Annual Report

2002

NSW
Injury Risk Management
Research Centre
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1. Director’s Report

The NSW Injury Risk Management Research Centre has continued to develop in scope of work and size over 2002. This year the research of the Centre covered areas such as motor vehicle injury, child safety, water safety, work-related injury and the economic impact of injury in over twenty research projects. This included over $180,000 for research projects in addition to the core funding. This work has generated publications in peer-reviewed scientific journals and government reports as well as many conference presentations. The work has also attracted considerable media interest.

A major objective of the Centre is to provide information on injury in NSW, which can be used to direct injury prevention activities. For some time we have been developing a repository of population data relating to injury in NSW. One of our highlights this year has been publication of a new extended Profile of Injury in NSW covering the period 1995 to 1999. This publication and a series of associated Fact Sheets has been circulated widely and can be obtained on the Centre’s website (wwwIRMRC.unsw.edu.au).

This year saw continuation of the Centre’s work on estimating the economic costs of injury. While the work on the Lifetime Cost of Injury in NSW report continues, the Centre conducted a two-day Symposium and Workshop on the cost of injury which was held in conjunction with the Australian Injury Prevention Network in April. The Symposium attracted around 40 attendees from all over Australia.

This year we have also had success in obtaining ethical approval to link population-based road safety data with population-based injury data. This project represents a major step forward in NSW as privacy concerns has meant that in the past, it has not been possible to link administrative datasets on injury in this state. This project will link hospital separation data from the Inpatient Statistical Collection (ISC) with data on road crashes from the Traffic Accident Database system (TADS). Through this linkage it will be possible to track the injury outcomes of road safety incidents which will be invaluable for helping us to understand better the causes of road traffic injury and to develop better crash countermeasures. This project involved working with the NSW Privacy Commission to develop a Privacy Policy for the Centre, which included addressing the privacy issues that are associated with any attempts to link administrative population databases.

Another exciting advance for the Centre has been the development of two courses which will be conducted in 2003. The courses are Introduction to Injury Risk Management which will run in first semester and Current Issues in Injury Prevention which will run in the second semester. Each of the courses will bring together lecturers from the Faculties of Science and Medicine and they will be available to students from these Faculties and to non-award and continuing education students from outside the University.

As September 2002 marked the end of the three year funding period set up under the Agreement establishing the Centre, this was a year of review for the Centre. A formal external review was conducted in May, under the Chairmanship of Professor
John Langley from the University of Otago, New Zealand. The results of the review suggested a range of changes including improvements to governance structures and the recruitment of a Professor of Injury Risk Management. The Centre’s funding partners responded to the review with an offer of funding for the Centre for a further five years and suggestions for a number of improvements to planning, performance measures and administrative structures. The end of this year saw the development of a new Agreement between the Centre and the Funding partners. This Agreement will set the scene for a very health and productive future for the Centre.

Dr Ann Williamson
Director NSW Injury Risk Management Centre
2. **Background and Objectives of the Centre**

The NSW Injury Risk Management Research Centre was established in 1999 to research the causes, consequences and solutions for all types of injuries occurring in NSW.

The NSW IRMRC is an independent research centre based at UNSW which provides leadership in developing innovative approaches to management of injury risk in NSW. The Centre is sponsored by:

- NSW Health
- Motor Accidents Authority
- Roads and Traffic Authority

With the Centre’s links to the faculties in the University, we are able to draw readily upon expertise in the fields of Medicine, Engineering and Science.

The initial three year sponsorship has been renewed for a further five year period with the intention that the Centre become self-funding by the year 2007.

The role of the Centre is twofold.

- To undertake quality research into injury risk management, taking an broad based "all injury" risk approach.
- To coordinate multidisciplinary expertise, providing solutions to injury risk management problems identified by our own research, by the sponsoring agencies or by other external agencies.

**Business Objectives**

- Enhance and further extend the research programme
- Develop the evidence base for improved responses to injury risk
- Continue to ensure quality control of Centre’s products including both research and consultancy
- Establish a university wide network of researchers to enhance research outcomes
- Establish links with other injury risk management researchers and injury research centres nationally and internationally
- Foster involvement of government and industry in the IRMRC
- Disseminate results of its research through publication in a variety of forms with an emphasis on refereed journal
- Advocate for improved responses to injury risk emerging from the Centre’s research
- Achieve a balance between commercial success and academic excellence
3. Chair of the Board of Management’s Report

It was my privilege to take over the Chair of the Management Committee from Robyn Kruk who knew that her appointment as Director-General of Health of NSW would make the pressures of time too much to sustain her involvement in the Centre. She has nevertheless continued to show a lot of interest and we hope this will continue. Following the review of the Centre in May 2002, UNSW and the Management Committee were involved in renegotiations the arrangements for the Centre in the formulation of a new 5-year contract. In particular, the importance of finding a more suitable location for the Centre has been a matter for ongoing discussion. Temporary relocation to “shunt” space in the Applied Science Building in mid 2003 will be followed by the renovation of a more permanent home.

The Management Committee held a one day retreat on 3 March 2003 facilitated by Gabrielle Kibble. The purpose was to reflect on the future direction of the Centre, specifically at developing useful and directed aims and objectives for the Centre. A draft Strategic Plan was defined and the roles and responsibilities of the staff discussed.

Finally the new agreement between NSW Health and the NSW Injury Risk Management Research Centre providing core funding for the Centre was signed in May 2003. This will enable the appointment of a new Director and Professor of Injury Risk Management. After an international search which attracted some very highly qualified candidates, we are delighted that Associate Professor Caroline Finch of the Trauma and Sports Injury Prevention Research Unit at Monash University has accepted the position and expects to take up her post in August 2003. We welcome Caroline to UNSW and to the Centre. Her expertise in sports injury research will bring a new dimension to the Centre’s activities and will enhance related areas across the University. The future for the Centre is looking very bright and I wish all the staff great success in the year to come. The Executive Director, Dr. Ann Williamson, has been pivotal in all these matters and we particularly wish to thank her for her commitment and energy in leading the Centre during its early development.

Elspeth McLachlan
Pro-Vice-Chancellor (Research), UNSW
Chair of the Management Committee
Injury Risk Management Centre
4. Attendance Register

Board Meetings
Meetings were held on the following dates:

Meeting 9 12th of April, 2002
Ms Robyn Kruk, Deputy Director General, Premiers Department (Chair)
Mr David Bowen, MAA
Mr Bill Bellew, NSW Health
Ms Pam Albany, NSW Health
Mr John Brewer, RTA
Professor Dennis Lincoln
Professor Phil Waite, Faculty of Medicine
Professor Paul Compton, Faculty of Engineering
Dr Ann Williamson, Director, IRMRC

Meeting 10 14th of June 2002
Ms Robyn Kruk (Chair; Deputy Director General, Premier’s Dept)
Ms Pam Albany (NSW Health)
Mr David Bowen (MAA)
Mr John Brewer (NSW RTA)
Professor Dennis Lincoln (Dean Science, UNSW)
Professor Phil Waite (Faculty of Medicine, UNSW)
Dr Ann Williamson (Director, IRMRC)

Meeting 11 31st Oct, 2002
Prof Elspeth McLachlan (Chair - Pro Vice Chancellor, Research)- replaced Robyn Kruk as Chair
Ms Pam Albany (NSW Health)
Mr David Bowen (MAA)
Mr John Brewer (NSW RTA)
Ms Robyn Kruk (Director General, Premier’s Dept)
Professor Dennis Lincoln (Dean Science, UNSW)
Dr Ann Williamson (Director, IRMRC)
5. Research Project Summaries

INJURY SURVEILLANCE:

1. NSW Injury Profile: A review of available injury data

Aims:
1. Review the most recent information on the patterns and circumstances of deaths and hospitalisation due to injury in NSW
2. Update current injury statistics
3. Identify target areas for further research

Investigators:
Marcia Schmertmann and Ann Williamson

Funding:
Standard report funded by the IRMRC

Methodology:
Data were obtained for NSW for 1986-1999 from the Australian Bureau of Statistics (ABS) for all Ecoded death records. All in-patient (hospitalisation) records were obtained from the NSW Department of Health for fiscal years 1991/1992 to 1999/2000. All death and hospitalisation cases for the major injury mechanisms were described using epidemiological methods. Age and gender-specific death and hospitalisation frequencies and rates were calculated for all major injury mechanism cases from 1995 to 1999 using standard five-year age groups. Age-adjusted rates for each injury mechanism were calculated annually from 1986 to 1999 for deaths and 1992 to 1998 for hospitalisations. Age-adjusted death and hospitalisation rates were calculated using the direct standardization method with five-year age groups and the 1991 Australia population census as the standard population. Ninety-five percent confidence intervals were calculated for all death and hospitalisation age-specific and age-adjusted rates.

Findings:

- In 1999, injury and poisonings were the sixth leading cause of death and the fourth leading cause of hospitalisation in NSW.
- In 1999, injury and poisonings were the leading cause of death among people aged 1-44 years, as well as the leading cause of hospitalisation among people aged 10-14 years.
- Seventy percent of all injury deaths and 56 percent of all injury hospitalisations between 1995 and 1999 were male.
- Death rates for males were higher than females for all major injury mechanisms, although there were some notable subgroups which did not show this pattern, including hospitalisations for falls on the same level and falls on stairs, medical misadventures and therapeutic use of drugs.
- Suicide was the leading cause of injury mortality but not morbidity in NSW from 1995 to 1999, accounting for 33 percent of deaths.
Complications of care were the leading cause of injury morbidity in NSW from 1995 to 1999, accounting for 32 percent of hospitalisations, although mortality rates were the lowest of the eight categories examined in this report.

**Products, publications and presentations:**
Two IRMRC reports published.
IRMRC projects – NSW Injury Prevention Network Meeting, 2 and 3 April 2001

**Bibliographic details:**
2. Linking Injury Datasets

Aims:
1. To conduct a trial linkage exercise by linking MAA third party compensation records with records from the RTA Traffic Accident Data System.
2. To identify potential problems with linked records, and evaluate the need for probabilistic linkage
3. To assess the feasibility of linking the NSW Inpatient Statistical Collection with RTA Traffic Accident Data System

Investigators:
Soufiane Boufous and Marcia Schmertmann

Funding:
Funded by core funding of IRMRC

Methodology:
A trial linkage exercise was conducted using accident records obtained from both the RTA Traffic Accident Data System (TADS) and the Motor Accidents Compulsory Third Party (CTP). A single year (1997) was chosen for the exercise. Each data set contains several files concerning information about the accident, the road users involved and the type of vehicle involved. Of these files, only the file containing information about the accident itself was used. This file was chosen because it was perceived to be the easiest way to link related records in the two data sets. These two data sets were used to do a series of incremented deterministic linkage queries in Microsoft Access. The following fields were used in the linkage queries:
- Date of accident
- Date and time of accident
- Date, time and street location of accident
- Street and date of accident

Findings:
- This exercise matched roughly one out of every three CTP records to a TADS record.
- In order to improve the percent number of records matched, probabilistic matching should be used.
- A method for linking hospital separation and road traffic crash data was developed and a proposal was submitted to the NSW Statewide Health Ethics Committee and the submission was successful.

Products, publications and presentations:
None

Bibliographic details:
None
3. Development of an on-line Data Warehouse

**Aims:**
1. To develop an on-line interactive resource for information on injury.
2. To develop a data warehouse and basic Internet query system based on health data, which can be expanded over time to include other sources of injury data.

**Investigators:**
Marcia Schmertmann and Soufiane Boufous

**Funding:**
Funded by core funding of IRMRC, NSW Health. Funding submission made to National Office of the Information Economy.

**Methodology:**
This project requires the following steps:
- Development of a Design Specification for internet-based dynamic query/reporting application and the data warehouse that contains the data being accessed.
- Development of the data warehouse including security measures to protect the sensitive nature of the data stored within it.
- Develop the internet query application, including report tools that allow the user to easily modify queries and produce injury data tables and graphs easily.

**Findings:**
- Preliminary work has begun on this project. Further funding is being sought.

**Products, publications and presentations:**
None

**Bibliographic details:**
None

**Aims:**
To examine the relationship between non-fatal injury and a number of socio-demographic factors including ecological and individual measures of socioeconomic status.

**Investigators:**
Soufiane Boufous and Ann Williamson

**Funding:**
Core IRMRC funding

**Methodology:**
The data analysed were collected for the 1997 NSW Health Survey of approximately 17000 residents aged 16 years and over. The impact of various sociodemographic factors on overall injury and severe injury were examined in a series of logistic regression analyses. The presence of interactions between gender and various covariates meant that the results were presented separately for males and females.

**Findings:**
The results indicated that both overall and severe injury were not associated with the ecological measure of SES. Age, on the other hand, was the strongest predictor of overall and severe injury. The odds of reporting injury were higher among those from ESB, paraprofessionals, labourers and tradespersons and seem to increase with the level of education especially among females. The risk of being severely injured was lower among the highly educated, professional males who owned their home. While these findings may be influenced by issues related to reporting of and defining injury in the survey, the study contributes to the ongoing debate surrounding the relationship between SES and injury.

**Products, publications and presentations:**
Presentation at Australian Public Health Conference

**Bibliographic details:**
N/A
WORK-RELATED INJURY

5. Work-related injury in NSW Hospitalisation and Workers' Compensation datasets: a comparative study

**Aims:**
1. To conduct a comparative analysis of Inpatient statistics and Workcover datasets for the 1999-2000 financial year
2. To determine whether the patterns of occurrence are similar between the two datasets.

**Investigators:**
Soufiane Boufous and Ann Williamson

**Funding:**
Core funding from IRMRC

**Methodology:**
Work-related injury is a major public health problem in Australia with the National health survey indicating that over one third of (37%) of reported injury or injury-related condition were work-related. Workers compensation scheme (WCS) data is currently the most widely used source of information to report on work related injuries in Australia. The data however is more likely to underestimate the magnitude of the problem because it does not include less severe injuries and the self employed who make up 15-20% of the paid work force. In addition, evidence showed that not all workers who are eligible to make a compensation claim would do so. During 1999-2000, an activity code was introduced as part the NSW Inpatient Statistics Collection (ISC) which allowed the identification of work-related injuries in the collection. This study involves a comparative analysis of both Inpatient Statistics and Work Cover datasets for the 1999-2000 financial year in an attempt to ascertain the potential benefit of the introduced activity code in the surveillance and monitoring of work related injuries in New South Wales.

**Findings:**
The final phase of data analysis is almost complete. A paper is in preparation for submission to a peer-reviewed journal.

**Products, publications and presentations:**
Presentation at Australian Public Health Association conference

**Bibliographic details:**
N/A
6. **International collaborative effort comparison of the work-related fatality statistics from Australia, New Zealand and the USA.**

**Aims:**
To compare the causes of workplace fatalities in the USA, Australia and New Zealand using population based data.

**Investigators**
Anne-Marie Feyer (University of Otago), Nancy Stout (USNIOSH), Tim Driscoll (NOHSC), Ann Williamson

**Funding:**
USNIOSH and University of Otago

**Methodology:**
This project is looking at comparing the causes of workplace fatalities in the USA, Australia and New Zealand using population-based data. The comparison is being conducted at a number of dimensions including an overview of existing data, an analysis of the validity of definitions of work-relatedness across countries, a trial of the use of narrative information available in each of the databases and analysis of specific aspects of the data including agricultural injury, injury involving older workers and motor vehicle injury.

**Findings:**
The results have demonstrated some clear differences in injury patterns between the three countries that are most likely due to the structure of industry in each one. There are some difficulties in definitions of work-relatedness between the three countries and in attempting to use narrative information to overcome differences in coding methods.

**Products, publications and presentations:**
Three journal articles and three conference presentations

**Bibliographic details:**
7. The effects of precarious work on occupational health and safety

**Aims:**
To examine the effects of precarious working arrangements (eg. Casual work, payment by results) on occupational health and safety in the transport, hospitality and call centre industries

**Investigators:**
Phillip Bohle, Michael Quinlan, Ann Williamson

**Funding:**
ARC Discovery grant

**Methodology:**
This study is using survey methodology to evaluate current work practices and health and safety outcomes in the three industry sectors; transport, hospitality and call centres.

**Findings:**
None to date as study has just begun. The questionnaire design is in progress.

**Products, publications and presentations:**
None yet

**Bibliographic details:**
N/A
8. Injury in working age adults: Fitness for duty and safety in the mining industry

Aims:
1. To develop a profile of the mining industry in terms of policies, practices and safety outcomes
2. Review the scientific basis of readiness for duty practices in mining
3. Undertake a preliminary analysis of work and break patterns in terms of their timing and duration in relation to incident/accident risk.

Investigators:
Tony Parker (QUT), Ann Williamson

Funding:
NHMRC Injury Partnership grant

Methodology:
This project is part of a larger partnership project being overseen by Injury Prevention and Control Australia (IPCA) at University of Queensland. This project involves the work-related injury section of the research programme for IPCA.

Findings:
None as yet as project has just begun.

Products, publications and presentations:
Nil as yet.

Bibliographic details:
Nil
9. Analysis of safety performance measures in the NSW Mining Industry

Aims:

1. To undertake an analysis of safety performance measures collected by the NSW Department of Mineral Resources (DMR)
2. To provide quarterly and annual reports on analysis of that can be used by the Mine Safety Council, Advisory Bodies and other stakeholders in the mining industry and government.

Investigators:
Ann Williamson and Usha Garg

Funding:
Department of Mineral Resources

Methodology:
The analysis and interpretation of incident and injury data collected by the Department of Mineral Resources in the COMET system and includes the following:

- A study of all reportable events for all mining sectors (coal and non-coal).
- Identifying any trends in incidents and injuries, degree of movement and reason for movement.
- Breakdown of incidents by different classifications and subsequent cross tabulations to identify causes
- Study of numbers, factors and circumstances for fatalities and non-fatal injuries.
- Enforcement notices – the number, factors and circumstances under which they are issued and any relationship between the application of the DMR’s enforcement mechanisms and changes in mine safety performance indicators.
- Benchmarking through comparisons with other States and other Sectors.

Findings:
The results show that approximately 500 incident events are reported in the COMET database every year from all mining sectors. Just over half of these events reported in COMET are from the coal sector and the remaining from the non-coal sectors. One fifth of the events in the coal sector and one third of the events in the non-coal sector reported in COMET were injury events. The rest were non-injury events. The results show differences in the circumstances of incidents and injury in the two sectors and are beginning to reveal targets for intervention to increase safety in this industry.

Products, publications and presentations:
Three quarterly reports and one annual report have been produced for the Department of Mineral Resources. One conference presentation was made to the NSW Mine Safety Conference.
MOTOR VEHICLE INJURY

10. Further analysis of child deaths and injuries in driveways

Aims:
1. To describe the causes of general motor vehicle accidents involving deaths in children aged five years and under.
2. To describe the causes of driveway deaths involving this age group.
3. To look for common factors across cases that could provide direction for action to prevent similar accidents occurring in the future.

Investigators:
Ann Williamson, Penelope Irvine, Samantha Sadural

Funding:
Motor Accidents Authority

Methodology:
This study accesses full Coroner's files through the Coroner's courts in Glebe and Westmead. The study involved a number of consecutive steps, including, reviewing a sample of cases and develop a computer-based coding and classification system, setting up a database for the classification and coding system including development and testing, reading, classifying and coding all cases of deaths involving five year olds and under from 1995 to 2000, analysis of data, and report writing.

Findings:
Nineteen cases were identified from the Coroners files involving under six year olds in slow-speed, off-road pedestrian fatalities. Three major patterns of accident causation were identified. The most common, accounting for more than half of the cases, involved a child who had been left unsupervised in a seemingly secure location indoors, managing to get outdoors and into the path of a generally large vehicle, with the driver being unaware of the child's location. The second pattern was distinguished by the involvement of an adult either in the form of a risky decision or a driver making an error, whereas the third pattern was distinguished by the behaviour of the child who suddenly ran out into the path of the moving vehicle, unknown to the driver. These patterns assist in directing strategies for preventing these particularly tragic types of fatalities. These include providing specific information to parents about environmental modifications to reduce the child's access to the path of vehicles, safety practices when children are in the vicinity of vehicles, factors that increase the risk of such accidents to assist with the responsibility of day to day supervision as well as focus on the design of vehicles to improve driver vision and reduce the likelihood of pedal errors.

Products, publications and presentations:
A report has been submitted to the funding body and a paper for peer-reviewed journal is in preparation.

Bibliographic details:
N/A
11. Fatigue management programmes: Impact on sleep, fatigue and performance

**Aims:**
The research compared the impact of regulated working hours and fatigue management plans on the fatigue, sleep and performance of professional truck drivers, with the aim of evaluating different types of working hours regimes for managing fatigue. The study also examined the usefulness of ambulatory motion monitors for indexing the characteristics of driver's sleep in situ.

**Investigators:**
Dr Ann Williamson, Samantha Sadural, Rena Friswell (IRMRC)
Dr Anne-Marie Feyer (Pricewaterhouse Coopers/NEOH, University of Otago)

**Funding:**
Australian Transport Safety Bureau

**Methodology:**
The participating company was involved in the Queensland Department of Transport's Fatigue Management Pilot Programme. Two groups of drivers working in different sections of the company were studied. The first group (long distance drivers) was measured across a normal working week under regulated working hours and then, 6 months later, under their company's fatigue management plan. Drivers reaction time and sustained attention were tested at the start and end of the week, and they were asked to self-administer tests at the start and end of each break containing sleep during the week. Drivers also completed a diary, reporting on their subjective fatigue, work, and sleep, and wore ambulatory motion monitors for the duration of their participation.

The second group of drivers carried sugar cane from local farms to the cane mill, with many short round-trips made per shift. This work occurred around the clock, so that the drivers worked rotating rosters. The impact of variations among and within rosters was examined. Drivers participated for a complete cycle of their roster. Like the long distance drivers, cane drivers were asked to complete reaction speed and attention tasks at the start and end of each work shift, to complete diary records of their work, sleep, and subjective fatigue, and to wear a motion monitor.

**Findings:**
The data have been collected and are currently under analysis.

**Products, Publications, Presentations:**
A report for the funding body is in preparation

**Bibliographic details:**
Not yet available
12. Evaluating differences in heavy vehicle driver fatigue levels for day and night driving

Aims:
The research aims to directly compare the effects on fatigue, sleep and performance of day and night shift driving to inform policy debate on changes to the national working hours regulations for long distance truck drivers.

Investigators:
Dr Ann Williamson, Rena Friswell (IRMRC)
Dr Anne-Marie Feyer (Price Waterhouse Coopers/NEOH, University of Otago)
Dr Philippa Gander (Sleep/Wake Research Centre, University of Otago)

Funding:
National Road Transport Commission

Methodology:
Truck drivers working continuous day shifts, continuous night shifts or rotating day and night shifts were recruited from a number of transport companies operating out of Sydney and Melbourne. The drivers participated in the study for a two week period. During this time they were tested for reaction speed and sustained attention at the start of their first week and at the end of the first and second weeks of participation. They were also asked to self administer these tests and record their work hours, and subjective fatigue at the start and end of each shift and in the middle of each shift during the two weeks of participation. Drivers wore an ambulatory motion monitor for the duration of the study to provide objective information about their sleep, to be used in conjunction with self-reports of sleep.

Findings:
Data collection is in progress

Products, Publications, Presentations:
A report will be prepared for the funding bodies

Bibliographic details:
Not yet available
13. **Fatigue management practices and road safety outcomes in regulated and non-regulated driving hours**

**Aims:**
This research aims to draw together convergent evidence on the ability of driving hours regulations to effect fatigue management by comparing the fatigue management practices of companies operating in regulated states of Australia (including NSW) and those operating in unregulated states of Australia (WA and NT).

**Investigators:**
Dr Ann Williamson, Samantha Sadural, Rena Friswell (IRMRC)
Dr Anne-Marie Feyer (Pricewaterhouse Coopers/NEOH, University of Otago)

**Funding:**
National Road Transport Commission

**Methodology:**
Structured telephone interviews were conducted with operations managers at transport companies in states which do not regulate working hours (WA and NT) and in states which do regulate working hours (NSW, VIC, QLD, SA). The interviews requested a variety of facts about the company and its operations but in particular, information about rostering practices, payment practices, and specific fatigue management practices. Information from existing surveys of transport companies was integrated with this interview data.

**Findings:**
Preliminary data analyses have been completed

**Products, Publications, Presentations:**
A report of the findings is in preparation for the funding bodies

**Bibliographic details:**
Not yet available
14. Evaluation of a modified work-rest schedule allowed under the Fatigue Management Program (FMP)

Aims:
This research was a follow-up investigation of a Fatigue Management Programme in place at a transport company participating in the Queensland Department of Transport's Fatigue Management Pilot Programme. The preliminary investigation had raised some questions about drivers fatigue levels and performance. At follow-up the participating company had implemented stricter monitoring of the programme.

Investigators:
Dr Ann Williamson, Samantha Sadural, Rena Friswell (IRMRC)
Dr Anne-Marie Feyer (Pricewaterhouse Coopers/NEOH, University of Otago)

Funding:
Australian Transport Safety Bureau

Methodology:
Long distance drivers at the participating company who were working under the company's Fatigue Management Programme and who had participated in the earlier evaluation study, were recruited. They were asked to record their work, sleep and subjective fatigue across a fortnight of work, and also to test their reaction speed and sustained attention at the start and end of each work shift. Fatigue and performance were compared to the results of the initial evaluation and to performance standards calibrated against the impairment expected at 0.05% BAC.

Findings:
The results suggested that although performance decrements were still evident across the work fortnight at follow-up, these were not directly related to the scheduling of trips in the company's Fatigue Management Plan, but rather appeared to reflect workload more generally and were consistent with previous data on drivers working under regulated hours.

Products, Publications, Presentations:
Report of findings submitted to funding body

Bibliographic details:
15. National survey of fatigue management practices in long distance road transport companies

**Aims:**
This study sought to describe current fatigue management thinking, policies and practices in the Australian road transport industry.

**Investigators:**
Dr Ann Williamson, Samantha Sadural, Rena Friswell (IRMRC)
Dr Anne-Marie Feyer (NEOH, University of Otago)

**Funding:**
National Road Transport Commission

**Methodology:**
Telephone interviews with 200 companies carrying freight over distances greater than 300km were undertaken, covering all regulated mainland states of Australia, and the Northern Territory. Middle managers familiar with the line haul operations of the company were the respondents. The survey covered knowledge and awareness of fatigue, work-rest scheduling practices and factors which underlie the way schedules are organised.

**Findings:**
One of the key findings was that there is a lag between increased awareness of fatigue in company management on the one hand and increased knowledge of fatigue and changes in operational practice on the other.

**Products, Publications, Presentations:**
Report submitted to funding bodies.

**Bibliographic details:**
16. Evaluation of the likely impact of proposed changes to the working hours regulations governing long distance truck drivers: Evidence from drivers' self-reports of work-rest experiences.

**Aims:**
This research sought to provide evidence on the extent of the impact of proposed changes to the working hours regulations governing long distance truck drivers. The National Road Transport Commission, guided by the recommendations of their Fatigue Expert Group, has proposed a number of changes to the working hours regulations designed to limit the amount of night driving that can be done each week and to increase the amount of night and compensatory rest that should be taken. These changes were prompted by a concern to better manage the factors contributing to driver fatigue, particularly circadian influences on fatigue.

**Investigators:**
Dr Ann Williamson, Rena Friswell (IRMRC)
Dr Anne-Marie Feyer (Pricewaterhouse Coopers/NEOH, University of Otago)

**Funding:**
Australian Transport Safety Bureau

**Methodology:**
In 1998, a national survey of long distance truck drivers was conducted for the National Road Transport Commission and Australian Transport Safety Bureau. In this survey, drivers were asked to report their working hours for the previous week. These data were re-examined to determine what percentage of drivers and drivers' shifts would not meet the proposed new regulations with regard to the length of daily rest breaks, the number of consecutive overnight sleep breaks, the number of night shifts worked in a row and the work hours in shifts ending at night.

**Findings:**
The data suggested that many of the proposed changes would impact only a very small percentage of drivers or driver shifts. However, changing the length of daily breaks and limiting the length of shifts ending at night might impact a sizeable minority of drivers.

**Products, Publications, Presentations:**
A report of the analysis has been prepared for the funding bodies

**Bibliographic details:**
17. **Heavy vehicle accident analysis. Part A: Analysis of bus crashes**

**Aims:**
This study aimed to explore the relationships between accident location, accident timing and human behavioural factors in heavy bus accidents occurring between 1996 and 2000

**Investigators:**
Dr Ann Williamson, Rena Friswell (IRMRC)

**Funding:**
NSW Roads & Traffic Authority

**Methodology:**
Data from the RTA Traffic Accident Database System for the years 1996 to 2000 were analysed.

**Findings:**
The results suggested that heavy bus crashes had slightly more serious consequences than other vehicle crashes, and that the rate of heavy bus crashes was increasing. Heavy bus crashes were typically on weekdays in peak transit times, on urban, low speed limit roads, and involved pedestrians or passengers and vehicles moving in the same direction.

**Products, Publications, Presentations:**
A draft report has been submitted to the funding body.

**Bibliographic details:**
18. Heavy vehicle accident analysis. Part B: Heavy truck crashes

Aims:
This study aimed to explore the relationships between accident location, accident timing and human behavioural factors in heavy truck accidents occurring between 1996 and 2000

Investigators:
Dr Ann Williamson, Penelope Irvine, Rena Friswell (IRMRC)

Funding:
NSW Roads & Traffic Authority

Methodology:
Data from the RTA Traffic Accident Database System for the years 1996 to 2000 were analysed.

Findings:
The results suggested that truck crash rates were similar to other vehicles when the distance travelled by trucks was taken into account. Differences were observed, however between types of trucks, particularly between rigid trucks on the one hand and articulated trucks on the other. The characteristics of truck accidents varied according to the time of day, the urbanisation of the location, the type of truck, and the vehicle at fault.

Products, Publications, Presentations:
A draft report has been submitted to the funding body.

Bibliographic details:
19. Heavy vehicle accident analysis. Part D: Analysis of heavy vehicles and speeding in NSW

Aims:
This research sought to compare traffic volume and speeding behaviour of heavy and other vehicles and to examine the impact of location and timing variables. In addition, the research examined the relative accident involvement rates for heavy and light vehicles using traffic volumes recorded in the vicinity of accidents.

Investigators:
Dr Ann Williamson, Rena Friswell, Penelope Irvine (IRMRC)

Funding:
NSW Roads & Traffic Authority

Methodology:
Traffic survey data collected in the vicinity of fixed speed cameras in NSW were analysed to determine the relative numbers of heavy and light vehicles on the road at different types of locations and at different times of day. The survey data also allowed the relative numbers of speeding heavy and light vehicles to be compared. These data were then used as denominators for calculating accident involvement rates, where accidents occurring in the vicinity of the traffic survey reorder in the surveyed years were extracted from the NSW RTA's Traffic Accident Database System. The impact on speeding behaviour of the introduction of speed cameras was also assessed.

Findings:
Heavy vehicles were far more likely to be on country roads and at night compared to light vehicles. Heavy vehicles were generally less likely to be speeding than other vehicles, and had lower crash rates. The introduction of speed cameras appeared to reduce speeding behaviour most markedly among vehicles travelling just over the speed limit and in the first 6 months after introduction.

Products, Publications, Presentations:
A draft report of the results has been submitted to the funding body

Bibliographic details:
20. Heavy vehicle accident analysis. Part E: Analysis of third party personal injury claims involving heavy vehicles

*Aims:*  
This analysis compared the involvement of heavy trucks and buses and other vehicles in accidents associated with a Third Party Personal Injury claims.

*Investigators:*  
Dr Ann Williamson, Penelope Irvine, Rena Friswell (IRMRC)

*Funding:*  
NSW Roads & Traffic Authority

*Methodology:*  
Data from the MAA Claims Register & Statistical Database for the years 1996 to 2000 were analysed in order to compare the involvement of heavy trucks and buses with other vehicles in terms of accident rates, injury levels, level of responsibility and cost of claims.

*Findings:*  
The data revealed that involvement rates were elevated for buses but heavy truck accident rates were on par or lower than other vehicles. Both classes of heavy vehicles were more likely to judged at-fault. Only small differences were observed in the Degree of Severity of Injury classifications for accidents involving heavy and other vehicles. Heavy truck accidents, however, were associated with higher claim payments.

*Products, Publications, Presentations:*  
A report for the funding body is in preparation

*Bibliographic details:*  
Not yet available
21. NSW Young Drivers' Cohort Study

Aims:
To investigate the factors that promote higher crash risk in young drivers.

Investigators:
Robyn Norton, Rebecca Ivers (Institute for International Health)
Mark Stevenson (University of Western Australia)
Maurice Eisenbruch (UNSW)
Ann Williamson (IRMRC)

Funding:
NHMRC, MAA

Methodology:
This is a very large-scale cohort study of the role or risk taking in causing crashes in young drivers. The study will follow new young drivers from obtaining their licence for three years. It will look at a range of characteristics of the young driver including their experience in driver training, gender, educational, socioeconomic and ethnic background and attitudes to risk-taking and related them to crash outcomes in the three years following licencing.

Findings:
Ethical approval has been obtained. The development of survey instruments is in progress.

Products, publications and presentations:
None yet.

Bibliographic details:
N/A
WATER SAFETY

22. Analysis of the causes of child drowning deaths

Aims:
1. To describe the causes of drowning deaths involving deaths in children aged five years and under.
2. To look for common factors across cases that could provide direction for action to prevent similar accidents occurring in the future.

Investigators:
Ann Williamson, Penny Irvine, Samantha Sadural

Funding:
Funded by the NSW IRMRC and the NSW Water Safety Taskforce

Methodology:
This study involved access to full Coroner’s files through the Coroner’s courts in Glebe and Westmead. The study involved a number of consecutive steps, outlined below.

1. Review a sample of cases and develop a computer-based coding and classification system.
2. Set up database for the classification and coding system including development and testing. This will be set up using Access database software.
3. Read, classify and code all cases of deaths involving five year olds and under from 1995 to present. Over this period there were 109 deaths in this age group.
4. Analysis of data.

Findings:
Preliminary analysis shows similar findings to previous studies. Most drownings involved boys and most involved two year olds and the location of the drowning depended on the child’s age, with most children under one year drowning in bathtubs, and those two years and older were more likely to drown in swimming pools and open bodies of water. Further analysis is looking at the patterns of related factors that come together to create the circumstances in which the drowning occurs.

Products, publications and presentations:

Bibliographic details:
23. Feasibility trial of the Minimum Dataset for Water Safety

Aims:
1. To trial the use of the draft minimum dataset for water safety at a set number of locations to assess the feasibility of collecting the data items specified on major rescues conducted in NSW;
2. To determine the reliability and validity of the data recorded;
3. To determine the most effective mechanism for data collection that is amenable to all the relevant water safety agencies in NSW

Investigators:
Ann Williamson, Gabrielle Burrows

Funding:
NSW Health and NSW Water Safety Taskforce

Methodology:
The project is a trial of the draft minimum dataset during February and the Easter school holidays in 2002. Ten locations are being trialed by life guards and life savers at beaches and pools. The locations for data collection were chosen according to the size of the area, type of area (urban/regional), number of lifesavers/lifeguards, estimated number of people attending location and number of rescues performed. As far as possible the locations chosen reflect high and low pressure rescue locations. Data were collected by representatives of the water safety agencies on major rescues occurring over a selected period using a specially designed collection form. In addition a one week trial will be conducted at one beach where attempts will be made to collect minimum dataset items for all rescues to determine the relevance and usability of the dataset for all rescues.

Findings:
Analysis of the quality of data is being conducted. A report describing the feasibility of collecting information on water safety using the draft minimum dataset will be produced.

Products, publications and presentations:
Report to NSW Water Safety Taskforce,

Bibliographic details:
COST OF INJURY

24. The cost of injury in New South Wales

Aims:
To develop an estimate of the ‘whole-of-life’ cost of injury in NSW

Investigators:
Mary Potter Forbes, Chris Aisbett (LAETA), Delia Hendrie (University of Western Australia)

Funding:
NSW Health

Methodology:
A full economic costing of injury involves identifying the opportunity cost of resources directly consumed in dealing with the injury, as well as the productivity and personal losses that can be attributed to the event and its sequela. The first stage of this work has concentrated on investigating the capacity of administrative data collection systems to provide the necessary epidemiological detail for costing and has led to collaborations being established with LAETA Pty Ltd. and the University of Western Australia. Building on LAETA’s work on the development of the DRG costing system provides this New South Wales research with an international competitive advantage and experience with data linkage from the University of Western Australia, has helped to overcome the incomplete epidemiology of injury in NSW. This will produce statistically valid methods to infer the long-tail costs of injury in NSW from the Western Australian experience through the data linkage capabilities developed in the CHSR Data Linkage Project. The accident cost database, using the New South Wales Motor Accident Authority data, which was also developed by the Injury Research Centre is augmenting the process.

Findings:
Data analysis and the final report are almost complete.

Products, publications and presentations:
In preparation.

Bibliographic details:
Nil yet
6. Centre Supported Postgraduate Students

Marcia Schmertmann - Exploration of the Predictive Value of the Mother-Child Relationship for Risk of Accidental Poisonings in Preschool Children
7. **Staff Contributing to the Centre**

**Dr Ann Williamson**
Director

**Research Staff**

Soufiane Boufous Data Manager
Rena Friswell Senior Research Assistant
Mary Potter Forbes Research Assistant
Usha Garg Research Assistant
Marcia Schmertmann Research Assistant
Samantha Sadural Research Assistant
Basema Saddik Research Assistant

Peter Hardy Casual Research Assistant
Gabrielle Burrows Casual Research Assistant
Helen Gardiner Casual Research Assistant
Kristin Rogers Casual Research Assistant
Phillipa Rokkas Casual Research Assistant
Emma Grove Casual Research Assistant
Penelope Irvine Casual Research Assistant

**Administrative Staff**

Susanna Smith Information Officer
Patricia Villaroel Administrative Officer (replacing)
Cornelia Brockhoff Administrative Officer
Yasmin van Kasteren Administration Manager
8. Publications


9. Conference Presentations


Soufiane B, Williamson, A. Socio-demographic variations in non-fatal injury among New South Wales adult population. 34th Public Health Association of Australia Annual Conference. 1st October 2002. (poster presentation)

10. Media Activities

The following media activities relating to the Centre have taken place on the following issues since the last Board meeting:

**Young driver safety**
Following a series of fatal crashes involving young drivers in the Newcastle area, the Director was interviewed by the Newcastle Herald and the IRMRC was cited in a number of articles. This attracted other attention:
- ABC Radio Newcastle - interview with Carole Duncan
- 2NUR Newcastle - interview with Felicity Biggins
- ABC Radio, the Gold Coast - interview with Briony Peche (4.40pm)

**Child pedestrian injury**
- ABC 702 Sydney - interview with Richard Glover on the issue of 4WD and safety
- 2GB Sydney - interview on 4WD and child safety

Following release of the report on Motor vehicle fatalities involving under six year olds, the Special Minister of State mentioned the Centre and the research project in NSW Parliament (Hansard, Tues 17th Sept, 2002).

Following a media launch of a Kidsafe/MAA initiative on child pedestrian safety, the Director did a number of radio and press interviews:
- 2SM Sydney - radio interview
- SBS Radio - radio news interview
- AAP - interview with journalist
- Illawarra Mercury - interview with journalist
12. Financial Statement

Statement of Financial Performance for the Year Ended 31 December 2002

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2001</th>
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</thead>
<tbody>
<tr>
<td>Income</td>
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<tr>
<td>External Funds</td>
<td>609,144</td>
<td>729,956</td>
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<tr>
<td>UNSW Contribution</td>
<td></td>
<td></td>
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<tr>
<td><strong>Total Income</strong></td>
<td>609,144</td>
<td>729,956</td>
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<tr>
<td>Expenses</td>
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<td></td>
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<tr>
<td>Payroll</td>
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<td>Equipment</td>
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<td>24,180</td>
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<td>Materials</td>
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<td>239,107</td>
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<tr>
<td>Travel</td>
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<td>7,030</td>
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<tr>
<td><strong>Total Expenses</strong></td>
<td>760,633</td>
<td>723,220</td>
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<td>Operating Result</td>
<td>-151,489</td>
<td>6,736</td>
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<tr>
<td>Surplus/Deficit Bwd from Prior Year</td>
<td>307,027</td>
<td>300,291</td>
</tr>
<tr>
<td>Accumulated Surplus/Deficit Funds</td>
<td>155,538</td>
<td>307,027</td>
</tr>
</tbody>
</table>

The Centre was able to generate $182,778 of funding in addition to the grant from the funding partners.