



LEGACY REPORT

MAY 2011



VICTORIAN
NEUROTRAUMA
INITIATIVE

This report is dedicated to people affected by neurotrauma, their families and carers; with thanks for your courage, involvement and perseverance as part of a research journey that is looking not at what is – but what will be.



Acknowledgements

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The Victorian Neurotrauma Initiative (VNI) would like to acknowledge the advice and input of the Steering Committee convened for this report which comprised:

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VNI also wishes to acknowledge with thanks the researchers, clinicians and organisations whose work has provided the key examples and information for this report.

Acronyms

ANZIC-RC	Australian and New Zealand Intensive Care Research Centre
DBI	Department of Business and Innovation
DALYs	Disability Adjusted Life Years
DECRA	DECompressive CRAniectomy Trial
DIIRD	Department of Innovation, Industry and Regional Development
GEM	Global Evidence Mapping
GDP	Gross Domestic Product
HiMAT	High-Level Mobility Assessment Tool
IBAS	Institute for Breathing and Sleep
ISCRR	Institute Safety Compensation Recovery Research
NET	Neurotrauma Evidence Translation
NHMRC	National Health and Medical Research Council
NICS	National Institute for Clinical Studies
NIH	National Institute for Health
NSV	Neuroscience Victoria
ntri	National Trauma Research Institute
ONF	Ontario Neurotrauma Foundation
QOL	Quality of Life
QOLIBRI	Quality of Life After Brain Injury
SAFE TBI	Fluid resuscitation for TBI
SCI	Spinal cord injury
SCIPA	Spinal Cord Injury and Physical Activity
SDA	Skill Development Award
SHiQ	Sleep Health in Quadriplegia
TAC	Transport Accident Commission
TBI	Traumatic brain injury
VNI	Victorian Neurotrauma Initiative
VRSS	Victorian Respiratory Support Service
VWA	Victorian WorkSafe Authority

Executive Summary

In 2005, the Victorian Neurotrauma Initiative (VNI) was established by the Victorian Government as a partnership between the Transport Accident Commission (TAC) and the Department of Innovation, Industry and Regional Development (DIIRD) (now the Department of Business and Innovation) as a multi-million dollar research fund to conduct research into traumatic brain injury (TBI) and spinal cord injury (SCI). In 2006, the Initiative was incorporated as the Victorian Neurotrauma Initiative Pty. Ltd.

The VNI received \$63 million over five years, making it one of the world's largest funding programs dedicated to research into the consequences of neurotrauma.

Neurotrauma has a devastating impact on people affected by TBI and SCI as well as the effect on their families and carers¹. The VNI has funded research-led improvements for the treatment, management, outcomes and improved quality of life for people affected by neurotrauma.

The VNI was established with three core goals:

- to fund internationally competitive research;
- to facilitate enhanced capacity and capability within the Victorian neurotrauma research community; and
- to facilitate the translation of research findings within the Victorian healthcare system.

¹Neurotrauma refers to injury to a nerve, especially part of the central nervous system (the brain and/or spinal cord).

True to these goals, the VNI has proactively encouraged interdisciplinary, multi-sited research collaborations across Victoria, Australia and internationally and also partnered with international organisations to further neurotrauma research and build researcher capacity and capability. A number of VNI funded research projects have already delivered substantial health and economic benefits. The majority of research outcomes and potential benefits for those affected with TBI and SCI will become evident in future years.

A key legacy of the VNI is that as a result of dedicated funding and support, Victoria is now an international centre of excellence in neurotrauma research. The VNI has provided an environment in which Victorian scientists have established themselves as national and international **research leaders**, evidenced by increases in research output, collaborative activity, growth in research income and appointments to key international organisations.

The VNI has facilitated **centres of research activity**; supported high-quality international **clinical trials**; funded **laboratory research** that has improved the understanding of brain and spinal cord injuries and their recovery; funded **imaging research** that has improved the understanding of the function of the injured brain and paved the way for new intervention studies and improved prognosis after injury. **Research products and platforms** have been developed that will support neurotrauma research into the future; and the VNI has supported internationally unique **outcomes studies** that have charted the course of TBI over many years post injury and led to a detailed understanding of the outcomes and experience of brain injury.

The VNI has established and funded a series of **research fellowships** that enabled a group of clinicians and young scientists to establish a career in brain and spinal cord injury research; provided significant **people support activities**; and pro-actively established **collaborative partnerships** with funding agencies that share the VNI's commitment to funding high quality, internationally competitive research, including the Ontario Neurotrauma Foundation (ONF) and the National Health and Medical Research Council (NHMRC).

The VNI has supported a range of **translational research** projects and initiatives that have improved and will continue to improve the understanding of ways to incorporate research findings into practice and policy; established and supported **interactions and collaborations** between researchers, clinicians and policy makers; and funded projects that have developed new approaches to **evidence synthesis** to ensure greater focus in future brain and spinal cord injury research.

In summary, the VNI has had a substantial impact nationally and internationally. VNI's investment has fostered in Victoria a cohesive world-leading neurotrauma research community. Victoria is now well positioned to build on these achievements and to continue its excellent track record of spinal cord and traumatic brain injury research that will positively impact the lives of those affected by these debilitating injuries.

The TAC Board, in acknowledging the legacy of the VNI in building upon Victoria's reputation for significant neurotrauma research over the past five years, will provide \$20 million for neurotrauma research over the next five years. This funding will be available from 2011.



Associate Professor Douglas Brown, Program Grant Chief Investigator & Associate Professor Graeme Hawthorne, VNI Project Grant Chief Investigator (left to right)

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01

Introduction

Introduction

“VNI brought a strong focus to Neurotrauma Research which has enlivened research in this area. There is no doubt that this has formed a foundation that has enormous potential to improve the quality of the lives of patients, their families and carers.”

*- Professor John Furness,
Professor of Anatomy and Cell Biology,
University of Melbourne*

The VNI has been active in pursuing its core goals and can be justly proud of its achievements and legacy. The primary purpose of this report is to reflect on the achievements of this unique Initiative and to highlight projects, researchers and the many talented people that have been part of the VNI journey and will continue to make a difference in neurotrauma research.

Though the VNI as a company, will end in May 2011, several initiatives are funded to 2015. These will transfer to the management of the TAC. These include four VNI funded programs with combined total funding of \$19 million due to be completed in 2015. These programs are interdisciplinary programs and include clinical trials across multi-sites with significant international collaborations. In operation since late 2009, each of the programs shows promising early signs for improving the health and well being of patients.

These four programs (consisting of a number of projects) are:

- Autonomic Dysfunction in Spinal Cord Injury - University of Melbourne and Austin Health;
- Spinal Cord Injury and Physical Activity (SCIPA) - University of Melbourne and Austin Health;
- Sleep Health in Quadriplegia (SHiQ) - Institute for Breathing and Sleep and Austin Health;
- The NET Program: *Neurotrauma Evidence Translation* - Monash University and Alfred Hospital.

Another project of significance is the *Early Interventions to Improve Outcomes after Traumatic Brain Injury* - Monash University and Alfred Hospital. This initiative is also a large multi-centre trial that is funded for \$2.1 million and will continue until 2014.

Aims and Deliverables

The objectives of this report are to:

- capture the legacy of VNI;
- highlight VNI activities;
- provide examples of the beneficial outcomes of VNI; and
- demonstrate the positive consequences that have resulted from VNI activities.

02

The Legacy

The Legacy

“There are many more neurotrauma researchers now than in 2005, they are more productive, they have larger research networks, they are attracting more funding and they are beginning to translate the outcomes of their research into real-world outcomes.”

- Dr Alex Collie, Chief Research Officer, ISCRR and former VNI Director

As a result of dedicated funding and support from the VNI, Victoria is now an international centre of excellence in neurotrauma research. The VNI has focused on three core goals and its legacy can be highlighted in these three areas:

Goal One: Internationally Competitive Research

The VNI has:

- Established **centres of research activity** focused around key groupings of clinical and academic excellence, including in SCI at the Austin Repatriation Medical Centre and the University of Melbourne; and in TBI at Monash University and Alfred Hospital.
- Supported high-quality international **clinical trials** that have addressed significant patient management issues. These trials have established Victoria as a key international centre for TBI and SCI clinical research trials.

- Funded **laboratory research** that has improved understanding of the injured brain and spinal cord and their recovery; and **imaging research** that has improved the understanding of the function of the injured brain, paving the way for new intervention studies and improved prognosis after injury.
- Produced **research products and supported platforms** that will facilitate future neurotrauma research, including a brain tissue bank, innovative animal models, clinical trial outcome metrics and research databases.
- Supported internationally unique **outcomes studies** that have charted the course of TBI over many years post injury and led to a detailed understanding of the outcomes and experience of TBI.

Goal Two: Capacity Development

The VNI has:

- Established and funded a series of **research fellowships** that have enabled a group of clinicians and young scientists to establish a career in brain and spinal cord injury research.
- Supported a range of other **people research support activities** that have provided young investigators with training in research methods and scientific communication with opportunities to present their work nationally and internationally.

- Provided an environment in which Victorians have established themselves as national and international **research leaders**, as evidenced by increases in research output, collaborative activity, growth in research income and appointments to key international organisations.
- Pro-actively established a series of **collaborative partnerships** with funding agencies that share the VNI's commitment to funding high quality, internationally competitive research, including the ONF and the NHMRC.

Goal Three: Translation of Research Findings

The VNI has:

- Supported a range of **translational research projects** and initiatives that have improved and will continue to improve understanding of ways to incorporate research findings into practice and policy.
- Established and supported a series of events aimed at **facilitating interaction** between researchers, clinicians and policy makers, including an annual trauma conference and regular forums held in conjunction with the TAC and the research community.
- Funded projects that have developed new approaches to **evidence synthesis** which have identified gaps in knowledge and provided information to ensure greater focus in future brain and spinal cord injury research.

In summary, the VNI has had a substantial impact both nationally and internationally. VNI's investment has fostered a cohesive world-leading statewide neurotrauma research community. Victoria is now well positioned to build on these achievements and to continue its excellent track record of spinal cord and traumatic brain injury research that will positively impact the lives of those affected by these debilitating injuries.



Dr Nicole Bye, Post-doctoral VNI Research Fellow

03 Background

Background

The VNI was established as a health research fund that supported research into TBI and SCI conducted by Victorian researchers in collaboration with national and international colleagues.

Brain and spinal cord injuries affect people from all walks of life and have significant health and economic impacts for the individuals affected, as well as the wider community. In recognition of the devastating impact of these injuries and the opportunity to focus Victoria's strengths in medical research and trauma practice on the problems of neurotrauma, the Victorian Government established the VNI in 2005 as a partnership between the Transport Accident Commission (TAC) and the Department of Innovation, Industry and Regional Development (DIIRD) (now the Department of Business and Innovation - DBI).

The Initiative received \$63 million from TAC and the Government, which established it as one of the world's largest funding programs dedicated to research into the consequences of neurotrauma. The Initiative sought to develop research-led improvements in the areas of treatment, management, outcomes and quality of life for people affected by neurotrauma. In 2006 the Initiative was incorporated as the Victorian Neurotrauma Initiative Pty. Ltd. and operated until 30 May 2011.

Defining Neurotrauma

The TAC has a specific interest in research associated with neurotrauma as this is a common outcome of road traffic accidents. On Victorian roads up to 334 new cases of moderate to severe TBI and up to 40 new cases of SCI occur consistently each year.² Tragically the average age of those suffering neurotrauma injuries in Victoria still tends to be at the younger end of the

age spectrum and often it is these young people who are most likely to suffer lifelong injuries. There are however, an increasing number of people who are experiencing neurotrauma later in life as the result of road traffic accidents.

Among victims of road traffic crashes, neurotrauma usually refers to blunt force applied to the brain or spinal cord. The injury to the nerve cells includes varying degrees of primary injury (injury that is unlikely to be repairable) and secondary injury (injury caused by swelling and pressure due to an excessive amount of fluid or bleeding, low oxygen, poor blood flow, and other toxic consequences).

TBI results in *concussion or coma*, in which the patient is unconscious. The temporary and permanent consequences are determined in part by the areas of the brain most injured. Recovery can take anything from a few minutes to many years.

SCI results in *incomplete or complete* loss of function of nerves below the level of the injury. Complete injuries are usually permanent. Incomplete injuries have prospects for recovery.

Both TBI and SCI can lead immediately to problems with muscle control, sensation, autonomic functions (such as bowel, bladder and blood pressure control), breathing and sleep/wakefulness. TBI may impair consciousness, cognitive function, sight, hearing, taste and smell. TBI and SCI are also associated with significant disability and often other issues such as pain, immobility, psychiatric, emotional and behavioural problems, drug and alcohol use and abuse, loss of work, and loss of family and social relationships.

Prognosis is often unclear at injury, particularly in TBI, and only becomes apparent with time. Importantly, however, the degree of long-term disability depends on early interventions in emergency, resuscitation, surgery and intensive care that minimise secondary injury and further nerve cell damage, and promote neuronal recovery. Optimal early management has been clearly shown to both save lives and reduce the disability of survivors, with enormous savings in lifetime medical, attendant care and societal costs.³

From early 2000 a number of key conditions coalesced to create the VNI. These included established neurotrauma researchers and research projects already underway in Victoria; the increasing recognition of Victoria as a state with a record of innovative and quality neuroscience research; substantial investments by the Victorian State Government into biomedical research and science infrastructure; the availability of a significant amount of funds - \$63 million; and strong community advocacy for research and new treatments to improve patient outcomes and care in neurotrauma. One of the key advocates was Gary Allsop. Gary's story is one of inspiration and courage.

^{2,3}Faul, M., M. Wald, et al. (2007). Using a cost-benefit analysis to estimate outcomes of a clinical treatment guideline: testing the Brain Trauma Foundation guidelines for the treatment of severe traumatic brain injury. *J Trauma*. 63: 1271-1278

Gary Allsop

In 1989 while playing Australian Rules football for his local club, Gary Allsop suffered a broken neck in an on-field incident leaving him with quadriplegia.

Following his accident, Gary became involved in many and varied community activities and was made an Honourary Director of Spinal Cure Australia. Gary made it his personal mandate to lobby for spinal cord research and after 10 years of campaigning, the Victorian State Government decided to commit significant funds to neurotrauma research. Gary's lobbying and persistence significantly contributed to the establishment of the Victorian Neurotrauma Initiative in 2005.

Despite the deep personal losses after his accident, Gary remains positive, actively involved in community and research initiatives and is living proof that one person can make a difference.



Mr Gary Allsop, & Professor Mary Galea, SCIPA VNI Program Grant Lead Chief Investigator

04 Establishing the Initiative

Establishing the Initiative

Community and Stakeholder Engagement

A priority for the VNI in determining its research strategy was engagement with individuals affected by neurotrauma, their carers and key stakeholders. These stakeholders included clinical and research opinion leaders, claims and clinical representatives from TAC, and research, health and policy representatives from Victorian Government Departments, Neurosciences Victoria (NSV) and the National Institute for Clinical Studies (NICS).

These multiple sources of information informed the research agenda for the VNI and led to the development of the VNI strategy and goals.

Victorian Neurotrauma Initiative Strategy

- Improve the outcomes for people affected by neurotrauma;
- Establish the Victorian research sector as a global leader in neurotrauma research and development; and
- Strengthen coordination and collaboration between neurotrauma researchers, clinicians, facilities and projects within Victoria, nationally and internationally.

Victorian Neurotrauma Initiative Goals:

- **Goal One:** Fund internationally competitive research;
- **Goal Two:** Facilitate enhanced capacity and capability within the Victorian neurotrauma research community; and
- **Goal Three:** Facilitate the translation of research findings within the Victorian healthcare system.

Governance

From 2005 the VNI was managed by a Committee of Management with representatives from TAC, NSV and DIIRD.

In November 2006 the VNI was incorporated as a company limited by guarantee and a Board of Directors appointed with responsibility for the financial and strategic oversight of the company. The day-to-day operations were delegated to a small executive management team.

Two key committees comprised experts from research, health and policy areas were established to support the VNI. These were:

- An Evaluation Committee that was responsible for the assessment of funding applications against set criteria for each funding round. National and international experts provided additional support and peer review.
- A Scientific Advisory Committee that provided high level strategic advice on research quality, priorities and relevance.

All of the VNI's activities were conducted with commitment to openness, impartiality and transparency.

VNI Directors, Evaluation Committee and Scientific Advisory Committee Members are at Appendix A.



Dr Alex Collie, former VNI Director, Professor Richard Smallwood, VNI Director & Mr Geoff Hilton VNI Director (chair) (left to right)

05 Summary of Research

Summary of Research

"The VNI has very effectively harnessed the world class expertise in Victoria and built bridges between researchers, clinicians, and people suffering from the neurotrauma of TBI or SCI, and government."

- Professor Russell Gruen, Director, National Trauma Research Institute

Funding Rounds

The VNI developed a comprehensive suite of funded projects and fellowships. Funding rounds evolved in response to the VNI strategy, emerging priorities and identified gaps. In total nine rounds were offered and resulted in 63 initiatives. An additional three projects received targeted funding bringing the total of initiatives funded to 66.

As of 31 December 2010, \$49 million has been committed to funding a wide range of research into neurotrauma initiatives:

- \$21.2 million was allocated to 41 research projects into TBI;
- \$21.3 million was allocated to 20 SCI projects; and
- \$6.5 million was allocated to five combined TBI/SCI research projects.

The forecast uncommitted funds at the wind up of the VNI are \$8 million. However, two research initiatives – one for TBI and one for SCI have recently been approved in principle and are subject to negotiations prior to contract execution. The residual uncommitted funds will transfer to the TAC for neurotrauma research.

Funding rounds were established as follows:

1. The first round was an open call for applications, designed to focus research on the problems of neurotrauma.
2. The second round invited applications for research into clinical and rehabilitation interventions.
3. In round three, capacity building support was offered to foster researcher capability in clinical and applied areas as well as skill development awards (SDA) for education and training.
4. Program grants were offered in round four which targeted collaborative, multidisciplinary, large-scale research focused on key issues and research opportunities in neurotrauma.
5. Round five invited applications for fellowships as well as additional SDAs for education and training.
6. In round six, grants were provided in partnership with the Ontario Neurotrauma Foundation to promote international collaboration.
- 7-9. In rounds seven to nine, the VNI utilised the NHMRC project grant funding process to award VNI research grants.



Professor Terry O'Brien, VNI Project Grant Chief Investigator

Table 1: VNI Fund Allocation.

This table represents the committed investment made into TBI, SCI and combined TBI and SCI research projects, programs and fellowships. The reconciliation of total VNI funds of \$63 million is also represented.

Injury Type	Total \$M
Traumatic Brain Injury (TBI)	21.2
Spinal Cord Injury (SCI)	21.3
Combined TBI and SCI	6.5
Sub-total	49.0
New projects (approved in principle subject to negotiations prior to contract execution)	5.0
Forecast uncommitted funds	3.0
Establishment/operating (up to 2015)	6.0
TOTAL FUNDS	63.0



Dr Cheryl Soo, Post-doctoral VNI Research Fellow, Professor Vicki Anderson, VNI Project Grant Chief Investigator & Ms Kathleen Bakker, VNI Training Fellow (left to right)

VNI funded research projects have addressed the broad spectrum of issues associated with neurotrauma including research into improved methods of managing the newly injured individual, the development of novel regenerative and neuroprotective therapies, new methods of rehabilitation and interventions to improve the quality of life and community integration for individuals affected by neurotrauma. This research can be broadly categorised under seven main themes and represents the research themes of the VNI funded projects, programs and fellowships.

Table 2: Main Themes of VNI Research

Research Theme	Research Theme Description
New therapies to minimise initial injury	Minimising damage shortly after the time of injury is a crucial step in the management of neurotrauma injuries, and may improve long term outcomes and reduce disability. Research is focused on the timely and optimal exposure to interventions and new therapies.
Treating the progressive damage after injury	Progressive damage is not limited to the site of the injury and can have a ripple effect in the days and months following which can leave a much larger area affected. Research is focused on reducing this secondary damage and reducing mortality and disability.
Improving quality of life	Neurotrauma impacts upon quality of life and can cause poor quality sleep, deficits in communication, loss of control of routine bodily functions, physical disability and cognitive impairment. Research is focused on developing and implementing new therapies to address these issues.
Improving integration	People affected by neurotrauma frequently have difficulty integrating back into the wider community. This can often create a sense of profound isolation. Research is focused on developing interventions for rehabilitation clinicians to assist people affected by neurotrauma to integrate into the community for example by returning to work, driving a vehicle, or by fostering independence.
Understanding mental health	The impact on the psychological well being of individuals affected by neurotrauma, their families and carers is significant and long-term and can include depression and anxiety, mood or panic disorders. Research focuses on the factors that contribute to recovery and positive outcomes for better treatment and care. Findings will assist health professionals and policy makers in targeting individuals at high risk of poor mental health outcomes at an earlier stage.
Measuring outcomes	Developing innovative types of measurement tools is essential to understand the long-term problems experienced by those affected by neurotrauma. Research focuses on developing innovative ways to measure the impact of neurotrauma on the person's quality of life.
Building better information and resources	Keeping up to date with the latest evidence and providing new research resources is important for the neurotrauma community in delivering optimal outcomes. Research focuses on providing valuable resources to researchers in national and international neurotrauma settings as well as investigating ways of building better information and incorporating neurotrauma research findings into clinical practice and policies.

Table 3: Funding by Research Theme

This table represents the VNI funding dedicated to each research category. \$49M has funded the research themes through projects, programs and fellowships.

Research Theme	Total \$M
New therapies to minimise initial injury	3.0
Treating the progressive damage after injury	15.2
Improving quality of life	17.6
Improving integration	0.7
Understanding mental health	3.2
Measuring outcomes	2.5
Building better information and resources	6.8
TOTAL	49.0*

*Some initiatives involve aspects that are relevant to more than one research category – where this is the case the initiative has been allocated to the more prominent category.



Professor Mary Galea, VNI Program Grant Lead Chief Investigator

Research collaborations

“There is no doubt that these levels of recognition and the extent of collaboration would not have developed without the VNI Program Grants in Spinal Cord Injury.”

- Associate Professor Douglas Brown, Director Victorian Spinal Cord Service, Austin Health

The VNI actively encouraged collaboration between researchers within Victoria, as well as nationally and internationally through the provision of project funding, networking forums, conferences and national and international sponsorships.

A large number of VNI funded projects across all research categories involved collaborations between research and clinical organisations. These projects brought the collective knowledge of experts from across the globe to focus on emerging issues in neurotrauma. For example, in funding round four the VNI allocated a total of \$19 million to four large, multidisciplinary research programs. These programs, due for completion in 2015, have brought together investigators from universities and hospitals in Victoria, across Australia, New Zealand, the United Kingdom and Canada.

Case Study

Collaborations between VNI Research Groups

In 2009 the VNI funded four program grants, three of which involve clinical trials to examine the effects of various therapies in SCI specifically:

- Autonomic Dysfunction in Spinal Cord Injury;
- Spinal Cord Injury and Physical Activity (SCIPA); and
- Sleep Health in Quadriplegia (SHiQ).

Early in the establishment of each program it became evident that each would require the participation of SCI patients often in the same hospital or rehabilitation setting. As a result, the **Spinal Research Consortium** was established to coordinate all patient participation activities. This collaboration has been a great success and has maximised patient participation and importantly minimised the burden of participation for patients in different research initiatives. This collaboration has also led to new opportunities including an increase in research capacity, people support and shared knowledge.

Other collaborations focused on people research support activities to promote networking and cooperation within Australia and internationally as well as across professional disciplines.

Victorian Neurotrauma Initiative / Ontario Neurotrauma Foundation Collaboration

“VNI funding has ensured that international collaborations will continue to develop and grow in the field for many years to come.”

- Professor Jamie Cooper, Director of ANZIC-RC and Deputy Director of Intensive Care, Alfred Hospital

In 2008, the VNI and the ONF established a partnership to develop a collaborative research agenda, build capacity and develop knowledge translation strategies.

During 2008 and 2009 research delegations from Victoria and Canada exchanged visits. These visits enabled delegates to connect with colleagues from their areas of research specialisation. This has resulted in exciting and ongoing collaborations supported by both organisations.

The inaugural VNI/ONF grants were established in 2009 to advance international neurotrauma research. Four joint initiatives were funded totaling \$1.1 million with three of these continuing to 2012:

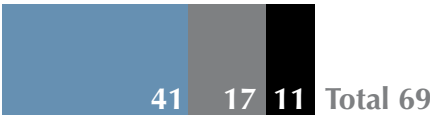
- Two initiatives focus on improving integration into the community and one initiative explores ways of treating the progressive damage after injury.

- The fourth initiative focused on knowledge translation through building better information and resources. A collaborative workshop was held in Denver, USA in October 2010. A key outcome was the identification of a tri-continental (Australia, Canada, and USA) knowledge translation/quality improvement project to optimise the monitoring and management of intracranial pressure. This project is currently at the planning stage.

Research Collaborations

Total Number of collaborations per year

2005



2008



2010



Victorian Interstate International

Figure 1 - This figure shows research collaborations by VNI researchers from 2005 to 2010 at a national and international level. Of note, there was a considerable increase in international collaborations, due largely to the availability and allocation of VNI funding.

Research Capacity

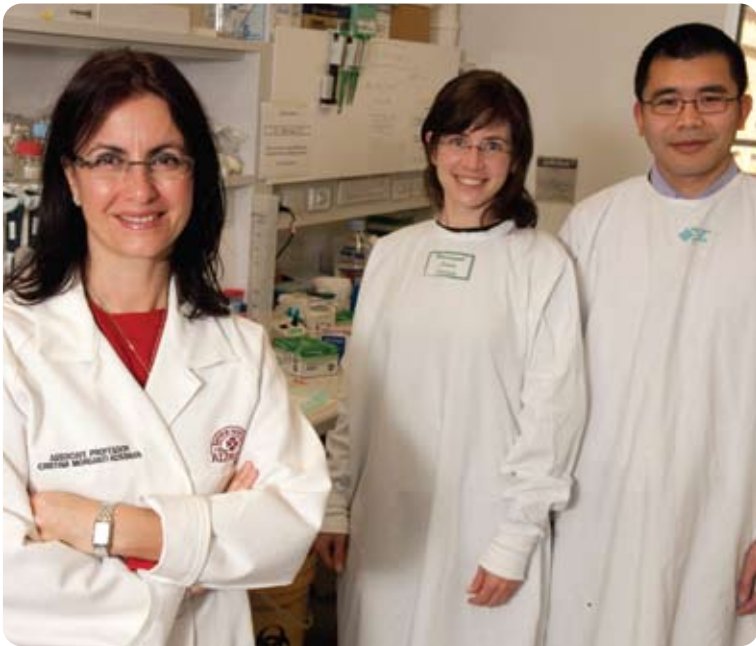
“The ability to dedicate time to research as a result of the Fellowship has been invaluable, and has provided an opportunity to begin to develop research skills and expertise, and to demonstrate this through publications and presentation.”

- Ms Jane Galvin, VNI Training Fellow, Murdoch Children’s Research Institute

The VNI has built capacity and capability through funding a range of research initiatives which have brought together neuroscience, medical, allied health and trauma professionals focused on researching identified gaps, needs and priorities.

The findings from a 2008 survey of Victorian neurotrauma researchers were published in the Medical Journal of Australia⁴ and showed a substantial increase in workforce capacity and collaborative activity during the VNI’s first three years. The article noted changes in commercial activity and research translation as well as increased activity and output from the Victorian neurotrauma research sector. Evidence showed that these were directly attributable to the availability and allocation of VNI funding.

In April 2010, the VNI conducted a follow-up survey⁵. The survey responses confirmed that the increase in research activity and capacity had been maintained. Evidence showed an increase in staff involved in neurotrauma research; number of presentations and published journal articles; and collaborations with international organisations.



Associate Professor Cristina Morganti-Kossmann, VNI Senior Research Fellow and VNI Project Grant Chief Investigator, Dr Nicole Bye, Post-doctoral VNI Research Fellow & Dr Edwin Yan, Post-doctoral VNI Research Fellow (left to right)

⁴Collie, A. Gains in neurotrauma research activity and output associated with a Victorian state government funding program. Med J Aust. 2010; 192: 712

⁵The Victorian Neurotrauma Initiative 2010 VNI Monitoring and Evaluation Survey, Projects and Programs, Fellowships (in house document)

Impact of VNI Funding on Workforce Capacity in Victorian Neurotrauma Research

Total Number of staff per year

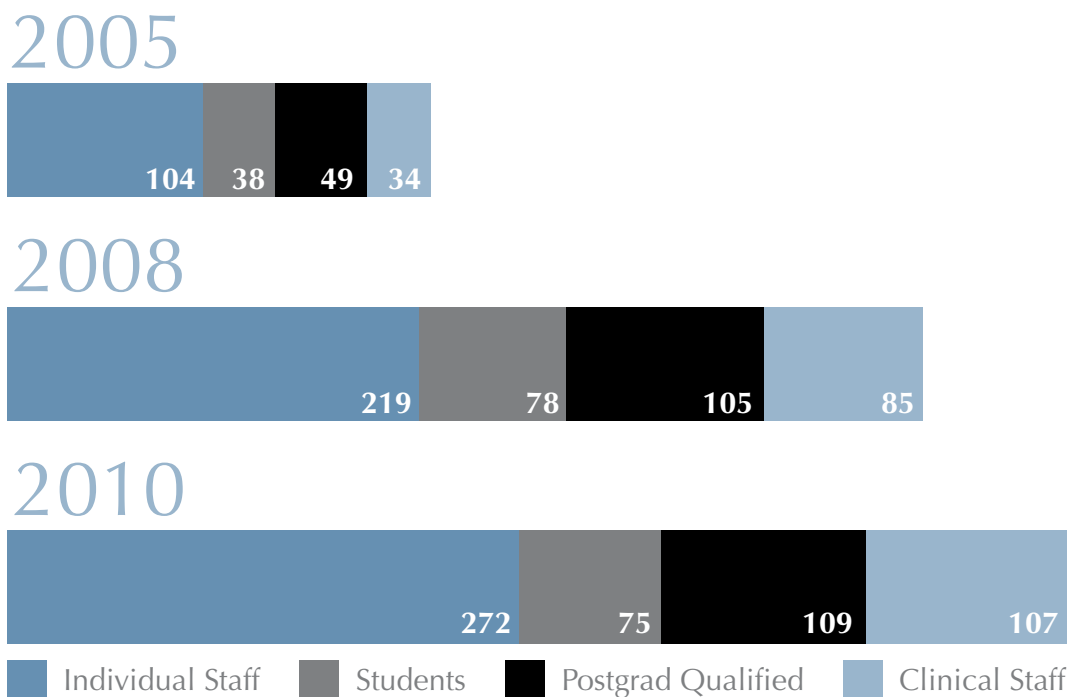


Figure 2 - This figure demonstrates an increase in workforce capacity from 2005 to 2010 for VNI research teams. An increase in staff can be seen across the board for individual staff, students and clinical staff.

Research Fellowships

Fellowship awards were an important part of VNI's strategy to build capacity and capability within the local research sector. In total 14 Fellowships were awarded across five categories:

1. Training fellowships:

Three fellowships were awarded to new researchers in the field of neurotrauma who were typically clinicians or public health practitioners.

2. Early career practitioner fellowships:

Four fellowships were awarded to active clinicians and public health practitioners, who had some research experience.

3. Early career research fellowships:

Five fellowships were awarded to support basic neurobiological and clinical researchers in the early stages of their career and to provide an opportunity to establish a track record in neurotrauma.

4. Senior research fellowship:

One fellowship was awarded to a senior neurobiological and clinical researcher within the neurotrauma field.

5. Career development award:

One fellowship was awarded to assist the recipient in their research career in neurotrauma and this will be administered through the NHMRC.

Two prominent fellows are:

Dr David Berlowitz

Early Career Practitioner Fellowship



Dr David Berlowitz, VNI Early Career Practitioner Fellow and Program Grant Lead Chief Investigator

David is a research physiotherapist at the Institute for Breathing and Sleep (IBAS) and the Victorian Respiratory Support Service (VRSS) at Austin Health. He has worked as a cardio respiratory physiotherapist in many of Melbourne's leading hospitals and is now involved in clinical research.

David is currently the Chief Lead Investigator for the *Sleep Health in Quadriplegia* research program. David has previously lead VNI and TAC funded projects that have investigated *Sleep Disordered Breathing After Tetraplegia*⁶ and a *Population Survey and Home Monitoring Sleep* program that focused on health in tetraplegia.

Amongst David's many achievements are:

- Founding physiotherapist of the VRSS; and
- First Coordinator of the Northern Clinical Research Centre at the Northern Hospital.

David was recently presented with an international award - the **Rick Hansen Difference Maker Award (2011)** which recognises his extraordinary contributions in advancing research discoveries related to SCI.

Information on Fellowship Recipients can be found at Appendix B.

Dr Jerome Maller

Early Career Research Fellowship



Dr Jerome Maller, VNI Early Career Research Fellow

Jerome is a neuroscientist in the Brain Stimulation and Neuroimaging Laboratory at The Alfred Psychiatry Research Centre and has co-supervised a number of students during his Fellowship.

His now completed fellowship project aimed to improve the current understanding of the factors underlying post-TBI depression and enhance the development of new treatments. Through this research, Jerome has shown that the underlying brain activity for people who have developed depression following a brain injury is different to those who have developed depression without an injury. These significant findings will enable customised treatments for depression in people with TBI.

Jerome was awarded a prestigious **NHMRC Industry Career Development (Fellowship) Award (2010)**. This will enable him to continue his research in TBI by utilising various imaging techniques to investigate markers of diffuse axonal injury (a major index of brain damage severity).

⁶Tetraplegia is paralysis of the arms, legs, and trunk of the body below the level of an associated injury to the spinal cord. This disorder is usually caused by spinal cord injury, especially in the area of the fifth to the seventh vertebrae. Also called quadriplegia.

Summary of Research

Education, Training and Skills Building

- In addition to formal funding rounds and fellowships, the VNI offered opportunities through funding and support for VNI researchers to participate in conferences, mentoring, networking, education and training.
- In 2009, the conference support was expanded to include individuals with neurotrauma, their carers, and neurotrauma advocacy organisations. A key success of this initiative was evidenced in the enhanced communication between researchers and those directly impacted by neurotrauma leading to specific client related research initiatives.
- Skill Development Awards were offered to build capacity and skills among neurotrauma professionals. Twenty awards were provided.
- Sponsorships to VNI funded researchers and TAC clinicians were also offered to develop ancillary research skills for example in media training and science writing. 108 sponsorships were provided.

- The VNI seminar series was an important avenue to facilitate education, information and networking opportunities amongst researchers, people with neurotrauma, carers, clinicians and TAC staff.



Professor John Furness, VNI Program Grant Lead Chief Investigator



Professor Albert Frauman, VNI Program Grant, Dr Chris O'Callaghan, VNI Program Grant Chief Investigator & Professor Douglas Brown VNI Program Grant Chief Investigator (left to right)

06

Achieving Results - 'Outputs and Outcomes'

Achieving Results - 'Outputs and Outcomes'

"The legacy of VNI will become clear in the next 10 years as the research is translated into practice."

- Dr David Berlowitz, Research Leader, Institute for Breathing and Sleep

Completed research

As at 31 December 2010, 13 VNI funded research projects were completed. These projects included research that investigated new therapies to minimise injury; research into treatments of progressive damage that occurs after injury; research that identified improvements in the quality of life; and research into understanding mental health after neurotrauma.

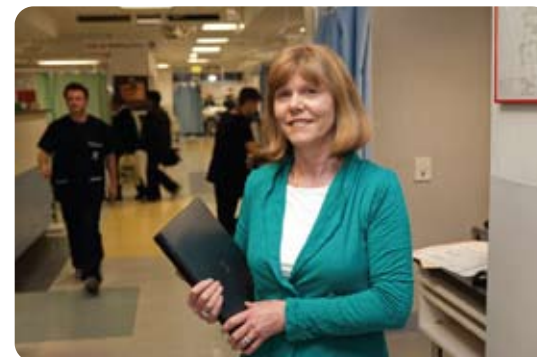
All completed research has contributed to the body of knowledge in the neurotrauma field. These projects have the potential to impact on clinical practice, health status and patient and practitioner behaviors. These outcomes may only become apparent in the medium or long term.

In 2008, the VNI commissioned the development of a **Monitoring and Evaluation Framework**. This confirmed that the usual timeframe for return on investment for funded research in terms of tangible impacts on population health, health system costs and/or industry ranged from three to over seven years.

Research Resources

The VNI has recognised the importance of developing resources and tools to assist current research that will be used to inform future research. The VNI investment in this area produced a number of innovative resources for neurotrauma. Examples include:

- Support of a Neurotrauma Tissue/Fluid Bank (NTB) within the National Neural Tissue Resource Centre accessible to researchers in Victoria, nationally and internationally;
- Large databases from projects with multi-site trials for data collection that are providing significant long-term information for example the *Longitudinal Head Injury Outcomes Study*. This database follows a large cohort of individuals who have sustained moderate to severe TBI over a 20-year period;
- A variety of animal models to investigate the biological response and potential treatment options in both TBI and SCI, such as the *Computer Controlled Cortical Impactor Model of TBI* and a *Multi-Purpose Contusion Impactor* for SCI;



Professor Jennie Ponsford, VNI Targeted Initiative Chief Investigator

- 'Global Evidence Mapping (GEM) Initiative in TBI and SCI' that investigates the evidence behind particular treatment practices and identifies gaps in knowledge to build better information and resources for neurotrauma research;
- Applied research that has produced tools such as the *Quality of Life after Brain Injury* (QOLIBRI) to assess quality of life after TBI; and the *High-Level Mobility Assessment Tool* (HiMAT) with the potential for the evaluation of mobility limitations in school-aged children following TBI;
- Better understanding of cellular and chemical responses to TBI and SCI, thereby building the knowledge foundation for technology in the repair of the injured spinal cord;
- The development of a "singing" training program for SCI patients to facilitate improvements in respiratory and vocal function; and
- Evaluation of new surgical therapies such as Decompressive Craniectomy (DECRA) to improve clinical outcomes for TBI.

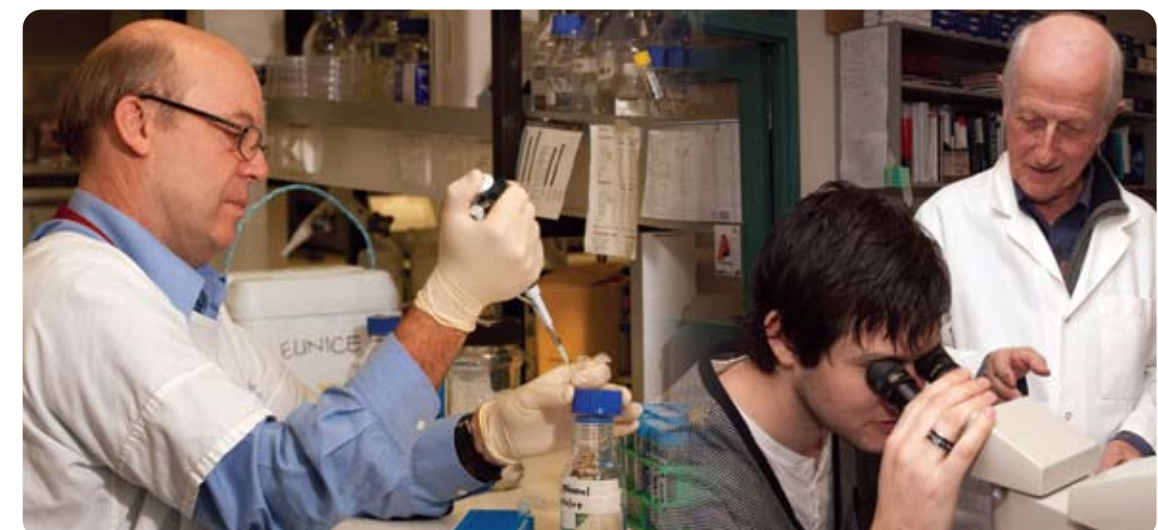
Research Publications and Presentations

An indicator of the quality of VNI funded research is the number of articles published in national and internationally respected journals relating to neurotrauma research.

Thirty-four national and international peer reviewed journals such as the *New England Journal of Medicine*; the *American Journal of Physical Medicine & Rehabilitation*; the *International Journal of Therapy and Rehabilitation*; the *Journal of Neural Transmission*; and the *Journal of Neurotrauma* have published articles on research funded by VNI.

A VNI survey showed a 200% increase in the number of research publications in 2010 when compared to 2005. Furthermore the survey revealed that the number of presentations given nationally and internationally increased by 107% from 2005 to 2010. This is a clear indication that the Victorian neurotrauma research community is well regarded and having an impact at a national and international level.

A list of publications through VNI research is at Appendix C.



Associate Professor Robert Medcalf, Project Grant Chief Investigator & Professor Norman Saunders, VNI Project and Program Grant Chief Investigator

Impact of VNI funding on research publications and presentations

Total Number of publications/presentations per year

2005



2008



2010



Journal Articles in past 12 months
Book Chapters
Presentations in past 12 months
Invited Presentations

Figure 3 - This figure shows the impact of VNI funding on the academic output of research from 2005 to 2010. Of note, there was a considerable increase in peer-reviewed publications and presentations of VNI research

Knowledge translation

"The VNI has been at the forefront of understanding the importance of supporting knowledge translation research, helping to realise for patients and the community, the benefits the research has to offer"

- Dr. Peter Bragge, Program Manager and Senior Research Fellow, The NET Program, Monash University

There is an increasing body of research focused on translating research findings into policy and practice which can positively impact patient care.

Facilitating the translation of research findings into clinical practice requires funding projects that have the potential for translation. It also requires engagement and communication with stakeholders and links with health policy makers.

The VNI has funded a variety of projects including the **Knowledge Transfer and Exchange** (NET) program that is focused on maximising the impact of TBI research into clinical settings. The program facilitates researchers continuing to publish findings that can be used to improve health care and clearly communicate results to health professionals and health services to incorporate into clinical practice and policy.

Another key example is the VNI funded targeted initiative: **Global Evidence Mapping (GEM) Initiative in TBI and SCI**. GEM investigates the evidence behind particular treatment practices and identifies gaps in knowledge to build better information and resources for neurotrauma practice and research.

It aims to answer questions such as: *What works in the early management of severe head injury? Is it better for paramedics to use a breathing tube or a mask over the patient's face to assist them with breathing?* This initiative funded to 2012 recognises that keeping up to date with the latest information in the treatment of neurotrauma is vital for optimising health care delivery and further research. This work is generating interest internationally and is seen to be at the forefront of its field.

Other projects funded by the VNI are also contributing to the body of neurotrauma research and knowledge translation. Of note:

- **DECRA** and **SAFE TBI** clinical trials are directly informing clinical practice on the optimum initial responses after sustaining a TBI.
- **Autonomic Dysfunction in SCI** is developing clinical and pre-clinical therapies to deal with complications related to the control of internal functions such as bowel, bladder and blood pressure.

The VNI has played a significant role in disseminating information by supporting conferences and establishing VNI research seminar series. The VNI along with the National Trauma Research Institute initiated the *Trauma Melbourne* conferences that have been held annually since 2008 and showcase the latest cutting edge research and clinical advances in the field of trauma in Australia. VNI research seminar series, which has been held quarterly, also showcases VNI funded research and has facilitated networking and resulted in significant research collaborations.

07

Long Term Benefits - 'Making a Difference'

Long Term Benefits - 'Making a Difference'

*"Whilst we acknowledge that we can't put a figure on the human costs of brain and spinal injury, it is important to understand the financial burden to the individual and the wider community."*⁷

- Dr Alex Collie, Chief Research Officer, ISCRR and former VNI Company Director

Despite rapidly increasing knowledge of the biological, physical, emotional and social impact of brain and spinal cord injury, the understanding of the economic impact of neurotrauma has been limited. **Access Economics 2009** identified that the lifetime cost of new cases of brain and spinal cord injury occurring in Australia in 2008 was \$10.5 billion - \$8.5 billion for severe TBI and \$2 billion for SCI. In Victoria the cost of neurotrauma was \$2.12 billion⁸. The largest cost was attributed to burden of disease, however direct costs such as provision of attendant care and healthcare services were also significant.

The following case study, as described in the *Access Economics Report* demonstrates the impact that neurotrauma research can deliver in terms of health benefits and economic returns for affected individuals.

⁷Collie, A. Gains in neurotrauma research activity and output associated with a Victorian state government funding program. *Med J Aust* 2010; 192: 712-714.

⁸Access Economics (2009). The economic cost of spinal cord injury and traumatic brain injury in Australia. Report by Access Economics Pty Limited for The Victorian Neurotrauma Initiative: 115 pages.

⁹Estimates the burden of disease, measured in terms of disability adjusted life years (DALYs), disaggregated by the mortality component (years of life lost due to premature death - YLL) and the morbidity component (years of life lost due to disability - YLD), converted into a reasonable monetary equivalent.

Economic impact

Case Study One

Sleep Health in Tetraplegia (Quadriplegia)

Good sleep is an essential element of a good life. Humans are asleep for almost one third of their lives, yet sleep in quadriplegia has received very little attention in research circles outside of Victoria. Most patients with quadriplegia have poor sleep quality which impacts on their daily functioning, quality of life and recovery from injury. The research investigated how the sleep of people with quadriplegia can be assessed, managed and improved.

The program worked with consumers, scientists and clinicians to ensure that research knowledge was translated into improved care. Immediately after injury (acute) and in chronic quadriplegia, the research program investigated the utility of pharmaceutical and physical treatments.

In quadriplegia, the use of continuous positive airway pressure to treat sleep disorders such as sleep apnoea will also reduce the burden of disease for a cost well within benchmarks of acceptability. **Access Economics** estimated 287 disability adjusted life years (DALYs)⁹ could be avoided if continuous positive airway pressure was used for treatment of sleep disorders in quadriplegia resulting in a cost saving per DALYs of \$17,387. The avoided cost of sleep disorders and mortality in Australia for people with quadriplegia was estimated to be \$5 million.

Health Impact

TBI and SCI most commonly occur in people involved in road traffic accidents. While advances in treatment have led to a reduction in mortality, there are an increasing number of people affected by neurotrauma living with the consequences of these injuries for decades following injury.¹⁰

The potential outcomes of neurotrauma research for an individual's health are numerous and include quantifiable measures such as: reduction in mortality and morbidity, reduction in neuronal cell death, development of new pharmacotherapies, development of new treatments and products as a result of research, improved quality of life through enhanced rehabilitation techniques, greater independence through technological developments, and even the potential for the regeneration of the spinal cord.



Professor Jamie Cooper, VNI Project Grant and Targeted Initiative Chief Investigator & Associate Professor Alistair Nichol, VNI Early Career Practitioner Fellow

¹⁰Collie, A. Gains in neurotrauma research activity and output associated with a Victorian state government funding program. *Med J Aust* 2010; 192: 712

Case Study Two

Fluid resuscitation for patients with traumatic brain injury - potential mechanisms behind the detrimental effect of albumin resuscitation (SAFE TBI II)

This research was a follow up study into the use of albumin-based fluid and saline fluid for resuscitation in TBI patients. All patients with TBI are treated with intravenous fluids that help maintain an adequate blood pressure so that vital organs such as the brain are perfused. The first SAFE study was the largest randomised controlled trial ever to be conducted within Intensive Care Units. The study suggested that, at the 28 day mark, patients that were receiving an albumin-based fluid for resuscitation were more likely to die from their injuries, than those who received saline fluid resuscitation. This second SAFE study was conducted to search for reasons behind the difference in mortality between albumin and saline resuscitation in patients with TBI. The results of this study are predicted to have significant developments in clinical practice.

Access Economics estimated that routine use of saline to resuscitate individuals with TBI, as opposed to albumin, was cost effective and would significantly reduce mortality associated with TBI in Australia. Specifically, 64,333 DALYs could be avoided if saline were used instead of albumin in intensive care units across the country. The avoided cost of mortality in Australia was estimated to be \$1,325 million. The research also found that saline treatment was significantly less expensive than albumin.

Leverage from VNI funded projects and fellowships

'Several (researchers) have gone on from VNI funding to achieve NHMRC funding – Cheryl Soo, Louise Crossley....our group was successful with two NHMRC TBI related project grants this year, both of which had initial VNI support.'

- Professor Vicki Anderson, Director, Psychology, Royal Children's Hospital

VNI funding has made a significant contribution to the ability to leverage funds from other sources by the Victorian neurotrauma researchers. VNI itself secured key partnerships with other health and medical research funding organisations, such as the ONF, to gain maximum leverage from VNI funding. Research teams formed partnerships supported by research grants from various national and international sources.

A critical indicator of the VNI's success was the extent to which VNI funded research teams and investigators attracted funding from sources other than the VNI. In the first four years following the establishment of the VNI the average research income per team had risen almost four times from \$205,000 to \$755,000. Similarly, the funded fellows' income increased from \$424,000 to \$658,000 over the course of their fellowships. This increase is a direct result of investigators leveraging the VNI funds to secure competitive national and international grants as well as various other forms of support.

The substantial gain for the Victorian neurotrauma sector is a good indicator of the importance of the initial investment made by the VNI. Examples of leverage obtained by VNI funded researchers include:

- NHMRC project grants that build on the results of VNI funded projects;
- NHMRC fellowships that build on the capacity and capability investment made by VNI into early career fellowships;
- Equipment grants provided to purchase laboratory and clinical equipment to assist researchers in their projects; and
- Travel grants to assist researchers in disseminating VNI funded results and to provide valuable networking opportunities.



Professor Russell Gruen, VNI Targeted Initiative and Program Grant Lead Chief Investigator

08

Future Outlook

Future Outlook

"Before the VNI, neurotrauma was a restricted field of research. VNI funding encouraged researchers not previously focusing on neurotrauma to undertake research – now there is a larger community focusing on neurotrauma."

- Associate Professor Cristina Morganti-Kossmann, Head of Basic Research, National Trauma Research Institute

The VNI has had a substantial impact on neurotrauma research in Victoria and beyond in the period from 2005 to 2011. Victoria is now well positioned to build on these achievements and positively impact the lives of those affected by brain and spinal cord injuries.

Several VNI funded projects will continue to 2015 with the management of these beyond May 2011, to seamlessly transition to the TAC.

The TAC Board has acknowledged the legacy of VNI in establishing a reputation and capacity for significant neurotrauma research within Victoria, nationally and internationally, and has committed to building on the significant contributions made by VNI. To this end, the TAC will provide \$20 million for future neurotrauma research over the next five years from 2011.

The TAC intends to align its future neurotrauma research agenda with its key objectives of improving client outcomes, client experiences and scheme viability. A recent environmental scan commissioned by TAC will assist in setting TAC's neurotrauma research

agenda for the coming five years. This identified significant areas for attention, potential gains in the next five to ten years, strengths of the Victorian research community, and key opportunities and challenges emerging in research relating to neurotrauma. Victorian, Australian and international representatives from the neurotrauma community¹¹ were key participants in the environmental scan.

VNI is confident that the new TAC funding for neurotrauma research will continue to advance improvements in the health and quality of life of individuals living with brain and spinal cord injuries.

The future for research into neurotrauma is a lot brighter today than before 2005. Many of the VNI projects will continue to deliver important new findings. The establishment of an extensive platform of research knowledge and resources has been made possible through the work of VNI which will support advances in neurotrauma research well into the future. The TAC is in a unique position to continue to build upon the reputation of Victoria as a place of research excellence in neurotrauma research.



Program Grant Announcement

¹¹The neurotrauma community includes people living with TBI or SCI, their family or carers, researchers, clinicians and providers of services, managers and academics as well as government, private sector and not-for-profit organisations committed to neurotrauma research, service delivery or policy.

09

Conclusion

Conclusion

"In Victoria we are now uniquely positioned to meet these challenges by creating new knowledge, and developing and evaluating innovative treatments which will yield dramatic benefits in functional and rehabilitation outcomes."

- Professor Mary Galea, Director Rehabilitation Sciences Research, University of Melbourne

In 2005 the Victorian Government and the TAC had the vision to invest in the future of Victorians through dedicated funding for neurotrauma research and to build upon Victoria's internationally significant neuroscience research sector. This commitment was focused on investing in innovation to deliver better health, developing a skilled neurotrauma research workforce, promoting greater collaboration, and forging global connections in key strategic priority areas. The VNI was charged with managing this investment.

The VNI has provided funding to promote internationally competitive neurotrauma research that will enable continuing relationships with national and international partners. This has led to innovative research and the recognition of Victoria and Australia as a centre of excellence in the field of neurotrauma.

The VNI has built capacity and capability by creating opportunities where gaps existed and has promoted collaboration, mentorship and information sharing. This has enhanced and created a highly skilled Victorian neurotrauma research sector and led to growth in research output and an increase in shared knowledge and resources.

The VNI has funded projects that have the potential for translation and has fostered communication with stakeholders and developed links with health policy agencies. This has maximised the impact of research into the clinical setting through research-led improvements for the treatment, management and improved quality of life for people affected by neurotrauma. Improving quality of life means reducing the physical, social and economic costs for the individual, their family, the healthcare sector and the community.

A number of VNI funded research projects have already delivered substantial health and economic benefits. However, the majority of research outcomes and potential benefits will become evident in future years. Of note, are the four VNI programs with a combined total funding of \$19 million that will continue to 2015. These show promising early signs for translation into clinical settings and continuing the reputation of Victoria as a leader in neurotrauma research.

The significant legacy of the VNI has been made possible only with the support of numerous organisations and individuals and the substantial funding provided by the TAC and the Victorian Government. The research community has provided intellectual resources and hard work in the conduct of their VNI funded research. VNI staff, board, committees and external experts have committed significant time and effort in delivering on the VNI's many achievements.

In summary a significant legacy has been realised through the VNI as evidenced by increases in research output, collaborative activity, growth in research income and appointment of Victorian researchers to key positions in international and prestigious organisations.

Appendix A

VNI Company Directors, Evaluation Committee and Scientific Advisory Committee

VNI Board of Directors

The VNI Board of Directors was responsible for the financial and strategic oversight of the VNI. The Board reviewed and provided final approval of all recommendations for funding from the VNI Evaluation Committee. It also reviewed all recommendations from the VNI Scientific Advisory Committee.

Directors:

Mr Geoff Hilton (Chair)
Director, Transport Accident Commission

Mr Bill Burdett
Director and Chair, Neurosciences Victoria Ltd

Dr Peter Harcourt
Consultant, TAC/VWA Clinical Panel

Professor Richard Smallwood
Emeritus Professor of Medicine, University of Melbourne

DIIRD Representative:

Mr Simon Rabl
Project Manager, Biomedical Research and Technology, DBI

Company Secretary:

Mr Jim Murray
Senior Manager, Corporate Legal Services, TAC

Past Directors:

Dr Alex Collie
Chief Research Officer, ISCRR

Dr Amanda Caples (DIIRD Nominee)
Director of Science and Technology Programs, DBI

Ms Faye Burton (DIIRD Nominee)
Executive Director, Office of Science and Technology

Past Company Secretaries:

Ms Angela Leahy
Senior Solicitor, Corporate Legal Services, TAC

Mr Peter Farley
Former Senior Manager, Corporate Legal Services, TAC

Ms Michelle BurrIDGE
Former Senior Manager, Corporate Legal Services, TAC

Evaluation Committee

The Evaluation Committee formulated recommendations for funding to the VNI Board of Directors. Those recommendations were based on review of both the submitted applications and evaluations from an expert panel review. The Committee provided a broad level of scientific review and evaluation.

Committee Members:

Mr Alan Blackwood (Chair)
Manager, Policy and Community Partnerships, Multiple Sclerosis Society

Professor Robert Burton
Professor of Public Health, Monash University

Professor Andrew Lawrence
Associate Director, Florey Neurosciences Institute

Professor Rod McClure
Director, Monash University Accident Research Centre

Professor Sandra Rees
Professor, Anatomy & Cell Biology, University of Melbourne

Ms Karen Sait
Executive Officer/ Manager, VNI

Past Committee Members:

Ms Melinda Rockell (Chair)
Manager, TAC/VWA Clinical Panel

Dr Alex Collie (Chair)
Chief Research Officer, ISCRR

Scientific Advisory Committee (convened to June 2010)

The Scientific Advisory Committee (SAC) provided scientific advice to assist the VNI to develop its strategic research plan and funding plan as well as promote a broad spectrum of research in neurotrauma.

Committee Members:

Professor Richard Smallwood (Chair)
Emeritus Professor of Medicine, University of Melbourne

Professor Perry Bartlett
Director, Queensland Brain Institute

Professor Ian Cameron
Professor of Rehabilitation Medicine, University of Sydney

Professor Mary Galea
Director, Rehabilitation Sciences Research, University of Melbourne

Professor Trevor Kilpatrick
Head of MS Group, Florey Neurosciences Institute

Professor Elspeth McLachlan
Professor, Autonomic Physiology Unit, Division of Integrated Biology, University of Glasgow

Professor James Middleton
Director, NSW Statewide Spinal Cord Injury Service, Royal Rehabilitation Centre

Professor Jennie Ponsford
Director, Monash-Epworth Rehabilitation Research Centre

Appendix B

Fellowship Recipients

Recipient	Fellowship Type	Organization
Ms Kathleen Bakker	Training Fellowship	Murdoch Children's Research Institute
Dr David Berlowitz	Early Career Practitioner Fellowship	Institute for Breathing & Sleep
Ms Susan Berney	Training Fellowship	Austin Health
Dr Nicole Bye	Early Career Research Fellowship	National Trauma Research Institute
Ms Jane Galvin	Training Fellowship	Murdoch Children's Research Institute
Dr Yona Goldshmit	Early Career Research Fellowship	Monash University
Dr Jerome Maller	Early Career Research Fellowship	The Alfred Psychiatry Research Centre, Monash University
Dr Steven Miller	Early Career Practitioner Fellowship	Caulfield Pain Management & Research Centre
Assoc. Prof. Cristina Morganti-Kossmann	Senior Research Fellowship	National Trauma Research Institute
Dr Alistair Nichol	Early Career Practitioner Fellowship	Australian and New Zealand Intensive Care Research Centre (ANZIC-RC)
Dr Alice Pebay	Career Development Award	Monash University
Dr Cheryl Soo	Early Career Research Fellowship	Murdoch Children's Research Institute
Dr Gavin Williams	Early Career Practitioner Fellowship	Epworth Hospital
Dr Edwin Yan	Early Career Research Fellowship	National Trauma Research Institute

Appendix C

VNI Funded Research Publications

Disclaimer: All publication information presented was correct at the time of printing. The VNI acknowledges that there may be articles not featured due to the process of manuscript approval and publishing.

BARBETTI JK, **NICHOL AD**, CHOATE KR, BAILEY MJ, LEE GA, COOPER DJ. Prospective observational study of complications with Percutaneous Dilatational Tracheostomy and Surgical Tracheostomy in 1163 Critically Ill Patients. A Critical Care Resuscitation. 2009;11(4):244-249.

BARKER A, KAMAR J, MORTON A, **BERLOWITZ D**. Bridging the Gap between Research and Practice: Review of a Targeted Hospital Inpatient Falls Prevention Program. Quality and Safety in Healthcare. 2009;18:467-472.

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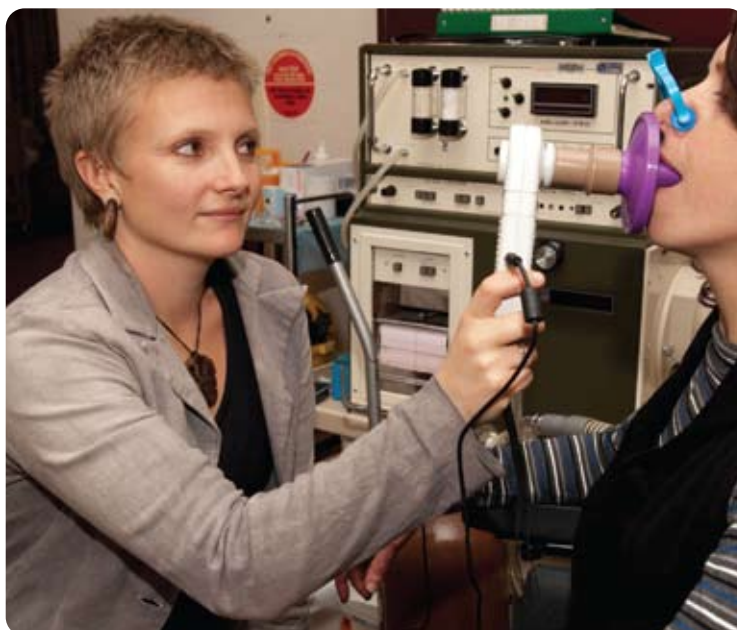
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