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Implementation considerations related to a National Injury Insurance Scheme

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Abstract

On the 10th of August 2011, the Prime Minister released the Productivity Commission's final report investigating the feasibility of a national long term care and support scheme for Australians with a disability and their families. The report recommends a complete overhaul of the disability system and the introduction of a National Disability Insurance Scheme and a National Injury Insurance Scheme. Under a National Injury Insurance Scheme all those suffering catastrophic injuries in the future would be assured provision of reasonable and necessary supports to help them maximise their life potential. Given the Productivity Commission's recommendations, we can now look forward to the commencement of work on the implementation and design of these national schemes to ensure they achieve their goals of maximising the quality of life and social participation of those with a disability. 1 October 2006 marked the commencement of the NSW Lifetime Care and Support Scheme which provides no-fault care and support for people who suffer catastrophic injuries as the result of motor vehicle accidents in NSW. This paper draws upon the experience of the NSW Lifetime Care and Support Scheme in considering the issues that must be considered in the implementation of a National Injury Insurance Scheme.

Keywords: Catastrophic injury, eligibility, insurance, scheme design, governance, monitoring, National Injury Insurance Scheme

Introduction

A new world is approaching for people with a disability, including those who suffer catastrophic injury in Australia. This new world brings choice, flexibility and decision-making power to the individual. The National Injury Insurance Scheme (NIIS), and the broader National Disability Insurance Scheme (NDIS), are major levers through which current practice will change. At present, severe injuries that lead to long term disability either receive no compensation or are covered under various insurance or compensation arrangements where they are often a small part of a much larger body of claims. In this new world these injured persons would receive the level of specialist attention and support that they require to maximise their potential. Disability service providers would also be compelled to offer competitive and high quality support services that cater to market need.

In its inquiry report into Disability Care and Support, the Productivity Commission reports that “Implementation of an NIIS should be faster than the full rollout of the NDIS” due to the existence of well established schemes that could form a blueprint and the small numbers of additional injuries to be covered. The PC also points to “Existing Schemes” to “provide a template to make a rapid pace of implementation possible”. As such there are compelling reasons for the lessons learned from the implementation of the NSW Lifetime Care and Support (LTCS) Authority to be applied to the NIIS.

This paper has therefore been written to document the key learnings from the implementation of the NSW LTCS Scheme and as such will cover the following broad topic areas, drawing in knowledge and information from the NSW LTCS scheme in providing an overview of the implementation considerations associated with an NIIS.

1. General participant characteristics of an NIIS
2. The importance of being prepared with an accurate view of initial incidence
3. How to ensure appropriate scheme management from commencement
4. Tailored and suitable assessment tools
5. The value of scheme governance being tied to actuarial valuations
6. What has been learned from the NSW LTCS scheme to date

The first and arguably most important lesson, however, for actuaries working in this area is one of understanding, language and nomenclature. A catastrophic injury is a serious, life changing event often resulting in limitations and complications that last a lifetime. It is not simply an event that costs over \$2 million. Those who suffer these injuries and as a result enter into an NIIS type scheme are participants, not claimants, and what they receive is not just care or services, but support to achieve their personal life goals. Part of the changing paradigm in relation to injury and disability in Australia means that the actuarial profession, along with the general public, need to adopt and understand this language and ideally to understand the lives behind the numbers

Participant characteristics

Currently, those who would be eligible for care under an NIIS fall within a wide range of compensation and social or government welfare groupings in terms of the care and support that they are eligible to receive. In Australia, there is no single body that collects data on this particular group of disabled individuals.

It is not a straightforward task to define serious injury, and indeed there are a number of ways in which it may be done. In this paper we use the NSW LTCS scheme as an example of how this issue could be approached. Further, for the purposes of this paper we have also considered a number of information sources both locally and internationally in order to paint a picture of the typical participant characteristics that could be expected within an NIIS.

The characteristics of those most severely injured from accidents are different from other compensable claimants, not only affecting their lives in a permanent way but also those of their family and other personal supports. As such, they warrant particular care and consideration due also to their significant impact on compensation costs. The cost per participant of serious injury victims can exceed \$10 million in some cases. Importantly, there is considerable scope for major improvements in the quality of life for these people to be achieved with appropriate and active case management. Early and active management of the unique needs of these participants has major long term implications on the financial viability of the overarching compensation body.

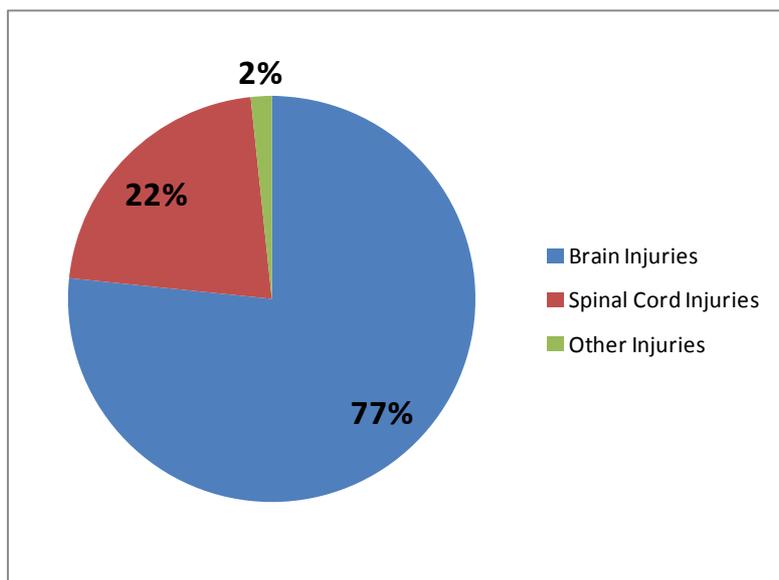
Appropriate scheme governance through a thorough understanding of the scheme participants themselves is a key theme of our paper and we begin below by presenting an overview of the characteristics of participants who would make up NIIS scheme's across the country.

Motor vehicle accidents in the NSW Lifetime Care and Support Scheme

The NSW Lifetime Care and Support Authority was established on 1 October 2006 for children under 15 years and from 1 October 2007 for all people who suffer a catastrophic injury resulting in long term disability as a result of a motor vehicle accident.

From scheme commencement to 30 June 2011 there have been more than 600 participants reported to the scheme. Of these, almost 550 remain active scheme participants eligible for benefits at 30 June 2011 made up predominantly of people with a severe brain injury (over 75%) and spinal cord injury (over 20%). The remainder of scheme participants suffer from severe burns, multiple amputations or complete blindness.

Figure 1 Active LTCS scheme participants – split by injury type



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Injury Severity

LTCS participants with a brain injury are assessed for severity using the Care and Needs Scale (CANS), with 7 being the most severe level. The following table summarises the estimated number of attendant care hours received per day by a brain injury participant given their severity level, as well as an estimate of the present value of all future benefits received over a lifetime.

Table 1 LTCS scheme brain injuries – hours of care per day and case estimates by severity

CANS Level	Hours per day	Present value of all future benefits
7	20	\$8.5m
6	13	\$5.5m
5	5	\$3.0m
4	2	\$1.5m
3	1	\$1.0m
2	0.5	\$0.5m
1	0.5	\$0.5m
0	0.2	\$0.5m

Similarly the following table summarises the assumed number of hours of care required by a LTCS scheme participant with a spinal cord injury and an estimate of total future costs by neurological level of injury.

Table 2 LTCS scheme spinal cord injuries – hours of care per day and case estimates by severity

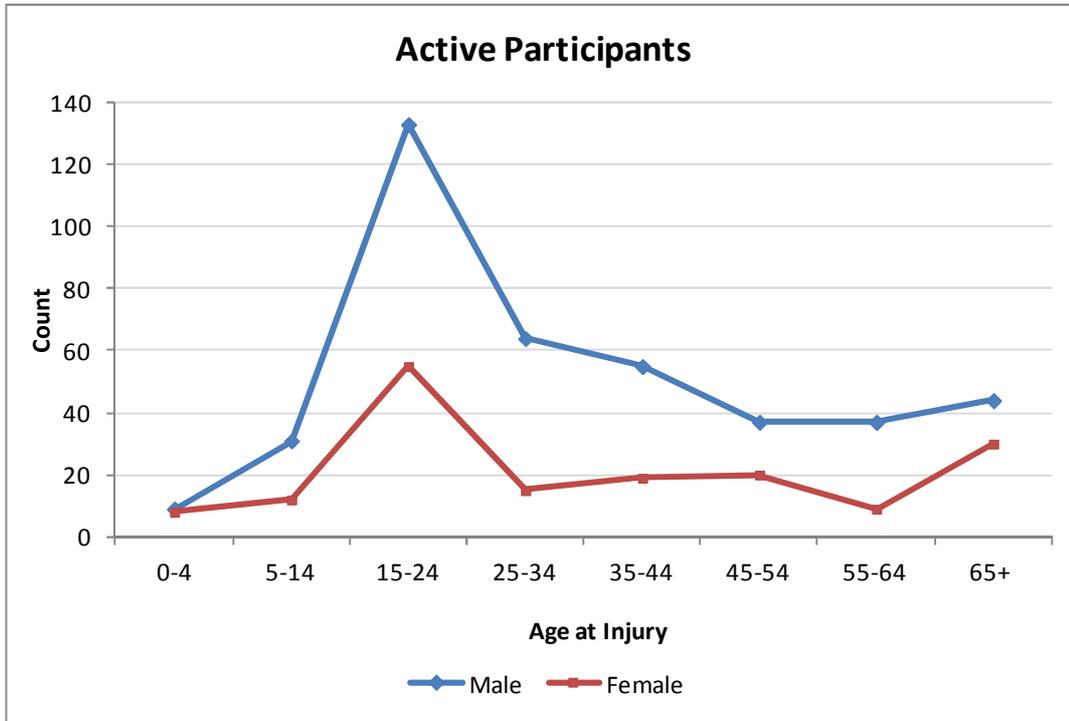
Neurological Level	Hours per day	Present value of all future benefits
C1-3	28	\$11.5m
C4	10	\$6.0m
C5	8	\$4.5m
C6	7	\$4.0m
C7	5	\$3.0m
C8	3	\$2.0m
T1-T7	1	\$1.0m
T8-T12	0.5	\$1.0m
L1+	0.5	\$1.0m

Note: 28 hours of care per day reflects the fact that two carers will be required for certain times in the day

These tables show that the present value of future services is highly correlated to the long term level of attendant care required. Additionally, the most severe of injuries (CANS 7 brain injuries and quadriplegia) incur substantially higher costs to the scheme than do lower severity injuries.

Age and gender breakdown

Participants in the LTCS scheme are predominantly male (70%) and young (average age of 35), with almost 45% of all participants aged under 25 at the time of their accident. There then appears to be a slight increase in the number of injuries as people age.



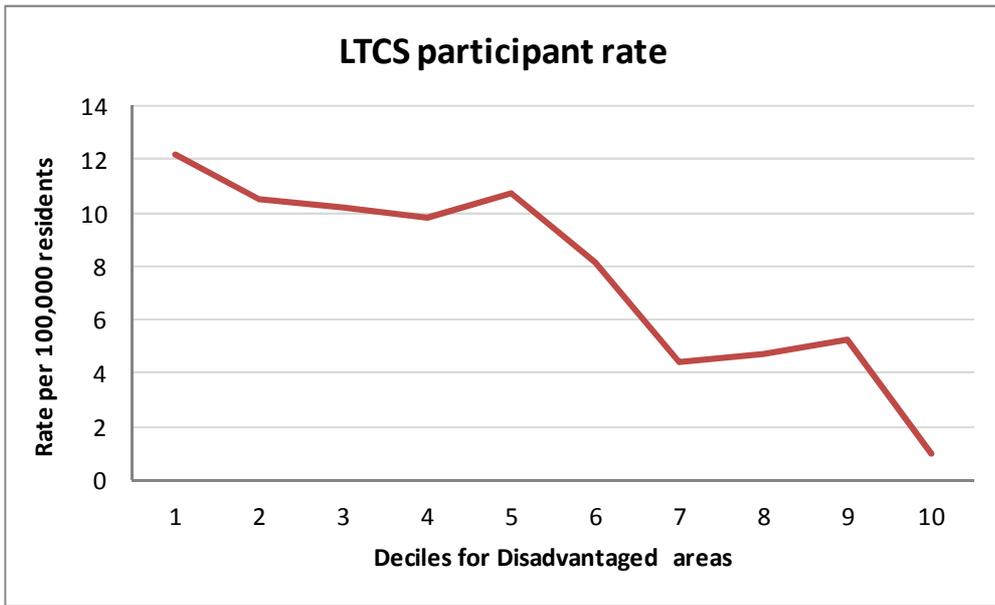
Social disadvantage

The Productivity Commission has reported that people with a disability often show significant social disadvantage in comparison to the rest of the Australian population. In the Productivity Commission’s report, and in this paper, we use the definition of social advantage / disadvantage created by the ABS from 2006 Census information, called Socio-Economic Indexes for Areas (SEIFA). These indexes summarise aspects of the socio-economic conditions of people living in an area including income levels, educational attainment, unemployment, and dwellings without motor vehicles.

We consider this finding in two ways below. Firstly we consider the likelihood of a person entering the LTCS scheme with a serious motor vehicle injury across levels of social disadvantage. And secondly we consider where people with a disability tend to live, comparing the general population to both the LTCS participant population and the wider population with a disability.

In the following chart low decile scores indicate postcodes with the highest levels of disadvantage. The chart shows a clear negative relationship between the likelihood of a person entering the LTCS scheme and the level of social disadvantage within their community.

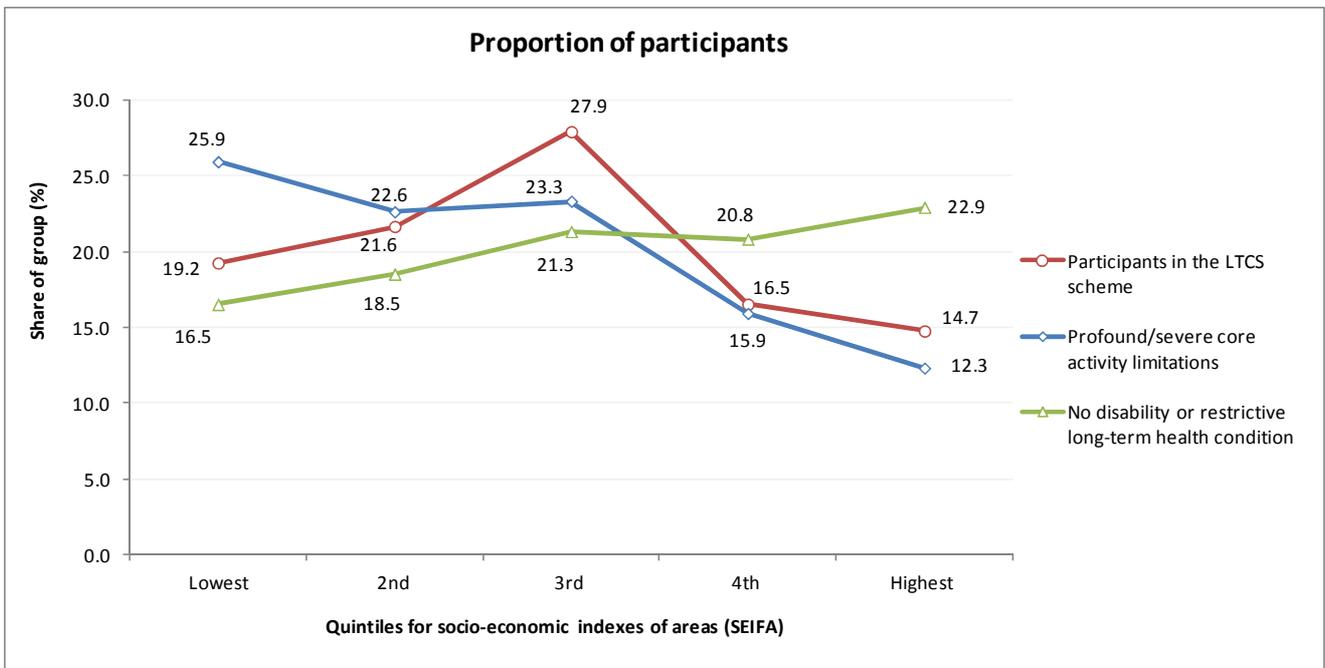
Figure 2 LTCS participation rate (per 100,000 residents) by social disadvantage



Further, the chart below shows how the distribution of LTCS participants across areas of varying disadvantage (in NSW) compared to the severely disabled population in Australia as analysed in the Productivity Commission report.

The chart shows that LTCS participants generally live in more disadvantaged areas. This trend is consistent with the findings of the Productivity Commission report which indicated that people with severe disabilities tend to live in areas with higher levels of disadvantage.

Figure 3 Distribution of participants by social disadvantage quintiles

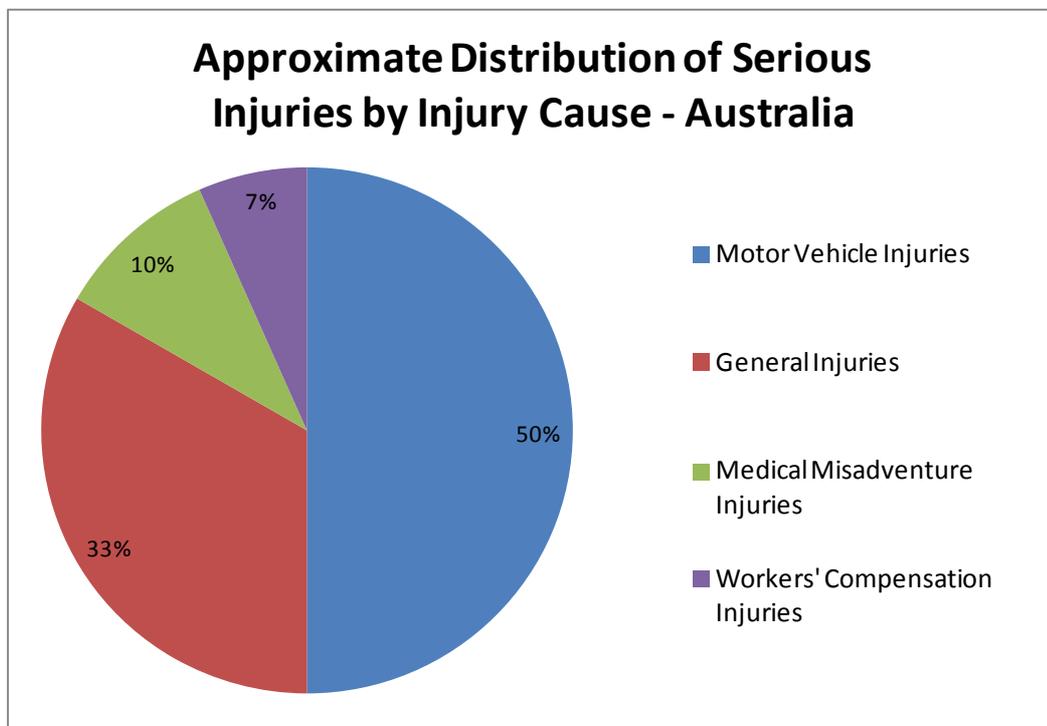


Although LTCS participants tend to live in areas that are more socially disadvantaged, preliminary analysis of the LTCS cohort does not show any significant difference in the severity of injuries between more disadvantaged and less disadvantaged areas.

How this changes across cause of injury

It is useful to use the NSW LTCS scheme as an example of the issues and characteristics of a broader NIIS as motor vehicle related trauma is expected to make up as much as 50% to 60% of all serious injuries.

Figure 4 Approximate distribution of serious injuries by cause - Australia



Other causes of serious injury are summarised in the following table along with a brief definition and discussion of compensation that may be currently available depending on jurisdiction.

Injury Cause	Definition	Includes	Current available compensation
Motor Vehicle	Serious injury resulting from a motor vehicle accident	Persons injured as pedestrians, cyclists or passengers in addition to those operating a vehicle at the time of accident	Access to motor accident compensation can vary across jurisdictions in regards of level of benefits and extent of coverage for those at fault in the accident
Medical Misadventure	Serious injury resulting from a very unlikely outcome from medical treatment	Medical accidents, not cerebral palsy	Access to medical indemnity insurance depending on ability to prove fault of medical practitioner
Workers Compensation	Serious injury resulting from a workplace accident, including journey to and from	Serious industrial accidents, motor accidents as part of employment, other	Access to workers' compensation insurance in all states with varying levels of benefits and

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Injury Cause	Definition	Includes	Current available compensation
	employment and at recess	workplace injuries	coverage
General Injury	All other injuries not yet defined	Assault, sporting accidents, falls	Some access to court awarded compensation and public liability insurance where negligence can be proven against a third party

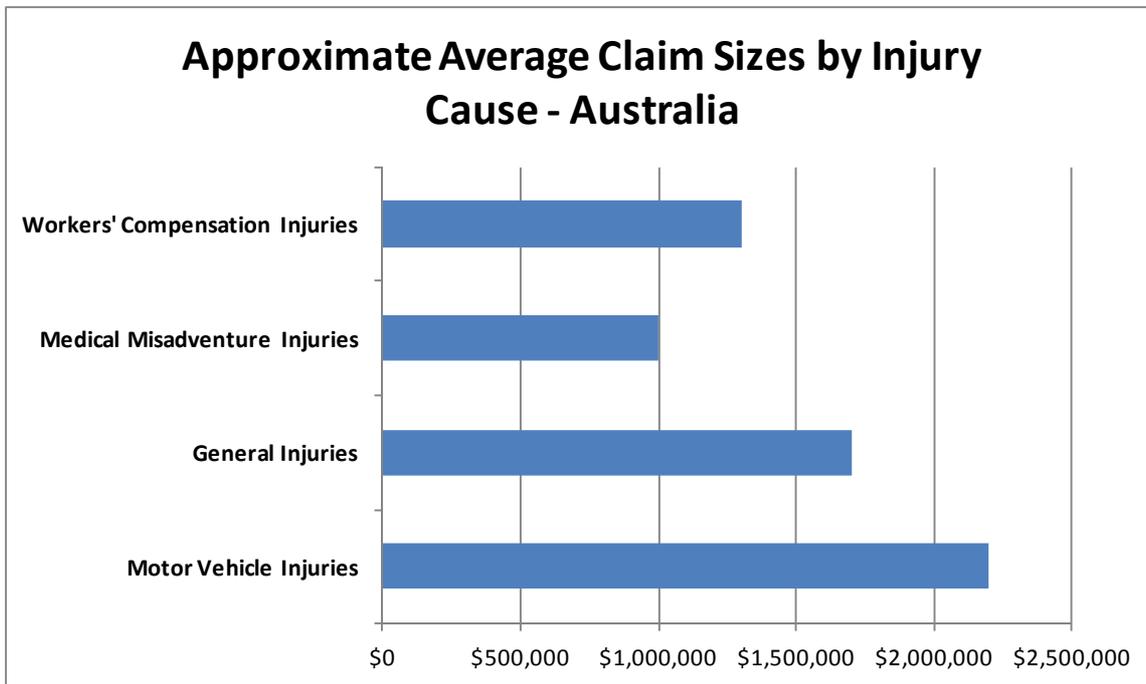
A brief discussion of how the key characteristics of serious injury compensation may change under alternate forms of injury cause (as they compare to the above information on motor vehicle injury) is outlined below. The following information has been completed using information from our previous work and should be considered as high level estimates only. Before an NIIS is established more in depth investigation will need to be done within each jurisdiction before these components (in particular injury rate and cost) can be assessed with any confidence.

Characteristic	Medical Misadventure	Workers' Compensation	General Injury
Age	Much older age distribution on average, although there is a greater proportion of young children injured	A materially higher average age than motor vehicle accidents (and a greater proportion of males)	Slightly older than MV injuries (average age approximately 40 years)
Severity	Slightly less severe injury distributions for both brain and spinal cord injuries	Less severe injuries on average than other injury causes	Less severe injury distribution for both brain and spinal cord injuries than for MV accidents
Type	Similar injury distribution to MV injuries	A higher proportion of spinal cord injuries than motor vehicle accidents	A higher rate of spinal cord injuries and low severity brain injuries than MV
Cost	Moderate average claim size	Lower average claim size than other injury causes	Moderate average claim size
Numbers	Low annual number of injuries compared to other forms	Low annual number of injuries compared to other forms	Higher annual number of injuries than all other injury forms except for motor vehicle accidents

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The following chart provides an overview of the estimated average claim sizes for participants suffering serious injury that would form part of an NIIS in Australia.

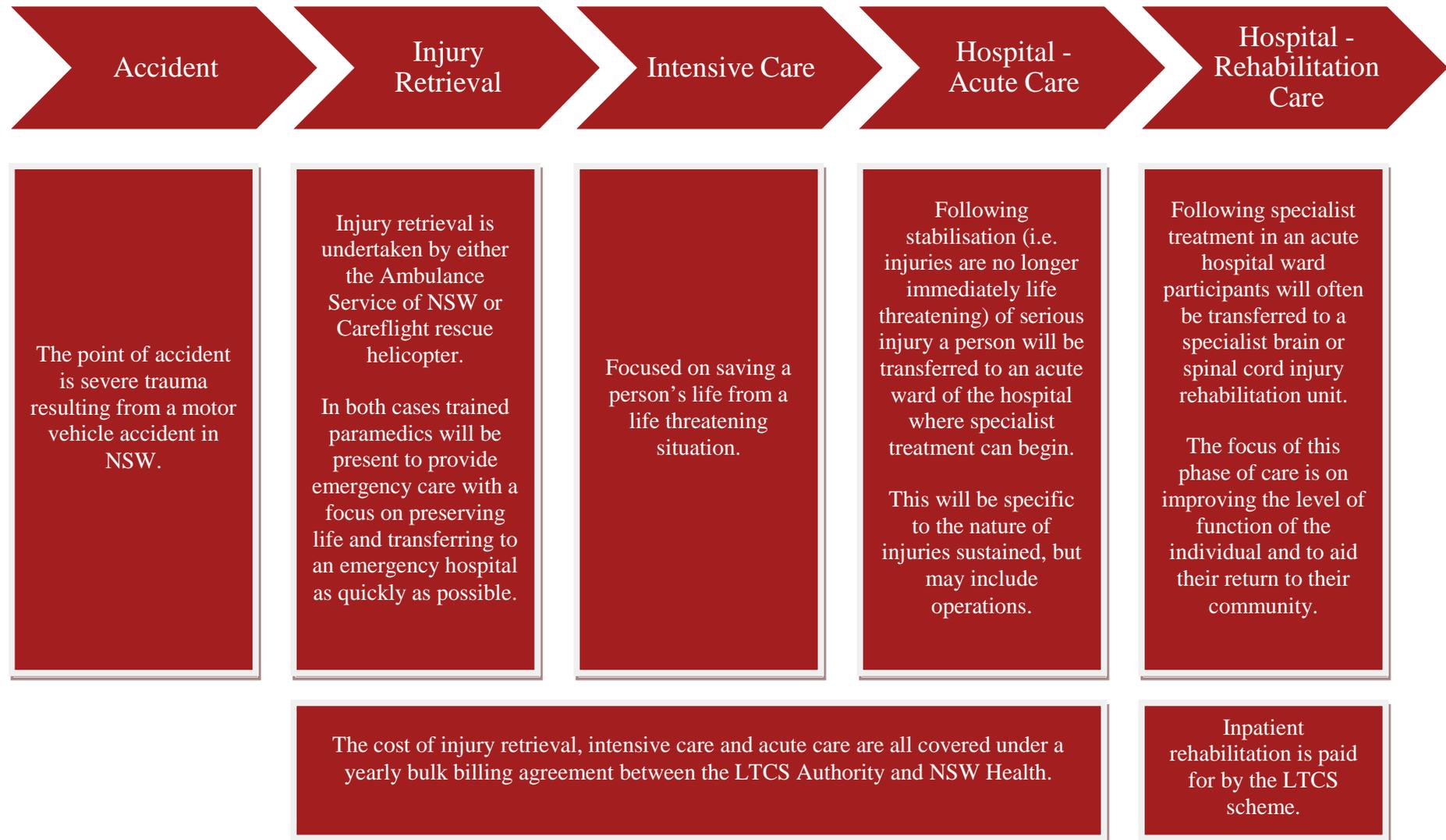
Figure 5 Approximate average claim sizes by injury cause - Australia



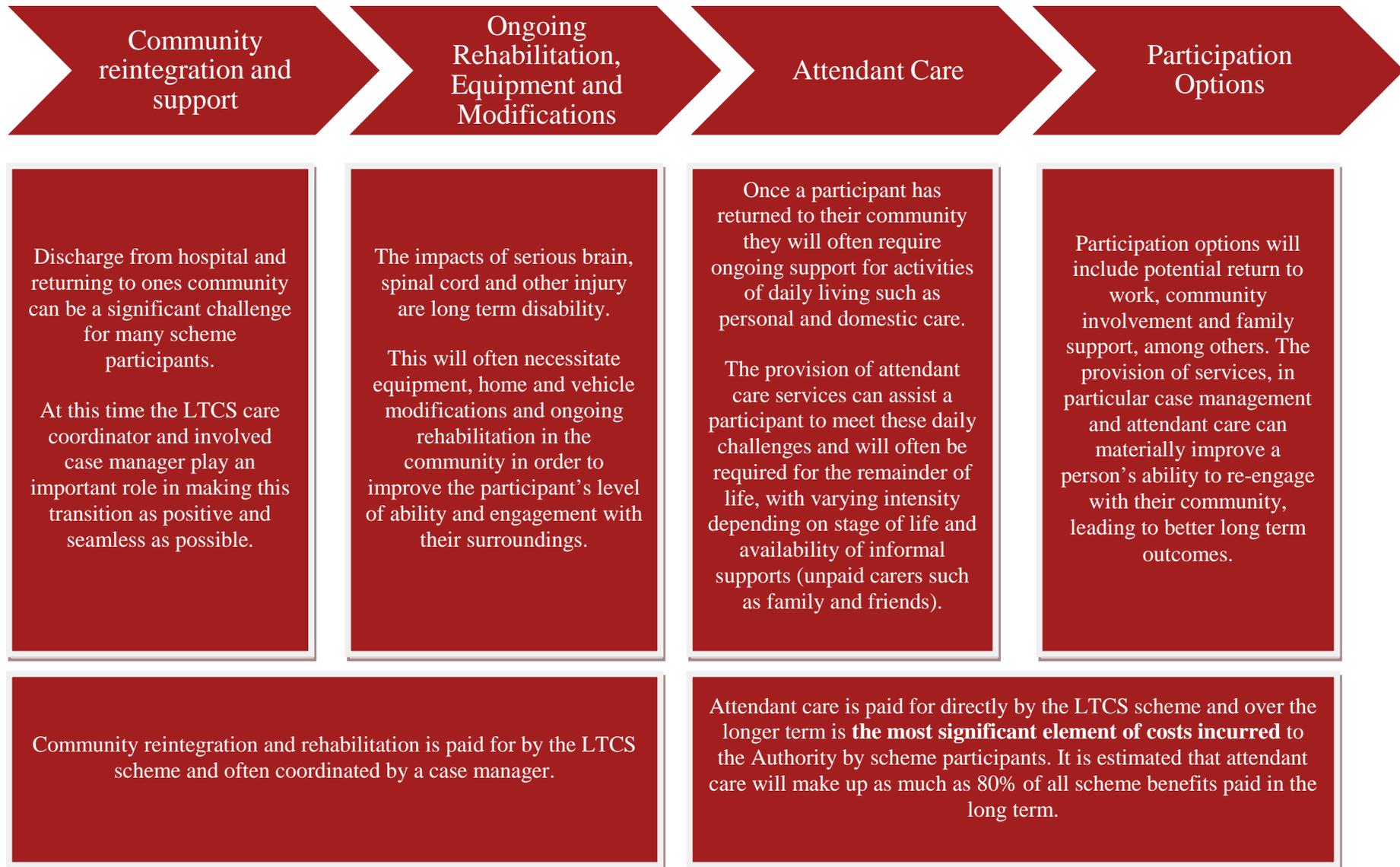
Differences in average claim size are largely driven by the younger age profile of motor vehicle and general injuries. Workers' compensation injuries also appear to be less severe on average than those from the other injury causes.

The participant journey for participants in the LTCS scheme

While there is no 'typical' participant journey and the individual circumstances of each participant can and will vary substantially, what follows is an overview of the key stages that will occur to most participants as they commence their recovery period following serious trauma.



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We note that a more in depth discussion of appropriate models of care for people with a severe neurological injury is covered in the paper “Models of Care - What is Best Practice and what is Achievable” by David Bowen and Lorraine Mackin.

Scheme Establishment and Governance

The initial estimate of the annual cost of the Scheme in each jurisdiction and the regular actuarial valuation is linked to expected dynamics of new participant incidence, existing participant continuance, service utilisation and cost. We will discuss each of these aspects in turn below.

Incidence

Unlike for those covered by existing compensation schemes, there is no single source of information regarding the incidence of the injuries to be covered under the proposed NIIS. In order to evaluate the likely size of these schemes information is required which can be used to determine the likely number and severity of people with spinal and brain injuries of a level likely to require lifetime care and hence eligibility for the proposed scheme, as well as information on their long term severity of injury allowing the estimation of the likely future costs of their care (requiring analysis of survival rates, care and support requirements and future costs of care).

In undertaking such an exercise in preparation for the implementation of the NSW LTCS Scheme PwC prepared detailed analysis of compensation data, as well as data from the Australian Institute of Health & Welfare, the Australian Spinal Cord Injury Registry, trauma registries, clinical data collections (most particularly those from the brain and spinal cord injury units) and the HACC and Disability systems, for example, and used these sources to triangulate the likely incidence of these injuries. We also performed a series of consultations with medical professionals involved in the care of people suffering catastrophic injuries (particularly traumatic brain injury and spinal cord injury) to understand the injury severity mix and long term care and support needs of people following these types of injuries.

In order to project the likely future costs of care, we relied on a combination of data from Disability and other support systems as well as research of Australian and international literature on people with catastrophic injuries.

Unlike most existing compensation schemes where annual fluctuations in the number and severity of these catastrophic injuries can be distributed across a wide base of claims experience, the NIIS, as is uniquely the case with the NSW LTCS, is stand alone in covering major injuries only, so accurate prediction of the number and severity of participants is all the more important.

Since the inception of the NSW LTCS Scheme, the incidence estimates derived using the aforementioned methods have remained largely unchanged. The estimates of the numbers of scheme participants at the highest levels of severity have proven to be particularly accurate compared to experience, with the differences being limited to the lowest severity injuries and the age distribution. Experience has yielded:

1. Lower than anticipated number of paediatric injuries entering into the Scheme – a difficult area in which we relied on the expectations of medical professionals for whom it is difficult due to the need to standardise assessment to expected developmental stages at each age.
2. This has been somewhat offset by a higher than expected number of injuries to persons aged over 65, which appears to be an actual change compared to historical experience.
3. Lower number of lowest severity injuries which achieve “interim” eligibility to the Scheme. Interim eligibility lasts for 2 years from time of acceptance. These estimates were initially elevated based on our consultations with medical professionals and was particularly difficult to estimate due to the lack of communication between the acute / rehabilitation care system and the long term disability support system.

In practice, the much lower overall number of entrants to the Scheme has been further support of the scheme eligibility assessment.

Eligibility Assessment

Determining eligibility for the NIIS will require assessment of both the severity of injury and also certification that this severity was caused by an injury such as are covered by the Scheme.

Regarding severity eligibility criteria, there is a need to strike a balance between the various influences: too 'loose' an eligibility criteria would inflate costs and threaten the sustainability of the Scheme, but too tough a criteria would mean that some able to benefit from the introduction of such a scheme would be unfairly left out.

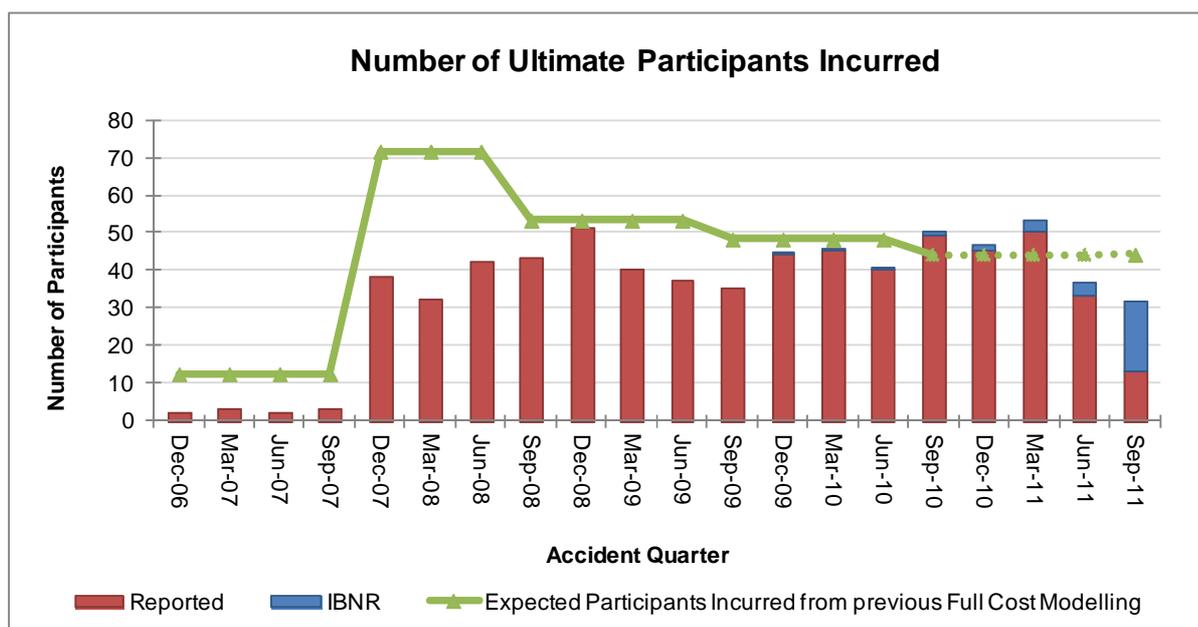
The development of the eligibility criteria for entry into the NSW LTCS Scheme involved analysis of literature on assessment tools as well as consultation with medical professionals involved in the care and treatment of people with, particularly, brain and spinal cord injuries. Analysis and discussion centred on the considerations of the severity of injuries most likely to benefit from such a scheme but also considered the need to strike the balance as discussed above.

For spinal cord injuries, which are easily identified by results of spinal cord pathology, entry to the scheme is most straightforward, being awarded if the injury results in permanent neurological deficit. For other injury types, and most particularly for brain injuries which represent 77% of total scheme participants, further assessment is required around severity of injury. Whilst a variety of tools were considered, the decision was made to base the assessment for eligibility around the Functional Independence Measurement, or FIMTM instrument, although other tools are also used for different injury types.

The FIMTM was developed in the 80's in the US to document the severity of patient disability and the outcomes of medical rehabilitation. The assessment comprises 18 items, each of which is assessed against a seven point ordinal scale, where the higher the score for an item, the more independently the patient is able to perform the tasks assessed by that item. The items are divided into two major groups, the Motor items, of which there are 13, and the Cognitive Items, of which there are 5. The rating scale designates major graduations in behaviour from dependence to independence and provides for the classification of individuals by their ability to carry out an activity independently, versus their need for assistance from another person or a device. The scale is used by the NSW LTCS Authority in such a way that if assistance is needed from another person in any of the 18 items, eligibility is granted into the Scheme – provided other eligibility criteria are met. For brain injuries, this additional criteria relies on a medical assessment of duration of Post Traumatic Amnesia (PTA), which is an assessment of the severity of head trauma. The other injuries eligible for the scheme are multiple amputations, burns and permanent blindness and each have their own unique eligibility assessment criteria, although these represent very small numbers of scheme entrants.

LTCS experience to date has been very positive against these eligibility criteria. In the following chart the green line represents our historical participant incidence assumptions over time. The difference from December 2006 to June 2007 indicates how we originally overestimated the number of children and the difference from the 2007/08 period indicates the original overestimation of interim participants.

Figure 6 Number of LTCS participants incurred by quarter compared to original actuarial assumptions



IBNR stands for Incurred but not reported participants which allows for the fact that at a point in time there may be accidents which have happened that will ultimately lead to participants joining the LTCS scheme but at a particular reporting stage the Authority have not yet been notified.

Participant Continuance

As these Schemes are for life, participant continuance requires estimates of life expectancy following brain, spinal cord and other catastrophic injuries. In the absence of comprehensive longitudinal databases in Australia, covering all relevant aspects of the lives of people who have suffered catastrophic injuries, this information is best sourced from literature. As was the case for incidence and severity estimation, life expectancies for people with spinal cord injuries are significantly easier to estimate given the established links between the underlying pathology (e.g. severity of lesion) and reduction in life expectancy by attained age compared to the population. The results of a number of published studies were used in deriving the life expectancies for scheme participants with spinal cord injuriesⁱ. Additionally, some of the authors of this current paper continue to contribute to the research in this area, having updated the analysis of life expectancy following spinal cord injury in Australia with a paper which has recently been submitted for publicationⁱⁱ. For brain injuries, the difficulty is in establishing a link between injury severity, as measured by an assessment tool or some medical process, and life expectancy and is further compounded by the need to consider future improvements in brain injury severity, this is discussed further in “Scheme spending experience” below. In developing our estimates of life expectancy for this participant group we used information from a number of published papersⁱⁱⁱ, as well as the experience available in the TAC claims database, but further work is needed in this area. In order to improve these assumptions, analysis is needed of a longitudinal database which contains information about initial severity of brain injury and other factors which may influence mortality such as: socio-demographic factors, conditions which may have existed prior to the injury and other injuries that occurred at the time of the injury.

Discontinuance can also occur over time as participants ‘lose touch’ with a compensation scheme. In the NSW LTCS scheme such participants are referred to as ‘lapsed’ when the scheme is unable to retain contact with them. To date this has affected less than 5% of participants who generally suffer from less severe injuries.

Benchmarking analyses performed across other compensation schemes (all of which cover serious injury) indicate that a decrement in addition to mortality may be present in the longer term (more than 5 years post injury). These benchmarking studies are discussed in more detail later in this paper.

Benefits provided to LTCS scheme participants

As well as establishing entry criteria for the NIIS consideration must be given to the benefits or services to be provided to scheme participants. Our initial cost analyses regarding the LTCS scheme included only attendant care (including domestic assistance), home and vehicle modifications and aids and appliances, with a loading for expenses applied that included case management. However, following discussions with medical professionals we were encouraged to consider the inclusion of hospital and medical treatment along with rehabilitation services.

These additions increased the annual incurred scheme cost modestly (less than 10%), which reflects the relative high cost of a lifetime of attendant care. In return, the inclusion of these benefits provides the scheme with greater control over the continuum of care from injury, through rehabilitation and back into the community. Indeed the ultimate cost increase may be less than the 10% added to the original costings if improved use of medical and rehabilitation resources can lead to savings in attendant care needs in the longer term.

For example, once a critical mass of NIIS participants is established the scheme will have the ability to dictate outcome based funding mechanisms. In the context of a rehabilitation service this may mean that provider remuneration may depend on their ability to demonstrate that participants have achieved gains in functional ability and community reintegration. Greater focus on these goals will in turn reduce the future need for care for these participants.

Similar arguments can be mounted for the inclusion of case management where, as is discussed further in the case studies below, good case management can reduce long term attendant care costs, especially for the less severe brain injuries, at significant savings to the scheme.

As a result of discussions and subsequent changes, the final list of benefits that can be provided by the LTCS scheme to its participants as are outlined in legislation are:

- a) medical treatment (including pharmaceuticals)
- b) dental treatment
- c) rehabilitation
- d) ambulance transportation
- e) respite care
- f) attendant care services
- g) domestic assistance
- h) case management
- i) aids and appliances
- j) artificial members, eyes and teeth
- k) education and vocational training
- l) home and transport modification
- m) workplace and educational facility modifications
- n) such other kinds of treatment, care, support or services as may be prescribed by the regulations

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The level of benefits the LTCS scheme is obliged to pay for is defined by legislation as those that are reasonable and necessary, properly verified, and related to the injury resulting from the motor vehicle accident.

Service Levels and Benefit Entitlement Assessment

Service levels to be provided are driven by assessment of care, support, equipment and other requirements as relate to participant's goals and aspirations.

After entry into the Scheme has been awarded, further assessment is required to determine the level of support needs to be provided. Much more than just fulfilling this administrative requirement, however, the assessment process is vital in providing an opportunity for individuals to articulate their care and support needs, identify issues that need to be addressed in any personal plan, and is used to collect important information relating to the Scheme participant.

The NIIS will need to assess participants at entry into the Scheme, as well as to periodically re-assess people's needs as their circumstances change, especially at key transition points like leaving school, getting a job, moving out of home, or losing a natural support. Given the range of injury types and severities entering into these Schemes, as well as the varying circumstances of people, there is no single assessment tool able to provide information about a participant's requirements in terms of assistance with activities of daily living, aids and appliances, accessing the community and social networks and the fulfilment of personal goals. Rather a package of tools will be employed to determine the support needs and funding for a person covered by the scheme. Different tools would be suited to particular needs for support and it is vital that the tools that are used are rigorous, valid (testing what they purport to), reliable (giving consistent results) and cost-effective.

At present all LTCS scheme participants are required to have a Community Living Plan (CLP) that is subject to periodic review, carried out by an approved assessor. A CLP will include the following elements:

- Participant details including name, address, age, gender, injury type
- Formally assessed FIM and CANS measures
- Period over which the plan is to apply and a proposed date for the next CLP review
- An overview of current health and medical issues, living arrangements, current levels of functioning in core activities of daily living and current levels of participation in life roles
- Rehabilitation goals and recent progress against these and previous goals
- A discussion of any barriers or problems facing the client's rehabilitation, goal attainment ability or service delivery
- Any service requests on behalf of the participant based on the community living plan. There should be enough information provided in the CLP or attached reports to facilitate a review by the Authority of the requests against the 'reasonable and necessary' criteria
- Any relevant specialist reports (for example, speech therapy assessments or equipment request forms)
- A Care Needs Assessment – which is a specific assessment of the level of care required by the participant, in particular an assessment of how much paid care is needed (which may be minimal if unpaid carers, such as family members, provide large amounts of care). This will include a plan by day (and sometimes by hour by day) outlining needs and the involvement of unpaid carers

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The application of these tools also requires careful consideration by the scheme. As with the assessment for eligibility, excessively tough use of the assessment tool would be unfair while too 'loose' use would threaten scheme sustainability. This is a perennial problem with compensation schemes but is particularly poignant when applied to catastrophic injuries. To guard against this, assessments must be conducted by approved allied health professionals, benchmarked against other participants and Schemes and the tools used constantly monitored and refined or changed if necessary.

The risk of service approvals increasing over time independent of any changes in underlying injury severity (such that a certain participant whose characteristics would have previously lead to an assessment of them requiring 8 hours care per day start to be assessed as requiring 10 hours per day) would be the most significant risk facing an NIIS.

For the purpose of the actuarial valuation, these assessments effectively allow the production of agreed budgets at an individual and scheme level.

Costs

As much as 80% to 85% of total NIIS costs in the long term will come from attendant care services. Given the large future cash flows of such an organisation and the high proportion that will be directed to attendant care it is important that issues of uncertainty and cost are understood and allowed for from the commencement of any new scheme.

Industrial conditions in Australia have been changing recently with Fair Work Australia releasing the NSW Social, Community, Home Care and Disability Services Industry Award 2010 (the Modern Award) which covers most attendant care workers and will be phased in from 1 February 2012 to 1 July 2014.

The minimum rates prescribed in this Award are currently subject to review by Fair Work Australia as part of the Equal Remuneration Case currently before them. It is likely that attendant care rates will increase materially as a result of this case.

Further, the increasing demands for disability services and attendant care in the future may create pressures on the hourly rate of spend due to workforce constraints.

These issues need to be considered in setting up an NIIS because the high levels of uncertainty regarding future attendant carer rates have a significant and material impact on the overall scheme financial position. For example, an increase in the rate of attendant care of 12% would, all else being equal, increase the current outstanding claims liability by 10%.

Establishing a funding buffer from the commencement of the scheme has been an effective strategy for the LTCSA in managing some of the unexpected risk present in attendant carer rates from the sources described above. This financial buffer will be discussed further below.

Each of the above cost drivers: Incidence, Participant Continuance, Service levels and Costs represents a risk to the Scheme, but the impact on cost and liabilities is not equal. Compared to an incidence rate of 10% greater, spread across all severity levels (approximately 18 additional participants), which would lead to an increase in the required levy rate of 10%, an additional 10 CANS 7 (the highest severity of brain injuries) would increase the required levy rate by 30%.

Each of the Schemes, and the National aggregation of them, will build to have the characteristics of a mini-“Support, health and welfare system”. In the case of NSW LTCS, the scheme is expected to grow from servicing around 550 participants per annum currently to around 6,000 clients by the year 2078 (motor injury only). These 6,000 clients will consume approximately 220,000 hours of support per week, at a cost

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approaching \$127m per week (in 2078 dollars terms), and using a service delivery field staff of about 5,500 full time equivalent workers.

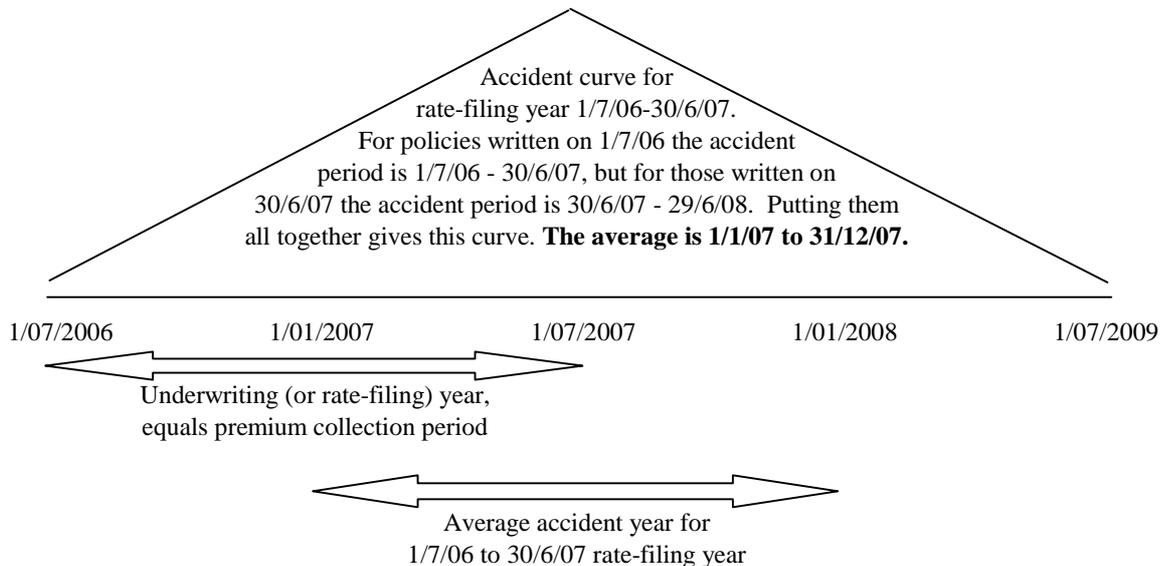
Scheme Management - Injury coverage and Levy Rates

An issue facing the NSW LTCS Scheme before even its inception was how best to time both the introduction of no-fault coverage for catastrophic motor vehicle accidents and the introduction of a levy to cover the costs of this. The commencement of the NSW LTCS Scheme – both coverage and levy collection – in the same date was to result in a disconnect between accident year and underwriting year for the LTCS Scheme. This would occur because a proportion of policyholders were to be paying an increased premium in advance of being covered for the additional no-fault benefits, whilst other policyholders would be commencing coverage for additional no-fault benefits in advance of paying the increase.

This issue arises broadly out of the variable renewal dates available within the NSW CTP Scheme, coupled with the requirement for insurers to file rates on an annual basis. What this means is that everyone renewing their policy in the same “rate-filing” period (also called underwriting year) pays the same premium, notwithstanding the fact that the “exposure period” for which they are covered for injuries may be as far as 12 months (less one day) different – comparing renewals on 1/7/06 to those on 30/6/07.

The following diagram seeks to illustrate this issue.

Explaining the problem



As presented in the diagram, the average accident period corresponding to the 1 July 2006 rate-filing period start-date was 1/1/07 to 31/12/08. Therefore, with the proposed implementation of the LTCS Scheme on a certain date, say 1 October 2006, the question was how to deal with this immediate change over of risk for current fault based catastrophic injuries – i.e. those injuries occurring on 30 September 2006 to be covered under the existing CTP Scheme but if the injury occurred on 1 October 2006 the liability was immediately with LTCS. For the new Scheme, no levies had yet been collected.

The challenge to be met by the Scheme was to achieve a desirable balance between policyholder equity and political acceptability.

A variety of options were available to the LTCS Authority regarding how to deal with this issue, such as:

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- Charge the extra premium or levy amount for the first half of the commencement year to reduce the political risk
- Charge no extra premium or levy amount for the first half of the commencement year and start with a deficit
- Limit commencement of the Scheme to those that have renewed their CTP policy since commencement date; or (and this was the option adopted by the NSW LTCS Scheme)
- Provide a differential commencement date of no-fault coverage, with children to be covered from 1 October 2006 and others from 1 October 2007.

Whilst the above discussion focussed on the problems created by the implementation of such a Scheme on a specific date, in actual fact the decision to charge the full levy from 1 October 2006 but implement coverage for children only in the first year provided the opportunity for the LTCS Scheme to accrue an unearned premium reserve during the first year of Scheme operation. This is an excellent example of the importance of making decisions in consideration of whole of scheme impacts, as this decision allowed the LTCSA to develop a financial buffer in response to the risks discussed earlier, and which has served as a prudential margin to the Scheme in operation. This buffer has proven useful for a variety of reasons, including in response to the potential carer award rate changes discussed above, and is now maintained as a risk margin in the ongoing Scheme.

Systems and Processes - Data

The actuarial monitoring and evaluation required for appropriate governance of the NSW LTCS Scheme, and also for the NIIS, is quite different from the “traditional” requirements of either accident compensation systems or health/welfare systems, such as trend analysis, modelling and curve-fitting for predictive cost estimates, but will also require the most valuable features of both.

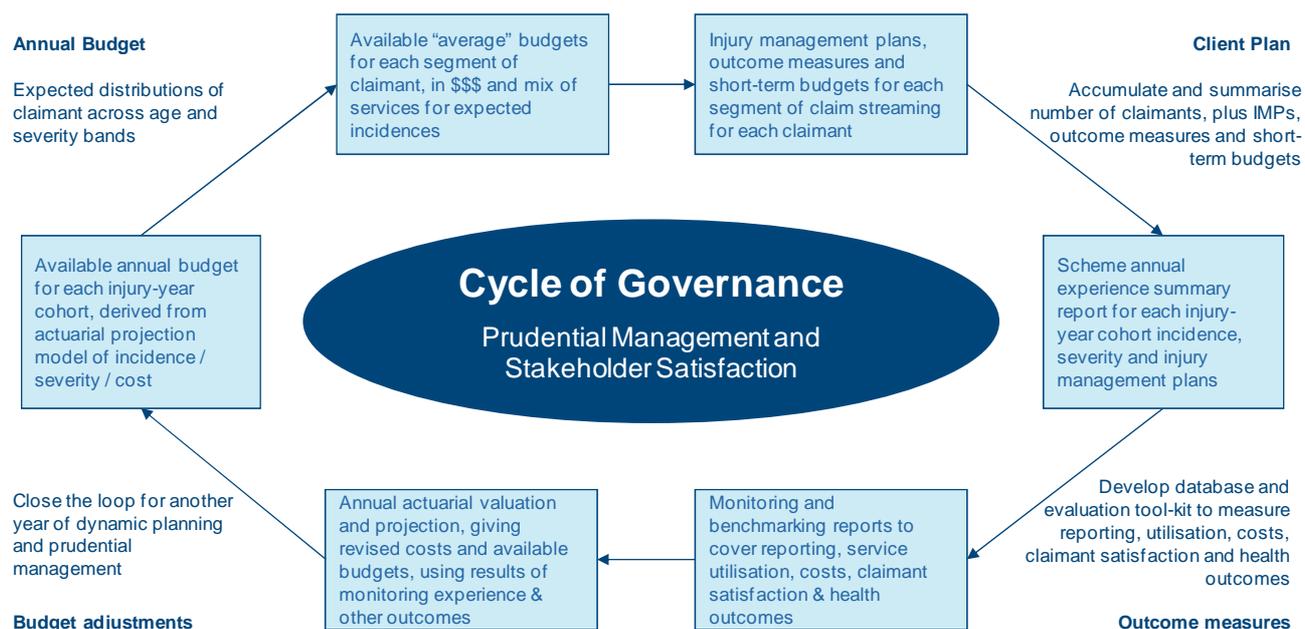
The NIIS will have a relatively small number of participants, very high average cost and variability of utilisation across the group and across each participant’s lifetime. The Scheme will be built around service models which are closer to disability support programs than financial payment systems, while at the same time requiring the financial and prudential governance arrangements of the latter.

Accordingly, it is essential for the data planning to be built around an aggregation of individual and personal life-plans, each considered within the context of an annual total budget for each injury-year cohort. This model will link with a monitoring facility of utilisation to provide a feedback loop to the prudential reporting requirements and governance.

Additionally, there is an opportunity to link the actuarial / financial monitoring with a dynamic process of monitoring health outcomes and participant satisfaction, to provide the NIIS with an overall process of scheme evaluation.

This process can be represented as follows:

Figure 7 Cycle of Governance



The new schemes will have an opportunity to set an example for other health, disability and welfare programs, where such comprehensive system evaluation is unavailable to Central Agencies. Indeed, this was the model used by NSW Treasury and NSW Disability to inject significant additional disability funding in the *Stronger Together* package, which has specific monitoring and outcome targets.

Three fundamental requirements for this model to support the success and sustainability of the NIIS and other Lifetime Care and Support Schemes are:

1. That schemes are committed to collecting accurate and comprehensive data;
2. That clients agree to provide data in the specified form (through legislation or regulation) as a condition of entitlement to benefits; and
3. That the schemes themselves have unfettered access to data on their own clients for the purposes of analysis and monitoring.

It is vital that the NIIS Schemes are committed to collecting accurate and comprehensive data, as the effective lack of these is a major impediment to planning and sustainability in existing health and welfare systems.

Database design is required to support the above requirements by combining data on utilisation, financials and health outcomes. In designing this database consideration needs to be given to the fact that services provided look quite different from traditional accident compensation schemes, with high levels of care coordination, case management, education, accommodation, hospital and other medical costs including therapy, aids and equipment, home modifications, personal and nursing care, transport and community and living skills development.

Additionally, the requirements and outcomes of care for Scheme participants depends not only on injury severity information but is also significantly affected by demographic details such as the known relationship between participant's socio-demographic and living status prior to injury, the support of family and pre-existing medical conditions and the participant's own life expectations and goals – thus all these factors must be captured in the initial database design.

Collection of all of these elements is not only vital for future Scheme development, but allows for accurate projections of future care and support requirements and so the robustness of the actuarial valuation is directly linked to the accuracy and completeness of the above data collection.

Care Coordination and Case Management in the LTCS Scheme

In the NSW LTCS Scheme, each participant is allocated a care coordinator who, as an employee of the Authority, becomes their primary contact point. The role of the care coordinator is to ensure that participants receive high quality, cost effective medical, rehabilitation and care services which satisfy individual needs, meet scheme objectives and support participants in meeting their goals.^{iv} They meet this role by working with the participant and their family to identify, plan and deliver their rehabilitation and care needs. They also ensure the quality of data capture by the Authority and that service requests and plans meet the Authority's "reasonable and necessary" criteria.

The LTCS Authority then purchases case management services for its participants. The role of case management as opposed to a care coordinator is to manage the details of service provision. Particularly at key stages of the participant journey such as discharge from hospital and key life transition points (such as leaving school or home) there can be a need for intensive and complicated services, across a wide spectrum of providers. It is the case manager's job to ensure that these services are organised in a way that meets the needs and goals of the participant while also meeting the administrative needs of the LTCS Authority.

Both of these roles can be very complicated and often require specialist experience in brain, spinal or paediatric care. An effective case manager will also be aware of the need to transition away from participants over time. They will seek to build the abilities of the participant, their family or carers to manage and coordinate their service delivery themselves and in the long term may only be needed at crisis points.

These roles are of critical importance to the LTCS Authority because they ensure that appropriate and timely services are received by participants at all times. Given the serious nature of injuries in an NIIS and the often leveraged impact of poor initial care leading to poor long term outcomes, good care coordination and case management can have significant positive impacts on participant health outcomes.

Effective care coordination and case management also have a significant impact on the overall financial viability and governance of an NIIS. The costs incurred by any one participant with a catastrophic injury are highly leveraged over time with the utilisation of attendant care being particularly material. To the extent that effective early injury management can be expected to improve long term health outcomes and reduce care needs there is a material cost benefit of case management and care coordination.

On a granular level, the Authority has recently noticed (and has been supported in scheme monitoring) that for low level brain injuries case management has taken the place of attendant care services. The reduction in future attendant care services assumed for this cohort has been larger than the increase in cost incurred from case management benefits leading to a benefit to the overall scheme financial position.

On a broader level, reducing the need for attendant care for all scheme participants by 10% would reduce the present value of future cost by almost 8%, which equates to over \$30 million for a single year cohort of new participants.

From a broader scheme governance standpoint it is important that the drivers of cost for both case management and scheme operating expenses be well understood by management.

Experience with the LTCS Scheme has shown that it is preferable to model case management as a separate benefit category, allowing for direct monitoring and an improved understanding of the drivers of cost. We have found that the level of case management services incurred by LTCS scheme participants is not related to the participant's level of injury severity (unlike other benefit types) and reduces over time post injury, on average.

Separately, we have been able to break down the components of scheme operating expenses for the LTCS Authority. This has allowed for the underlying drivers of operating expenses to be made more explicit. The major long term driving of scheme operating costs is salaries paid to care coordinators, which will continue to grow over time as the number of participants grows.

Service Accreditation and Quality Control

Under the Motor Accidents (Lifetime Care and Support) Act 2006 No 16 Part 1, paragraph 10, the Authority has the ability to approve treatment and care providers as well as to determine the minimum standards of competency that apply to them on an ongoing basis.

This force of legislation is an important tool for the LTCS Authority in ensuring that services available to scheme participants will always meet the ‘reasonable and necessary’ provisions of the legislation and the Authority’s mission for improving the quality of life for all scheme participants.

Further to ensuring consistent service quality, this legislation allows for the Authority to actively pursue the following goals:

- Enforce accurate and timely completion of necessary paperwork for the Authority – reducing the amount of time lost chasing information from service providers and reducing operational risks associated with poor data capture
- To facilitate training, education and knowledge sharing sessions between service providers or with the Authority for the mutual benefit of all and ultimately to ensure high quality service to all participants
- To provide quality controls around a rapidly growing workforce and indeed to ensure that the growing demand for services will not lead to poorer participant outcomes

To date the Authority has invoked these powers in a number of situations, including attendant care service providers and case management.

In the case of attendant care service providers a panel of approved providers has been established based on an open tender process. All service requests for paid attendant care must be provided by a provider from of this list, ensuring that any services received by scheme participants meet minimum standards of quality, experience, mentoring and oversight.

In the case of case management services the Authority has recently commenced the Approved Case Manager Initiative, which over time will mean that all case managers providing services to LTCS scheme participants must be approved to do so by the Authority. This process will include either a review of previous instances of case management or a probationary period, where minimum standards of mentoring, competence and ability to work positively with the Authority will be assessed. It is important to note that these standards are not intended to be onerous on providers, in fact they are expected to largely represent current best practice in the market.

It is recommended that an NIIS would benefit greatly from ensuring that similar abilities and controls are available to ensure consistency of service across all participants, across all states and causes of injury.

Scheme Governance tied to Actuarial valuations

Life Cost Estimator

The Life Cost Estimator is a case estimation tool that has been built by PwC, in conjunction with assistance and further development by the LTCS Authority for internal application. Cost estimates are set based on the assumptions and models underlying PwC's yearly outstanding claims valuation work and represent an average cost profile from an individual with a particular set of characteristics (age, gender, injury type and severity).

The tool operates from a spreadsheet base and has been built to serve two primary purposes for the LTCS Authority.

- 1) For the use of LTCS staff in managing participant service allocations on a dynamic, day to day basis
- 2) To allow the Authority to aggregate individual cost estimates by a variety of groupings (such as all brain injuries, all male spinal cord injuries aged 15-24, etc.) to compare actual expenditure against budgeted expenditure over time

Significant drivers of scheme costs

In the case of serious injury the underlying pathology of injury is important in predicting the long term cost. That is, all else being equal, a person with severe quadriplegia will require more services from the LTCS Authority over their life than a person with a mild brain injury as assessed by the Care and Needs Scale.

However, all is often not equal when considering the unique situations facing people with severe disability. An understanding of the underlying nature of injury and its impact on care needs is an important first step to building an estimate of future costs but an appreciation of other key factors is also critical.

PwC's valuation models are centred on what a person needs to support them in the community. As discussed, the key driver of future costs is attendant care services which can be heavily influenced by both the quality of informal supports (family, friends or partner) available to an individual over time and the individuals own level of motivation and desire to return to pre-injury levels of community involvement.

In this way there can be significant differences in the cost profile of two injuries with the same age, gender, injury type and severity (as measured by level of spinal lesion or FIM score).

There are numerous other factors that can influence the costs incurred by an individual outside what is currently captured in the valuation model including:

- Location of participant – in particular rural or remote location – which can influence access, quality and cost of services for the participant
- Significant orthopaedic injuries – which can influence medical and rehabilitation needs in the short term
- Family functionality – which can influence the need for care and the extent to which an individual engages with their community (which is correlated to lower need for attendant care)
- Dual diagnosis (e.g. drug and alcohol, mental health, diabetes, etc.) – which adds considerable complexities to service needs, delivery and effectiveness
- Key transition points in life including: adolescence, family breakdown, the aging process or moving out of home

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- Psychosocial issues

However it is important to note that these and other factors can also influence positive cost outcomes for the scheme. Some examples include:

- Strong family supports
- Return to employment opportunities
- An absence of any dual diagnosis
- Personal resilience
- Meaningful community engagement

All of these factors can be predictors of lower than average scheme costs and above average long term health outcomes.

Understanding the impact and nature of these significant cost drivers

Given that these factors can have a significant impact on the level of benefits that a participant requires, we have built into the Life Cost Estimator the ability for the user to make manual adjustments to the original cost estimate. This functionality serves two important purposes.

Firstly, it allows for each individual case reserve to be set in a much more accurate fashion than if an overall average were applied. At a high level, our valuation model is calibrated for a large group of participants as a whole. Thus taking the overall average and applying this to each individual is going to lead to inaccuracies on an individual basis for the reasons specified above. By allowing for adjustments to be made to this estimate adequate participant reserves can be set which are both prudent and not overly restrictive (that is, they sit within the Authority's "reasonable and necessary" criteria).

And secondly, by building in the adjustment process to a cost model that is a daily part of the Authority's operations and soon to become part of the core data systems, it becomes the logical vehicle in which to collect data on these factors. By enabling the collection of accurate and timely data on key cost predictors the scheme actuary is able to, over time, explicitly incorporate these factors into the Life Cost Estimator and scheme valuation work.

Linking back to the yearly valuation (closing the loop)

Each year, PwC undertakes a valuation of the outstanding claims liability of the LTCS scheme as at 30 June, using data to the prior 31 March. A valuation "update" is also undertaken using data to 30 September.

This process begins by aggregating individual participant case estimates on known reported participants, which contribute the substantial majority of the scheme liability. We use outputs from the Life Cost Estimator when undertaking this process and also take into consideration the direction, nature and number of adjustments that have been made by LTCS staff in operating the Life Cost Estimator over the past 12 months.

In this way we are able to incorporate similar adjustments where appropriate and also learn in detail the issues facing service delivery and costs on a granular level. The feedback from this process is invaluable as solely concentrating on aggregate modelling or monitoring will not always alert one to underlying risks that are gradually building within the scheme.

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In future valuations we intend to make use of data collected through the use of the Life Cost Estimator tool to add additional predictive power to our model by incorporating variables such as: participant location, co-morbidities and informal supports.

More recently we have been able to improve our valuation modelling through incorporation of American Spinal Injury Scores (ASIA) into our predictive model for spinal cord injury and the extent of improvements in brain injury over time post accident.

Given that the Life Cost Estimator is updated on a yearly basis post completion of the valuation work, these improvements in modelling are then incorporated into the new Life Cost Estimator, reducing the need for manual adjustments to be made and improving the predictive power of the tool.

The Future of the Life Cost Model

The Life Cost Model is an integral part of current best practice within the LTCS Authority as well as setting the basis for future improvements in the overall governance and operations of the scheme.

Over time there is a strong need to inform the governance cycle with a strong evidence base regarding the true costs of service delivery and in particular the long term health outcomes and service usage (in particular attendant care needs over time). As a part of the regular case management process for every scheme participant, the Life Cost Estimator is the perfect tool to allow for accurate, timely and organised data to be collected on the health and service cost outcome measures needed to generate such an evidence base.

This form of data collection and subsequent analysis will form an integral part of the establishment of a future National Injury Insurance Scheme as it will allow for evidence based policy to dictate its establishment and initial operation protocols.

However it is important to note that a new NIIS will be influenced by its own nuances and particular issues that will differ to those of the NSW LTCS scheme. For this reason it will be important for any new scheme to take up a continuous cycle of improvements and monitoring similar in principle to that of the LTCS Authority.

Case Studies from the LTCS scheme

As discussed earlier, there are various factors not explicitly captured in the LTCS valuation model that can significantly influence the future cost incurred by an individual. Factors such as quality of informal supports, presence of challenging behaviours and location of residence can lead to variability in cost between participants with similar injury severity and age profiles.

The following case studies have been selected from the cohort of participants in the LTCS scheme to demonstrate how these factors can affect the level of services required by an individual. We note that these case studies have been altered to protect the privacy of the LTCS scheme participants affected.

In order to understand the cause and extent to which costs can vary within the same severity level (as measured by CANS in the case of brain injury), the first two case studies compare two participants with similar severity levels but significantly different costs

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Case Study 1

The two participants considered in the first case study:

- Have a brain injury
- Are male
- Have been in the scheme for close to 4 years
- Had initial CANS score of 4 and a revised current CANS score of 5
- Were pedestrians in their respective accidents
- Were from relatively poor backgrounds
- Have behavioural and cognitive issues

However, the incurred cost to date of one participant is significantly higher than the other participant. This difference in cost can be explained through an understanding of the situation behind each participant.

Participant A

- **10 years of age** at injury
- Significant behavioural and cognitive issues
- Impulsive and violent
- Lack of initial family support
- Department of Community Services are involved
- Requires two carers for 30-40 hours per week
- Lives in a remote community with his grandfather
- **Costs to date have been approximately 60% higher than expected**

Participant B

- 15 years of age at injury
- Behavioural and cognitive issues
- Case management costs account for a third of his costs to date
- In this situation an active case manager appears to have significantly lowered long-term needs
- Now lives with family and requires no attendant care due to this support
- Is involved with a job seeking agency exploring employment options
- **Costs to date have been approximately 70% lower than expected**

Case Study 2

Significant improvement can be seen from people with a brain injury over time. This case study looks at one participant who initially presented as a CANS 7 and ended up leaving the scheme as an interim participant.

This participant was aged 20 at injury, was in the scheme for 2.5 years prior to leaving as an interim participant, and was initially assessed for CANS upon admission to rehabilitation. The majority of payments received were related to hospital services. This situation is not alone and indicates that early assessments can be quite variable when it comes to long term outcome prediction.

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Case Study 3

The level of 'completeness' of a spinal cord injury can have a significant effect on the future costs of individuals with similar severity and age profiles.

This case study considers two participants with neurological level of lesion T8-T12

Participant A

- 'Complete' injury (ASIA score B)
- Female
- Aged 30 at injury
- Was a driver in her accident
- Has care of child and a supportive husband
- High attendant care costs due to intense levels of early support related to caring for child
- **Payments made to date have been more than double the level expected**

Participant B

- 'Incomplete' injury (ASIA score D)
- Male
- Aged 35 at injury
- Was a motorbike rider in his accident
- Minimum service use over the last 12 months
- No attendant care services utilised
- **Costs to date have been approximately 95% lower than expected**

What we have learned from LTCS experience

The situation facing the NSW LTCS scheme and the prospective NIIS is that there is no directly comparable scheme in operation in Australia that is completely focused on providing care and support to the most severe of injuries.

As such every year that passes brings with it a wide range of important and at times unexpected lessons learnt to all involved. With this knowledge and in the spirit of the governance cycle outlined previously, it is imperative to establish a strong process of regular monitoring and review **that is tailored to the specific nuances of a large serious injury compensation scheme.**

Scheme spending experience

There have been a number of things that have been learned from the first five years of operation for the LTCS scheme, two of the more significant and noteworthy are listed below.

- The extent of improvement seen in people suffering a serious brain injury post their injury has been considerably greater than initially expected even though these initial expectations were established through consultation with rehabilitation doctors and specialists. Improvement appears to continue for at least three, and even more years post injury and some participants who initially require almost 24 hours a day of care leave the scheme after 2 years as interim participants.
- That the level of ‘completeness’ of a spinal cord injury as measured by the American Spinal Injury Association (ASIA) score is a very significant predictor of costs over and above simply using the level of lesion of the injury. While the lesion location provides information as to the areas that may be impacted by a Spinal Cord Injury, the completeness of that injury determines how much function is actually impaired and has an obvious impact on what a person is able to do.

These examples highlight the need for regular monitoring and acceptance that modelling approaches must be refined and improved constantly otherwise their usefulness will quickly be lost.

Given the unique nature of serious brain and spinal cord injuries it is important that any predictive cost modelling begin with a thorough understanding of the nature of serious injury itself. By first understanding the situation and needs of people with a disability we are then able to build a costing model around the supports that they reasonably require in order to maximise their potential. It is not sensible in this situation to rely solely on aggregate valuation techniques as unique characteristics such as those described above would be lost from analysis and there would be a substantial risk that modelled costs would differ materially from reality.

As described earlier the cost risks in this situation are highly leveraged due to the low number of injuries occurring each year and the very high average cost associated with them. Thus the implications of poorly modelled costs are significant.

Monitoring and Benchmarking

As in all accident compensation and social welfare schemes there is a need to undertake diligent and regular monitoring of participant and payment experience over time to manage and mitigate against the emergence of significant risks to the scheme.

The scope and depth of monitoring for an NIIS must reflect the unique risks and issues facing such a scheme. Some of these elements will differ from the forms of monitoring applicable to existing compensation schemes which may service a different or broader group of injuries (reflecting differences in key cost drivers).

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Some of the elements that should be considered in this context are outlined below.

- **Detail on the type (e.g. Brain or Spinal injury) and severity of injury.** Severity should be considered primarily in terms of the need for care as this will have the greatest correlation to long term scheme costs. A simple medical diagnosis is often not able to reflect these long term cost pressures, in particular for a large group of participants
- **Unique elements of serious brain and spinal injury.** This would include tracking improvements in the level of brain injury severity by month and the level of injury completeness of all spinal cord injuries. Understanding trends in these elements over time provides significant information on top of the traditional injury severity measures when considering the long term financial position of the scheme.
 - For example if LTCS were to see a consistent number of CANS 7 injuries occurring each new accident year this would not be cause for concern. However if the rate at which these injuries improved over time were to drop materially, then this would have a long term impact of increasing costs incurred by the Authority.
- **Understanding the emerging age profile of scheme participants** takes on added importance as benefits are often for life. The younger the average age of injury becomes the longer the term of the scheme's outstanding liabilities.
- **The focus of analysis should be on the most severe participants.** For example, in the NSW LTCS scheme valuation, the liability associated with CANS 7 brain injuries and quadriplegic spinal cord injuries (approximately 20% of all participants) makes up as much as 65% of the scheme liability. Thus any emerging changes in these categories must be identified and understood early.

While the LTCS scheme is the only compensation scheme in Australia which purchases benefits solely for those suffering catastrophic accidents, other schemes (Victoria, Tasmania and NZ) provide lifetime support coverage of these injuries as well as coverage of a wider spectrum of injury. As the NSW scheme is quite new there has been a need to benchmark its emerging experience against other schemes with similar components to LTCS. The benefit of such an analysis is that all involved schemes are able to compare emerging participant development and spending in comparison to other similar situations.

While there are a number of difficulties in creating valid comparisons between schemes (due to subtle and important differences in coverage, jurisdiction and benefit structure) there is much that can be learnt and shared between schemes in such a forum. Some examples of the current issues of focus from these reports:

- **Long term participant continuance rates.** The rate at which participants 'discontinue' from a long term benefits scheme has an important impact on projections of future costs given the long tail nature of benefits. Understanding the reasons why participants discontinue (aside from death) and the rate at which this will occur over time is an important input into any actuarial modelling.
- **There is a need for standardised measures of injury severity assessment** across different jurisdictions to ensure that meaningful and valid comparisons are made. The current iteration of benchmarking reports explores the use of FIM scores as a means of comparing injury severity across schemes.
- **Definitions of benefits covered** can differ materially across schemes and jurisdictions. The process of producing benchmarking reports can help to understand these differences and allow schemes to work together to improve consistency where it is sensible to do so.
- **The level of operating costs incurred by each scheme.** The level of reasonable operating cost spend is a difficult and important question for any such body to consider regularly. Too much spend may

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threaten financial stability and encourage unethical billing and servicing practices within the service provider community. However inadequate spending can lead to poor controls of benefit approvals, escalation in scheme costs and deterioration of participant outcomes. This is a worst case scenario as the impacts on future claims liabilities are likely to be significantly in excess of any financial savings from reduced operational costs.

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