frequent in number, can also be attributed to the unavailability of accommodation for patients under 65 years, homeless patients and patients requiring Guardianship rulings. Patients with extremely long length of stay who do not belong anywhere else generally may be transferred to the rehabilitation ward for the remaining length of stay whilst waiting for alternate accommodation.</p>	<ol style="list-style-type: none"> <li>1 Identify current external services and community support services.</li> <li>2 Work with external services and community support services to develop processes that will ensure more timely access for patients.</li> <li>3 Implement planning for transfer of care to original place of residence on admission and make contact with the applicable external services and community support services.</li> <li>4 Develop a local escalation process for patients that unable to access services that would enable their return home and instead remain in rehabilitation units.</li> </ol>	<p> In acute care the use of scarce resources by older people in the post-acute phase are frequently portrayed as inappropriate and those who remain in hospital longer than comparable to a younger person are considered <i>bed blockers</i>.</p> <p>Studies have established many factors as causal to delayed discharge of the older person from hospital including; slower recovery times, longer times required to achieve optimum potential compared to younger patients, and coordination of services factors.</p> <p>In reach models for rehabilitation provide a good example of how services have opportunity to provide leading edge healthcare and move patients through the acute care environment more effectively.</p> <p>Further studies have concluded that length of stay efficiency and discharge to the community were more likely with higher therapy hours and higher nursing hours.</p> <p>Randomised controlled trials have reported the implementation of early supported Discharge (ESD) from hospital and focussed rehabilitation at home or in a day hospital had reduced the average inpatient days 52 weeks with a non-significant reduction in total mean service costs in the ESD group.<sup>69 70</sup></p>

Difficult to change		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p><b>Pressure from acute</b></p> <p><b>Key finding -</b></p> <p>Rehabilitation services face continuing pressure from acute services to take patients quickly when they are potentially not 'ready for rehabilitation'.</p> <p>Co-located rehabilitation services often lack control as to who is transferred to rehabilitation inpatient beds. Due to hospital pressures and bed capacity, medical outliers are placed in rehabilitation beds increasing the workload for rehabilitation nursing staff and blocking a potential rehabilitation bed.</p>	<ol style="list-style-type: none"> <li>1 Implement 'ready for rehabilitation' criteria and guidelines across the hospital and provide education for medical staff referring patients to rehabilitation.</li> <li>2 Develop guidelines for 'non-rehabilitation' patient transfer processes to the rehabilitation ward including agreed processes for supporting medical outliers at peak periods and transfer of these patients at the earliest opportunity.</li> </ol>	<p> Jette et al's (2004) exploration of outcomes in 68 skilled nursing facilities which measured therapy intensity and nursing staff levels concluded that Length of stay efficiency and discharge to the community were more likely with higher therapy hours <i>and</i> higher nursing hours.<sup>60</sup></p> <p>Increasing medical outliers in rehabilitation wards detract from nursing staff levels and the ability to implement enablement practices.</p>

<sup>69</sup> Fjaertoft, H, Indredavik, B, Magnussen, J & Johnsen, R (2005) Early Supported Discharge for Stroke Patients Improves Clinical Outcomes. Does it also reduce Use of Health Services and Costs? *Cerebrovascular Diseases*, 2005;19:376-383

<sup>70</sup> Langhorne, P, Taylor, G Murray, G & Dennis, M et al (2005) Early supported discharge services for stroke patients: a meta-analysis of individual patients' data *The Lancet*; Feb 5-Feb 11, 2005; 365, 9458; Academic Research Library pg. 501

Easy to change but low impact		
Opportunities	Recommended Actions for improvement	Supporting evidence
<p><b>Patient transport</b> <b>Key finding-</b> Stand alone rehabilitation services frequently experience difficulties associated with transport for patients requiring other medical consults or tests not available onsite. Access to clinical support services, particularly radiology was also more difficult at these sites.</p>	<p>1 Develop a memorandum of understanding/ service level agreement or similar with facilities that are providing clinical services not available onsite including patient transport services.</p>	<p>A core need for the success of rehabilitation services is the timely receipt of treatment. This requires collaboration between hospitals and access to and support from clinical support services. A key link in this collaboration is patient transport.</p>
<p><b>Patient and family expectations</b> <b>Key finding-</b> The management of expectations of patients, families and carers of what rehabilitation can achieve is a challenge in circumstances where people expect that rehabilitation equals recovery. Additionally managing expectations associated with transfer of care timing and requirements for ongoing care and rehabilitation may be difficult particularly where a patient is unable to be transferred back to their original accommodation.</p>	<p>1 Establish agreed guidelines for communication with the patient and family regarding participation in a rehabilitation program and potential outcomes.</p> <p>2 Where possible, implement trial rehabilitation stays and family meetings to discuss and manage rehabilitation expectations.</p>	<p> There is community recognition that patients are entitled to make their own decisions about their medical treatment. These decisions will need to be based on information and advice given by the doctor.<sup>71</sup></p> <p>The majority of literature also supports:</p> <ul style="list-style-type: none"> <li>• a family's need for information</li> <li>• the value placed on providing consumer choice</li> <li>• The value of open communication and the support of a case manager/ counsellor/ social worker to support the process.</li> </ul> <p>Having a family member admitted to an acute or sub-acute facility is stressful. Families are often mourning the loss of hopes and plans for the patient and may fear having the person return home alone, or having to care for them</p>

<sup>71</sup> National Health and Medical Research Council (2004) *General Guidelines for Medical Practitioners on Providing Information to Patients*

Easy to change but low impact		
Opportunities	Recommended Actions for improvement	Supporting evidence
		<p>themselves.</p> <p>Good practice recommends the use of counselling, family conferences and structured problem solving as well as grief counselling can help families cope with these problems. Education about the nature of the illness, the prognosis and treatment. Involve the family in relapse prevention. Have a clear plan about whom they should contact in crisis, or when other problems arise.</p> <p>A good way of reconciling the person's right to privacy with the carers' need for information is to see the patient and the family together.</p>

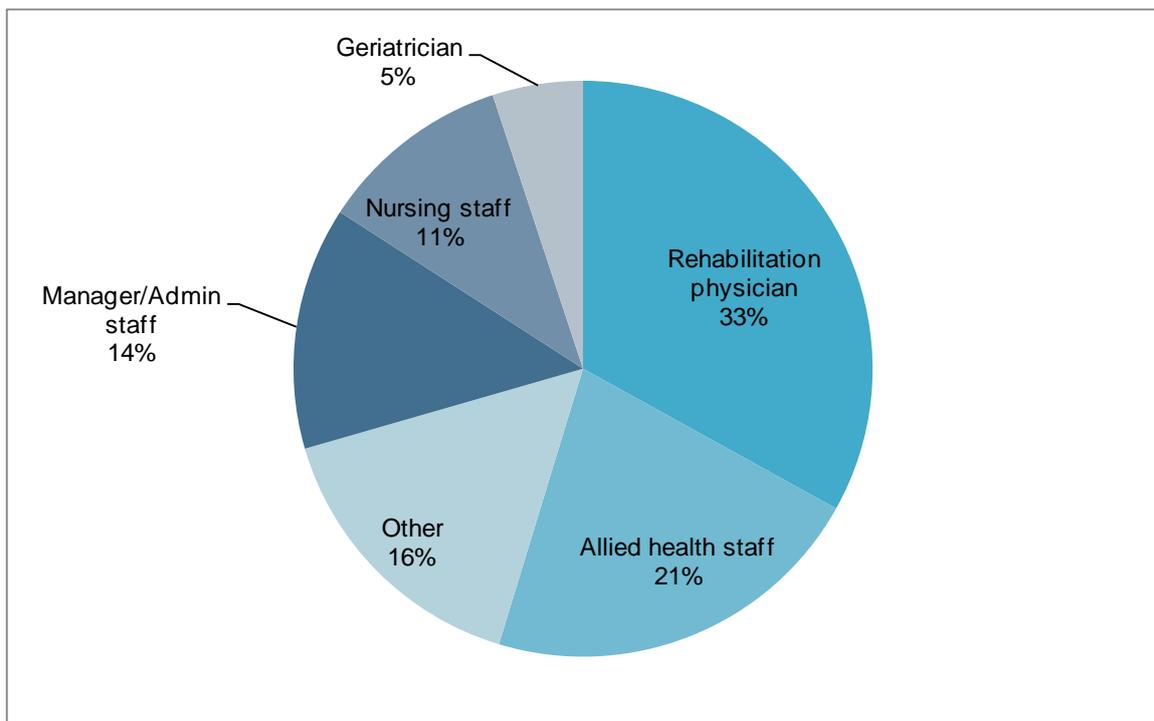
## Appendix 3: Survey/ consultation feedback

Feedback and consultation to validate findings regarding the draft model of care for rehabilitation in NSW was sought in the form of an online survey during the 'NSW Health Rehabilitation Redesign project Consultation Week'. Specific feedback questions were developed for the online survey and the responses presented below. The majority of questions were in the form of a five point likert rating scale from strongly agree to strongly disagree. For the purposes of this exercise we have combined the strongly agree and agree to report a 'favourable response'.

In addition to the online survey and provide background and detail around the draft model of care, a consultation document accompanied the survey. The overall survey response rate was 120.

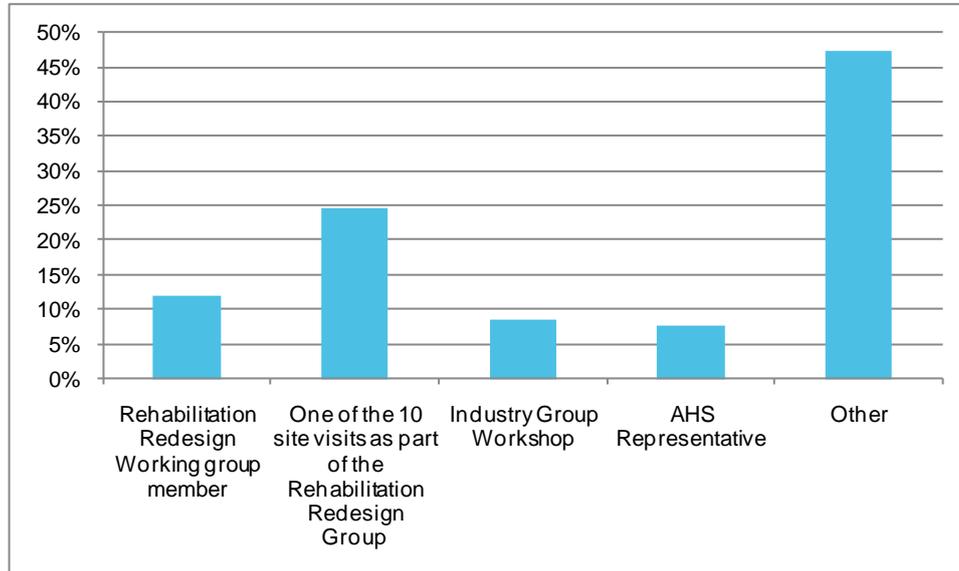
The primary role of respondents is shown in Figure 17 below. Note that participants were able to select more than one role if their role was a joint role.

Figure 17: Primary job role of respondents



Survey respondents were asked how they had been involved in the Rehabilitation Redesign project to date. The results are shown in Figure 18 Respondents were able to tick more than one if they had a joint role.

Figure 18: Involvement in Rehabilitation Redesign project



## Rehabilitation definition

Survey respondents were questioned regarding a common definition for rehabilitation in NSW. A rehabilitation definition has been devised to support the development of models of care that can be operationalised and implemented.

The definition is:

Rehabilitation care in NSW is defined as the provision of care that aims to:

- restoring functional ability for a person who has experienced an illness or injury
- regaining function and self-sufficiency to the level prior to that illness or injury within the constraints of the medical prognosis for improvement
- developing functional ability to compensate for deficits that cannot be medically reversed.

Respondents were asked to indicate their level of agreement with this definition:

**Favourable response: 86%**

## Key Findings

Respondents were asked to comment on key findings presented in the Diagnostic Report and indicate their level of agreement with the ratings.

The findings from the Diagnostic Report that RRWG members rated as being 'easy to change but having a high impact' are identified below.

Key Finding	Favourable answer
Waiting list management	82%
Inappropriate referrals	75%
Administrative support	74%
Lack of outpatient services	67%

Increased complexity of patients	100%
Data reporting	100%

The findings from the Diagnostic Report that RRWG members rated as being 'difficult to change but having a high impact' are identified below.

Key Finding	Favourable answer
Infrastructure and equipment	86%
Discharge delays	81%
Availability of health professionals	87%
Access to workforce	81%
Lack of outpatient services	85%

## Principles for a new rehabilitation model of care

Respondents were asked to indicate their level of agreement with the principles for rehabilitation.

Principle	Favourable answer
Leadership	96%
Equitable access	90%
Multidisciplinary care teams	97%
Care coordination	95%
Patient centered care	94%
Evidenced based care	92%
Appropriate care setting	94%
Clinical process and outcome indicators	87%

## Core clinicians in the multidisciplinary team

Respondents were asked to consider who the 'core' and specialist/'non-core' members of the rehabilitation multi-disciplinary team.

Clinician	Core	Specialist ('non-core' members)	N/A
Social Worker	99% (112)	1% (1)	0%
Rehabilitation Physician	98% (111)	1% (1)	1% (1)
Occupational Therapist	98% (112)	2% (2)	0%
Physiotherapist	97% (111)	2% (2)	1% (1)
Registered nurse	96% (110)	4% (4)	0%
Speech Pathologist	87% (97)	13% (14)	1% (1)
Care Coordinator/ case manager	75% (84)	22% (25)	3% (3)
Enrolled nurse	71% (79)	25% (28)	4% (4)
Dietician	65% (73)	35% (39)	0%
Psychologist	65% (73)	35% (40)	0%
Allied Health Assistant	54% (60)	42% (47)	4% (5)
AIN	49% (53)	41% (45)	10% (11)
Diversional Therapist	46% (52)	48% (54)	5% (6)
Neuropsychologist	36% (40)	64% (70)	0%
Geriatrician	30% (34)	63% (71)	6% (7)
Prosthetist	25% (28)	73% (81)	2% (2)
Orthotist	24% (27)	74% (83)	2% (2)
General Practitioner	23% (25)	71% (78)	6% (7)
Podiatrist	8% (9)	91% (101)	1% (1)

## Rehabilitation model of care – Care Settings

Respondents were asked to indicate their level of agreement with the care settings where rehabilitation should be provided:

Rehabilitation setting	Favourable answer
Inreach to acute	88%
Sub-acute inpatient	96%
Ambulatory care: ay hospital	87%
Ambulatory care: Outpatients	96%
Ambulatory care – home based	95%
Outreach	86%

## Rehabilitation model of care – care components

### Access and Initial contact

Respondents were asked if they felt that referral for Rehabilitation and Geriatric care consultations should occur automatically on admission of specific DRGs to an acute facility.

**Favourable response: 73%**

Respondents were asked if a person deemed “ready for rehabilitation” (from acute to sub-acute setting) should be assessed by which clinician – the list below was provided. Respondents were able to select as many responses as applicable.

Clinician	Favourable answer
Rehabilitation physician (or trainee)	93%
Geriatrician (or trainee)	39%
Medical officer	10%
Specialist Rehabilitation nurse	55%
Allied Health	29%
Multidisciplinary assessment	49%

Respondents were asked if the following criteria should be used when categorising a patient as “ready for rehab” (to a sub-acute setting). Respondents’ agreement with the criteria is provided below.

Criteria	Favourable answer
Medically stable	90% (102)
No severe delirium or dementia	81% (92)
Have rehabilitation potential	93% (104)
Able to participate in rehabilitation	94% (106)
<i>Have a discharge destination</i>	<i>41% (46)</i>
Achievable goals identified	93% (103)
<i>Is weight bearing</i>	<i>39% (43)</i>

### Assessment on admission

Respondents were asked if a standardised tool and multidisciplinary assessment of a patient on admission to rehabilitation services better enables data gathering and benchmarking.

**Favourable response: 86%**

### Rehabilitation Planning

Respondents were asked if patient and carer involvement in their rehabilitation plan means they know what their goals are and their role and responsibility in their plan of care.

**Favourable response: 98%**

Respondents were asked if best practice for rehabilitation planning and goal setting includes communicating to determine a patient's prior level of functioning, social context and discharge destination.

**Favourable response: 98%**

### Transfer of care, follow-up and re-entry

Respondents were asked if best practice in transfer of care includes referral to community services and provision of transfer of care information to primary care

**Favourable response: 98%**

## Enablers in implementing a new model of care

Respondents were asked if a best practice Model of Care for rehabilitation services can be operationalised with standardised performance measures.

**Favourable response rate: 71%**

## Future Context

Respondents were asked which of the following elements they thought will impact the implementation of the model of care for rehabilitations services.

Element	Favourable answer
Local Health Networks	71%
Activity Based Funding	86%
E-Health	50%
Data	76%

## Appendix 4: National comparisons

Jurisdiction Victoria			
<b>Informant and background</b>	<i>Dr Mary-Lou Leach, AFRM Victoria Branch Chair and Councillor</i>	<b>Charlotte Dart &amp; Rachel Lawson</b>	Robert Weller
<b>Does your jurisdiction/facility/professional group have an overarching rehabilitation plan, definition, strategy, philosophy of rehab care or defined model of care? If yes, please briefly describe.</b>	We do not have a "Rehabilitation Plan" for the organisation. We have a number of strategies and our model of care is multidisciplinary and largely determined by CRAFT funding		State-wide plan, recently revised but new plan not yet implemented; based on role delineation, and incorporates 4-5 levels of service across rehabilitation, aged care and ambulatory services
<b>How is it determined in which practice setting (inpatient, outpatient, at home) a patient will receive rehabilitation care? for example: admission criteria</b>	We have a Sub-Acute Assessment Service for inpatients at our acute hospital site. For referrals from the community we have a service called "ACCESS" which filters the referrals and is supposed to determine which type of care. Often in the more complex ones, the rehabilitation physician will see in Rehabilitation Clinic and decide from there or may decide with further phone information.		Admission criteria for both inpatient and ambulatory services Nature of initial referral; can be from acute service, community or internal rehabilitation Outcome of assessment by either rehabilitation assessment nurse or care co-ordination team Electronic referral
<b>What objective assessment of rehabilitation potential occurs before a patient is accepted in to the service? eg physician assessment, use tools like FIM, therapist assessment</b>	Physician or Sub-Acute Assessment nurse review. Allied Health assessment at the Acute hospital site. Sometimes MMSE	Based on clinical judgement - some health services have teams that assess clients in the acute setting in terms of safety and rehabilitation goals as well as input client will require. Inreach service to acute wards Department does not have guidelines or have any criteria	Physician, therapist or assessing nurse; no formal tool For fast-track ortho (eg. joint replacement)-screening tool in preadmission clinic
<b>What are the enablers or barriers associated with patient flow across the continuum of care? eg workforce shortages, defined clinical pathways</b>	We have a well oiled system of 7 days a week assessments at the Acute Hospital. One of the big barriers is poor communication between services. This is most common in the transition from the Acute to the Subacute sites.	Not sure - tools in health services, mostly clinical judgement and goals and most appropriate setting. Bartel used on admission to rehabilitation – currently transitioning to FIM - health services reporting both at the moment to align with ARCO	Some staffing issues, esp. OT in ambulatory team. Ebbs and flows in referrals, esp. following orthopaedic elective surgery. Poor access to support services and supported residential options for under-65s
<b>Are there objective measures regarding how much rehabilitation a patient should receive / when to stop providing care? eg discharge criteria, defined funding eligibility limits</b>	Over the years our threshold for patients being ready to discharge home has changed. We are now discharging patients earlier than previously. We aim to have the person able to transfer independently, be reasonably indep in PADLs, socially continent. If they have a career, we aim to censure that the burden of care can be met by one person. CRAFT funding also determines LOS, as hospital networks try to maximise income from the CRAFT funding model.	Service availability - access issues - moving people out of sub acute beds Young clients requiring disability packages eg spinal and brain. Work closely with services Clinicians willing to discharge people and move them on - can be dependent on where a person lives and their access Workforce - medical workforce is a challenge in rural and regional areas, neuropsychology, PT especially for muscoskeletal Strong focus on AH assistants and looking at up skilling and enhancing the role - working closely with PT and OT Rural - hub and spoke models. 5 regions. 1 health service that is the regional provider or level 4, then sub regional and local providers (all receive sub-acute funding). Other services don't receive funding local services are less complex in nature. The regional level provider provides outreach to local level services - sometimes this is done by video conference, not always in person Some level 4's are funded more to provide more services, there are some areas with gaps. Planning framework found gaps Level 4 access to rehabilitation physician and Geriatrician as well as AHP and nursing staff.	Discharge criteria, step-downs in per diem payments after defined episode, contracts in private sector

Jurisdiction Victoria			
		Variable telehealth services State wide services eg spinal. Trying to enhance these specialist services links with level 4 centres	
<b>Approximately what proportion of your health system's rehabilitation care occurs in inpatient vs. outpatient vs. aged care vs. at home?</b>	No response	Rehabilitation and GEM loads are not shared between medical staff. In small areas where there is less distinction - clinical staff decide who it is more appropriate to consult with the patient. In small areas there is usually only a geriatrician or GP with aged care training Investment 10/11 - funding \$178M for admitted public rehabilitation services (270,000 bed days) 880 public rehabilitation beds Ambulatory - block grant for subacute ambulatory services - home, centre based and specialist clinics - not allocated by Department. Level 4 - 20% home based, 20% specialist clinics, 60% centre based SAX - 137M GEM 173M	40% rehabilitation, 60% aged care; rehabilitation 30% ambulatory and home-based, aged care 90% inpatient
<b>What are the key types of professions which make up the 'rehabilitation team', eg geriatrician (physician), physiotherapist, etc.</b>	Rehabilitation Physician (and Registrars, HMOs), Physiotherapists, nursing staff, OTs, SPs, Dieticians, Pharmacists, Neuropsychologists (sessional)	Rehabilitation physician, Geriatrician, PT, OT, SW, Dietician, ST, Exercise physio, neuropsych (at a level 4 centres with outreach), Div 1 and 2 nursing, case coordinators (across the continuum of care - for more complex cases, not usually orthopaedic cases) Care coordination - minimise duplication of services and support coordination, multiple specialists involved in care, ongoing community services, brings all people together to work towards same outcome - pt centred care. Help person navigate through the system. makes sure things happen when supposed to, discharged in timely manner with all supports in place. Value of care coordinators seen in other programs such as HARP roles - mix of nursing or allied health staff	rehabilitation physician, nurse, PT, OT, SW, SP, Clinical or neuropsych, orthotist/prosthetist, dietician
<b>Are there usual patterns of treatment frequency, intensity, and duration - and if so can you describe. eg a patient in inpatient rehabilitation would be seen twice daily for an hour each until able to be seen in outpatient.</b>	Each person has an individualised programme depending on their deficits (eg. Dysphasia but good physical function, would mean twice daily SP, but minimal input physio). In general most inpatients would have therapy sessions two to three times/ day (weekdays only). In our Ambulatory service it is usually two to three days/ week with one to two therapy sessions each attendance day.	No real knowledge here - in terms of allied health hours for input Victoria nursing rations for rehabilitation: 1 in 5 AM, 1 in 4 PM, 1 in 7 Night Traditionally no services on the weekends but health services are moving towards this model of increased therapy on weekends	depends on diagnostic grouping and stage of therapy; average as stated
<b>How does a patient move from one practice setting to another, for example from inpatient to aged care?, eg based on functional measures, based on funding, based on access</b>	No response	Health service decision - clinical judgement and health service protocol. No Vic policy perspective	based mostly on team assessment of readiness for discharge/progression
<b>Please describe a good practice operational models (or elements of a model) for rehabilitation care within your jurisdiction?</b>	In previous years we have had a terrific model of care in that our ambulatory service has been able to pick up our discharged rehabilitation inpatients quickly. This	Key elements: environment supports the model of care - infrastructure, adequate ambulatory services to support admitted services.	Prompt admission based on agreed criteria and not on the need to clear an acute bed. Patient able to benefit from rehabilitation involvement. Family and

Jurisdiction Victoria			
	<p>enabled us to have the shortest length of rehabilitation inpatient stay in the state. This has sadly deteriorated badly since we have taken a big budget "hit" this financial year. Because of lack of staff who have been reassigned elsewhere, our waiting time has now blown out to 8 weeks which is unacceptable in my opinion.</p>	<p>Victorian emphasis on ambulatory services, no true growth in inpatients. Looking at clinical pathways and how ambulatory services can support inpatient services. Identifying opportunities and directing growth into those areas especially home based services in rural areas Waiting lists - hard to quantify. Access to sub-acute is a couple of days. Some health services are looking at IT services eg Barwon looking at management from acute to sub acute, discharge planning and flow in and out of sub-acute. Good learning's</p>	<p>patient clearly on board with goals of therapy and discharge plan. Seamless progression to next level of care. Satisfactory community supports available regardless of pt age. Residential options readily available and unhindered by bureaucratic nonsense, again regardless of patient age</p>
Other notes		<p>Transition care program – allows patients more time before returning home Restorative care program - more flexible in client types eg those not requiring active rehabilitation but can't yet go home, waiting for packages, non-weight bearing etc - not prescriptive eg usually 12 weeks. Can be bed based or ambulatory care Clinical pathways - spinal, ABI and amputee also working on stroke. Currently looking at data and understanding models in various settings. Identifying good models of care and how this can roll out more broadly. Public private interface- not sure of the mix, however there is no real cross over between public and private settings as in NSW</p>	

**Dr Mary-Lou Leech- AFRM Victoria Branch Chair and Councillor -**

*Clinical Director of rehabilitation Services at Peninsula health, a public hospital network on the Mornington Peninsula in Victoria. We have a large acute hospital, Frankston Hospital and a smaller satellite acute hospital at Rosebud, in the southern end of the Peninsula. We also have three subacute campuses throughout the Peninsula. Our Rehabilitation Service has a total of 80 inpatient beds at two sites, and our Ambulatory rehabilitation service operates out of those two sites at both ends of the Peninsula. Our casemix is assorted. We do not generally care for traumatic SCIs and compensable ABIs as they (mostly road accidents) go to the private system. We have a large orthopaedic and neurological base, but increasing numbers of deconditioned elderly.*

Background to Victoria Department of Health **Overview of rehabilitation services - Rehabilitation has a focus on working with people who have a physical disability, are frail, chronically ill or recovering from traumatic injury or illness, to regain and/or maintain optimal function, and to allow people to maximise their independence and return to, or remain in, their usual place of residence. Services include: inpatients, Subacute Ambulatory Care Services (SACS) rehabilitation (including centre based and home based rehabilitation), and the Victorian Paediatric Rehabilitation Service (VPRS).**

**Admitted services and funding arrangements - The VicRehab episode based funding model is for designated sub-acute rehabilitation units with 20 or more rehabilitation beds. The Casemix and Rehabilitation Funding Tree (CRAFT), which underpins the VicRehab funding system, categorises Level 2 rehabilitation patients into 16 groups and a short stay category according to clinical and functional levels, most of which are funded on an episode basis as Rehabilitation Weighted Units (RWU). CRAFT categories that cover amputee, major head injury, spinal and burns patients are referred to as Special Level 2 and are funded on a per diem basis at the Rehabilitation Level 2 bed day rate. Payments are also provided for Level 1 services (first post acute rehabilitation episode for amputee, major head injury and**

spinal patients) on a per diem basis. For more information refer to the Victorian health services policy and funding guidelines 2010-11. These can be accessed at: [http://www.health.vic.gov.au/pfg/downloads/hospitals/tech\\_guidelines3.pdf](http://www.health.vic.gov.au/pfg/downloads/hospitals/tech_guidelines3.pdf) Refer to page 26 of the document.

**Non admitted services and funded arrangements** - SACS includes community rehabilitation (centre-based and home-based) and specialist clinics. SACS in the community provides a person and family-centred, interdisciplinary model of care supported by flexible service delivery in a range of settings, and is directed at improving and maintaining clients' functional capacity and maximising their independence. The specialist clinics provide specialist assessment, diagnosis, intervention, management, education, advice and support to clients with specific medical conditions. It is expected that clients will have access to a comprehensive suite of specialist assessment and investigative services including cognitive dementia and memory, continence, falls and mobility and chronic pain management. This may also include clinics such as wound, transition of young adults, polio and movement disorders.

SACS are available to people of all ages and may follow a hospital stay, hospital day attendance, or may be accessed directly from the community. SACS extend and complement inpatient services. SACS can be delivered in a client's home or at an ambulatory care centre. The SACS consolidated funding streams (State (non-DVA) SACS funding and DVA SACS funding) enable health services to use the funds to deliver flexible services in a range of care settings in response to clients' identified needs. Health services will need to ensure that clients requiring SACS on transition from a hospital stay have priority of access to these services and the client's continuum of care is effectively maintained.

**Subacute planning framework** - The Planning the Future of Victoria's Sub-acute Service System - a Capability and Access Planning Framework was developed in response to the need for an evidence based approach to service planning. The framework aims to ensure that the level and mix of existing and future rehabilitation and GEM services is targeted appropriately. The Framework develops explicit expectations about service standards and capability requirements for all Victorian public sub-acute services. It defines the scope of practice and resources needed to provide care at a designated level. Further information on the Sub-acute Service System – a Capability and Access Planning Framework can be found at: <http://www.health.vic.gov.au/subacute>

**Additional policy documents which underpin non admitted subacute services - these can be accessed at :**

<http://www.health.vic.gov.au/subacute> Health independence programs guidelines **Promoting health independence : a framework for better care** An evaluation of home based rehabilitation services was conducted in 2004 for the department by the National Ageing Research Institute. [http://www.mednwh.unimelb.edu.au/research/service\\_hcr.htm](http://www.mednwh.unimelb.edu.au/research/service_hcr.htm)

Jurisdiction Queensland			
Informant and background	<i>Prof Len Gray</i>	<i>Kiley Pershouse, Program Manager, Spinal Outreach Team , QLD Health-</i>	<i>David Douglas Rehabilitation Physician Ipswich Hospital</i>
Does your jurisdiction/facility/professional group have an overarching rehabilitation plan, definition, strategy, philosophy of rehabilitation care or defined model of care? If yes, please briefly describe.	Len is an academic, without a "jurisdiction". Since telehealth has no real boundaries, he works in multiple jurisdictions. Changes from COAG funding very slow in Queensland - no new programs implemented yet.	Community based rehabilitation – stroke and adult rehabilitation Community based rehabilitation – stroke and adult rehabilitation Working age patients and geriatric clients Service model has been endorsed for the team	No - Currently in discussion with administration to develop one
How is it determined in which practice setting (inpatient, outpatient, at home) a patient will receive rehabilitation care? for example: admission criteria	Depends on the level of disability, availability and capability of family/carers, and capacity to deliver in home care in the person's locality.  Patients are divided into specialised rehabilitation and general rehabilitation/geriatric rehabilitation – but patients don't fall neatly into 2 groups. How much therapy a person can cope with often determines where they go. Each specialty (rehabilitation and geriatrics) control their own beds.		Mostly determined at the intake meetings of the various components. Where the referral is more appropriate to another component, the referral is passed on.
What objective assessment of rehabilitation potential occurs before a patient is accepted in to the service? eg physician assessment, use tools like FIM, therapist assessment	In my practice, we conduct a comprehensive geriatric assessment using the interRAI Acute Care system, built on a web-based clinical decision support platform. Nurse assessors are trained to collect data, and this is reviewed either online or in person by a geriatrician as part of the triage process.		<b>Inpatients</b> - Therapy assessments and rehabilitation registrar review for most cases. <b>Outpatients</b> - Comprehensive questionnaire sent out to the patient. Can be provided with assistance from the rehabilitation nurse to complete the questionnaire. <b>Rural</b> - assessed by allied health staff only
What are the enablers or barriers associated with patient flow across the continuum of care? eg workforce shortages, defined clinical pathways	Consistent systems of assessment and review. Well trained assessors and specialists. Good IT infrastructure. Telehealth can transform the capacity to provide services in smaller hospitals, providing the other elements are in place  Barriers are lack of appropriate investment in these facets of service delivery and support.  Lack of economies of scale – particularly in relation to workforce Few rehabilitationists in Queensland		Workforce shortages limit flow from inpatient to outpatient. Allied health are used across the hospital and rotate through the rehabilitation unit. This causes instability of the team.
Are there objective measures regarding how	Yes, but the formula is complex, and very context sensitive. The key criteria for stopping care		Discharge goals are set on planned functional achievements for inpatients and most outpatients.

Jurisdiction Queensland		
<b>much rehabilitation a patient should receive / when to stop providing care? eg discharge criteria, defined funding eligibility limits</b>	incorporates 1. Lack of continuing functional gain. 2. Lack of ability to further reduce handicap (which includes functional gain, but also involves provision of aids, appliances, training how to use them, training carers how to provide care, etc)	There is no formal funding cap
<b>Approximately what proportion of your health system's rehabilitation care occurs in inpatient vs. outpatient vs. aged care vs. at home?</b>	I don't have a health system, strictly speaking and work in a variety of jurisdictions in metro and rural Australia. "Proportion" could be expressed in budget, occupied place days, or a variety of other parameters. I expect that 75% of budget is spent on inpatient rehabilitation, but that is at best an educated guess.	Difficult to comment as no linkage between some of the arms. 80% inpatient and 20% outpatient.
<b>What are the key types of professions which make up the 'rehabilitation team', eg geriatrician (physician), physiotherapist, etc.</b>	I'm involved in 3 rehabilitation services, each of which has a core array of disciplines: geriatrician, OT, PT, speech, social work, then variably psychology, prosthetists, audiologists, nutritionists, etc.	Unsure of local skills in the teams  Clinical psychology, Dietician (inpatient), Diversional therapy (inpatient), nursing, physiotherapy, Occupational therapy, Rehabilitation medicine, Speech pathology, Social work
<b>Are there usual patterns of treatment frequency, intensity, and duration - and if so can you describe. eg a patient in inpatient rehabilitation would be seen twice daily for an hour each until able to be seen in outpatient.</b>	There is no simple answer to this, depends on the definition of rehabilitation, the rehabilitation diagnosis, the physical and cognitive fitness of the individual. Trying to strictly define this is very dangerous, and encourages a narrow focus of rehabilitation effort.	Inpatients receive more intensive therapy than outpatients. Up to twice daily inpatient treatment by therapists is achieved, but is not the routine.
<b>How does a patient move from one practice setting to another, for example from inpatient to aged care?, eg based on functional measures, based on funding, based on access</b>	A complex judgement, which I referred to in section 2  As an example in the rural model: an older patient from the country has surgery in the city and returns to the local hospital for rehabilitation. Slow stream rehabilitation patient may also return to their local hospital for continuing rehabilitation	Transfer is limited to components of rehabilitation. There is no formal geriatric service offered. Referral to other services (HACC, etc) done via forma referral process.
<b>Please describe a good practice operational models (or elements of a model) for rehabilitation care within your jurisdiction?</b>	Telehealth model: assessment and video conference ward round, proper case evaluation and assessment at admission. Nurses trained to do assessment pre admission and after entering program.  RP reviews assessment and writes commentary – assessment provides the framework for the care plan - provides baseline function levels  Ward rounds - local doctors (GP or specialist), but Rehabilitation supervision for planning provided from a distance. Weekly rounds - mobile wireless on site and at an office in city. Rounds done with nurse at site (not	Build capacity of a community that includes a hospital  Video conferencing for training and education  <i>Telehealth is used to a limited extent, to date for case conference. We are currently looking at option of extending this but that is not likely to happen soon.</i>

Jurisdiction Queensland	
	<p>trialled with GPs) Shared care arrangement</p> <p>Need competent person at the other end - team meeting and end of round and usual case conferencing</p>
<b>Other notes</b>	<p>Ideal models</p> <p>Shared care - admitted under geriatrician and surgeons providing surgery etc eg Royal Melbourne bed cared held by Geriatrician Shared care common</p> <p>City specialist - work with remote centres, portfolio of responsibilities include support for distance hospitals - need to work out funding - who will fund telemedicine component, who does assessments and prepare case conferences</p> <p>Key elements - slow stream needs to be present in every area, integration with general and geriatric services. Who will run the services that needs extended stay, pts need restorative care .</p> <p>Telemedicine opportunity - more equitable access, good relationship for transition care, ambulatory and transition care need to be co-managed</p> <p>Patients that go home needs a blend of centre based and home based therapy, need overarching structure to support</p> <p>Basic ingredients - most people can get reasonable access - geriatrics more difficult to design programs for but these are the growth area</p>

*Len Gray background - Len is currently working on developing a clinical decision support system to synthesise inpatient triage consultancy processes with post acute assessment and care. The interRAI Acute Care will soon have a Post Acute Supplement to support “whole of episode care”. Ultimately the plan is to build a CDSS that encompasses ED assessment (the interRAI ED), acute care assessment (the interRAI AC), post-acute care (the interRAI PAC supplement to the AC), and transition care (home based rehabilitation) using the interRAI Home Care (HC). This will represent a continuous assessment system across the entire episode with identical core instrumentation in each setting to enable monitoring of progress, and ultimately outcome measures (QIs).*

*The interRAI AC is currently being used as an assessment system for triaging to post acute care in several Qld hospitals and the Royal Hobart Hospital. Shortly, it will be made available in all public hospitals in Queensland.*

*Len plans to validate and incorporate a set of QIs for post acute care in the next couple of years. We have almost completed a set of QIs for acute care of older people, and are commencing a similar project in the ED setting.*

*Kiley background Coordinates the Community Rehabilitation Special Interest Group (CRSIG) whose focus is information sharing across Community Rehabilitation workforce members to support the development of a community rehabilitation identity and optimise the capability of the workforce to develop, implement and evaluate community rehabilitation programs.*

<http://www.health.qld.gov.au/qhcrwp/default.asp>

**Project Aim** - To optimise the capability of the current and future workforce to develop, implement and evaluate community rehabilitation programmes to meet the current and emerging health needs of the Queensland community.

The Queensland Health Community Rehabilitation Workforce Project (CRWP) was funded for five (5) years until June 2008, by the Australian Government Pathways Home Programme. The aim of the CRWP was to optimise the capability of the current and future workforce to develop, implement and evaluate community rehabilitation (CR) programmes to meet the current and emerging health needs of the Queensland community. Developing the CR assistant workforce was a major aspect of the project. This included piloting an Advanced CR Assistant (ACRA) role in six (6) sites across Queensland.

The development of the ACRA role was locally driven through a service mapping and needs analysis process. Consistency across the pilot sites regarding the purpose of the role, resulted in the development of a state-wide role description. Evaluation from the perspective of the ACRA, health professionals and clients indicated that the role was valuable. Many of the pilot sites have secured ongoing funding. The project also funded the development of an online training module for health professionals around skills for supervising assistants.

**Definition of Community Rehabilitation**

Community rehabilitation is a process that seeks to equip, empower and provide education and training for rehabilitation clients, carers, family, community members and the community sector to take on appropriate roles in the delivery of health and rehabilitation services to achieve enhanced and sustainable client outcomes.

It is therefore a broad and diverse area which generally encompasses:

- The physical, social and attitudinal environment in which services are delivered
- The use of networks to create a complete response to consumer needs
- The engagement of consumers in their own rehabilitation.

This definition was adapted from "CBR": a strategy for rehabilitation, equalization of opportunities, poverty reduction and social inclusion of people with disabilities: joint position paper 2004", International Labour Organisation, United Nations Educational, Scientific and Cultural Organisation and the World Health Organisation.

## Appendix 5: International comparisons

Jurisdiction	United States- Friday 29 October at 2pm (Sydney time)	Netherlands - Friday 5 November at 6pm (Sydney time)
Informant and background	<p>Luann Lamay has 30 years of experience in a variety of roles across the US health system - she is a Certified Rehabilitation Nurse, Certified Case Manager, Masters in Public Health Administration, previous VP of a Rehabilitation Agency that works across hospital, nursing home, outpatient, community care; and currently Director of Continuity of Care for Kaiser Permanente - a member of the hospital exec responsible for discharge planning, nursing home placements, home health referrals, etc.</p> <p>Kaiser Permanente is an integrated managed care consortium, based in Oakland, California, United States, founded in 1945 by industrialist Henry Kaiser and physician Sidney Garfield. Kaiser Permanente is made up of three distinct entities: the Kaiser Foundation Health Plan (the funder), the Permanente Medical Group (physicians contracted exclusively to Kaiser), and its regional operating subsidiaries. As of 2006, Kaiser Permanente operates in nine states and the District of Columbia, and is the largest managed care organization in the United States. Kaiser Permanente has 8.6 million health plan members, 167,300 employees, 14,600 physicians, 35 medical centers, and 431 medical offices. In its most recently reported year, the non-profit Kaiser Foundation Health Plan and Kaiser Foundation Hospitals entities reported a combined \$1.3 billion in net income on \$34.4 billion in operating revenues</p>	<p>Gertjan Postma RA is director at PwC Netherlands within the Healthcare Advisory Group and specialised in elderly care. Gertjan works at PwC for 26 years. He is very experienced at performance improvement issues regarding home care, nursing and intramural care, as well as Healthcare policymaking for the Central Government. Moreover, he is an expert on financial and cost issues.</p> <p>Drs. Anneke Offereins is a management and organisation expert and advisor with the Healthcare Advisory Group. She works on strategic and organisational issues, focusing mainly on improvement of elderly care. Anneke has been studying the effects of ageing on the healthcare sector and works on strategic innovation and transformation issues.</p> <p>Dr Jurriaan de Groot, a senior rehabilitation physician (an AFRM Fellow) who works in NZ, gained his medical degree in the Netherlands and then undertook his postgraduate training in Rehabilitation Medicine in Australia and NZ.</p>
Does your jurisdiction/facility/professional group have an overarching rehabilitation plan, definition, strategy, philosophy of rehabilitation care or defined model of care? If yes, please briefly describe.	<p>Philosophy of US Rehabilitation - Adopted elective hips &amp; needs - pre-hospital class, case management &amp; home based programs, paths for patient care coord/discharge, physiotherapist discussion Follow-up- prior to admission at home consultation and inspection of environment, discussion of pain management LOS - 3 days Intensive front end management to understand Reduced need for a skilled nursing facility Seen within a few days of being sent home.</p>	<p>Services are focused on the improvement of quality of life and providing support to return to work and an active in lifestyle.</p> <p>Referral by a GP to get rehabilitation care - allocation, the RP will then determine the type of treatment that is necessary. Rehabilitation and older people - also the case in the Netherlands, RP and geriatricians</p>
How is it determined in which practice setting (inpatient, outpatient, at home) a patient will receive rehabilitation care? for example: admission criteria	<p>Stroke - Luann's Facility is neurocentre of Northern California - see all strokes, neurosurg, craniotomies, Acute neuro rehabilitation facility for cognitive impairments Admission to the Acute rehabilitation facility is based on Ability to withstand 4 hrs of therapy per day. If not able go to acute rehabilitation go to Skilled nursing facility. Skilled Nursing Facilities - Therapists see patients for approx 2-2.5hrs. Funding is driven by acuity in these facilities Restorative aids are use in the skilled nursing program - certified but not licensed. Plans of care carried out by nursing staff and restorative aids at the facility</p>	<p>There is no exact criteria. Those in a nursing homes will get their rehabilitation care in the nursing home. Nursing Homes contract Rehabilitation Physicians. RPs A large proportion receive services in outpatients The setting may be determined by where the patient is - acute situation eg stroke will be treated in rehabilitation area of the hospital. The functional status of the patient determines where the patient is treated - hospital is predominantly short stay care 1 week or less Also depends on illness or disease of the patient. Patients may visit the centre weekly - eg day hospital. Rehabilitation is also provided at home, this depends on the clients diagnosis and if the patient is able to get to outpatient clinics, if this is not possible, treatment is in the home. Outpatients is weeks to months. There are 24 rehabilitation centres (outpatients)- Depends on degree of complexity, long term or short term care</p>

Jurisdiction	United States- Friday 29 October at 2pm (Sydney time)	Netherlands - Friday 5 November at 6pm (Sydney time)
What objective assessment of rehabilitation potential occurs before a patient is accepted in to the service? eg physician assessment, use tools like FIM, therapist assessment	Admission criteria -Prolonged hospitalisation/neurological event/otherUse interqual criteria, discharge screen, look at level of care required, discharge destination & support from family,FIM used in skilled nursing facilities, doesn't address the ADL's as well so staff follow closely to identify goals and progress.Set goals based on what they need to return to a home environment safely. Dependent on level of support available.If appropriate can go to Acute Rehabilitation.Keep in skilled nursing facility until they are safe to return to discharge environment.	
What are the enablers or barriers associated with patient flow across the continuum of care? eg workforce shortages, defined clinical pathways	Barriers - Being unsure about how long a patient will need. Can't really establish a level of care as end product LTAC - Long term Acute Care hospital - can see patients for another spell of acute illness, but have very distinct discharge plan & path if not successful after specific stay period. Waiting for outpatient services 2-3wks, MRSA, male/female mix wards. Prevents moving patients	There are not many barriers in patient flow. The Netherlands policy is to treat patients while they live at home – therefore there are no barriers in transferring from hospital to home or nursing home. There may be physical barriers within people's homes, it is the responsibility of the rehabilitation physician to determine if the patient is able to go home. Patients may need home mods and equipment. Access to these services - waiting lists sometimes, people waiting in hospital for rehabilitation mods etc. costly. Public information on waiting lists is available: Waiting lists are managed locally
Are there objective measures regarding how much rehabilitation a patient should receive / when to stop providing care? eg discharge criteria, defined funding eligibility limits	Acute care hospitals - not much OT, some Physio therapy to mobilise early in hospital stay (assessing ability to ambulate, reinforce surgical precautions, ensure technique. Making recommendations for future care. Speech - swallowing recommendations, dysphasia recommendations for skilled nursing setting Skilled nursing environment follow through with rehabilitation component Multi-disciplinary care occurs in Skilled Nursing facilities, to facilitate higher level ADL functions, with the aim that patients can manage their own ability to be at home.	Depends on the needs of the patients. Patients are monitored by a rehabilitation team, frequent evaluation and review of how the process is going and the patients improvement, these factors determine if treatment continues or the patient goes home. It is not currently transparent when a treatment is finished –there are no guidelines or criteria.
Approximately what proportion of your health system's rehabilitation care occurs in inpatient vs. outpatient vs. aged care vs. at home?	Acute stays are particularly short in acute hosp. Skilled nursing facilities - Run IV's and IV antibiotics, TPN, Contract with specific facilities for Rehabilitation/ICU need patients	90% rehabilitation is outpatient care
What are the key types of professions which make up the 'rehabilitation team', eg geriatrician (physician), physiotherapist, etc.	Multi-disciplinary care occurs in Skilled Nursing facilities, Restorative aids are use in the skilled nursing program - certified but not licensed. Plans of care planned by therapists & carried out by nursing staff and restorative aids at the facility Role of Physician - When look at sending a patient to other rehabilitation units, PM&R doctors evaluate the patient, look at extent of injury, prognosis, discuss with consultants. In Kaiser physiatrist will mostly make decision regarding the transfer to skilled nursing facilities. Stroke Unit - Role of specialist doctor - stroke rounds 3 days per week discussed in interdisciplinary setting, neurologist, hospitalist, PM&R doctors, surgeons, advise allied health team on what they should expect in rehabilitation process. Key link to the family. Also involved - endocrinologists, infectious disease,	RP, Geriatricians, nursing home physicians (slow stream rehabilitation - for patients that do not needs specialised treatment), PT, OT, SP, remedial educationalist, social work, psychologist, cognition, kinesotherapist, sports therapist, dietician, orthotists/prothetist, nursing

Jurisdiction	United States- Friday 29 October at 2pm (Sydney time)	Netherlands - Friday 5 November at 6pm (Sydney time)
Are there usual patterns of treatment frequency, intensity, and duration - and if so can you describe. eg a patient in inpatient rehabilitation would be seen twice daily for an hour each until able to be seen in outpatient.	Admission to the Acute rehabilitation facility is based on Ability to withstand a minimum of 4 hrs of therapy per day. If not able go to acute rehabilitation go to Skilled nursing facility. Skilled Nursing Facilities - Therapists see patients for approx 2-2.5hrs. Funding is driven by acuity in these facilities	Rehabilitation centres provide an integrated program of therapies - one on one or group based – the duration depends on the patient situation and progress, this is determined by the team and programs adjusted as required Rehabilitation centre - treatment can vary from 1 hour a day or hours per day if required - based on judgement of the Rehabilitation doctor. All doctors have different standards these are not transparent. Patients with similar problem are not always treated in the same way. Looking at moving towards standards for treatment - DBC extended to rehabilitation centres in 2012
How does a patient move from one practice setting to another, for example from inpatient to aged care?, eg based on functional measures, based on funding, based on access	Open electronic record - can see patient details immediately and access consultations. Other facilities may not have this though so print outs required. Home services - Extensive home health service with highest number of physiotherapists Need to meet specific criteria and of being home bound in order to receive services Not a daily event - intermittent - management of case load. PT, OT & Speech come on alternate days. Important to provide at home - Too expensive to provide at home practically.	Rehabilitation is funded by private health care insurance. Rehabilitation centres agree with the insurer to determine the reimbursement. Rehabilitation centres are not big players (vs. hospitals). Rehabilitation is paid as part of the basic insurance package. Rehabilitation centres must contract for their price - no longer require prior approval
Please describe a good practice operational models (or elements of a model) for rehabilitation care within your jurisdiction?	Essential - Communication so that hand-offs of the patient are virtually seamless. Loss of continuity and need for catch-up. Staff follow through acute and turn up at the skilled nursing facility so that there is no misunderstanding regarding the patient status. Aggressive case management within 24hrs of discharge from any setting. Piloting program for phone follow up within 24-72 hrs of discharge RE: medications, support. Key KPIs tracked for each patient - Re-admission rates and reasoning, ED visits, track any that are readmitted within 30 days.	All rehabilitation services across the Netherlands are operating at a high standard – There are currently no plans by the Dutch to make changes to the quality of the system. Funding - health insurance costs are rising quickly, the government is seeking greater transparency to enable a way of financing the sector and controlling the costs (transparency= more data). Rehabilitation research and development focuses on new technologies, treatment at home, e health, video consults, pts can discuss with coach at a distance their needs,
Accreditation & standards used ?	Accreditation - Important in providing specific status of facility, if accredited & survey and found to be in alignment deemed suitable for billing services and receiving reimbursements. CARF is rehabilitation specific . Outpatient & inpatient specific. Expectations around accreditation are for quality practice measures , meets national standards, accepted practices followed.	Accreditation of rehabilitation centres is required and quality standards exist. Services are reviewed under the AKZ standards and accreditation system annually, these are the most used standards in the Netherlands.
Other Notes		Essential elements of rehabilitation services: Dedicated allied health staff The Netherlands has workforce guidelines / standards – including staffing guidelines Home based rehabilitation – this is supported with home care for example cleaning, help at home , personal care, basic care treatment, activities of daily living. The community personal care provider is different to the rehabilitation provider. Care provided in parallel with rehabilitation care.

## Appendix 6: Literature scan

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
Accessed Sept. 2010  Jurisdiction: Australia	Performance data	AROC Inpatient Clinical Data Set	AROC	In 2007 AROC and the AFRM jointly completed a review of the ACHS Rehabilitation Medicine Clinical Indicators resulting in revised indicators implemented on 1 January 2008: Timely assessment of function on admission; Assessment of function prior to patient episode end; Timely establishment of a multi-disciplinary team rehabilitation plan; Discharge plan prior to patient separation; Functional gain achieved by rehabilitation program; Destination after discharge from a rehabilitation program.	It is a goal of AROC's that in the near future we will be able to assist rehabilitation facilities with sending ACHS their Rehabilitation Medicine Clinical Indicators. As such, the Version 3 AROC Inpatient Clinical Data Set now contains all data items necessary for the collection and compilation of the ACHS Rehabilitation Medicine Clinical Indicators. AROC recommend that rehabilitation units collect all relevant Hospital Wide indicators as well as the Rehabilitation Medicine indicators.
BMJ 2010; 340:c1718 doi:10.1136/bmj.c1718  Jurisdiction: International	Scientific journal	Inpatient rehabilitation specifically designed for geriatric patients: systematic review and meta-analysis of randomised controlled trials,	Bachmann, S, Finger,C, Huss, A, Egger, M, Stuck, AE & Clough-Gorr, K M	Systematic review and meta-analysis of randomised controlled trials to assess the effects of inpatient rehabilitation specifically designed for geriatric patients compared with usual care on functional status, admissions to nursing homes, and mortality.	Inpatient rehabilitation specifically designed for geriatric patients showed beneficial effects over usual care for functional improvement, preventing admissions to nursing homes, and reducing mortality. For all outcomes inpatient rehabilitation showed a short term effect after discharge as well as a less pronounced longer term effect at the end of follow-up. Compared with those in control groups, weighted mean length of hospital stay after randomisation was longer in patients allocated to general geriatric rehabilitation (24.5 v 15.1 days) and shorter in patients allocated to orthopaedic rehabilitation (24.6 v 28.9 days). Conclusions: Inpatient geriatric rehabilitation programmes specifically designed for older people show; sustained effects on improving functional status and reducing admissions to nursing homes and mortality; Such programmes might increase or decrease the overall length of hospital stay, depending on type and concept of the programme; Reduction in admissions to nursing homes might result in cost savings or offset additional costs of the initial inpatient rehabilitation.
Disability and Rehabilitation, 2010; 32(9): 781–789  Jurisdiction: Victoria, Australia	Scientific journal	A description and evaluation of an innovative rural rehabilitation programme in South Eastern Australia	Dow, B, Moore, K, Dunbar, J M, Nankervis, J and Hunt, S.	Study sought to describe and evaluate the effectiveness of an innovative model of rehabilitation designed to meet the needs of a sparsely populated rural area in South Eastern Australia, commencing in July 2004. With the support of the Victorian DHS, a planning committee consisting of representation from five health services and DHS was established to plan for, establish and support the implementation of the rehabilitation programme. The health services collaborated on client care. For	Access to rehabilitation services is poorer in rural areas than metropolitan areas, despite the larger proportion of people with a disability in these areas; People living in rural areas are less likely than their metropolitan counterparts to receive the level of secondary and rehabilitative care recommended by clinical guidelines; Rural areas with sparsely distributed populations also have difficulty recruiting and retaining an adequate health service workforce, making it difficult to develop specialist expertise and services; Programmes incorporating education, and sharing of resources and expertise across health services and with larger regional and metropolitan services have shown promising findings for overcoming barriers faced in rural areas. Historically there had not been strong links between inpatient (acute) care and community rehabilitation. With the new programme, protocols were established including CRC staff attendance at inpatient rehabilitation case discussion meetings and communication of the client's inpatient rehabilitation goals. Clients

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
				example, a client could go from acute care in one of the smaller hospitals to inpatient rehabilitation at one of the larger hospitals and then back to their local hospital as an outpatient for ongoing community-based therapy provided by staff from both hospitals; Clients referred to the programme were given a comprehensive rehabilitation assessment, including functional assessment (modified Barthel Index (BI)) and setting of rehabilitation goals. Evaluation included comparing length of stay (LOS) and improvement in the Modified Barthel Index (BI) with the Victorian State average for Level 2 (nonspecialist) rehabilitation. Surveys were conducted with staff, clients and carers in the programme.	admitted to the programme improved functionally at least as well as the Victorian State average for similar client groups (BI change 26.5 compared with 22.3 points, p50.001), with a shorter LOS (13.8 compared with 22.3 days) but more were discharged to residential aged care (16.1% compared with 6%).
National Ageing Research Institute, 2003  Jurisdiction: Victoria, Australia, International	Industry publication	Evaluation of home-based rehabilitation in Victoria	Dow, B, Black, K & Bremner, F (2003)	Literature review of Australian and internationally published (peer reviewed) research into home-based rehabilitation since 1990; covering interventions that include a multi-disciplinary team approach for stroke and/or orthopaedic conditions as these are the client groups.	In summary, this literature review revealed the following – <ul style="list-style-type: none"> <li>• Home-based rehabilitation is not associated with any adverse effects for clients (particularly stroke clients) – and is therefore worthy of further investigation;</li> <li>• Home rehabilitation is a cost effective alternative to hospital rehabilitation for stroke clients due to reductions in inpatient LOS;</li> <li>• The models of home and hospital-based rehabilitation have not to date been clearly defined in the literature;</li> <li>• Outcomes for carers need further exploration;</li> <li>• Outcomes for orthopaedic and other rehabilitation conditions need further exploration;</li> <li>• There is a need for more research that focuses on handicap (participation restriction) and personal factors, such as client goals and quality of life;</li> <li>• There is a need for more qualitative research to explore the motivational and affective features of being at home and their effect on rehabilitation outcomes;</li> <li>• Staff perceptions of home-based rehabilitation (for example, the impact on workloads of increased throughput and any safety issues associated with working in the client's home) need to be further explored.</li> </ul>
BMC Neurology 2010, 10:3  Jurisdiction: Canada	Scientific journal	Study protocol of the 'You call - We Call' trial: impact of a multimodal support intervention after	Rochette, A, Korner-Bitensky, N, Bishop, D, Teasell, R, White, C, Bravo, G, Côté, R, Lachaine, J, Green, T, Lebrun,	Study assesses the effectiveness, for individuals who experience a first "mild" stroke, of a sustainable, low cost, multimodal support intervention (comprising information, education and telephone support) - "WE CALL" compared to a passive intervention	The telephone component of the intervention is based on the Family Intervention Telephone Tracking model (FITT), where pilot data shows promising effectiveness in the US. Each telephone interaction focuses on any new, or ongoing issues as well as six key areas (i) family functioning, (ii) depression, (iii) neurocognitive functioning, (iv) functional independence, (v) physical health and vi) individualised risk factors. Additional written information will be provided when and as needed.

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
		a "mild" stroke	L H, Lanthier, S, Kapral, M, and Wood-Dauphinee, S.	(providing the name and phone number of a resource person available if they feel the need to) - "YOU CALL". Study includes 384 adults who meet inclusion criteria for a first mild stroke across six Canadian sites.	Participants will be referred to local community services as necessary and/or directed to their family doctors when they experience health problems (including depression).
McKesson Media 1st June 2007  Jurisdiction: Australia	General media	Two InterQual projects to commence at Wollongong hospital	McKesson Media	Study from McKesson, a leading provider of telephone-based healthcare, evaluating the validity and usability of the McKesson InterQual Review Manager utilisation review application at Wollongong Hospital, building on a previous trial conducted in 2004. Studies led by Associate Professor Chris Poulos, South Eastern Sydney Illawarra Area Health Service.  This is a clinical decision support tool to measure 'the appropriateness of the level of care a patient is receiving' with the potential to improve both individual patient outcomes and hospital productivity; used extensively in US, Canada and also in UK.	Previous study concluded that that "InterQual Criteria may have a useful role for patient selection in rehabilitation, in facilitating the transfer of patients from acute to sub acute care and in improving patient flow within acute care". New study will build on this data; results not yet published.
JARNA Summer 2004 – Vol 7;4 pg10-16  Jurisdiction: Western Australia	Scientific journal	A multidisciplinary model of transitional rehabilitation in acute aged care	Michael, Dr R, Wichmann, H, Wheeler, B, Homer, B & Downie, A/Prof	First stage of a three stage pilot research project to establish a Healthy Ageing Unit in a private hospital in Western Australia, based on a multidisciplinary model of transitional rehabilitation for the elderly acute patient; including medically stable acute patients aged over 60 years, referred to the Unit and assessed as suitable candidates for therapeutic nursing if they had the expected ability to improve/rehabilitate within a 2 week time frame.	An audit of admissions and separations data found that patients aged 65yrs and over had an ALOS of 33.4 days compared with the Australian norm for all patients of 3.7days and that in the previous year, more than 322 acute general, medical and surgical patients had been unable to be admitted for treatment because of bed shortages.  Anecdotal information suggested that both nursing staff and patients were frustrated by the lack of time available to adequately provide "enabling" care.  The Unit proposed an innovative multidisciplinary model of staffing with Enrolled Nurses trained as Therapy Assistants providing the majority of care. The development of selection criteria for the Unit was based on data identified from medical records and focus groups. The HAU was seen to support innovative utilisation of beds, and the potential to produce sufficient revenue to cover the costs of the Unit whilst also providing leading edge healthcare and removing the older patients from the acute care environment. Reduction in ALOS not yet determined.
Health Technol Assess 2000;4(2).  Jurisdiction: Australia, New Zealand, UK	Scientific journal	Geriatric rehabilitation following fractures in older people: a systematic review	Cameron I, Crotty M, Currie C, Finnegan T, Gillespie L, Gillespie W, <i>et al.</i>	Study to synthesise the published evidence for the effectiveness and cost-effectiveness of programmes of care following the acute management of fractures in older people. The principal focus is on rehabilitative care after proximal	Geriatric service interventions after hip fracture are complex: their form and outcomes are strongly influenced by local conditions. Comparative studies comparing different treatments and strategies are of poor to moderate quality, allowing only tentative conclusions. However, the studies reviewed suggest, Geriatric hip fracture programme (GHFP) and Early supported discharge (ESD) programmes were found to reduce total length of stay in hospital and significantly higher rates of return to

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				femoral fracture. The prevalence of fractures in older people is increasing rapidly. Different types of programmes are available for rehabilitation after these fractures. However, the effectiveness of these programmes is uncertain. Forty-one comparative studies (of which 14 were randomised trials) and seven audit studies were included.	previous residential status are achieved by GHFP and by ESD. There is no evidence that length of stay in a Geriatric orthopaedic rehabilitation unit (GORU) is less than in a conventional orthopaedic unit. There are insufficient data to assess the impact of any programme on level of function, morbidity, quality of life or impact on carers. ESD should be a component of GHFPs to maximise opportunities for suitable individuals to return to their own homes as soon as possible. New GORUs should not be established unless their superiority over mixed assessment and rehabilitation units (MARUs) is demonstrated. However, acute units managing hip fractures should retain access to assessment and rehabilitation services in GORUs or MARUs for the more disabled but previously community-dwelling patients. There are insufficient data to recommend the introduction of formal clinical pathways in association with these practices, although there is weak evidence that they may be advantageous
Disability and Rehabilitation, 2010; 32(12): 1051–1058  Jurisdiction: Australia	Scientific journal	Models of rehabilitation – commonalities of interventions that work and of those that do not	Cameron, I	Review of models of rehabilitation and to consider factors that influence a models effectiveness or ineffectiveness.	Reasons for apparent 'non-effectiveness' of rehabilitation models are protean and can range from inadequately conceptualised health conditions, or interventions, to interference from 'active' control interventions, inappropriate outcome measures and, inadequate sample size. Rehabilitation models can generally be considered as 'complex interventions' for which specific research approaches have been defined. It is more likely to be accepted by the people involved, and be more likely to work, if the complex intervention paradigm is used and if rehabilitation operates at the level of activity and participation, as defined by the WHO International Classification of Functioning. Many opportunities remain for future research into the effectiveness of models of rehabilitation and detection of what constitutes the crucial components.
Arch Phys Med Rehabil 2009; 90:1269-83.  Jurisdiction: United States	Scientific journal	Characterizing rehabilitation services for patients with knee and hip replacement in skilled nursing facilities and inpatient rehabilitation facilities	DeJong G, Hsieh C-H, Gassaway J, Horn SD, Smout RJ, Putman K, James R, Brown M, Newman EM, Foley MP.	Multi-site prospective observational cohort study to characterize rehabilitation services for patients with knee and hip replacement in 3 types of postacute facilities in the U.S.	Both freestanding Skilled Nursing Facilities (SNFs) and Inpatient Rehabilitation Facilities (IRFs) provided similar amounts of PT with a similar emphasis on exercise and gait activities. IRFs, however, provided more OT than freestanding SNFs. IRFs had shorter LOSs and more intensive therapy services than freestanding SNFs. Average LOS was about 15 days for freestanding SNF patients, and 9 to 10 days for hospital-based SNF and IRF patients. Freestanding SNFs and IRFs provide about the same number of hours of PT and OT; the hospital-based SNF provided 27% fewer hours. Freestanding SNFs and the hospital based SNF provided fewer hours a day than did IRFs. Joint replacement patients across all 3 types of facilities spent, on average, 70% to 75% of their PT time in just 2 activities— exercise and gait and spent 56% to 66% of their OT time in 3 activities— exercise, functional mobility, and dressing lower body.
The Australian Health Review, May 1 2010  Jurisdiction: New South Wales	Policy document	A snapshot of rural rehabilitation referrals in rural New South Wales	Pryor, J	The aim of this paper is to describe patterns of referral to inpatient rehabilitation in rural NSW. Archival records of referrals to one rural speciality medical rehabilitation service during 2004 and 2005 were analysed using descriptive statistics	This paper provides the first focussed study of referrals to inpatient rehabilitation in rural NSW. It reports the number of patients referred, the number of referrers, the appropriateness of those referrals and their outcomes. Seventy-six referrers referred 922 patients for inpatient rehabilitation. Almost two-thirds (63.6%) came from the local acute hospital. Most referrals (80.4%) were considered appropriate for inpatient rehabilitation. Almost three-quarters (72.5%) of the patients referred were

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods displayed using tables and graphs.	Summary of key points / findings admitted.
Cerebrovascular Diseases, 2005;19:376-383  Jurisdiction:	Scientific journal	Early Supported Discharge for Stroke Patients Improves Clinical Outcomes. Does it also reduce Use of Health Services and Costs?	Fjaertoft, H, Indredavik, B, Magnussen, J & Johnsen, R (2005)	320 patients were randomly allocated either to ordinary stroke unit care or stroke unit care combined with early supported discharge (ESD) which was coordinated by a mobile team; the study compared ESD patient's use of health services and costs with traditional stroke care during a 1 yr follow-up.	The demand for inpatient rehabilitation is high in rural NSW, suggesting that many healthcare providers view rehabilitation as a valuable service. Furthermore, this study suggests the important contribution that inpatient rehabilitation makes to the utilisation of acute care beds, but does not confirm it.  Acute stroke patient units combined with ESD programs may reduce LoS without increasing costs of outpatient care when compared to traditional stroke treatments. There was a reduction in average number of inpatient days at 52 weeks in favour of the ESD group and a non-significant reduction in total mean service costs in the ESD group. ESD services seem to be most cost-effective with those who have a moderate stroke. The LoS in the acute stroke unit was the same for both groups. There was no difference in rates of readmission or use of nursing homes.
The Lancet; Feb 5-Feb 11, 2005; 365, 9458  Jurisdiction: United Kingdom	Scientific journal	Early supported discharge services for stroke patients: a meta-analysis of individual patients' data	Langhorne, P, Taylor, G Murray, G & Dennis, M et al	Meta-analysis (using Cochrane Stroke Group search strategy) of data from individual patients who took part in randomised trials that recruited patients with stroke in hospital to receive either conventional care or any early supported discharge (ESD) service intervention that provided rehabilitation support in the community setting with the aim of shortening the duration of hospital care.	Appropriately resourced ESD services provided for a select group of stroke patients can reduce long term dependency and admission to institutional care as well as shortening of hospital stays. ESD Patients had a reduced risk of death or dependency. Hospital stays were 8 days shorter in patients assigned ESD services vs those assigned conventional care. Greatest benefit came from coordinated multidisciplinary teams and stroke patients suffering mild-moderate disabilities.
Centre for Allied Health Evidence Division of Health Sciences, University of South Australia  Jurisdiction: Queensland, Australia	Other	Final Report on the Systematic Review of the Literature on Utilisation of Support Workers in Community Based Rehabilitation	Dr. S,Kumar, L Nyland, A Young, Prof. K Grimmer	Reviews literature on utilisation of community based rehabilitation support workers, including allied health and nursing in government and non-government, rural and remote and indigenous settings.	A set of 10 core recommendations are reported in this summary. These recommendations provide a framework for Queensland Health in formulating policies and practices in relation to support workers in community rehabilitation specifically and health care in general. The recommendations also highlight the need for a "bottom up" consultative and collaborative approach of all stakeholders in the effective utilisation of support workers.

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Australia and New Zealand Health Policy 2007, 4:3  Jurisdiction: Australia	Policy document	Determining appropriateness for rehabilitation or other subacute care: is there a role for utilisation review?	Poulos, CJ and Eagar, K (2006)	A literature review on the potential role of utilisation review in defining levels of care and in facilitating appropriate care, with a focus on the interface between acute care and rehabilitation. While predominantly an instrument of payers in the United States, concurrent utilisation review programs have also been used outside of the US, where they help in the facilitation of appropriate care. Some utilisation review tools also have specific criteria for determining patient appropriateness for rehabilitation and other subacute care.	In studies using standardised utilisation review tools there is consistent reporting of high levels of 'inappropriate' bed days in acute care settings. These inappropriate bed days include both inappropriate admissions to acute care and inappropriate continuing days of stay. The high levels of 'inappropriate' care demonstrated repeatedly in international studies using formal programs of utilisation review should not be ignored in Australia. Utilisation review tools, while predominantly developed in the US, may complement other Australian patient flow initiatives to improve efficiency while maintaining patient safety. They could also play a role in the identification of patients who may benefit from transfer from acute care to another type of care and thus be an adjunct to physician assessment. Testing of the available utilisation review tools in the Australian context is now required.
MJA 2008; 189: 340-343  Jurisdiction: Australia	Policy document	Functional improvement of the Australian health care system — can rehabilitation assist?	New P W & Poulos C J	Editorial	Strategies for managing increasing health system demand have focused on the acute sector and chronic disease management in the community, with little attention on the role of rehabilitation. There were over 53 000 inpatient rehabilitation episodes in Australia in 2006. We argue that rehabilitation can improve patient flow and outcomes in acute care if engaged early. The effectiveness of rehabilitation can be enhanced by increasing the intensity of therapy and developing models of rehabilitation that provide alternatives to inpatient care.
Disability & Rehabilitation, 30(2), 150-159.  Jurisdiction: Australia	Policy document	Using stroke to explore the Life Thread Model: An alternative approach to understanding rehabilitation following an acquired disability.	Ellis-Hill, C.,Payne, S., & Ward, C.	Paper describing the Life Thread Model, which incorporates established psychological and social theory related to identity change following an acquired disability. It is supported by a growing body of empirical evidence and can be used to broaden our understanding of service provision in rehabilitation.	The Life Thread Model, based on narrative theory and focusing on interpersonal relationships, has been developed following ten years of empirical research. Using the model, the balance of power between professionals and patients can be recognized. We suggest that positive emotional responses can be supported through (a) endorsing a positive view of self, (b) 'being' with' somebody as well as 'doing' things for them; and (c) seeing acquired disability as a time of transition rather than simply of loss. This model highlights the usually hidden social processes which underpin clinical practice in acquired disability. Recognition of the importance of discursive as well as physical strategies widens the possibilities for intervention and treatment.
Arch Phys Med Rehabil 2009;90:1523-31  Jurisdiction: Australia	Scientific journal	Models for integrating rehabilitation and primary care: a scoping study	McColl MA, Shortt S, Godwin M, Smith K, Rowe K, O'Brien P, Donnelly C.	Peer-reviewed journals were searched using CINAHL, MEDLINE, and EBM Reviews for the years 1995 through 2007. This process identified 172 items. To be considered for the subsequent review, the article had to describe a service delivery program that offered primary care and rehabilitation, or services specifically designed for people with chronic conditions/disabilities	In consultation with the team of investigators, it was determined that there were 6 different models for providing primary health care and rehabilitation services in an integrated approach: clinic, outreach, self-management, community-based rehabilitation, shared care, and case management. In addition, a number of themes were identified across models that may act as either supports or impediments to the integration of rehabilitation services into primary care settings: team approach, interprofessional trust, leadership, communication, compensation, accountability, referrals, and population-based approach.

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International Journal of Stroke, 2(3), 191-200.  Jurisdiction: International	Scientific journal	Stroke rehabilitation 2007: What should it be?	Dewey, H. M., Sherry, L. J., & Collier, J. M. (2007).		There is excellent evidence for the effectiveness of a number of stroke rehabilitation interventions, notably care of stroke patients in inpatient stroke units and stroke rehabilitation units providing organized, goal-focused care via a multidisciplinary team. Stroke units (in comparison with care on general medical wards) effectively reduce death and disability with the number needed to treat to prevent one person from failing to regain independence being 20. Unfortunately, only a minority of stroke patients have access to stroke unit care. The key principles of effective stroke rehabilitation have been identified. These include (1) a functional approach targeted at specific activities e.g. walking, activities of daily living, (2) frequent and intense practice, and (3) commencement in the first days or weeks after stroke.
Physiotherapy Research International Physiother. Res. Int. 11(1) 35–47 (2006)  Jurisdiction: Australia	Scientific journal	Status of physiotherapy rehabilitation after total knee replacement in Australia	NAYLOR, J, HARMER , A FRANSEN, M CROSBIE , J & INNES, L	A nationwide postal survey involving public and privately funded hospital physiotherapy departments was conducted. This survey of clinicians aimed to describe standard (usual) care after total knee replacement in Australia and to provide possible explanations for practice variance, if such variation exists	Elements of consistency and diversity across the acute and post-acute phases were evident. Consistent findings included the provision of gait retraining and exercise prescription in the acute period, the requirement for independent ambulation as a criterion for discharge from acute care and the routine referral to ongoing outpatient or community-based physiotherapy. Less consistency was reported for the use of continuous passive motion and cryotherapy in the acute phase, the modes of ongoing rehabilitation, discharge from rehabilitation criteria and the tools for measuring outcomes. Both institutional and non-institutional factors appeared to explain the demonstrated practice variation.
Topics in Stroke Rehabilitation, 16(1), 1-10. 2009.  Jurisdiction: Australia	Scientific journal	Stroke rehabilitation Down Under: can Rupert Murdoch, Crocodile Dundee, and an Aboriginal Elder expect the same services and care?	Faux, S., Ahmat, J., Bailey, J., Kesper, D., Crotty, M., Pollack, M., & Olver, J.		The complexities and difficulties in treating indigenous stroke survivors are described in a culturally sensitive narrative. The article then discusses the outcomes of the first Australian audit of post acute stroke services completed in December 2008, which describes the journeys of 2,119 stroke survivors at 68 rehabilitation units throughout Australia's 6 states and 2 territories. It demonstrates an average length of stay of 26 days, with 18% of survivors requiring nursing home or other supported accommodation. The article concludes with future directions for stroke rehabilitation in Australia, which include hyperacute rehabilitation trials, studies in 7-days-a-week rehabilitation, and the potential use of robotics.
Disability & Rehabilitation, 29(20), 1616-1624. 2007.  Jurisdiction: Australia	Scientific journal	Why is rehabilitation not yet fully person-centred and should it be more person-centred?	Gzil, F., Lefevre, C., Cammelli, M., Pachoud, B., Ravaud, J. F., & Lepege, A		Although person-centredness has unquestionably contributed to the overall progress of rehabilitation, it is not certain that 'more' person-centredness is the solution to current challenges to rehabilitation. . We argue that one way forward might be to clarify further the respective role of the medical and non-medical aspects of rehabilitation in ways that go beyond what has been already achieved in either the ICIDH or ICF but which is still unsatisfactory or incomplete in many respects.
International Journal of Stroke. 5(3), 178-186. 2010.  Jurisdiction: Australia	Scientific journal	Rehabilitation for community-dwelling people with stroke: home or centre-based? A systematic review.	Hillier, Susan and Inglis-Jassiem, Gakeemah	Study pools data from all retrieved studies that compared the functional benefits of home-based vs. centre for community-dwelling people with stroke. Looks at randomised controlled trials investigating this question in relation to functional benefits as a primary outcome and	There was a significant effect in favour of home-based rehabilitation at 6 weeks (P=0.03) and 3–6 months (P=0.01). The effects were less clear at 6 months, although this was using the less sensitive version of the Barthel Index (P=0.27 or adjusted P=0.04). Individual studies reported cost benefits and increased carer satisfaction in favour of home-based rehabilitation. The provision of rehabilitation for people living in the community should trend towards home-based. Further research is required into adverse events and the experiences of all stakeholders.

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
				carer, cost or other benefits as secondary outcomes. There were no language or date limits. Eleven trials were found and results pooled for the Barthel Index	
Archives of Physical Medicine and Rehabilitation, 89(3), 575-578. 2008.  Jurisdiction: Canada	Scientific journal	A blueprint for transforming stroke rehabilitation care in Canada: the case for change.	Teasell, R. W., Foley, N. C., Salter, K. L., & Jutai, J. W	Editorial.	Using the principles of best evidence, we make the case for needed changes to the current system based on 5 processes of care known to be important in the pursuit of optimal outcomes: (1) admission to specialized stroke rehabilitation units, (2) early admission to stroke rehabilitation units, (3) intensive stroke rehabilitation therapies, (4) task-specific rehabilitation therapies, and (5) well-resourced outpatient programs. Implementation of these strategies will be expected to result in improved functional gain, fewer complications, decreased mortality, and reduced need for institutionalization. In addition to providing improved care for both the stroke survivor and their family, evidence-based stroke rehabilitation care is more efficient and may reduce costs. Our experience in Canada suggests that instituting these 5 measures alone will result in significant improvements to the health care system.
Department of Human Services, Victoria  Jurisdiction: Australia, Victoria	Policy document	Hospital in the home - Literature review and background information	DLA Phillips Fox 2009	The key features of a HITH program are the provision of care that is a true substitute for hospital care, is provided in a place of residence, and utilises the services of health care professionals in the delivery of care. A comprehensive targeted literature review of both the peer-reviewed and 'grey' literature was performed to identify strengths and weaknesses of delivery of Hospital in the Home (HITH) programs, their service profiles, and factors relevant to the delivery, safety and efficiency of HITH programs. Information was analysed regarding the international and national HITH experience with respect to demand, assessment, models of care and economic evaluations of HITH programs, and assessment of models of substituted acute care in order to identify service features consistent with an improved patient experience of receiving hospital care at home.	Studies have demonstrated clinical and financial advantages to provision of orthopaedic after-care in home settings, if post-operative pain is able to be controlled. Models are predominantly nurse-led but commonly also involve allied health practitioners. Requirement for services may be lower. Comparisons of home-based with hospital-based care following primary unilateral total hip or knee replacement have demonstrated that the mean length of stay for patients treated as inpatients is 18 days post surgery. HITH patients receive a mean number of 8 HITH visits in total post surgery. Although less extensively studied, there is also evidence that delivery of post-operative HITH care following surgery for hernia, varicose veins <sup>72</sup> <sup>73</sup> , coronary artery bypass grafting, and cataract surgery is safe and effective.

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
International Journal of Therapy and Rehabilitation, August 2010, Vol 17, No 8  Jurisdiction: International	Scientific journal	Rehabilitation nursing: invisible and underappreciated therapy	Kearney, P., Lever, S.	Editorial	Nurses increase the frequency and intensity of therapy – during bathing, toileting, dressing, positioning, transferring, walking, eating, and medication and communication activities - but this work is not formalised. Allied health contributions to rehabilitation are measured and valued, while nursing activities are rarely considered. However, studies have concluded that Length of stay efficiency and discharge to the community were more likely with higher therapy hours and higher nursing hours.
Journal of Advanced Nursing 65(4), 737–754. 2009.  Jurisdiction: International	Scientific journal	Task oriented training in rehabilitation after stroke: systematic review	RENSINK M. , SCHUURMANS M. , LINDEMAN E. & HAFSTEINSDO´ TTIR T.	Review conducted to provide an overview of the evidence in the literature on task-oriented training of stroke survivors and its relevance in daily nursing practice. A range of databases was searched to identify papers addressing task oriented training in stroke rehabilitation. The selected randomized controlled trials and systematic reviews were assessed for quality. Important characteristics and outcomes were extracted and summarized.	Studies of task-related training showed benefits for functional outcome compared with traditional therapies. Active use of task-oriented training with stroke survivors will lead to improvements in functional outcomes and overall health related quality of life. Many interventions are feasible for nurses and can be performed in a ward or at home. Nurses can and should play an important role in creating opportunities to practise meaningful functional tasks outside of regular therapy sessions.
Clin Rehabil 2005; 19; 126 DOI: 10.1191/0269215505cr841oa  Jurisdiction: England	Scientific journal	A study to assess the effect of nursing interventions at the weekend for people with stroke	Ian Davidson, Valerie F Hillier, Karen Waters, Timothy Walton and Joanne Booth	A single blind randomized controlled trial of a 16-bed stroke rehabilitation unit in the north of England to examine whether additional therapy provided by nurses at the weekend improved the physical outcome for people with stroke on a stroke rehabilitation unit. The intervention group received additional exercise at the weekend provided by the nursing staff and the control group received their usual care. Both groups received usual care during weekdays.	The present study indicates that an increase in one-to-one input by nurses for people with stroke did not lead to a measurable difference in outcome in this small study. No significant differences were found between the groups in terms of MAS and BI at discharge but there was a borderline significant difference between the groups on unconditional testing in terms of length of stay in hospital and on the stroke unit.
Journal of Clinical Nursing, 19, 17–32 17 doi: 10.1111/j.1365-2702.2009.03023.x  Jurisdiction: International	Scientific journal	A systematic review of nursing rehabilitation of stroke patients with aphasia	Irina E Poslowsky, Marieke J Schuurmans, Eline Lindeman and Tho´ ra B Hafsteinsdo´ ttir on behalf of the Rehabilitation Guideline Stroke Working Group	A systematic review of published studies, focusing on identification and treatment of aphasic patients after stroke in terms of the consequences for nursing care, to explore the evidence on rehabilitation of stroke patients with aphasia in relation to nursing care, focusing on the following themes: (1) the identification of aphasia, (2) the effectiveness of speech-language interventions.	The contribution of nursing to the rehabilitation of patients with aphasia is relevant. The use of screening instruments by nurses can increase early detection of aphasia, a precondition for initiating timely speech-language therapy. Collaboration between speech-language therapists and nurses is of the utmost importance for increasing the intensity and functionality of speech-language exercises, which may enhance the quality of treatment. Intensive speech-language therapy, which was initiated in the acute stage post stroke, showed the best rehabilitation outcomes. Trained persons other than speech-language therapists provided effective speech-language interventions. Speech language therapy included several types of intervention that met nursing intervention classifications.

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
Top Stroke Rehabil 2009;16(1):44–56. 2009.  Jurisdiction: International	Industry publication	Stroke Rehabilitation: An International Perspective	Robert Teasell, Matthew J. Meyer, Andrew McClure, Cheng Pan, Manuel Murie- Fernandez, Norine Foley, and Katherine Salter	Editorial.	International comparative studies coupled with an impressive evidence base have provided a platform from which an ideal system for stroke rehabilitation can be envisioned. Using the concepts of structure and process of care, different systems of stroke rehabilitation can be compared and evaluated against best evidence. Even though structures of care have been shown to affect processes of care, it is the processes of care that have proven to be more influential in altering patient outcomes. Two structures of care are examined: specialized interdisciplinary stroke rehabilitation units and outpatient programs. Although specialized interdisciplinary stroke rehabilitation units remain the “gold standard” of care, access to them is often limited. Outpatient programs are essential to stroke rehabilitation systems of care; however, while some countries are investing in outpatient programs, others are scaling back.
Disability and Rehabilitation, 2010; 32(2): 159–172  Jurisdiction: Australia	Scientific journal	Patient centered goal-setting in a subacute rehabilitation setting	EMMA LEACH1, PETREA CORNWELL1,2, JENNY FLEMING2,3 & TERRENCE HAINES2,4	Descriptive research looking at current practices in goal-setting within a subacute rehabilitation setting from the perspective of therapists representing the disciplines of occupational therapy, speech pathology and physiotherapy. Qualitative semi-structured email interviews were conducted with therapists from the Geriatric Assessment and Rehabilitation Unit of an Australian hospital. Therapists were required to respond to questioning with reference to identified rehabilitation patients with stroke.	Three approaches to goal-setting were identified: therapist controlled, therapist led and patient centred. The inability of patients to participate fully in the goal-setting process largely determines the approach taken by therapists. This influences the level of patient centeredness incorporated into the goal-setting process. Goals expressed at the level of impairment, by therapists, may be stepping stones to perceived patient goals at the levels of activity and participation. Barriers to a patient centred approach can be overcome through education of the patient and family regarding the nature of the injury and modification of communication between therapist and patient.
Clinical Effectiveness in Nursing (2003) 7, 124—133  Jurisdiction: International	Scientific journal	Therapeutic nursing in stroke rehabilitation: a systematic review	Burton, C.	Editorial.	This review concludes that therapeutic nursing has been subject to little rigorous scrutiny, and where therapeutic interventions have been evaluated, they have failed to incorporate a strong theoretical underpinning.
Disability and Rehabilitation, October – November 2007; 29(20 – 21): 1589 – 1595  Jurisdiction: International	Scientific journal	Care and compassion: Part of person- centred rehabilitation, inappropriate response or a forgotten art?	ROD MACLEOD1 & KATHRYN M. MCPHERSON2	Editorial.	The nature of healthcare, rehabilitation and indeed even professional practice and discipline roles seems to constantly change. In particular, whilst ‘care’ has an accepted place in much of health service delivery, there is considerable debate about whether the concept has a place in modern rehabilitation. Whilst the arguments presented here suggest there is value in caring, there are very limited studies that explicitly examine its nature or indeed value, particularly in rehabilitation. As a result, the potential difference in both the experience of, and outcome, from rehabilitation in relation to the nature of care is yet to be clearly established.

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
J Neurol Neurosurg Psychiatry 2010 81: 146-153  Jurisdiction:	Scientific journal	The Rehabilitation Complexity Scale version 2: a clinimetric evaluation in patients with severe complex neurodisability	Lynne Turner-Stokes, Heather Williams and Richard J Siegert	Observational cohort analysis in a tertiary specialist setting to evaluate the clinimetric properties of the Rehabilitation Complexity Scale (RCS) in a neuro rehabilitation inpatient sample.	In the study cohort, the RCS provided a reliable, valid and moderately responsive profile of rehabilitation interventions, separating into two main subscales. It usefully identified medical and therapy inputs not captured by the FIM and Barthel Index, which are commonly used to define case complexity in rehabilitation.
Arch Phys Med Rehabil Vol 91, May 2010  Jurisdiction: Victoria, Australia	Scientific journal	Selecting Patients for Rehabilitation After Acute Stroke: Are There Variations in Practice?	Paul A. Ilett, BAppSc (Physio), Kim A. Brock, PhD, Christine J. Graven, PostGradDip (Health Research Methodology), Susan M. Cotton, PhD	Prospective multicenter audit of seven acute stroke units in metropolitan and regional Victoria, Australia to investigate whether there were variations in practice in selection for rehabilitation after stroke, after adjustment for case mix. Data were analysed for 616 stroke survivors, looking at Mobility Scale for Acute Stroke Score and Modified Barthel Index (MBI) scores for continence at day 3 post stroke, discharge destination from the acute hospital.	This project has demonstrated that, in acute stroke, discharge destination from the acute hospital (home, rehabilitation, or nursing home) can be predicted with reasonable accuracy, using data that are routinely available from simple clinical assessments. In this benchmarking project, the facility the person was admitted to had a significant effect on the discharge destination, suggesting variations in practice in selection for rehabilitation that require further exploration.
Clin Rehabil 2009 23: 922  Jurisdiction: Australia	Scientific journal	Development and initial validation of the Northwick Park Therapy Dependency Assessment	Lynne Turner-Stokes, As a Shaw, Janet Law and Hilary Rose	Study to describe the development and initial validation of the Northwick Park Therapy Dependency Assessment (NPTDA) as a measure of therapy interventions in neurorehabilitation. The study involved with 37 patients with complex neurological disability in two consecutive cross-sectional cohorts using a tertiary specialist inpatient neurorehabilitation service.	NPTDA-estimated therapy hours/week were strongly correlated with those identified from activity analysis. Although intended levels of intervention were higher than those actually delivered, the differences corresponded to real deviations from intended practice. In this initial evaluation, after revision of the algorithm, the NPTDA provided acceptable estimate of therapy interventions. Further evaluation is now required in other populations and settings.
Disability and Rehabilitation, October – November 2007; 29(20 – 21): 1566 – 1574  Jurisdiction:	Scientific journal	Continuity, transition and participation: Preparing clients for life in the community post-stroke	CHERYL A. COTT1,3, ROSE WILES2 & RACHEL DEVITT	Editorial examining examine issues of continuity and transition facing clients as they return to life in the community following stroke and the role of rehabilitation in this process.	Models of rehabilitation service delivery need to move to a chronic disease management model that incorporates outcomes that are meaningful to clients, and not the assumed needs or outcomes as defined by rehabilitation professionals. Rehabilitation has an important role in the transition from the non-disabled to the disabled state however current rehabilitation services and outcomes post-stroke focus on functional recovery rather than on a return to meaningful roles and activities and pay little attention to the transition from the non-disabled to the disabled self. Although some current rehabilitation models address the importance of involvement in a life situation, they do not adequately address issues of the role of the environment, the nature of community, the importance of meaning and choice when thinking about life situations, and change in abilities across the life course.

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
Australasian Faculty of Rehabilitation Medicine Royal Australasian College of Physicians (2005)  Jurisdiction: Australia	Policy document	Adult Rehabilitation Medicine Services in Public and Private Hospitals	Australasian Faculty of Rehabilitation Medicine Royal Australasian College of Physicians	Editorial; refers only to specialist Rehabilitation Medicine units.	Covers five domains for standards: governance, staffing, facilities and equipment, policies and procedures and quality management activities, and describes mechanisms for measuring performance against standards.
J Rehabil Med 2010; 42: 417–424. 2009.  Jurisdiction: Australia	Scientific journal	EVALUATING INPATIENT PUBLIC REHABILITATION IN AUSTRALIA USING A UTILIZATION REVIEW TOOL DEVELOPED IN NORTH AMERICA	Poulos, C.	Prospective cohort study to evaluate inpatient rehabilitation in public facilities in Australia against a utilization review tool used in the USA. The InterQual utilization review criteria were applied to days of stay in the rehabilitation wards for 267 patient episodes. Patients identified in the acute wards of a regional referral hospital and subsequently transferred to a public inpatient rehabilitation facility.	Patients in these facilities seem to be receiving less therapy than their American counterparts; however, therapists often viewed their rehabilitation as appropriate. Findings also suggest inefficiencies in care delivery. Utilization review may help in the assessment of level of care appropriateness in the rehabilitation setting. Only 48% of patient days met utilization review criteria, with reasons for variance including insufficient therapy, awaiting discharge to long-term care or to home and being more appropriate for acute medical care. Therapy time data show that therapy was received on 50% of calendar days and for an average of 37 min per weekday (56 min for stroke patients). Allied health staffing levels were below recommended levels, but consistent with other Australian public hospital rehabilitation facilities.
J Rehabil Med 2010; 42: 417–424. 2009.  Jurisdiction:	Scientific journal	EUROPEAN UNION OF MEDICAL SPECIALISTS (UEMS) SECTION OF PHYSICAL & REHABILITATION MEDICINE: A POSITION PAPER ON PHYSICAL AND REHABILITATION MEDICINE IN ACUTE SETTINGS		Editorial. Describes 4 options for the delivery of services for people, who continue to require to be inpatients and who will benefit from Physical and Rehabilitation Medicine (PRM) interventions during the acute phase of a disabling health condition.	Four service delivery options: (1) Acute PRM beds; (2) Mobile visiting PRM team; (3) Daily visits to acute wards by PRM specialists; (4) Establishing acute PRM centres. The first 2 models are the most effective in making best use of the acute facilities and PRM services. The benefits of dedicated PRM beds appear to outweigh those of the other options and may be cheaper, although no cost-effectiveness studies comparing the first 2 options have yet been undertaken. Prospective trials are required to show this benefit, and a number of examples need to be set up to pilot this in order to provide realistic cost-effectiveness data.

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
Department of Human Services, State Government, Victoria, 2008  Jurisdiction: Victoria, Australia	Policy document	Victorian Paediatric Rehabilitation Service model of care	Department of Human Services, State Government, Victoria	Description of model of care.	The report describes, at a high level, the model of care across the entire patient pathway. The stages of the patient journey are defined as: Asses and initial contact; Initial need identification; Assessment; Care planning; Service delivery; and Follow up and re-entry. Victorian Paediatric Rehabilitation Service (VPRS) clients will have access to a variety of types of service delivery. Inpatient services will be provided at a tertiary centre by staff employed directly by the VPRS. Ambulatory services may be provided by staff from a specialist VPRS tertiary centre or by staff from a local VPRS service provider or external service provider. This report details referral / access routes and workforce and infrastructure implications of all types of services.
Department of Health, Government of Western Australia, 2008  Jurisdiction: Western Australia	Policy document	Amputee Services & Rehabilitation Model of Care	Aged Care Network, Department of Health, Government of Western Australia	Description of model of care issues, barriers, development plans and further recommendations.	There is a lack of a coherent and coordinated framework that provides the strategic direction for the planning and configuration of amputee services across WA Health. The recommended developments to the model of care include: Provision of interdisciplinary care services at all Level 6 metropolitan hospital sites; Development of an interdisciplinary care checklist that also includes the consideration of the needs of the carer for amputee services that is applicable for the WA Health system; consistent data collection processes and robust electronic collection platforms that promote accessibility to data, consistency in reporting and ability to monitor improvements to the WA health system in relation to amputee patient management across the continuum of care.
Department of Health, Government of Western Australia, 2009  Jurisdiction: Western Australia	Policy document	Rehabilitation & Restorative Care Services Model of Care	Aged Care Network, Department of Health, Government of Western Australia	Description of model of care issues, barriers, development plans and further recommendations.	The model seeks to incorporate the application of geriatric medicine assessment and management in the care of the older person as they move along the rehabilitation care pathway, promote a multi-disciplinary approach to rehabilitation and restorative care and emphasise community based physiotherapy options. Recommended developments include: Establishment of dedicated Aged Care Rehabilitation Units at Regional Resource Hospitals; Extension of risk screening identification processes through Care Coordination Teams in all metropolitan hospitals that have an Emergency Department to identify older patients at risk of functional decline; Expansion of ambulatory care services to enable services to be attached to Aged Care Rehabilitation Units and integrated clinical decision making in rehabilitation care planning for the older person. Additional system management recommendations are made as well as discard early discussion of approaches to enable earlier discharge with support in the community.
BMJ VOLUME 320 20 MAY 2000  Jurisdiction: England	Scientific journal	Recent advances in rehabilitation	Wade, D. , de Jong, B.	Editorial.	Advances in rehabilitation contrast dramatically with advances in all other medical areas. The advances have occurred in service delivery; no important advances in single treatments have occurred. Consequently, it has been much more difficult for rehabilitation services to maintain or increase their share of resources in the face of expensive but effective single treatment advances in other fields.

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
Human Capital Alliance, Department of Human Services, Victoria  Jurisdiction: Victoria, Australia	Policy document	Workload Capacity Measures for Use in Allied Health Workforce Planning	Human Capital Alliance, Department of Human Services, Victoria	Final report for research project including literature review, interviews and focus groups to identify approaches to workforce planning and applicability for implementation in Victoria, looking at physiotherapy, occupational therapy, speech pathology, clinical psychology, and social work.	The review of the literature revealed a small terminology minefield around the concept of workload measurement and an equally large number and variety of methodologies for assessing workforce capacity. A range of workplace and work practice factors can strongly influence the outcome of workload measurement, leading to significant variation between theoretically similar settings in the staffing requirements that might be indicated. The authors recommend manipulating a range of variables to deliver appropriate workload outcomes prior to measuring workload and deriving staffing requirements.
Aust Health Rev. 2007 Apr;31 Suppl 1:S79-85  Jurisdiction: Australia	Policy document	Supporting work practices, improving patient flow and monitoring performance using a clinical information management system	Poulos CJ, Gazibarich BM, Eagar K.	Paper sets out 8-year experience with an inexpensive information management system which provides clinical and business process support for clinicians and bed managers.	Providing information technology solutions to clinicians to support their work practices benefits clinicians, administrators and patients. We present our 8-year experience with an inexpensive information management system which provides clinical and business process support for clinicians and bed managers. The system has been used by an area rehabilitation and aged care service to manage inpatient consultations and patient flow across nine hospitals. Performance monitoring of the time from referral to consultation, the number, type and outcome of consultations, and the time taken to access a rehabilitation or subacute bed is also provided. Read-only access to the system for clinicians and bed managers outside the rehabilitation and aged care service allows greater transparency.
Arthritis & Rheumatism (Arthritis Care & Research) Vol. 61, No. 2, February 15, 2009, pp 184–191 DOI 10.1002/art.24420. 2009  Jurisdiction:	Scientific journal	Land-Based Versus Water-Based Rehabilitation Following Total Knee Replacement: A Randomized, Single-Blind Trial		Two weeks after surgery (baseline), 102 patients were randomized to participate in either land-based or water-based exercise classes. Treatment parameters were guided by current clinical practice protocols. Therefore, each study arm involved 1-hour sessions twice a week for 6 weeks, with patient-determined exercise intensity. Session attendance was recorded. Outcomes were measured at baseline and at 8 and 26 weeks postsurgery.	Functional improvement in both groups as a result of exercise post-surgery was demonstrated but a beneficial difference between land based and water based therapies was not supported.
BMC Musculoskeletal Disorders 2009, 10:69 doi:10.1186/1471-2474-10-69. 2009.  Jurisdiction:	Scientific journal	Maximum recovery after knee replacement – the MARKER study rationale and protocol	Chung-Wei, C.L. et al.	In this multicentre randomised controlled trial, 600 patients undergoing primary TKR will be recruited at the orthopaedic pre-admission clinic of 10 large public and private hospitals in Australia. There will be no change to the medical or rehabilitative care usually provided while the participant is admitted to the orthopaedic ward. After TKR, but prior to discharge from the orthopaedic ward, participants will be randomised to either the novel rehabilitation strategy or usual rehabilitative care	There is little scientific evidence to support the usual practice of providing outpatient rehabilitation to patients undergoing total knee replacement surgery (TKR) immediately after discharge from the orthopaedic ward. It is hypothesised that the lack of clinical benefit is due to the low exercise intensity tolerated at this time, with patients still recovering from the effects of major orthopaedic surgery. The results of this pragmatic clinical trial can be directly implemented into clinical practice. If beneficial, the novel rehabilitation strategy of utilising outpatient exercise classes during a later rehabilitation phase would provide a feasible and potentially cost-effective intervention to optimise the physical well-being of the large number of people undergoing TKR.

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods as provided by the hospital or recommended by the orthopaedic surgeon.	Summary of key points / findings
New South Wales Nurses Association. Sept 2010.  Jurisdiction: Australia, NSW	Industry publication	Staffing and Skill Mix for Safe Patient Care: 2010 Final Claim for Nurse Staffing Ratios and Skill Mix for Safe Patient Care	New South Wales Nurses Association	Association's 2010 claim for staffing provisions. This is a claim for the introduction of nurse staffing ratios and tools for the nursing specialties of medical, surgical, emergency, palliative care, rehabilitation, inpatient mental health, community health, community mental health, critical care and operating theatres approved by vote of NSWNA Branches in September 2010.	Rehabilitation recommendations relating to all Peer Group F6 Rehabilitation hospitals and rehabilitation wards in other hospitals. are Morning Shift: 1:4 + RN in charge; Afternoon Shift: 1:4 + RN in charge; Night Shift: 1:7. The skill mix for each ward or unit will include a minimum of 85% Registered Nurses for each shift; There will be at least two (headcount) Registered Nurses on every shift. Further claims are presented regarding other nursing staff grades.
Australian Nursing Federation (Victorian Branch) 2001  Jurisdiction: Australia, Victoria	Industry publication	Nursing the system back to health: Nurse Patient Ratios 2001	Australian Nursing Federation (Victorian Branch)	Position statement importance of maintaining nurse to patient ratios. Not rehabilitation specific.	Describes position regarding under nursing and nurse staffing levels particularly regarding a shortage of nurses willing to work in the public hospital system. Recommendations following August 2000, on behalf of its public sector members, the ANF (Vic Branch) served a log of claims on the State Government. Emphasis on 1:4 ratios and impact on workload, quality, safety and employment levels.
New South Wales Nurses Association. Sept 2010.  Jurisdiction: Australia, NSW	Industry publication	A Nurses' & Midwives' Guide to Reasonable Workloads for the Delivery of Safe Patient Care	New South Wales Nurses Association	Guide to industry on importance of patient ratios and routes to addressing understaffing. Not rehabilitation specific.	Nurses and midwives working on the ward or unit often know what is needed in order to improve the delivery of safe patient care and their workload. Sometimes it takes sitting down as a group and discussing what it is that is actually making the ward / unit busy and then brainstorming ways to fix the problem. Includes guidance on calculating appropriate staffing levels and staff productivity measures. It is crucial that the ward / unit provide some solutions. A Reasonable Workload Committee is made up of people just like you and they may not know your ward / unit and therefore can't pluck a solution from the air.
Victorian Government Department of Health, 2009.  Jurisdiction: Australia, Victoria	Policy document	Planning the future of Victoria's sub-acute service system	Victorian Government Department of Health	A capability and access planning framework; The framework aims to establish a process to guide planning towards equity and consistency of service quality in sub-acute services. The document describes demand drivers and characteristics of patient and case mix, approaches applied to measuring capacity and case mix and next steps for developing and planning services to better align capacity, patients needs and health system objectives.	A service capability framework (SCF) defines scope of practice and resources needed to provide care at a designated level. Integrating role delineation and program designation underpins an SCF's development. The SCF outlines a standard set of capability requirements for Victorian public sub-acute services. This framework is built upon two sub-acute care types (rehabilitation and GEM) and is delivered across a number of settings, which, for the purpose of this framework, are admitted and ambulatory. Rehabilitation is defined as care in which the clinical purpose or treatment goal is to improve the functional status of a patient with an impairment, activity limitation or participation restriction. Quality standards that are specific to rehabilitation are expected to be increasingly applied, for example, collection and monitoring through the most recent version of the Australian Council of Healthcare Standards (ACHS) Clinical

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings Indicators in Rehabilitation Medicine.
NSW Bureau of Health Information (2010)  Jurisdiction: NSW, Australia	Performance data	Hospital Quarterly Performance of NSW Public Hospitals April to June 2010	NSW Bureau of Health Information	Intended for a public audience, in this report, the Bureau of Health Information charts how hospitals are performing, how use of hospitals has changed over time, and how area health services and public hospitals compare with each other. This issue has a particular focus on Emergency Department performance.	From April to June 2010, there were 400,592 admitted patient episodes of care in NSW public hospitals. This represents an increase from the previous quarter and since the same time last year. Waiting times for elective surgery for the most urgent cases were found to have improved from last year. Waiting times for ED care when arriving by ambulance remain unacceptably long. Triage-to-treatment times are within targeted performance levels. Waiting times for admission following emergency care remain unacceptably long with only 71% of cases meeting the 8 hour target.
Department of Health NSW (2007)  Jurisdiction: NSW, Australia	Policy document	Discharge Planning: Responsive Standards (Revised November 2007)	Department of Health NSW	Policy Directive.	Widespread anecdotal evidence from patients and health care professionals indicates continuing gaps in discharge planning processes and protocols in NSW. This introduced a responsive and standardised approach to discharge planning, from pre-admission to post-discharge. Components of the approach include: patient information before or at admission; recording Expected Date of Discharge for all patients; use of a discharge risk screening protocol to identify patients at risk of late discharge early and involve various clinical teams from the beginning, identifying a clear lead taking responsibility; retrospective analysis of long LOS cases.
Department of Health NSW (2009)  Jurisdiction: NSW, Australia	Policy document	National Partnership Agreement on Hospital and Health Workforce Reform; NSW Subacute Care Implementation Plan; Progress report: July to December 2009	Department of Health NSW	Policy implementation report.	Under the National Partnership Agreement, NSW received \$165.652m to enhance subacute care service delivery over the period 2009-10 to 2012-13. For the year 2009-10, \$17.9m was allocated to the eight Area Health Services, the Children's Hospital at Westmead and the NSW Department of Health. Activities in this first six months have generally focussed on: <ul style="list-style-type: none"> <li>• Establishment of governance arrangements, for example Area-wide or care type specific oversighting/advisory committees</li> <li>• Developing/refining models of care and clinical pathways</li> <li>• Commencement of capital works planning</li> <li>• Recruitment to medical, nursing and allied health positions, and other administrative positions including data management</li> <li>• Purchasing of equipment</li> <li>• Reviewing and refining data collection and management practices</li> <li>• Commencing/enhancing services</li> </ul>

Source/ Jurisdiction	Type	Title	Authors	Approach / Methods	Summary of key points / findings
Department of Health NSW (2004)  Jurisdiction: NSW, Australia	Policy document	NSW Funding Guidelines for Rehabilitation and Extended Care 2004/2005	Choi E, Eagar K, Gordon R and Green J (2004) Department of Health NSW	Policy guidelines.	Area Health Services will need to ensure that hospitals carry the financial risk for those factors that are within their control (eg efficiency). However, hospitals should not be required to carry all financial risk for factors outside their control (eg differences in severity or complexity between different types of patients). This is a prospective funding model in which the funding for a particular hospital or service is agreed at the beginning of the financial year and does not change through the year. However, there can be changes in funding levels between years based on revisions to activity targets. The casemix measure used in the model is the Australian National Sub- and Non- Acute Patient (AN-SNAP) classification.
Department of Health NSW (2008)  Jurisdiction: NSW, Australia	Policy document	NSW Health Subacute Care Reform Implementation Plan: December 2009 (A component of the National Partnership Agreement on Hospital and Health Workforce Reform)	Department of Health NSW	Policy implementation plan.	The implementation strategy includes development of effective service delivery models such as day hospitals, hub and spoke models where specialist teams in hubs provide support to generalist teams in community, and specialist networks. The strategy is also largely focused on workforce development including: increasing the numbers of specialist and generalist clinical staff to increase the volume and quality of subacute services in hospital and community settings; new roles and extended scope of practice for specific disciplines; designating Data and Performance Management positions to monitor performance in subacute care against agreed targets. And promises: NSW will implement information systems for the improved collection of activity and performance data.
Department of Health NSW (2009)  Jurisdiction: NSW, Australia	Policy document	SNAP Data Collection - Australian National Sub-Acute and Non-Acute Patient (AN_SNAP) Classification	Department of Health NSW	This policy document relates to the continuation of the NSW Sub-acute and Non-Acute Patient Data Collection, which began on 1 July 1999.	The project was undertaken in recognition that the DRG system is not appropriate for the classification of this form of care. Changes / updates were issued in 2007 including: amendment to Compliance Monitoring to reflect the specific areas for analysis and proposed feedback reporting to Area Health Services and submitting units; and amendment of data validation and reconciliation instructions amended.

## Appendix 7: Acute care to rehabilitation scenarios

### Scenario 1

A 62 year old male was admitted to an acute care facility (Hospital A) with a specialised stroke care unit (no inpatient rehab beds) on 01/02/2010 following a haemorrhagic stroke. Following intervention and treatment the patient improved but had residual left sided weakness, and was deemed unsafe in getting out of bed and ambulating. The patient was assessed on 08/02/2010 for rehabilitation suitability and the decision to transfer to a rehabilitation facility was made with specific goals. As there was no rehabilitation bed available for 3 days the patient remained in the unit before transfer to the rehabilitation hospital. The patient spent 10 days at the rehabilitation facility.

Hospital A Acute care facility without Rehabilitation Beds		Hospital C Rehabilitation Facility
7 days	3 days	10days
→		→
Acute care episode	Rehabilitation care episode	Rehabilitation care episode

### Scenario 2

A 74 year old male was admitted to an acute care facility (with inpatient rehab beds) (Hospital B) with a specialised stroke unit on 03/10/2010. Following initial assessments, interventions and treatments the decision to move the patient to the Rehabilitation ward occurred on 10/10/2010. The patient was moved to the rehabilitation ward on 13/10/2010. Rehabilitation proceeded with the patient deemed safe for home discharge with continuance of rehab as an outpatient on 23/10/2010.

Hospital B Acute care facility with Rehabilitation Beds		
7 days	3 days	10days
→		→
Acute care episode	Rehabilitation care episode	

### Scenario 3

An 18 year old male is admitted to an acute care facility Hospital A (no inpatient rehab beds) on 01/01/10 with traumatic head injuries following an assault with a baseball bat. Following neurosurgical interventions (decompressive craniectomy, evacuation of a subdural haematoma and extradural haematoma & repair of #zygoma, mandible and maxilla) and neurosurgical intensive care stay, the

patient is transferred to the neurosurgical ward. Allied health interventions of physiotherapy, speech therapy and occupational therapy proceed. On the 18/01/10 the decision is made that the patient is ready for a referral for the rehabilitation facility. The referral is made and the patient is seen on 19/01/10 by the Rehabilitation Specialist. This specialist accepts that the patient is suitable for transfer and notes that the patient is to be readmitted at a later date for 2 days for surgical review of the mandibular plate

The patient is transferred to the Rehab facility on 20/01/10.

As planned the patient is readmitted to the acute care facility on 30/01/10 for the elective procedure of review of the mandibular plate. Following a 2 day stay the patient is transferred back to the rehabilitation facility. The patient is discharged home from the Rehabilitation Facility on 29/02/10.

Hospital A (Acute)	Hospital C (Rehab)	Hospital A (Acute)	Hospital C (Rehab)
20 days	10 days	2 days	28 days
→	→	→	→
Acute care episode	Rehabilitation care episode	Acute care episode	Rehabilitation care episode

#### Scenario 4

A 21 year old male is admitted to an acute care facility Hospital B (with inpatient rehab beds) on 01/01/10 with traumatic head injuries following a fall off a balcony. Following neurosurgical interventions (decompressive craniectomy, evacuation of a subdural haematoma and extradural haematoma & repair of #maxilla & mandibular) and neurosurgical intensive care stay, the patient is transferred to the neurosurgical ward. Allied health interventions of physiotherapy, speech therapy and occupational therapy proceed. On the 19/01/10 at the team conference with the Rehabilitation Specialist the decision is made that the patient is now ready for transfer to the rehabilitation ward. The team notes that the patient will require the surgical exploration of the mandibular.

The patient is transferred to the Rehab ward on 20/01/10.

As planned the patient proceeds for the exploratory surgery on 30/01/10 for the elective procedure. Following a 2 day stay the patient is transferred back to the rehabilitation ward. The patient is discharged home on 29/02/10.

Hospital B Acute care facility with Rehabilitation Beds	
20 days	40 days
→	→
Acute care episode	Rehabilitation care episode

