This issue of Hazard includes Monash University Accident Research Centre Victorian Injury Surveillance System’s response to the Federal Bureau of Consumer Affair’s September 1993 discussion paper on babywalker safety. In addition there is an analysis of Victorian Injury Surveillance System data on injuries in child care settings supplemented by a literature search of American studies. The VISS data are compared with injuries in the home.

The Safety of Babywalkers

Joan Ozanne-Smith
Irene Brumen

Introduction

The Monash University Accident Research Centre has undertaken several research studies on babywalker related injuries (Ozanne-Smith & Heffernan, 1990; Routley & Valuri, 1993), and monitored injury and exposure rates as far as possible in order to determine the level of risk associated with this product.

Injury Data

A total of 133 cases of injury resulting from babywalkers were reported to the emergency departments of the Royal Children’s Hospital, the Preston and Northcote Community Hospital and Western Hospital during the period 1989 - 1992. Thirteen percent of the injuries warranted hospital admission, and most injuries referred to the under one year age group (87%). Ninety-one percent of babywalker injuries occurred in the home. In addition, VISS reported that baby walker injuries accounted for 16% of all nursery furniture related injuries in children under the age of 2 years during the period 1989 - 1992.

When placed in context with all other injuries, baby walker injuries presenting to VISS hospitals accounted for 3.4% of all injuries to young children aged between 6 and 14 months (inclusive).
and 1.7% of all hospital admissions for the same age group. Table 1 shows a comparison of proportions of Victorian babywalker related injuries to other injuries with the totals in the National Injury Surveillance database and with those of New South Wales and Queensland.

These data suggest that babywalker injuries may be less frequent in Queensland compared with other injuries, but that they are more serious thereby resulting in a greater proportion of hospital admissions than in other parts of Australia. This apparent higher level of severity could relate to higher levels of exposure to steps and stairs in Queensland. Some of the differences may also be as a result of the different admission practices in various states. Interestingly, the greatest proportion of presentations is in the National dataset, indicating that other states have even higher proportions of babywalker injuries than Victoria.

Approximately 77% of all babywalker injuries in the VISS data involved some type of fall. Of the total injuries however, 37% directly resulted from a fall of up to one metre from one level to another, 23% from a loss of control of objects or movements, and 23% due to being moved/moving into a dangerous position. Three of the injuries resulted from chemical ingestions, e.g., “Walking around in babywalker. Pulled down box of detergent. Ingested detergent powder”. Approximately 19 of the injuries (14%) related to the child gaining access to other hazards such as oven doors, heaters, irons, electric kettles and cords, hot water, and poisonous cleaning products.

Twenty-eight percent of the injuries were lacerations or abrasions, 27% were bruising, 12% burns (e.g., “In his walker, pulled on electric kettle cord which was hanging off bench, splashed by hot water”), 10% concussion, and 4% fractures. Fifty-nine percent of the injuries were to the head region. In addition to the association of babywalkers with the injuries, steps and stairs were implicated in 50 of the 133 cases (38%).

Furthermore, impact with concrete or other manmade surfaces, the floor or flooring materials or steps/stairs was the direct cause (i.e., mechanism of injury) of the babywalker injury in 50% of the cases, and accounts for 47% of all babywalker related hospital admissions. The issue of babywalkers overturning therefore appears to be a significant one. Injuries relating to steps/stairs are particularly serious as they involve a fall from one level to the next. Examples of injury events showing the seriousness of steps/stairs related falls are:

- “In baby walker and fell down 3 concrete steps hitting her face”
- “Playing in a walker. Fell down a step head first. Landed on concrete”
- “Child in his walker. Fell down the stairs, Landed on the edge of a wall unit”

### Table 1: Babywalker injuries as a proportion of total injuries: 6-14 months of age

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<td>Victoria (VISS)</td>
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The “Safety in the Home” survey conducted by the Australian Bureau of Statistics in Melbourne, November 1992 provided valuable information about the distribution of babywalkers in the community, and is useful in combination with injury data in ascertaining the risk of baby walkers to young children. Nineteen percent of all households with children under the age of one year had a babywalker in use. This represents 8,900 babywalkers currently in use in Melbourne for this age group. Conversely, 81% of households with a child under one year of age did not use a babywalker (Australian Bureau of Statistics, 1992b).

There were steps/stairs in 65% of the households with a child under the age of one year who had a babywalker in use. Of these, 53% were found to include a child less than one year of age, and 38% a child aged one (Australian Bureau of Statistics, November 1992b).

Of an estimated 5,800 households with steps/stairs and a babywalker, only 35% of the baby walkers were reported to be in use. Furthermore, only 30% of the households with a baby walker in use claimed to have stair guards or gates at the top and bottom of the steps/stairs. Thus, 70% of the households with steps/stairs inside the house who had babywalker in active use did not take adequate measures to guard against a possible fall from one level to the next.

The Australian Bureau of Statistics (1992) report that 34% of the babywalkers were used for more than 5 hours per week, and 41% for between one and five hours per week. This amounts to a heightened opportunity for potential injury.

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**Exposure Information**

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householders from non-English speaking backgrounds, compared with the general community (Australian Bureau of Statistics, November 1992). Seventy-two percent of households using babywalkers were defined as belonging to a nuclear family (i.e., husband and wife with children). Seventeen percent of households actively using babywalkers resided in a flat, unit, apartment, terrace, or townhouse (Australian Bureau of Statistics, November 1992b).

**Risk**

In order to determine the most appropriate intervention to improve babywalker safety, it is necessary to determine the level of risk associated with the product, taking into account both injury rates and exposure. Nineteen percent (8,900) of the 46,700 Melbourne households with children under 1 year of age have a babywalker in use (Australian Bureau of Statistics, November 1992). In addition, it is estimated that there are approximately 18,700 rural households with children under 1 year of age. Assuming that the ownership of babywalkers is similar for this group (i.e. 19%) an additional 3,553 Victorian households would have a babywalker in use. Hence a total of 12,453 Victorian households with a child less than one year of age are estimated to have a babywalker in use.

During the first year of life, an annual average of 418 infants are admitted to hospital as the result of injury (Langlois, Hawkins, Penny, Brumen & Saldana, 1992). If the proportion of injuries due to babywalkers in this age group is taken to be 1.7%, as for the four VISS hospitals’ then the number of admissions statewide would be 7 per year. However, based on a 22% admission rate for injuries presenting to hospital in this age group (as in the VISS database) and the proportion of injury presentations associated with babywalkers (3.4%), the annual frequency of injuries requiring hospital assessment estimated to be due to babywalkers in Victoria is 65.

If the estimated number of babywalkers in use in this age group (12,453) is divided by the estimated number of injuries (65), it is determined that there is a risk of 1 in 192 babywalkers causing significant injury each year to children less than one year of age. These are conservative figures, since the population estimates are also conservative (i.e. do not take into account those households with more than one child in this age group) and given that those injuries presenting to general practitioners are not included. If as many injuries due to baby walkers present to general practitioners as to emergency departments, the risk of a babywalker causing an injury each year would be 1 in 96 for this age group.

Clearly, extrapolations and assumptions have been made in determining these risk estimates. However, these are probably the best available data worldwide since exposure data are unavailable elsewhere.

There is no apparent formula to determine the level of risk required to warrant a product ban. However, the data presented point in a compelling way to a product ban as the most appropriate countermeasure for this problem, particularly, since there appears to be little “good” associated with babywalkers, and most households already do not to use them.

**Options for prevention**

Several prevention strategies for babywalker injuries have been presented by the Federal Bureau of Consumer Affairs (1993).

**Product ban**

For the reasons presented above this seems to be the most appropriate action, and there should be few barriers to quick implementation. Data do not appear to be available to compare the level of risk associated with similarly unsafe products which have already been banned and could potentially be used as a precedent for action in this case (e.g. fireworks in 1974).

The health outcome from a product ban would be expected to be almost entirely positive, since the lack of natural mobility of infants would prevent exposure to most other injury risks (e.g. burns from oven door). A cost to parents and care givers could be increased demands on them to stimulate the child by other means.

**Recall**

A product recall could be expected to be extremely difficult to administer. Given the lack of quality of current babywalkers, and their limited period of use for any particular child, it may be expected that the exposure rate would diminish quite quickly following the ban of import and sales of new babywalkers.

**Design change**

Design changes incorporating a broad base, which is wider than household doorways, and supported by mandatory standards should overcome those injuries resulting from the current instability of design as well as those due to the passage through doorways leading to falls down steps or stairs, and access to some other hazards. This seems an appropriate second choice if a product ban cannot be accomplished. It may be that exposure to risk would be reduced even further due to the lack of attraction to potential purchasers of such a device.

Examples of babywalker injuries which could be prevented with the broad base design are:

- “Playing in babywalker. Victim followed sister down back step, fell on concrete”
- “In babywalker. Back door open, fell down two steps”
- “Walking around in a walker tripped on iron edging of door, hit against the edge”
- “Child in babywalker. Fell down approximately 5-6 steps. Landed on the floor”
- “In walker. Pulled overhanging cord of kettle on bench. Hot water scald”

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**VICTORIAN INJURY SURVEILLANCE SYSTEM**

**HAZARD 16**

**page 3**
• “Child walking in baby walker, pulled electrical lead of iron and iron fell on arm”.
• “In a baby walker. Pulled box of soap powder down. Ingested soap flakes”. and
• “Walking in her walker. Burnt hand on oven door”.

It is of concern that there would probably be a considerable delay in developing and implementing such a standard, but this could be overcome by a product ball until a new standard becomes available.

Warnings/education
Despite warning labels in New South Wales and strong education campaigns in Victoria, particularly targeted at the point of sale and through Maternal and Child Health Nurses, unacceptable rates of injuries are continuing. These preventive measures alone are clearly unsuccessful.

Current educational materials encourage the use of stairguards, and yet the actual use of these in the presence of steps/stairs when babywalkers are in use is quite low in Victoria (30%).

Any product ban or design modifications should be accompanied by an educational campaign to inform the public of the risks associated with existing babywalkers, and the necessity for stair guards and supervision. Educational programs should be targeted particularly at families from non-English speaking backgrounds since they are over-represented in babywalker ownership and usage.

Other
The responsible retailer approach, in refusing to stock babywalkers, taken by Myer/Grace Brothers over recent years is to be commended.

Conclusion
Based on the Victorian Injury Surveillance System data, Victorian hospital admissions data, and the Australian Bureau of Statistics “Safety in the Home” Survey, the Monash University Accident Research Centre recommends an Australian product ban on babywalkers to become effective as soon as is practicable. There may be a case for allowing babywalkers back into the market once all appropriate standard specifying a broad base is available.

References


Injuries in Child Care Settings

Virginia Routley

Introduction

There has been very scant research in Australia on injuries in childcare settings. However research in the U.S. has been extensive including studies by Gunn, Elardo, Gratz, Landman, Chang and Rivara. These studies focused on early nursery schools, single centres, multi-sites or injuries specifically (Gratz, 1992).

There were 536 cases on the VISS database for children aged under 6 years who presented with injuries sustained in child care settings to the emergency departments of the Royal Children’s Hospital, Western Hospital and Preston & Northcote Community Hospital between the years 1989-92. Those aged under 5 years injured in child care settings represented approximately 3% of all injury cases on the VISS database for that age group.

Almost two thirds of the injury cases occurred in day care centres and one third in kindergartens. Additionally there were a very small number of injuries which took place at playgroups and family day care homes. Family day care homes are almost certainly under-represented due to ‘home’ rather than ‘family day care home’ being stated on the VISS form.

Comparisons are made throughout with home injuries aged under 5 years on the VISS database over the same hospitals and time period, 1989-92. Under 5 years was considered preferable to under 6 years since 5 year olds represent only 8% of those injured in child care settings and the majority of 5 year olds would be at school. (Routley, de Lemos, 1993)

Findings

- The child care injuries were approximately as severe as for child injury locations overall where admissions as a percentage of presentations is used as a measure of severity. (admission rate for children’s injuries under 5 years in the home is 20%, 18% child care settings).

- Two thirds occurred outside in the playground which is consistent with an American study. (Elardo et al, 1987)

- The peak time of day was 11am for kindergartens, 11am and 3pm for day care centres - when the children were likely to be outside playing. These times also featured frequently in American studies. (Elardo et al 1987, Gratz 1992, Chang et al,1989)

- The most frequent day of the week was Thursday and Monday the least. American studies were varied on this suggesting there is no clear pattern. (Gratz, 1992).
The monthly pattern of VISS data to some extent followed the school terms and was most frequent in March, May and November. March has consistency with American studies which frequently cited September, the beginning of the child care year when the children are unused to the equipment and the weather is conducive to outside play. (Gratz, 1992)

Mechanism of Injury
A moving body impacting, mostly falls, was the most common mechanism of injury. Compared with injuries in the home, poisonings and burns were under-represented (in the home - 11% poisonings, 6% burns) and impact, mostly falls was over-represented in child care (52% home). See Figure 2.

Falls
Distribution of Fall Types
The distribution of the types of falls is shown in Figure 3. The proportions which were admitted increased from 11% for the ‘same level’ to 25% for ‘up to one metre’ - clearly the distance fallen has an impact on the severity of injury.

Falls from playground equipment accounted for 44% of falls. These falls were most often from monkey bars and climbing apparatus, slides and swings. The predominance of falls from play-ground equipment was also found by Turner et al, 1993, Chang et al, 1989, Sacks et al, 1989.

Thirty-two percent of falls were caused by the injured person either himself or herself on their own eg ‘Playing around outside. Tripped and fell on to pavement’ or associated with another factor eg ‘Jumping off a climbing frame. He fell over when he landed on the ground’.

Nature of Injury
Fractures (9% home v 19% child care) were over-represented in childcare settings compared with home. Poisoning (8% home v 0.6% c.c), burns (11% home v 3% c.c) and dog bites (2% home v no
These nature of injury under-representations were consistent with findings by Chang, Solomon and Turner in the U.S. In studies including injuries which did not require medical attention. In the VISS data there were only 3 cases. See Figure 4.

**Body Part Injured**

The head was the most frequently injured body part. The head is proportionally larger and the centre of gravity higher in children than adults, so they tend to fall head first (head injuries were 18% of adult home injuries, 40% of under 5 year old home injuries). Head injuries were mostly face and scalp lacerations and bruising, and concussion. Arm fractures, especially to the forearm, were the most frequent injury to the upper extremity, representing 70% of these injuries. See Figure 5.

**Causes of Injury**

Where up to two factors could be nominated which led to the injury occurring products were found to be a factor in 55% of cases (cf 63% for home injuries under 5 years), persons 39% of cases (cf 32% for home injuries) and natural materials or animals 6% (cf 5% home injuries). Products therefore, although the leading factor involved in injuries in child care settings, were less likely to be involved than at home.

**Person Causes of Injury**

The injured child himself or herself was a factor in 24% of cases (cf 19% at home), a child other than the victim 13% (cf home 7%) and an adult 3% (cf 7% home). Children therefore, whether the victim himself, herself or another child, were more likely to be a factor in causing injury in a child care setting than they were at home. This is not surprising given their greater exposure to other children.

Examples of the child himself or herself causing injury in child care settings were ‘Playing. Collided with tree. Hit head.’, ‘Running. Tripped and fell’; of another child causing injury were ‘Hit on the lip with a pipe. Thrown by another child’, ‘While eating fruit another child stuck popcorn in his ear’ and of an adult causing injury were ‘Teacher holding child by the hands and spinning him around. Pulled child’s arm’, ‘Being held, was
dropped, fell onto arm’. With the exception of 2 unfortunate cases where the kindergarten was under siege and the children doused with petrol all the latter were noted as unintentional.

**Product Causes of Injury**

Playground equipment was clearly the most significant cause of product related injury representing **almost one half of injury cases in this category**. Furniture, toys and doors represented a further 11%, 10% and 6% respectively of product related injury. Toys were varied but were most frequently tree houses, tricycles and pull toys. See Figure 6.

Child care settings contrasted with the home where playground equipment represented only 2% of product related injuries.

Poisoning hazards, stairs/steps, bikes, nursery equipment (no high chair cases) and hot water (scalds) were all under-represented in child care settings compared with the under 5 year age group in the home.

**Playground Equipment**

(n=164)

These injuries were mostly from monkey bars and climbing equipment, slides and swings and see-saws. The 73 cases in the “Playground equipment not stated” category in Figure 6 also included “other playground equipment”. Falls caused 77% of injuries from playground equipment which were usually arm fractures (30% of injuries), concussion (12%) and face and scalp lacerations (12%).

Impact absorbing undersurfaces were noted in only 17 of the 164 playground injury cases. Tan bark was the material noted in 10 of these cases, mats in 5, pinebark and woodchip each in one. There was one case of concussion on pine bark, otherwise arm fractures were the most frequently occurring injury on impact absorbing materials. Unfortunately information as given on the VISS form does not usually state the condition of the impact absorbing material.

A study undertaken by the Playground and Recreation Association of Victoria found undersurfacing adequate in very few of the school, pre-school and community playgrounds inspected (PRAV, June 1992).

No mention is made of playground equipment specifically in the Children’s Services Centres Regulations 1988 (Victoria). Regulation numbers 81 relating to cleanliness, maintenance and repairs and 97, being a general obligation that every precaution is taken to protect children at the centre from any hazard likely to cause injury, were of most relevance to playground safety.
Monkey Bars & Climbing Equipment (n=52)

Monkey bar and climbing equipment injuries were most frequent for playground equipment injuries, and usually took the form of falls over one metre causing arm fractures (34% injuries) and concussion (12% injuries). One quarter of monkey bar and climbing equipment injuries were directly caused by the equipment itself and one half were incurred on striking the ground.

Slides (n=26)

As for monkey bars etc arm fractures and concussion (each 26% injuries) occurred most frequently. Almost all cases were injured by falling from the slide, often when not using the slide correctly eg ‘Climbing up slide steps backwards, fell’; ‘Playing on slide. Pushed off. Landed on ground’.

Swings (n=13)

Nine of the 13 swing injuries were a result of falls, particularly up to one metre. The other 4 injuries were caused by the child being struck by a swing. These injuries were relatively serious (30% admission rate) and were mostly fractures and concussion.

It is of interest that the NSW Health Promotion Unit has funded an inter-departmental working party to develop guidelines for playspaces in child care. These guidelines, called PLAN-IT, will cover criteria such as age-appropriateness of equipment, recommendations for lay-out, height, guard railings, entrapments and maintenance plans. All 2,500 registered centres will receive a copy at the end of 1993. As in Victoria there is no regulation which refers to the specific design of outdoor play areas or the equipment required.

Furniture (n=40)

These injuries were mostly from chairs; tables; cabinets, racks, room dividers and shelves and beds, in that order. Injuries were relatively minor (admission rate was 10%) and occurred most frequently to 2 year olds, Face and scalp lacerations and bruising were the most frequently occurring injuries. Falls were most often up to one metre or on the same level.

Examination of the text descriptions revealed approximately equal numbers of children who fell off while sitting on a chair, who were playing and hit against furniture and who were climbing on furniture and fell off.

General Playground Equipment Recommendations

1. When the Draft Australian Standard for playground equipment becomes an Australian Standard (AS 2155) it is recommended that the Children’s Services Centres Regulations be revised to include compliance with or progress towards compliance with this standard.

2. The purchase of equipment which complies with the Draft Australian Standard (91167) is strongly recommended. The Playground and Recreation Association of Victoria provides advice on the safety and appropriateness of equipment and is familiar with the draft standards.

3. A loose impact absorbing undersurface such as tanbark, fine pinebark or mulch is recommended to a depth of 200mm (community playgrounds 250mm). It should be regularly raked and maintained to this depth.

4. As in the PRAV report, VISS data showed that large numbers of children are falling onto outstretched arms and landing awkwardly on the ground, resulting in long-bone fractures. The PRAV report recommended that ‘Australian and international laboratories who are currently undertaking scientific analyses of impact absorbing materials for safety surfacing of playground equipment areas, focus their attention on the numbers of severe long bone injuries from playground equipment usage. Also that testing be carried out to establish safety surfaces which may be relevant to lessening the severity of long bone injuries as well as those recommended for possible head injuries.’

5. Play equipment should be appropriate for children’s size and stages of development. This could be taken as an argument against mixing age groups of children, particularly in the outdoor setting. (Ozanne-Smith, J, 1986).

Recommendations

1. Furniture should be stable and well maintained.

2. Children should be discouraged from climbing onto furniture and sitting awkwardly on chairs.

3. The purchase of furniture with sharp edges should be avoided eg round tables are preferable, and sharp edges covered with protectors.

Doors (n=17)

These injuries most often occurred to 2 year olds and represented a similar proportion of injuries to those at home. The injuries were relatively serious (30% admission rate). Almost all were finger injuries, particularly cuts and lacerations, crushing and fractures. One third of cases involved a child other than the victim. eg ‘Friend closed door. Victim’s fingers caught’.

Regulations relating to doors in the Children’s Services Centres Regulations 1988 refer to door fastenings and handles and the ease and preventability of their opening. Features to prevent finger jam injuries are not mentioned. Unlike furniture which is a more frequent cause of injury, door injuries can easily be prevented.
Recommendations

1. A Finger Safe Guard, available from the Child Safety Centre for $14- (See Fig. 9) can be fitted over vulnerable openings on the door hinge side, wedges can be placed under doors to retain them in an open position, closures can be fitted to prevent slamming or material which compresses can be placed between the frame and door.

2. A regulation which aims to prevent finger jam injuries and incorporates the above recommendations should be added to the Children’s Services Centres Regulations. 1988.

American Research

The issue of whether child care is more or less safe than in the home and the resulting studies arose in the United States in part because of media exposure to the issue of child abuse. The focus shifted from intentional to unintentional injury.

These studies were often in a position to calculate exposure rates but differed partly because of the variation in definition of injury - emergency room attendance, first aid book entry, medically attended etc. Frequently quoted figures were Rivara’s medically attended definition of 2.5 per 100,000 child hours for out-of-home care compared with 2.88 for home care and Gunn’s 1.69 per 100,000 child-hours compared with 2.66 for home care.

Therefore in a comparison with injury in the home Gunn and Rivara found that although out-of-home child care may carry an increased risk of infectious disease relative to home care, it did not appear to carry an increased risk of injury and, in fact may have conferred a lower risk. (Gunn, 1991; Rivara, 1982) Gunn found that children who attended out-of-home care had a higher injury rate when at home than did children who did not attend out-of-home care. (Gunn, 1991). He suggested as possible explanations that parents of children in out-of-home care may be busy cramming meal preparation and other domestic tasks into the evening thus impairing their supervision; on release from the relatively structured environment of the day care centre children may exhibit more reckless behaviour and the home environments of children in out-of-home care may not be as child-proofed as those of children in full-time care. He recommended further research in this area.

General Recommendations

1. Initial efforts in safety improvement should focus on the playground.
2. Involved supervision of children, especially when using play equipment.
3. Education in non-violent settlement of disputes or negotiation appropriate to the child’s level of maturity.
4. First aid training, including 3 yearly updates (St. John’s Ambulance qualification or similar) for all primary contact staff. Trained nursing staff should update their resuscitation skills at least every 3 years. There is no alternative to immediate aid supplied by a staff member. (Ozanne-Smith, J, 1986)
5. Children’s Services Centres Regulations 1988 be revised when the Draft Australian Standard on playground equipment becomes an Australian standard to include regulations relating to door jam injuries, playground equipment and first aid training (including updates), as referred to in the relevant sections.
6. Injury reports be investigated by child care centres to determine any recurring hazards and moves be made to eliminate these.
References


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Sherry, K, October 1993. School of Community Medicine, University of New South Wales (October 1993) (Personal Communication).

VISS Update

The National Injury Surveillance Unit, in consultation with injury research and prevention personnel and emergency department directors, has developed a National Minimum DataSet (Injury Surveillance) which is expected to become part of the national data dictionary. Software is under development by several groups around Australia to collect emergency department data in accordance with this dataset.

VISS has been funded by the Victorian Health Promotion Foundation and the Department of Health and Community Services to undergo transition during the 1993/94 financial year from the current “paper” collection of injury data to a routine electronic collection using the National Minimum Dataset (Injury Surveillance). In addition Health and Community Services has provided bridging finance for one month.

To facilitate routine electronic data collections in hospital emergency departments, the Minister for Health, the Hon Marie Tehan recently announced that her department will provide $500,000 per year in 1994/95 and 1995/96 to upgrade emergency department computerisation and to purchase appropriate software. As new data systems become operational, VISS will be able to use the new datasets which will become available.

Meanwhile, it is anticipated that the data output functions of VISS will continue with little change during this transition period. Currently VISS has approximately 135,000 cases of injury and poisoning in its database, and this number will rise further before the current data collections cease. This large dataset will support further research, data analysis and publications, including Hazard, during the transition phase.
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* Special edition
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How to Access VISS Data:

VISS collects and tabulates information on injury problems in order to lead to the development of prevention strategies and their implementation. VISS analyses are publicly available for teaching, research and prevention purposes. Requests for information should be directed to the VISS Co-ordinator or the Director by contacting them at the VISS office.

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HAZARD VOLUME 1
Bound Edition of Hazards 1-10
These are available from VISS. A handling and postage fee of $10 applies.
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*This .pdf version re-created by Glenda Cairns.*