New Research Portfolio strategy: Injury, Impairment, Rehabilitation and Disability

The HRC has developed a new Injury, Impairment, Rehabilitation and Disability Research Portfolio strategy. The new strategy represents an extension to the previous Injury and Rehabilitation Research Portfolio strategy. While little has changed with regard to the content or the research priorities identified within the strategy for injury research, additional research priorities have been identified for rehabilitation and disability research. The most significant change to the strategy is the inclusion of **all** rehabilitation research, that is, rehabilitation from injury as well as rehabilitation from a disease or pathology related event.

The purpose of redrafting the strategy was to provide a more central locus for rehabilitation and disability, and to create an opportunity to achieve greater alignment between the HRC's investments and those of ACC, the principal funder and stakeholder for injury prevention and rehabilitation research.

The new Injury, Impairment, Rehabilitation and Disability Research Portfolio strategy stands for this funding round. The Council wish to encourage the health research workforce to respond to the research priorities and gaps identified within the strategy. Given that the strategy has not had the benefit of wider consultation, the Council consider the strategy in its current form as a 'living strategy'. The HRC will take comments on the strategy and launch a broader consultation process in January 2005.

HRC RESEARCH PORTFOLIO STRATEGY: INJURY, IMPAIRMENT, REHABILITATION AND DISABILITY

DESCRIPTION

Research in this portfolio will focus on injury, impairment, rehabilitation and disability. The following areas of research are covered by this portfolio strategy:

- Research that focuses on reducing the impact of injury and impairment through injury prevention. Injury includes unintentional and intentional injury. Intentional injury covers harm inflicted by others as well as harm that is self-inflicted. Research on self-harm, suicide and assault, and research on alcohol and substance use leading to injury and impairment is therefore included.

- All rehabilitation research including rehabilitation from an accident or injury, and rehabilitation from an illness or pathology related event resulting in medium to long-term impairment.

- Research on evaluation and the outcomes of rehabilitation and injury prevention (including primary, secondary and tertiary prevention).

- Maori health issues relating to rehabilitation, disability, impairment and injury will be addressed in this portfolio and not in Rangahau Hauora Maori, which focuses on Maori development rather than specific health issues.

DEFINITIONS

Injury prevention consists of identifying, describing and quantifying causes of injury, as well as developing and evaluating interventions that can eliminate or reduce the likelihood of injury and related consequences (including impairment).

Rehabilitation is a broad multidisciplinary term that encompasses basic and applied aspects of the health sciences, social sciences, and engineering as they relate to restoring functional capacity and/or improving an individual's interactions with the surrounding environment. Rehabilitation involves the development and delivery of a wide range of services and interventions designed to provide the optimal level of benefit and care, and enhance activity and participation.

In order to describe the natural history of a disabling condition, possible targets for intervention and assessing meaningful outcomes for those interventions, a model of 'function' is useful such as the internationally recognised 'International Classification of Functioning' (ICF) developed by the World Health Organisation (WHO).

Acute care is an amalgamation of pre-hospital care (the design and implementation of emergency medical services) and hospital care.

Impairment is defined as the deviation or loss of physiological, anatomical, or cognitive structure or function from a person's usual biomedical state. Impairments may result in functional limitations that restrict activity and participation and which would benefit from targeted and effective rehabilitation.

Disability is viewed in the New Zealand Disability Strategy (2001) as the disadvantages people with impairment experience due to social, economic, political and environmental factors, which restrict or exclude people with impairment from full participation in their communities.

MANDATE

The Health Research Council of New Zealand (HRC) has recognised the importance of research in the area of injury, impairment, rehabilitation and disability, through the creation of this portfolio. The HRC particularly wish to encourage strong links between injury, rehabilitation and disability researchers by bringing these related disciplines together in the one portfolio. The need for research in the area of injury, rehabilitation and disability is identified in and supported by the New Zealand Disability Strategy, the Foresight Strategy for the Disability Sector (1999), the New Zealand Injury Prevention Strategy (NZIPS), the New Zealand Health Strategy (NZHS), and He Korowai Oranga: the Maori Health Strategy. The HRC also wishes to encourage and support research that addresses information gaps in these areas and provides the evidence base to develop successful and responsive approaches to the prevention of injury and impairment, rehabilitation, and community-based health and disability support services.

Reducing mortality, the incidence and severity of injury, the rate of hospitalisations, and the level of impairment incurred and disability experienced through illness, pathology or injury, is an important goal. Strengthening disability research and rehabilitation capacity and capability, advancing knowledge, identifying barriers and informing the development and implementation of effective interventions through evidence-based knowledge and evaluation are also important goals. Individuals who experience impairment as a result of injury or pathology (such as stroke) are likely to benefit from receiving comprehensive, well-coordinated and timely acute care and rehabilitation services. Reducing rates of impairment and disability as well as the incidence of secondary complications and the need for institutional care through effective rehabilitation and management will improve quality of life and enhance productivity, to deliver significant financial and social benefits.

People with disability, children and youth, older adults, Pacific peoples and Maori are priority population groups for the HRC. The HRC wishes to encourage and support research that will reduce the incidence and impact of injury and pathology on the rates of impairment and disability experienced by these priority populations. The HRC further wishes to encourage and support research that will contribute to the

development of effective rehabilitation and community-based health and disability support services for these populations.

The HRC is committed to decreasing disparities in health outcomes. It is a priority to facilitate equitable health and disability outcomes for Maori, and to ensure Maori are able to recognise and create life opportunities as participants in society.

NATIONAL ISSUES

The national issues outlined below are drawn from the New Zealand Disability Strategy (2001), the Foresight Strategy for the Disability Sector (1999), the New Zealand Injury Prevention Strategy (2003), the New Zealand Health Strategy (2000), He Korowai Oranga: the Maori Health Strategy, and areas of importance identified by the HRC and the Accident Compensation Corporation (ACC). The list is not exhaustive and does not reflect specific priorities unless otherwise stated.

INCIDENCE AND PREVALENCE

In 2001, a total of 743,800 New Zealanders reported living with some level of impairment and disability. Findings from the New Zealand Disability Survey (2001) indicate that one-in-five New Zealanders identifies as disabled; that rates of impairment and disability increase steadily with age; that physical impairment is the most common type of impairment; and that the majority of people who identified as disabled had more than one type of impairment. The leading cause of impairment and disability is a disease or illness (40 percent), followed by an accident or injury (30 percent). Stroke is the third leading cause of death and the leading cause of impairment. Forty-two percent of adults report being mildly limited by their impairment. A further 43 percent are moderately affected, while the remaining 15 percent are severely limited. Severity is defined by the level of assistance required.

Injuries, both intentional and unintentional, accounted for 21 percent of the 260,000 potential years of life lost prematurely in New Zealand in 1996. Injuries are the leading cause of potential years of life lost among males, and the fourth leading cause among females. Unintentional injury accounts for 58 percent of the years of life lost prematurely due to injury. Child injury death rates in New Zealand are also high compared with other OECD countries. Most fatal injuries among children are unintentional. On average, one child a fortnight dies through an unintentional injury that occurs in their home or the community. Falls among older adults are also a major public health problem: about one-third of people aged 65 years and over will fall in any one year, and there is a marked increase in this probability with increasing age. Fall-associated fractures in older adults are a significant cause of impairment and mortality.

THE COST OF INJURY, IMPAIRMENT AND REHABILITATION

The cost of impairment and rehabilitation from injury, illness and pathology to New Zealand society is considerable. In 2001/2002, there were 1,371,225 minor injuries and 93,854 moderate to serious injuries recorded. Insurance costs for injury constitute

the most readily accessible estimate of one part of the cost of injury and rehabilitation to New Zealand. The Accident Compensation Corporation's (ACC) expenses for medical treatment, rehabilitation and compensation for injury victims amounted to $1.399 billion in 2002. Costs associated with minor claims accounted for $216 million, moderate to serious claims accounted for $1.105 million, and fatalities accounted for $78 million[1]. Importantly, a sizeable proportion of ACC claims and associated costs are for soft tissue injury, particularly back, neck and arm pain. In 2000/01, 54 percent of all claims accepted by ACC were for soft tissue injury. There are also many personal, social and economic costs related to injury, impairment and disability. The total social and economic costs of injury are estimated to be $6-7 billion per year[2].

The cost of impairment and disability associated with illness or a pathology-related event is more difficult to ascertain. It was estimated that there were 32, 690 stroke survivors in New Zealand for 2001[3]. There are nearly 5 million stroke survivors in the United States. The estimated cost of care and savings lost in 2003 was $51 billion. Research indicates that effective, timely and individually targeted rehabilitation is likely to result in reduced mortality, morbidity and costs relating to care, while providing opportunities for individuals to participate in their communities. Evidence suggests that for every 20 patients managed in a stroke unit rather than a general medical ward, one less person requires long-term institutional care resulting in annual savings of over $250,000 for every 100,000 of the population[4].

INJURY PREVENTION

On the basis of current statistics, six national injury prevention priority areas have been identified. They include: motor vehicle traffic crashes; suicide and deliberate self-harm; falls; workplace injuries (including occupational diseases); assault; and drowning and near-drowning. These six areas account for 80 percent of injury-related deaths and serious injury in New Zealand, and form the basis of the New Zealand Injury Prevention Strategy (2003). The focus of the strategy is on the prevention of injury (both intentional and unintentional). The development and implementation of effective injury prevention interventions and initiatives is dependent upon the development of sound evidence-based knowledge and research, which is necessary to identify the groups most at risk of injury and the settings in which injuries occur, and to identify which aspects of injury prevention initiatives are having an impact.

ACUTE CARE

The ideal solution to the problem of injury is effective injury prevention. When prevention fails, however, effective trauma systems are essential to optimise the recovery of injured persons. Such systems must embrace the whole spectrum of injury, from minor to catastrophic, and level of function from the moment of injury

[1] ACC, September (2002). Consequences – What Accidents are Doing to New Zealanders.
[2] New Zealand Injury Prevention Strategy (2003).
[3] Tobias, M., Cheung, J. and McNaughton, H. (2002). Modelling the Impact of Stroke in New Zealand. Ministry of Health.
[4] Stroke Trialists' Collaboration (2003). Organised Inpatient (stroke unit) Care after Stroke (Cochrane Review). The Cochrane Library: Oxford.

across the entire continuum of care (including pre-hospital, hospital and community-based care).

The care and treatment of the injured imposes a substantial burden on healthcare expenditure in New Zealand. However, the structure and services delivered through our trauma systems largely draws on data and findings from overseas. Formal evaluative research on the outcomes of trauma care and local issues that impact on these is scant. There is an urgent need to address these deficiencies in order to benchmark and improve the health and supportive care provided to injured New Zealanders, and identify gaps in services, disparities in outcomes, and opportunities for intervention.

REHABILITATION

In New Zealand, significant resources are expended on rehabilitation, yet little is known of the efficacy of the interventions used in the rehabilitation process. Rehabilitation spans a variety of disciplines and approaches, and often a multidisciplinary approach is necessary to achieve success. We frequently draw on overseas experiences with rehabilitation, but it is important that the relevance of overseas examples be considered in the unique New Zealand social, cultural and political context. The development and implementation of rehabilitation programmes and techniques must be based on research findings.

DISABILITY

The New Zealand Disability Strategy (2001) outlines fifteen objectives devised to achieve a more inclusive society through the promotion of choice and participation for people with disability. The ability to choose and to participate necessarily involves having equitable access to and involvement in education, employment, decision-making and service provision. Research can contribute to these objectives through the inclusion of disabled people on research teams and the development and monitoring of disability research priorities. Research can also inform and contribute to the development of responsive health, rehabilitation and disability services through identifying gaps and understanding the diverse needs of people with disability.

ACCESS TO HEALTH SERVICES AND APPROPRIATE CARE

Increasingly, barriers or inequitable access to appropriate rehabilitation and disability services has been identified as an area of concern (Ministry of Social Policy, 2001). Similarly, the responsiveness of rehabilitation programmes and health services to the diverse needs of people who use or require these services has been limited. Many people experience more than one kind of impairment. As such, there are often diverse needs among people who have differing combinations and levels of severity of impairment. Objectives outlined in the New Zealand Disability Strategy (2001) with regard to rehabilitation and supported living for people with disability include a holistic approach to assessment and service provision; long term support systems that are centred on the needs of the person, their family/whanau, and their environment;

and the opportunity to make lifestyle choices, and to participate fully in the management of their disability.

In addition, the Foresight Strategy for the Disability sector identifies eight core competencies and areas where research will contribute and be of benefit to people with disability. These include the need to: close the gap between the rhetoric and the realities experienced by service users across all disability groups; critically analyse ways of conceptualising disability and the implications of these; ensure an increasing influence on and involvement in the research agenda by people with disability; undertake evaluation research to ensure outcome measures are validated by service users; include people with disability as part of the population in all research involving population samples; conduct longitudinal studies which identify multiple and interactive influences on people's lives; generate ongoing valid and relevant statistics relating to people with disability and services, and economically analyse disability issues including all costs and benefits.

WORKFORCE CAPACITY AND CAPABILITY

The HRC has identified an urgent need to build research capacity and capability in the area of disability and rehabilitation research. The need to strengthen rehabilitation, disability and injury prevention research capacity and capability has also been identified as an issue of importance in the New Zealand Injury Prevention (2003), the New Zealand Disability Strategy (2001), and the Foresight Strategy for the Disability Sector (1999). The challenge for the HRC and the health and disability sectors is to find the most effective way of building and continuing to support research capacity and capability in these areas.

RESEARCH PRIORITIES

The HRC has referenced and is aligned to the priorities set out in the New Zealand Injury Prevention Strategy (2003), the New Zealand Disability Strategy (2001), the Foresight Strategy for the Disability Sector (1999), the New Zealand Health Strategy (2000), He Korowai Oranga: the Maori Health Strategy, and those identified by the Accident Compensation Corporation (2004/05). In this section priority research areas rather than specific priorities are outlined. Applicants should demonstrate how their research proposal fits within the priority areas outlined below, show alignment to the key sector policy documents referenced above, and provide evidence to support arguments regarding why the research topic is of importance.

There are some important gaps in our research knowledge, including the impact of injury, impairment and disability on New Zealanders; the risk factors that contribute to and the barriers that undermine the efficacy of prevention efforts; the effectiveness and appropriateness of our acute care and rehabilitative interventions and approaches; and the needs and experiences of those utilising current rehabilitation and community-based health and disability support services.

PREVENTION OF INJURY AND IMPAIRMENT

The focus of research on the prevention of injury and impairment should be to target knowledge gaps and identify risk and protective factors in these areas. Descriptive epidemiology of injury or impairment should not be a primary focus unless this information is otherwise unavailable. The six relevant priorities identified in the New Zealand Injury Prevention Strategy (2003) and incorporated here are as follows:

- Motor vehicle traffic crashes
- Suicide and deliberate self-harm
- Falls
- Workplace injuries
- Assault
- Drownings and near-drownings

Additional priorities include the need to:

- Identify risk factors for injury and impairment
- Develop prevention and intervention techniques, strategies and programmes
- Develop the methodologies needed to evaluate the application and impact of these prevention and intervention techniques, strategies and programmes
- Strengthen capacity and capability in the prevention of injury, impairment, and its consequences

ACUTE CARE

In acute care, the research priorities are:

- Effectiveness of pre-hospital (including emergency services) and hospital-based interventions in the New Zealand setting
- Potentially preventable deaths after trauma and the means of reducing this burden
- Early determinants of the outcome on injury

REHABILITATION

In rehabilitation, there is a need for research to focus on:

- The effectiveness of rehabilitation interventions

- Developing new interventions and trialling them
- Investigating barriers (both intrinsic and extrinsic) in achieving desired rehabilitation outcomes
- Cultural factors and rehabilitation processes, particularly the use and experience of services by Maori, Pacific peoples and new immigrants to New Zealand
- Developing robust, New Zealand-relevant outcome measures that can be used to assess the impact of individual rehabilitation interventions, as well as interventions at a service level
- Development of rehabilitation research workforce capacity and capability

Evaluation of rehabilitation techniques and approaches is the highest priority. Evidence on the effectiveness of most interventions is very limited. The intention here is that the focus be on outcomes over the medium term at least, rather than the immediate term, and on participation restriction rather than the level of impairment only.

Impairments also arise from a wide range of injury and pathology related events. Areas of particular concern because of their frequency, health burden and cost are:

- Stroke
- Traumatic brain injury
- Arthritis and connective tissue disorders
- Falls and hip fracture
- Acute low back pain
- Chronic pain syndromes
- Spinal cord injuries

ACCESS TO HEALTH SERVICES AND APPROPRIATE CARE

There is an urgent need to address and improve the health and supportive care provided to injured, impaired and disabled New Zealanders, and identify gaps in services, disparities in outcomes, and opportunities for intervention. Areas that deserve particular attention include:

- Effective models of service delivery including responsiveness to Maori, Pacific peoples, people with disability, older adults, children and youth, as well as rural communities and other populations
- The development of indicators to assess the quality and appropriateness of care, the transition from pre-hospital through to hospital and community settings, and regional and national co-ordination of services

DISABILITY

There are many areas where little research evidence or information exists. Some areas of importance identified include:

- The high rate of disability among older adults
- How people experience disability support services
- The impact of impairment and disability on individuals, families and communities
- The impact of the rehabilitative process on the individual, their family, and caregivers
- The level of understanding of disability issues among health service providers; and the need for 'supported living' and on-going services 'post-rehabilitation'