

# INJURY ISSUES MONITOR

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## Child injuries due to falls

Falls among children are one of the priorities listed in the *National Injury Prevention Action Plan: Priorities for 2001–2003*.<sup>1</sup> They are a frequent cause of injury morbidity in children<sup>2</sup> and a burden on available health care resources. The direct cost of falls in children to the health care system in Australia has been estimated to be more than \$130 million, of which \$28 million was the cost of hospital inpatient care.<sup>3</sup>

A new report in NISU's *Injury Research & Statistics Series*, written by Malinda Steenkamp and Raymond Cripps, has used available data to gain a clearer insight into the nature of the problem and the possibilities for intervention.

*Child injuries due to falls* was commissioned by the Injury Prevention Unit in Commonwealth Department of Health & Aged Care. It reports on analyses of fall-related deaths data among children for 1979–1998 and similar hospital separations data for the financial years 1993/94–1997/98. It also examines a sample of emergency department (ED) data for the period 1 July 1996–30 June 1998.<sup>4</sup>

We report here on some of the key findings.

### The epidemiology of fall-related injury in children

#### *Child falls are numerous, but rarely life-threatening*

Between 1979 and 1998, there were about eleven childhood deaths due to falls annually. Fall-related deaths accounted for 2.3% (n=225) of all deaths due to injury and poisoning in children aged 0–14 years during the stated period. These deaths are few in number, but they obviously result in much emotional suffering for affected relatives and care givers.

There seems to be a declining trend in age-standardised rates for fall-related injury among children between 1979 and 1998.

In contrast to the small number of deaths, childhood falls accounted for nearly 38% of hospitalisations due to injury and poisoning at ages 0–14 years, making it the leading cause of hospitalisation among children. In the financial

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## Release of National Injury Prevention Plan



Injuries affect the daily lives of many Australians and their families. Some have lost a loved one as a consequence of an injury, others suffer the physical, cognitive and psychological effect of an injury. Injuries cost the Australian health system around \$2.6 billion each year, or 8% of total recurrent health expenditure. In 1999, over 8,300 Australians died as a result of injury and a further 400,000 were hospitalised from injury.

Fortunately, Australia is rich in knowledge about best practice interventions that can prevent injuries. The challenge is to apply that knowledge to minimise risks of injury for the community and for individuals. This challenge has led to the development of the *National Injury Prevention Plan: Priorities for 2002–2003* (*The Plan*). *The Plan* was approved by the Australian Health Ministers Council at their meeting in Adelaide on 1 August 2001 and has now been printed and distributed to stakeholders.

*The Plan* is a significant step forward for injury prevention in Australia. It involves a collaboration of all Australian governments

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# Child injuries due to falls

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year 1997/98, this equated to 25,401 hospitalisations.

Hospitalisations data are available for the five financial years 1993/94 to 1997/98. No clear trend for fall-related hospitalisation among children was noted.

About 40% of the children who were admitted for a fall-related injury were discharged on the same day they were admitted. Of the remaining cases, about 70% (n=21,988) were discharged after one day, but nearly 11% (n=1,815) were hospitalised for three days or more.

ED data from Victoria indicate that accidental falls account for a large number of ED presentations due to injury. The Victorian Emergency Management Dataset (VEMD) data showed that around 42% of ED presentations to participating VISAR hospitals among children were due to fall-related injury.<sup>4</sup>

In 1997/98, nearly 87% of the 16,719 VEMD cases of fall-related injury were discharged home after treatment. About 15% of the cases were admitted (to a ward or within the ED) or were transferred to another hospital. No deaths were recorded among the ED cases for 1997/98.

Between 1996/97 and 1998/99, case numbers of fall-related ED presentations due to falls increased by about 11%. However, it is uncertain whether this change reflects an increase in the incidence rate of fall-related injury among children recorded in the VEMD.

In addition to the large number of fall-related cases presenting to hospitals and being admitted, it is likely that many other fall-related cases among children are treated by general practitioners.<sup>5,6,7</sup>

## *For a notable number of falls, the outcomes are more serious*

Among hospitalised cases, fractures to the radius and ulna resulted in large case numbers (n=6,901 cases) and the largest total length of stay (LOS; n=9,488 days), even though the average LOS per case was less than one day.

Fractures of the femur contributed relatively few cases among hospitalisations (n=411 cases), but resulted in the second largest total LOS (n=4,441 days). These diagnoses also had the longest average LOS per case, i.e. more than ten days for fractures of other and unspecified parts of the femur and more than eight days for fractures involving the neck of femur.

Head injury also contributed significantly to the burden of fall-related injury among hospitalisations. Intracranial injury (n=2,114 cases) and skull fractures (n=657 cases) together accounted for 18% of case numbers and the third largest total LOS (n=4,268 days).

Fall-related cases with more severe injuries have the potential for chronic morbidity and disability, e.g. certain fractures that do not heal well or long-term consequences of traumatic brain injury. Due to limitations of the data sources, little insight about such long-term outcomes of severe cases could be gained from the data analysed for this Report.

## *There is an association between fall outcome and children's age and sex*

Among fall-related **deaths**, the 0–4 year olds made up about 50% (n=107) of the cases, whereas the 5–9 year old age group accounted for 20% (n=45) of fall-related deaths. In contrast to deaths, the 5–9 year age group accounted for about 40% (n=10,328) of the **hospitalisations**, while the 0–4 year olds made up about 29% (n=7,244). Older children (those aged 10–14 years) made up similar proportions among fall-related deaths and hospitalisations resulting from falls, i.e. around 31% (n=73 for deaths and n=7,829 for separations).

Children aged **0–4 years** generally suffered more head and face injuries than the other two age groups. A contributing factor to this may be that in children under four years, the head of a young child is proportionally bigger and heavier than for older children. Young children may also be less likely to break their falls by using their hands, especially for those younger than 1 year.

At **ages 5–9 years**, physical development (including increased skill to use upper limbs to break a fall) may help to reduce head and facial injuries. In addition, these children are more capable of climbing and this may lead to more falls from heights. As a consequence the frequency of injury to the forearms increases in this age group.

More **children aged 10–14 years** sustained fractures of the lower limb than younger children. However, the proportion for fractures of the upper limb were similar for age groups 5–9 years and 10–14 years.

## *Children's behaviour and stage of development play an important role*

Hospitalisation data showed that **children aged 0–4 years** were often injured at home (i.e. about 50%) and that nearly 60% of the cases in this age group were due to falls from one level to another (E884). For this age group, falls from one level to another more often involved furniture, such as a bed (E884.4) or chair (E884.2), than for the other two age groups. Falls from playground equipment (E884.1) was less prominent in this age group than for the 5–9 year age group.

VEMD data reinforced that, for children aged 0–4 years, most of the fall-related injuries presenting to EDs occurred at home (78%) and that most fall-related injuries resulted from low falls (i.e. about 90%).

Compared to the younger age group, **5–9 year olds** had less injuries resulting in hospitalisation occurring at home (22%). For the 5–9 year old age group, more hospitalised injuries happened at other venues such as place of recreation or sport (15%), or public buildings, which includes schools, (14%). Also, for this age group about 60% of the fall-related injuries were from one level to another (E884). Of these falls, a larger proportion involved playground equipment (E884.1) than for children aged 0–4 years. Also, more 5–9 year olds (especially 5–9 year old boys) were hospitalised because of falls from trees (E884.3).

VEMD data showed that a smaller proportion of fall-related cases for 5–9 year olds that presented to EDs occurred at home (47%), whereas injuries occurring at school, day care or other public administration areas accounted for more than 25%. Also, high falls and other types of falls made up a larger proportion of falls among the fall-related ED presentations recorded in the VEMD.

For **10–14 year olds**, even less hospitalised injuries occurred at home (12%), whereas places of recreation and sport made up nearly 25%. Public buildings (which includes schools and day care centres) also made up a notable proportion (11%). Falls from one level to another (E884) accounted for a smaller proportion of injuries than for the other two age groups, i.e. about 28% compared to just under 60% for both the 0–4 and 5–

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# Child injuries due to falls

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9 year olds. Falls on the same level from collision, pushing or shoving by or with another person (E886) accounted for nearly as many cases as those coded to E884. Most of the falls coded to E886 could be attributed to sports-related activities. Falls on the same level from slipping, tripping or stumbling (E885) also made up a notable proportion in this age group.

For deaths and hospital separations data, case numbers and rates for **males** are higher than for **females**. Case numbers and proportions in the VEMD data are also higher for males. These findings may reflect higher risk taking behaviour in males.

The differences between males and females are most noticeable in the **10–14 year age group**. One particular type of injury where males outnumbered females four to one was sports-related falls (i.e. those coded to E886.1). There may be several reasons for this. Boys have higher participation rates in sports than girls<sup>8</sup>; the type of sports they participate in may have higher injury rates; or boys may play sports in a more physically aggressive manner which more often results in more injuries and/or more severe ones. The data sources employed in this Report do not provide an insight into issues of exposure. Interestingly, many more females aged 10–14 years than males in the same age group were injured in falls from trampolines (E884.5), whereas more males than females fell from trees.

## *The height of a fall plays an important role in injury outcome*

Among fall-related deaths, **falls from or out of buildings (E882)** made up a significant proportion for all age groups (27%), whereas these falls only accounted for small proportions of hospitalisations (less than 4%).

The role of the height involved in the fall is also illustrated by **falls coded to E884** (i.e. falls from one level to another). For these deaths, falls from cliffs (E884.1) made up about one-third of all the falls coded to E884. In contrast, hospitalisations due to falls from cliffs (E884.1) represented less than 1% of all hospitalised falls coded to E884.

## Conclusions

### *It is necessary to target fall-related injury research and interventions*

The Report identified **specific clusters** of fall-related injury that warrant attention and intervention, e.g. among 5–9 year olds a large proportion of fall-related is associated with playground equipment.

A systematic approach to describing these clusters is provided by a **fall-related injury matrix**, with four action areas forming the rows and three childhood age groups the columns (Table 1). Relevant clusters are listed within each of the resulting cells.

The report also stresses the need to keep a **strategic oversight** on what work

is being done on specific clusters of fall-related injury and whether work in these areas is progressing.

Much of the information necessary for the design and implementation of initiatives to prevent fall-related injury is not found in surveillance data and additional and complementary approaches are needed. Such approaches include case control studies, surveys of risk behaviour, etc.

The body of knowledge about fall-related injury is increasing and a number of developments in this regard is also taking place.

A list of current research and developments regarding some of the clusters is included in the report.

### *Ways of improving available data*

The report makes some specific suggestions about how the data currently used to monitor the incidence of fall-related injury could be improved.

**A free copy of this report can be downloaded, in pdf format, from the RCIS Website: [www.nisu.flinders.edu.au/pubs/reports/2001/childfalls.php](http://www.nisu.flinders.edu.au/pubs/reports/2001/childfalls.php) Printed copies are also available. To enquire about the latter, please contact Malinda Steenkamp, Tel: 08 8374 0970. Any questions about the contents of the report should be addressed to the authors, Malinda Steenkamp, E-mail: [malinda.steenkamp@nisu.flinders.edu.au](mailto:malinda.steenkamp@nisu.flinders.edu.au) or Raymond Cripps, E-mail: [ray.cripps@nisu.flinders.edu.au](mailto:ray.cripps@nisu.flinders.edu.au)**

**Table 1: Proposed matrix for fall-related injury in children**

Action area	Age group		
	0-4 years	5-9 years	10-14 years
Furniture/nursery items	Nursery furniture Beds Chairs Tables Baby walkers Bunk beds	Bunk beds	Bunk beds
Recreation/sports		Small wheeled equipment (skate boards, in-line skates) Bicycles Play equipment, including trampolines Sporting activities and specific sports	Small wheeled equipment (skate boards, in-line skates) Bicycles Play equipment, including trampolines Sporting activities and specific sports
Structural aspects of the environment	Stairs and steps	Stairs and steps	
Other	Falls from heights resulting in death	Falls from heights resulting in death	Falls from heights resulting in death

# Release of National Injury Prevention Plan

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as well as expert advice from non-government agencies, professional bodies and industry organisations to reduce the incidence and severity of injury in the community.

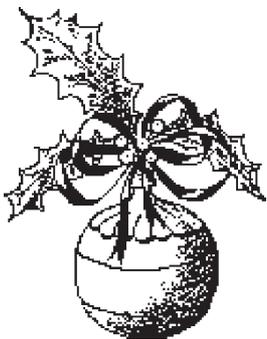
*The Plan* identifies strategies, actions and best practice evidence-based interventions to assist in reducing injuries in four priority areas. It encourages implementation of these activities through collaboration and the establishment of partnerships within jurisdictions and across sectors. *The Plan* also identifies key sectors that have responsibilities for these activities and goes further to clarify potential key partners. It also includes a comprehensive list of stakeholders who may have a role in preventing injuries.

Responsibility for implementing *The Plan* rests with the

Strategic Injury Prevention Partnership, a group that was established by the National Injury Prevention Partnership. SIPP is made up of jurisdictional representatives as well as members from the Australian Institute of Health and Welfare, the Department of Treasury (Consumer Affairs Division), the National Health and Medical Research Council and the Australian Injury Prevention Network.

***The Plan* and its accompanying *Implementation Plan* can be downloaded from: [www.nphp.gov.au/sipp/index.htm](http://www.nphp.gov.au/sipp/index.htm)**

**For more information, contact Paul Sayers at the Strategic Injury Prevention Partnership Secretariat, Injury Prevention Section, Department of Health and Aged Care, Tel: 02 6289 8074, Email: [paul.sayers@health.gov.au](mailto:paul.sayers@health.gov.au)**



## *Christmas greetings to all our readers*



*From left to right:* Chris Wendt, Peter O'Connor, David Robley, Renate Kreisfeld, Steve Trickey, James Harrison, Malinda Steenkamp, Raymond Cripps, Sugala Pathagama, Stacey Wendt, Yvonne Helps

Everyone at the Research Centre for Injury Studies wishes you a very merry Christmas, a relaxing holiday break, and an exciting and rewarding new year! We look forward to serving you again in 2002.

We recently welcomed two new staff members into the fold. Yvonne Helps and Sugala Pathagama have joined us on short-term contracts in the first instance. Yvonne's

background is in psychology. Sugala originally practised medicine in Sri Lanka. Most recently, she has completed a Masters in Public Health at the University of Adelaide.

Judy Carman left us earlier this year. We also farewell David Robley, our longest-standing staff member, who will be relocating to New Zealand this month, where his wife has taken up a new position.

Many people will remember David as one of the team that developed the Injury Surveillance Information System (ISIS), which served the injury prevention community for several years as a mechanism for identifying a wide range of injury hazards. We wish him well, and are confident he will enjoy his new 'semi-retired' status.

# Here's what happened in Warrnambool ...

Around 200 people attended the 5th National Injury Conference held in Warrnambool in November. This was the first of these conferences to be held in a regional centre of Australia. The conference was linked with the 4th National Farm Injury Conference.

The feedback received has generally been very positive. The modest size of the conference was highly conducive to networking, and it was soon apparent that contact and discussion between delegates was crossing traditional sectoral and disciplinary boundaries, something which has been an on-going objective of these national conferences.

The contributions of many people in Warrnambool played a key role in the success of the conference. Particular mention is made here of the efforts of **Daryl Pedler**, Chair of the Organising Committee; **Terry Clift**, who did much of the preparation and management; and **Marie Togni** and **Janet O'Connor**, who provided secretariat support. Warrnambool made conference delegates very welcome.

## Prize winning papers

Conference 'talent scouts' were present at all sessions and two prizes were awarded for outstanding papers: **Rod McClure** of the University of Queensland for his paper "Appropriate indicators for injury control?" and **Douglas Brown** of the Limestone Coast Division of General Practice in Millicent, SA, for his paper "A regional plan in action for the prevention of falls in the elderly in rural South Australia."

## Student bursaries

The Conference was again able to introduce 'new blood' by sponsoring the attendance of postgraduate students. Student bursaries were awarded to three students active in the injury area: **Kerianne Watt** and **Riana Nugrahani**, both from the School of Population Health at the University of Queensland; and **Heidi Lindner** of the School of Health & Environment at Latrobe University.

## Annual AIPN Awards

The Australian Injury Prevention Network used the Conference Dinner as the venue for presenting its annual awards.

The *AIPN Award for Practice* went to **Sharon Landers**, the Public Education Officer with the Metropolitan Fire and Emergency Services Board in Victoria. Sharon was recognised for her role in gaining recognition for and by the fire and emergency services of their pivotal role in primary prevention. She has been instrumental in the implementation and evaluation of several community education programs, widely regarded as world's best practice. For example, the *Fire Ed* program has been adopted by nearly all Melbourne schools and embraced by most urban fire services in Australia. Sharon has also created strong multicultural links, and represented her employer and Australia in local, state, national and international forums.

The *AIPN Award for Research* was given to **Mark Stevenson** of the Injury Research

Centre at the University of Western Australia. Mark has an impressive record for research and teaching, both in Australia and overseas. He has been involved in a number of injury prevention projects in the areas of child pedestrian injury, sports injury, road safety, and bicycle helmets, to name but a few. He also teaches injury epidemiology, prevention and control to postgraduate students.

A *Special Award for Sustained Achievement* was presented to Victorian State Coroner, **Graeme Johnstone**, who has taken great pains to look at and overcome the causes of injury death. In his initial product safety case, the investigation of a death associated with the 'Mistral Fan', he collected the information necessary to show that the system of prevention had failed. There had been numerous fires associated with the product and it was well known as a hazard but it took the investigation of the death and the follow up to institute change. In collecting information on a number of child drownings in swimming pools, he brought together experts to demonstrate the patterns associated with these deaths and the available means of prevention and the steps necessary to implement them. Graeme has also facilitated, championed and led the move toward the national electronic collection of coronial data.

## The next national conference

The next national injury conference will be held in Perth in 2003. We'll give you further details as they become available.

## Seen at the Conference Dinner



Mark Stevenson, (Injury Research Centre, University of Western Australia) and Ian Scott (Injury Consultant)



Stan Bordeaux (Injury Prevention, Tasmanian Department of Health & Human Services) and Michael Tilse (Injury Prevention, Queensland Health)



Karen Ashby and Wendy Watson, Monash University Accident Research Centre



Richard Franklin tries his hand at stand-up comedy ...



... And the crowd laps it up!

## Seen at the Conference Dinner (continued)



*Terry Clift and Daryl Pedler (Warrnambool-based members of the Organising Committee)*



*Neil Storey and Patricia Healy (National Occupational Health and Safety Commission)*



*Annie Warn (Health Promotion, NSW Central Coast Area Health Service) and Chris Pollachini (Falls Prevention, Western Sydney Area Health Service)*



*L to R: Jan Shield (Crime Prevention Victoria), Barbara Minuzzo (Royal Children's Hospital Safety Centre, Melbourne), Mark Stevenson (Injury Research Centre, University of WA), Marilyn Lyford (WA Royal Lifesaving Society), Richard Scheiber, (Childhood Injury Prevention, US Centers for Disease Control)*



*Richard Bowman (CSIRO Melbourne)*



*Caroline Finch (Monash University Accident Research Centre)*



*John Wakerman (Centre for Remote Health, Alice Springs)*



*Kieranne Watt and Heidi Lindner, two recipients of student bursaries, with Richard Franklin (AIPN President)*



*Richard Franklin presenting the AIPN Award for Practice to Sharon Landers (Victorian Metropolitan Fire & Emergency Services Board)*



*Jenny Heslop (Mid North Coast Aboriginal Injury Surveillance Project) and Bob Davis (NSW Mid-North Coast Area Health Service)*



*Karen Peasley and Lyndal Owens (Victorian Institute of Forensic Medicine)*



*Marilyn Lyford (WA Royal Lifesaving Society) Jan Shield (Crime Prevention Victoria) Chris Costa (Injury Prevention Control Council of WA)*



# New report: Falls by the elderly in Australia

NISU recently released a new report in its *Injury Research & Statistics Series*. Under the title *Falls by the Elderly in Australia*, the report uses 1998 deaths data and hospitalisations data for the financial year (FY) 1997/98 to examine the issue and leaves no doubt about the seriousness of the problem. In 1998, 1,014 elderly people (65 years and over) died from falls and over 45,000 were hospitalised for injuries caused by accidental falls.

The report was funded by the Commonwealth Department of Health and Aged Care to inform community practitioners, health planners, health administrators, researchers and the public of the scope of the problem of falls in our ageing population.

What follows is a brief overview of the Report's key findings:

## 1998 Fall related deaths

- More females than males died (female to male ratio of deaths was 1.6:1).
- The death rate increased with increasing age, with the highest rates of deaths occurring at ages 85 years and above.
- The oldest age group (85 years and above) had 40 times the risk of dying from fall-related injuries than the 65 to 69 year age group.
- The most common 'accidental fall' recorded as the 'underlying cause' was 'Fracture, cause unspecified' accounting for 70% of deaths.
- Multiple cause of injury most often diagnosed for the 'underlying cause' was fracture of neck of femur (35%). Head injuries, including skull fractures, were also common, accounting for 13% of deaths.
- Fracture of neck of femur occurred 3.6 times more often as a cause of death at ages 85 years and above than in the 80 to 84 year old age group (343 cases versus 96 cases).

## 1997-98 Fall related hospitalisations

- The female to male ratio of hospitalisations in people aged 65 years and over was 3:1.
- Rates for both sexes increased exponentially with age, with about a 9-fold increase in rate between ages 65 years and 85 years and above.
- Between age groups 80–84 years and 85 years and above, the rate of hospitalisations doubled for males and increased by 74% in females.
- The mechanism or factor responsible for the injury was reported in 56% of the cases and coded to E-code categories E880–E886. Based on these cases, 39% of the cases were admitted due to injuries sustained from a fall caused by slipping, tripping or stumbling. A further 14% were injured from falling on stairs or steps or from one level to another.
- Forty-eight per cent of the falls occurred in the home—an important focus for interventions to decrease falling particularly during daily activities.
- Fall-related injuries in the elderly accounted for a total of 486,484 bed days, averaging 11 days of care for each of the 45,069 cases admitted.
- The most common injury diagnosed was fracture of lower limb (fracture of neck of femur and other or unspecified fractures of the femur), responsible for about 45% of the injured cases and having an average length of stay of about 13 days.

An earlier edition of the *Monitor* carried an article on the growing problem of elderly falls.<sup>9</sup> In particular, that article

noted that older people are disproportionate consumers of health resources. They have a higher rate of admission to hospital and, once admitted, tend to stay there longer. Furthermore, the proportion of older people in the population is set to rise dramatically. ABS predictions are that the proportion of the population aged 65 years and over will double by 2051. The Australian population aged 85 years and over—ie the group most vulnerable to the problems posed by falls—will increase five-fold!<sup>10</sup> Clearly, such dramatic increases will have serious implications for the ability of our health and welfare system to meet the future costs and service demands associated with falls among the elderly.

**A copy of this report can be downloaded, in pdf format, from the RCIS website: [www.nisu.flinders.edu.au/pubs/reports/2001/eldfalls.php](http://www.nisu.flinders.edu.au/pubs/reports/2001/eldfalls.php) Printed copies are also available. Enquiries about the latter should be directed to Raymond Cripps, the report's principal author, Tel: 08 8374 0970; E-mail: [ray.cripps@nisu.flinders.edu.au](mailto:ray.cripps@nisu.flinders.edu.au)**

## NHMRC funds for injury prevention research

During November, the National Health and Medical Research Council announced the outcome of its latest round of research grants. Nationally, the NHMRC is funding 408 new Project Grants (\$143 million) and 16 New Program Grants (\$115 million). From the information available, it is evident that 4 of these new projects have a focus on injury-specific research into primary prevention. These are:

**The policy response to Indigenous petrol sniffing—and how to improve it.** Chief Investigator: Dr Peter D'Abbs, Menzies School of Health Research (\$105,000 over 2 years).

**Risk factors for serious farm-work related injury among adult males.** Chief Investigator: Dr Lesley Day, Monash University Accident Research Centre (\$664,500 over 4 years).

**Improving vision to prevent falls: a randomized trial.** Chief Investigator: Assoc Prof Robert Cumming, Sydney University (\$402,000 over 3 years).

**Cohort study of risk factors for young driver injuries.** Chief Investigator: Prof Robyn Norton, University of Sydney, (\$681,250 over 3 years).

A further project may also contribute to the primary prevention of injury:

**Epidemiology of osteoporotic fractures in the very frail elderly: risk factors, quality of life and mortality.** Chief Investigator: Professor Philip Sambrook, University of Sydney (\$340,000 over 3 years).

A complete list of project and program grants is available at the NHMRC website at: [www.nhmrc.gov.au](http://www.nhmrc.gov.au)

# Information sources on injury among Indigenous Australians

NISU has recently completed a report intended to provide a guide to information sources which are being used to inform or support prevention of injury in the Indigenous population, and to sources which could be used for this purpose. The project report is in press.

The project, entitled *Information sources for injury prevention among Indigenous Australians: status and prospects for improvement*, was commissioned by the Commonwealth Department of Health and Aged Care (DHAC).

The report was written by NISU's James Harrison and Emma Miller with the collaboration of Tarun Weeramanthri from the Territory Health Services' Centre for Disease Control, John Wakerman of the Centre for Remote Health in Alice Springs, and Tony Barnes of the Collaborative Research Centre for Aboriginal and Tropical Health in Darwin.

## *What do we know?*

Available mortality and morbidity are sufficient to show that Indigenous injury is a major problem, though data limitations leave uncertainty about trends, many risk factors and other important matters.

The report maintains that, while the severe limitations of available information concerning injury prevention in Indigenous communities should not be down-played, it should be noted that much of this information is also lacking concerning injury and injury prevention in the general community.<sup>11</sup>

Available literature indicates that injuries and their prevention in Australian Indigenous communities tend largely to be seen in terms of a series of discrete issues (alcohol and injury, road injury, etc.). An 'injury prevention' perspective in which commonality is seen between a range of 'external causes' exists, but is not widespread. Among these discrete topics, the greatest level of attention has been given to alcohol and its effects. While topic-specific approaches are useful, it may be that gains might be made by also considering risk factors and outcomes more broadly. It appears likely that the possible benefits of an injury prevention approach, targeting a broader

range of risk factors and outcomes, have not yet been considered by many Indigenous communities.

Starting from this foundation, further information source development and data collection should focus on those gaps that most directly impede preventative action. Setting priorities among gaps in knowledge and potential topics for future research must involve Indigenous people.

## *What are the gaps?*

Preliminary findings suggest that current sources are generally inadequate for the assessment of trends, identification and quantification of most risk factors, evaluation of the efficacy and other properties of most interventions, and assessment and monitoring of the extent and distribution of the implementation of most interventions.

Among other gaps identified were an absence of information about:

### *Injury and its prevention in urban indigenous communities*

Much of the information found in this study tends to focus on the part of the Indigenous population that lives in remote and rural communities.

### *Rehabilitation and the long term effects of injury*

The report has focused on the circumstances and acute effects of trauma, largely reflecting the data that are available. While most cases of injury result in good recovery, some do not, and it will be important to consider the long-term consequences of injury in Indigenous communities. Indigenous people living in remote communities are likely to have less access to rehabilitative services by virtue of their distance from health centres (perhaps complicated by lack of access to transport, due to high cost in relation to available resources). Another likely factor is non-availability of culturally appropriate services.

### *Future patterns of health burden*

While good information about present health status is necessary, it is not an infallible guide to future patterns. Population projections may be inaccurate due to uncertainties surrounding base assump-

tions, and even relatively accurate projections of population may fail to identify future health needs. Patterns of morbidity amongst both Indigenous and non-Indigenous populations are subject to considerable change over time that may not be reflected in overall mortality statistics. For example, while life expectancy at birth of Indigenous Australians has remained at similar levels for the past two or three decades, there has been a considerable shift from a predominance of infectious disease to so-called 'lifestyle' diseases during this period.<sup>12</sup> Patterns of morbidity and mortality will continue to be shaped by socioeconomic, political and historical factors as well as being mediated by developments in medical technology and services.

## *Future priorities and perspectives*

Views of Indigenous people, policy-makers and academics on issues relevant to Indigenous health and injury prevention have evolved quite quickly in recent years, and may well continue to do so. Changes may affect assessments of what information is required, from whom, for whom and for which purposes. The changes will be reflected in a changing operational and policy context.

## *How this report is being used ...*

This report is providing input into a newly established group, the Aboriginal and Torres Strait Islander Injury Prevention Action Committee (ATSIIIPAC). ATSIIIPAC is a sub-committee of the Aboriginal and Torres Strait Islander Working Group of the National Public Health Partnership.

The Committee is chaired by Tim Agius who heads the Aboriginal Health Unit of the NSW Health Department and has met twice to date.

**Further information about the report is available from James Harrison at RCIS, Tel: 08 8374 0970; E-mail: james.harrison@nisu.flinders.edu.au Enquiries about ATSIIIPAC should be directed to Paul Sayers at the Commonwealth Department of Health and Aged Care, Tel: 02 6289 8074; E-mail: paul.sayers@health.gov.au**

# Changes to ICD-10-AM

James Harrison  
National Injury Surveillance Unit

Up to the end of June 1998, Australian hospital data were coded to a clinical modification of 9th version of the *International Classification of Diseases* (ICD-9-CM). A first version of an Australian modification of ICD-10 (ie ICD-10-AM) was introduced at various stages in the different states and Territories: NSW, NT, Victoria and the ACT adopted ICD-10-AM from 1 July 1998. The other four jurisdictions followed suit on 1 July 1999. A second version of ICD-10-AM was introduced on 1 July 2000. Version three is scheduled for release in July 2002, although this is yet to be confirmed.

The External Causes chapter of ICD-10-AM (Chapter XX) has developed considerably between the second and third editions. The greater specificity will make Australia's hospital statistics more useful for injury prevention and control.

Some major gaps in information are now being filled in. In particular, sports injury and work-related injury are beginning to be described to a level of detail in keeping with the importance of these activities as settings for injury.

Other developments reflect changes in patterns of risk (eg. the emergence of 4-wheel drives as common vehicles on Australian roads), recognition that some useful categories were lost with the change from ICD-9 to ICD-10 (eg poisoning by motor vehicle exhaust gas); demand for more detail on the circumstances of some common types of hospitalised injury (eg falls by children from playground equipment); and interest in being able to distinguish certain case types that attract much interest, though the case frequency may be low (eg shark attacks).

The changes arose out of a consultation process managed by the National Centre for Classification in Health and reflect views of people concerned with injury prevention and control in Australia about topics and categories that would increase the value of hospital separations data for injury prevention and control. Practicability of implementation was kept in mind, and clinical coders participated in the process of identifying topics and designing new categories.

All of the changes provide more specific categories by splitting existing external cause categories. Thus, data collected according to the new 3<sup>rd</sup> edition version can be made compatible with data collected according to earlier versions of ICD-10-AM by collapsing the new categories into the broader ones available in previous editions.

The changes will provide more specific categories for some aspects of Transport-related injuries; Falls; Sports injury; Work-related injury; Intentional self-harm; Assault; Animal-related injury; Injury associated with machinery; and several other types of injury.

The changes will also incorporate more specific identification of Place of occurrence.

**A briefing paper entitled *New External Cause categories in the 3<sup>rd</sup> edition of ICD-10-AM* provides further detail about the proposed changes. The briefing paper can be viewed at NISU's [website: www.nisu.flinders.edu.au](http://www.nisu.flinders.edu.au)**

**Any enquiries about this article should be directed to James Harrison, Tel: 08 8374 0970; E-mail: [james.harrison@nisu.flinders.edu.au](mailto:james.harrison@nisu.flinders.edu.au)**



## Beware of falling coconuts

Each year, Harvard University hosts the *Ig Nobel* prize-giving ceremony. In the words of *Ig Nobel* organizers ...

The *Ig Nobel* Prizes honor people whose achievements "cannot or should not be reproduced". Ten prizes are given to people who have done remarkably goofy things—some of them admirable, some perhaps otherwise. The *Igs* are intended to celebrate the unusual, honor the imaginative—and spur people's interest in science, medicine, and technology.

The 2001 *Ig Nobel* prize for medicine went to Canadian epidemiologist Peter Barss. Barss was recognised for his 1984 paper "Injuries Due to Falling Coconuts".<sup>13</sup> In an interview with his University's newspaper,<sup>14</sup> Peter Barss acknowledged that "It does sound like something to laugh at". However, as he was quick to point out, for people living in New Guinea—as he did during the 1980s—falling coconuts are far from being a laughing matter. During his time in New Guinea, he served as the director of a rural hospital, where one in every 40 patients who presented had serious injuries caused by coconuts.

In researching the phenomenon, Barss and a visiting astronomer were able to determine that the kinetic force generated by coconuts dropping from a tree height of around 35 metres "was enough to tear a hole through the roof of a car". That work provided the spark for Barss' subsequent career in injury prevention.

In recent times Barss has been an active campaigner for the prevention of child drowning in Canada and recently earned a national citation from the Red Cross Society of Canada for his ongoing coordination of the *National Drowning Report*.<sup>15</sup>

He has been rewarded by witnessing an 80% drop in reported cases of infants drowning in Canada, in part due to the alarm he sounded about the number of infants who died in bath tubs while being left unattended for brief periods.

He is currently highlighting another child drowning hazard posed by the shortage of self-latching, self-closing gates on swimming pool fences in his home province of Quebec. "In Quebec over 95% of home pools don't have these doors. Swimming pool vendors don't explain the risks or sell the safety equipment. It costs thousands of dollars to buy a pool and \$25 to make it safer."

Barss recounted to the *McGill Reporter*<sup>14</sup> that, at the *Ig Nobel* ceremony, he had met a woman who told him she felt bad that he had been singled out for the *Ig Nobel* since he has done such important work. That's not the way he sees it at all: "Even if it's a bit oddball, it's been an opportunity to talk to all kinds of media. I've been interviewed

*Continued on page 12*

# Something to read ...?

## Australian Health Trends 2001



*Australian Health Trends 2001* outlines key trends in the health of Australians using the latest statistics and other available information. In particular, the report examines health status, health service utilisation and determinants of health. More than 80 different health indicators are used, with each indicator presented as a combination of descriptive text, a table and a graph. This report will be useful for all people interested in public health, including students, academic researchers and policy makers, as well as the general public.

In the last 10 years, fewer Australians died prematurely from coronary heart disease, stroke, cancer, road accidents and other injuries. As a result, life expectancy continues to increase. An Australian boy born in 1999

can expect to live 76 years, and a girl born in the same year can expect to live almost 82 years. Other findings include: increasing death rates from opiate overdose; increases in health and hospital expenditure per person, but falling average lengths of hospital stay; pdf versions of this report can be downloaded from [www.aihw.gov.au/publications/phe/aht01/index.html](http://www.aihw.gov.au/publications/phe/aht01/index.html) Printed copies are available for \$27.00 from AusInfo, GPO Box 84, Canberra ACT 2601; Toll free Tel: 132 447 (24-hour service) (AIHW Catalogue No PHE-24).

## The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples 2001

This report is jointly published by the Australian Bureau of Statistics and the AIHW every two years. *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples* brings together a comprehensive body of information about Indigenous health and welfare, predominantly at the national level, and includes, where practicable, data comparable with those for the general population. The report is also a detailed supplement to the AIHW's flagship publication *Australia's Health* and *Australia's Welfare* which is released in alternate years.

A free pdf version can be downloaded from [www.aihw.gov.au/publications/ihw/hwaatsip01/index.html](http://www.aihw.gov.au/publications/ihw/hwaatsip01/index.html) Printed copies are available from the ABS for \$44.00 Tel: (02) 6252 5249 (Catalogue No 4704.0).

## Illicit Drug use in Regional Australia 1988-1998

New in the series *Trends & Issues*, this recent report from the Australian Institute of Criminology responds to a concern that rates of illicit drug use in regional Australia are approaching, or even exceeding, those observed in metropolitan areas of the country. An apparent increase in crime, and particularly property crime, in regional Australia in the past decade has been linked to the suspected increase in drug use.

The report did indeed find an increased use of illicit drugs in regional Australia over the 10 year period 1988-98: 77% for heroin, 131% for amphetamines, 37% for cocaine, and 47% for cannabis. However, compared to metropolitan Australia, there were fewer drug users in regional Australia at the commencement of the decade. The subsequent rates of growth and durability of drug use since then have also been lower in regional Australia.

The report concludes that it is unlikely that rates of drug use in regional Australia will contemporaneously match those found in metropolitan areas of the country in the near future. This notwithstanding, the report urges the need for the early adoption of the lessons learned from responding to drugs in the metro area if regional Australia is to avoid the drug-related social disruption which is evident in the cities.

The report can be downloaded as a pdf file from [www.aic.gov.au/publications/tandi/tandi192.html](http://www.aic.gov.au/publications/tandi/tandi192.html)

## Adolescent intentional self-poisoning

Helen Thomas

Injury Surveillance & Control Unit, SA Department of Human Services

Between January 1990 and December 1999 the South Australian Injury Surveillance System (SAISS) collected data on 535 adolescents, aged 10-19 years, who presented to the emergency department of two participating public hospitals, on 709 occasions, with injuries resulting from intentional self-poisoning (ISP).

During the study period, the rate of ISP amongst adolescents was 1 per 1,000, compared with 0.1 per 1,000 for all other age groups. Adolescents aged between 14 and 17 years inclusive were most at risk from ISP injuries, accounting for 80% (570/709) of episodes.

Since 1993, the number of adolescent ISP episodes has been increasing. Of particular concern was the steep increase in ISP episodes from 1997-1999, which doubled from 71 episodes in 1997 to 144

episodes in 1999. The most common medication used by adolescents to intentionally poison themselves has shifted from sedatives and tranquillisers in the early 1990s to analgesics in the late 1990s. In particular the involvement of paracetamol and aspirin in ISP has increased, from 22% (13/58) of all episodes in 1990 to over 50% (73/144) of all episodes in 1999.

One in four episodes (174/709) of ISP recorded by the SAISS were repeat episodes by adolescents who had intentionally poisoned themselves previously. The average number of repeat episodes was 2.1 with a range of 1-24, highlighting a broad range of repeat behaviour. One-fifth (35/174) of repeat episodes occurred within one week of the

primary ISP presentation, and 67% occurred within three months.

Several key issues need to be considered to address the problem of adolescent ISP. Rates are increasing. There is a high rate of repeat behaviour, and only a brief interval time for intervention between the primary ISP episode and subsequent episodes.

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# NPHP “Schema for evaluating evidence on public health interventions”: an injury case study

James Harrison

Research Centre for Injury Studies

“Evidence-based decision-making” is generally accepted as being desirable for injury prevention, as it is for other areas of health policy and practice. Systematic reviewing and appraisal of evidence, best exemplified by the Cochrane Collaboration, has become an important tool for decision-making in clinical medicine.

The Cochrane approach has been applied to public health (or population health) interventions, including some injury prevention topics. However, differences tend to be found between clinical and public health interventions in terms of study designs and types of evidence. Recognition of these has prompted views that different or additional approaches might be useful for evaluating evidence on public health interventions.

The National Public Health Partnership has funded the Australian Centre for Effective Health Care at the University of Sydney to develop “A proposed schema for evaluating evidence on public health interventions”. The project is being conducted by Lucie Rychetnik and Michael Frommer.

The first version of the Schema was published as an NPHP discussion paper in April 2000. A second stage of the NPHP project has involved doing a small number of case studies in which a revised version of the Schema has been applied to literature on a particular public health topic. James Harrison, Director of the Research Centre for Injury Studies, was invited to undertake a case study in the area of injury prevention. The other members of the team who did this case study are Emma Miller and Su Gruszyn.

We selected for this Case Study a topic in which public and policy interest is considerable, and for which evidence was likely to be quite limited in amount and type. The Schema will be particularly valuable if it assists evaluation and decision making in this (common) type of situation.

The topic selected for the case study was harm reduction by means of restriction of alcohol supply in communities in remote Australia, with particular reference to Aboriginal communities. The main study question was whether restriction of supply has been shown to reduce harm, particularly injury.

This article summarises our conclusions concerning the draft Schema. (The review resulting from the case study is being finalised prior to publication.)

We found that use of the schema forced us to pay close attention to the presence and *absence* of the elements of information about studies that are specified in the schema questionnaire, some of which might otherwise have been overlooked. It encouraged us to consider some relevant contextual questions, particularly including whether it is plausible that better evidence will be obtained on issues of interest.

The draft Schema was, however, time-consuming and laborious to use. Most of the literature that we examined reported post hoc evaluations of community-initiated interventions, and the version of the schema that we used had not been written with this type of literature in mind.

We concluded that the Schema provided a useful degree of systematisation of a difficult evaluation process, at the cost of laboriousness. This benefit may be greatest for reviews done by a team not already familiar with the subject matter at a detailed level. However, use of the Schema might help even subject-area experts to gain new insights (eg by highlighting

as a ‘gap’ a characteristic of a body of literature that has been overlooked).

Benefits might also be gained by readers of reviews if the Schema became used widely. This is because they would become familiar with the standardised structure and content of the resulting documents.

While the Schema has potential to help a team to focus attention on the most relevant and adequate evidence concerning a question, it does not, *per se*, provide new methods or tools for the central evaluative task. Nor does it add to the amount or strength of evidence.

Our conclusions were based on the use of a draft version of the Schema on a body of literature that we expected to pose challenges. Rychetnik and Frommer are taking account of our findings along with those of other case studies as they continue to develop the Schema.

**For further information regarding this article, contact James Harrison, Tel: 08 8374 0970; E-mail: james.harrison@nisu.flinders.edu.au The most recent version of the proposed schema—Version 3.1, July 2001, is available for downloading at the National Public Health Partnership’s website: [www.dhs.vic.gov.au/nphp/ppi/evidence/schema/index.htm](http://www.dhs.vic.gov.au/nphp/ppi/evidence/schema/index.htm)**

## Editor’s Note

The *Injury Issues Monitor* is the journal of the Research Centre for Injury Studies at the Flinders University of South Australia. The Centre incorporates the National Injury Surveillance Unit (NISU).

Letters to the Editor are welcome.

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Note: where available, Internet addresses have been provided below for conference websites. For those meetings that don't have their own website, detailed descriptions of the events are normally available at our website: [www.nisu.flinders.edu.au/events/](http://www.nisu.flinders.edu.au/events/)

## 6th International Conference in Clinical Forensic Medicine of the World Police Medical Officers

17-22 March 2002

Sydney

Contact: WPMO 2002 Conference Managers, Tel: +61 2 9262 2277; Fax: +61 2 9262 3135; E-Mail: [wpmo@tourhosts.com.au](mailto:wpmo@tourhosts.com.au) Website: [www.tourhosts.com.au/wpmo](http://www.tourhosts.com.au/wpmo)

## Safety in Action 2002

16-18 April 2002

Melbourne

Contact: Australian Exhibitions & Conferences Pty Ltd, Tel: +61 3 9654 7773; Fax: +61 3 9654 5596; E-Mail: [safety@aec.net.au](mailto:safety@aec.net.au)

## 2nd Australasian Conference on Drugs Strategy

7-9 May 2002

Perth

Contact: Conference Coordinator, Alcohol & Drug Coordination Unit, Tel: +61 8 9223 3035; Fax: +61 8 9223 3414; E-Mail: [steveguest@adcuwa.org](mailto:steveguest@adcuwa.org) Website: [www.adcuwa.org](http://www.adcuwa.org)

## 11th International Conference on Safe Communities

7-9 May 2002

Rainy River District of Northwestern Ontario, Canada

Contact: Doug Langtry, Rainy River Valley Safety Coalition, Tel: +807 274 2823; Fax: +807 274 2823; E-mail: [who2002@hotmail.com](mailto:who2002@hotmail.com)

## International Symposium on Urban Safety

8-9 May 2002

Montreal, Canada

Contact: Michelle Cote, Montreal Urban Community Police Department, Tel: +514 280 2770; Fax: +514 280 2410; E-mail: [jacques.lelievre@spcum.qc.ca](mailto:jacques.lelievre@spcum.qc.ca)

## 1st International Seminar on Women's Safety—Making the links

9-11 May 2002

Montreal, Canada

Contact: Anne Michaud, Comite International Femmes et Securite Urbaine, Tel: +514 396 3521; E-mail: [cfsu@qc.aira.com](mailto:cfsu@qc.aira.com)

## Canadian Injury Research Network meeting

11 May 2002

Montreal, Canada

Participation is open to interested researchers and stakeholders from other countries. Contact: Dr Lynne Warda, Tel: +204 787 1908; Fax: +204 787 2070; E-mail: [Lwarda@escape.ca](mailto:Lwarda@escape.ca)

## Training Workshop on Coalition Building and Mobilizing for Safety

11 May 2002

Montreal, Canada

Contact: Wendy Cukier, Tel: +416 979 5000 ext. 6740; Fax: +416 979 5249; E-Mail: [wucukier@acs.ryerson.ca](mailto:wucukier@acs.ryerson.ca)

## Course on Safety Promotion and Injury Control: Principles in Research and Evaluation Methods

11-14 May 2002

Montreal, Canada

Contact: Celine Farley, University of Montreal, Tel: +514 343 6111 ext. 2950; E-mail: [farleyce@magellan.umontreal.ca](mailto:farleyce@magellan.umontreal.ca)

## Course on Safety Promotion in Local Communities: Planning and implementation methods and tools

11-14 May 2002

Montreal, Canada

Contact: Renee Levaque, Tel: +418 666 7000 ext. 454; Fax: +418 666 2776; E-mail: [renee.levaquer@ssss.gouv.qc.ca](mailto:renee.levaquer@ssss.gouv.qc.ca)

## People's Right to Safety Charter Workshop

11 May 2002

Montreal, Canada

Contact: Tapan Bose, South Asia Forum for Human Rights, Tel: +977 1 541026; Fax: +977 1 527852; E-mail: [right\\_to\\_safety@rediffmail.com](mailto:right_to_safety@rediffmail.com)

## 6th World Conference on Injury Prevention and Control

12-15 May 2002

Montreal, Quebec, Canada

Contact: Conference Secretariat, Tel: 514 848 1133; Fax: 514 288 6469; E-mail: [trauma@coplanor.qc.ca](mailto:trauma@coplanor.qc.ca) Website: [www.trauma2002.com/](http://www.trauma2002.com/)

## Measuring the Burden of Injury Conference

16-17 May 2002

Montreal, Canada

Contact: Suzanne Tylko, Transport Canada Crashworthiness Division, Tel: +613 998 1951; Fax: +613 990 2913; E-mail: [tylko@tc.gc.ca](mailto:tylko@tc.gc.ca)

## 12th Annual Construction Safety and Health Conference and Exposition

21-23 May 2002

Chicago

Contact: The Center to Protect Workers' Rights, Suite 1000, 8484 Georgia Avenue, Silver Spring MD 20910, USA; Tel: +1 301 578 8500; Fax: +1 301 578 8572; Website: [www.cpwr.com](http://www.cpwr.com)

## XVth World Congress on Safety and Health at Work

26-31 May 2002

Vienna, Austria

Contact: E-Mail: [safety2002@auva.sozvers.at](mailto:safety2002@auva.sozvers.at) Website: [www.safety2002.at](http://www.safety2002.at)

## International Network on the Prevention of Accidents & Trauma at Work

3-6 September 2002

Elsinore, Denmark

Contact: Conference secretariat, Tel: +45 70 222 130; E-Mail: [workingonsafety@nhg.dk](mailto:workingonsafety@nhg.dk) Website: [www.workingsafety.net](http://www.workingsafety.net)

## Beware of falling coconuts

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by *The New York Times*, *The Boston Globe*, Italian state radio. Injury prevention doesn't usually get this kind of attention."

He's also happy he took part because the ceremony, where somewhat bemused genuine Nobel Laureates present the awards, is such fun. Barss explains that as part of his work on monitoring water-related deaths in Canada, "every day I'm receiving data that's quite tragic. It's nice to have an opportunity for a lot of laughs."

More information about the *Ig Nobel* awards is available at [www.improbable.com/ig/ig-top.html](http://www.improbable.com/ig/ig-top.html)

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