



V.I.S.S.

**Hazard
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**Victorian Injury
Surveillance System**

**Monash University
Accident Research Centre**

The eighth edition of *Hazard* from the Victorian Injury Surveillance System introduces the topic of sporting injuries with a general overview. It also examines two common causes of injury in the first year of life. Updated information is provided on head injuries to bicyclists to complete the first year of post-helmet legislation evaluation. Recent VISS activities are outlined, including an overview of organisations requesting VISS data.

Sport Related Injuries - An Overview

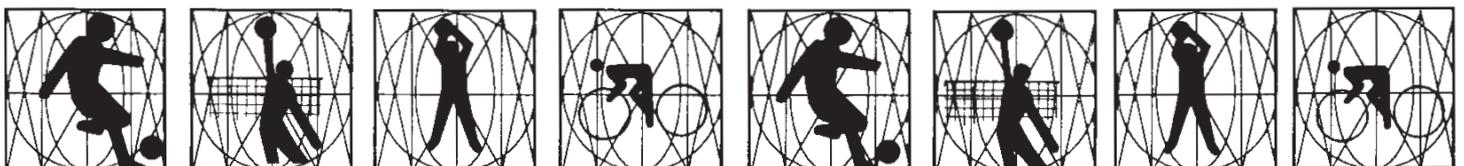
Virginia Routley, Joan Ozanne-Smith

In Australia, there are an estimated one million sports injuries every year (Egger, 1990). This extrapolates to a sports injury occurring in 1 in 17 Australians each year. The financial costs of these injuries have been estimated by Egger to be \$1 billion per year (Better Health Commission 1986).

Sports injuries are common in children and adolescents. In the breakdown of injury from the Victorian injury surveillance System

data (1989-90), sport related injuries in boys and girls in the 10-14 year age range, were the single highest cause of attendances to Emergency Departments.

Of the sporting injuries which presented to 4 VISS hospitals, Australian Rules football represented almost one third of sporting injuries under 15 years old, followed by soccer (15%), then basketball (11%) and cricket (10%).



Frequency of injury by sport

Table 1

ALL SPORTS		INJURY PRESENTATIONS
	N	%
Football	825	31
Soccer	388	15
Basketball	286	11
Cricket	254	10
Netball	137	6
Gymnastics	105	4
Physical Education (schools)	95	3
Track and Field	82	3
Baseball	55	2
Tennis	47	2
Martial Arts	37	2
Hockey	30	1
Volley Ball	30	1
Ball Sports (other)	126	5
Sports Not Ball (other)	91	4
	2558	100%

Risk Factor

It must be remembered that these figures and those to follow are not necessarily an accurate indicator of a sport's risk factor. Children with sports injuries also attend General Practitioners, Physiotherapists, Podiatrists and Special Practitioners. Some injuries because of their more serious nature, requiring immediate attention are more likely to present to the Emergency departments of hospitals than others, e.g: fractures and concussion rather than sprains and strains¹.

The risk factor is a function of many variables -

- * competitive or informal,
- * protective gear
- * supervised or unsupervised
- * environmental
- * number of participants,
- * number of playing hours, e.g. gymnastics require many hours of participation compared with a weekly game of tennis.

Injuries as a percentage of the number of participation hours by sports ASMF Sports Injury Survey - ACT

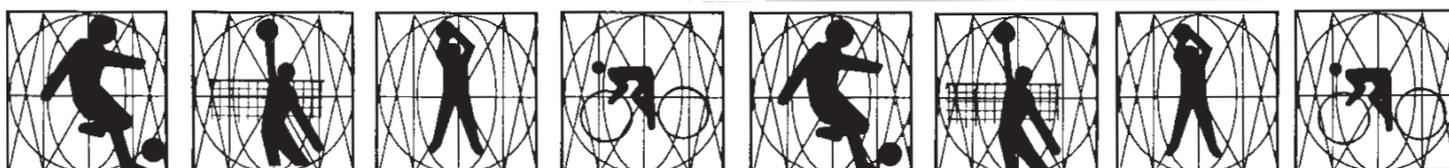
Table 2

Risk factor = $\frac{\text{Number of injuries} \times 100}{\text{Mean hours played} \times \text{number of participants}}$

SPORT	N	MEAN HOURS PLAYED (per week)	N	RISK FACTORS %
Australian Rules	46	7.1	3,375	0.19
Basketball	29	5.8	4,500	0.11
Gymnastics	7	9.6	5,000	0.01
Hockey	25	6.4	2,500	0.15
Indoor Cricket	15	2.2	5,734	0.11
Netball	38	4.0	4,590	0.11
Soccer	23	6.4	6,500	0.06
Squash	18	4.1	3,400	0.13
Rugby League	44	6.5	3,359	0.20
Rugby Union	56	7.1	4,100	0.19
	301			

The Australian Sports Medicine Federation (ASMF) Sports Injury survey compared the risk factors of the various sporting injury rates for competitive players of all ages in the Australian Capital Territory (ACT). The hours played were estimated from those revealed by sports injured patients while the figures for the number of participants were readily available from the various sporting organisations in the ACT. Their results are shown in Table 2. (Sanders et al 1989).

¹ In the ASMF Sports Injury Survey conducted in the ACT 40% of sport-injured persons (all ages) presented to hospitals. It is anticipated that the figure for children would be greater because they demand more immediate attention and parents are more cautious with children than with themselves.



The determination of an accurate figure for participants in the various sports in Victoria is a project on its own and the Victorian Database for Sport, a project of Vicsport, Vichealth and the Victorian Department of Sport and Recreation, comes closest to providing this. Their data however are limited in their application to VISS data - sports are not defined by area, the relevant age groups are given as under 10 years, and 10-19 years, and data have not been provided for all sporting groups. Alternatively Australian Bureau of Statistics data are provided by area but are based on an adult survey (over 15 year olds).

Ignoring the risk factor element, a small improvement in injury prevention measures in the most frequently presented sports should significantly reduce injuries overall.

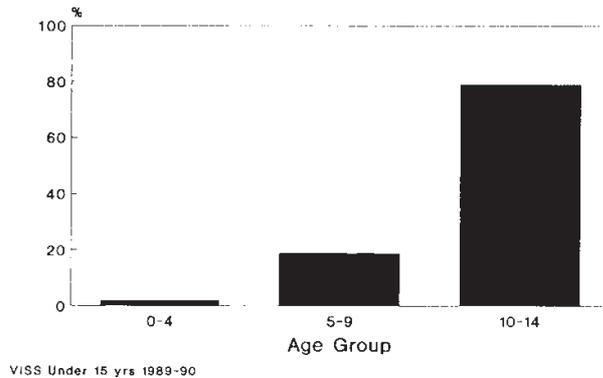
VISS Data

There were 2,653 cases of sport related injuries which presented at the Royal Children's Hospital, Preston & Northcote Community Hospital and Western Hospital in the years 1989-90 for children aged under 15 years.

Of these cases seventy-five percent were male and twenty-five per cent female. Approximately 40% of all sport related injuries were incurred in school playgrounds and another 30% on sports ovals, arenas or courts.

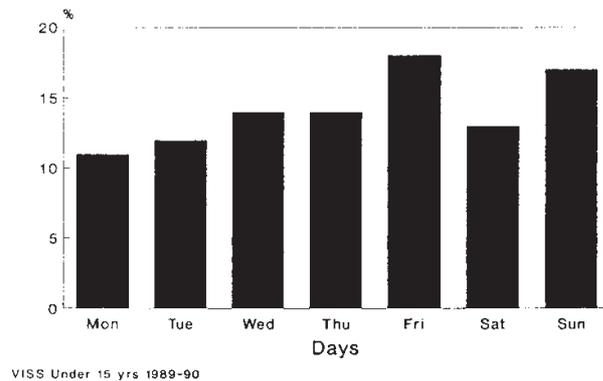
Approximately 80% of children less than 15 years of age injured while engaging in sport were in the 10-14 age group (Figure 1).

Age Distribution
All Sports Injuries



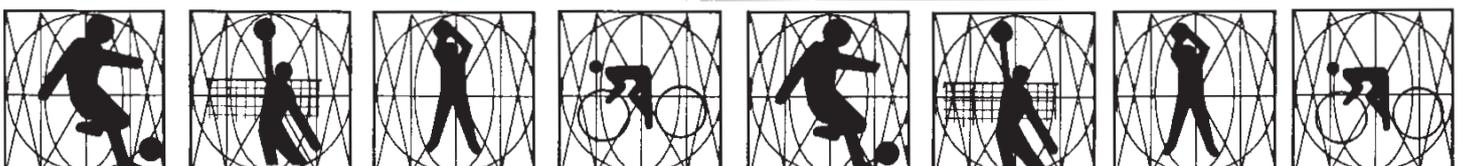
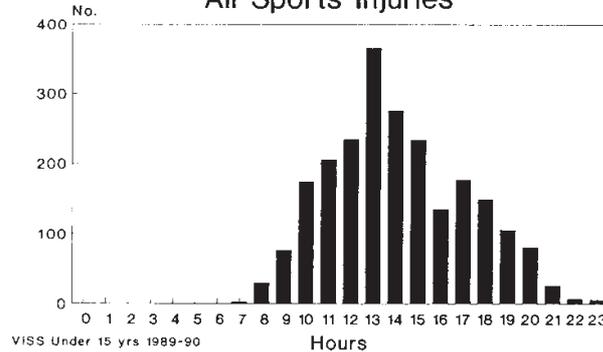
Fridays and Sundays were the days on which injuries most often occurred (34% together) (Figure 2)

Days of the Week
All Sports Injuries



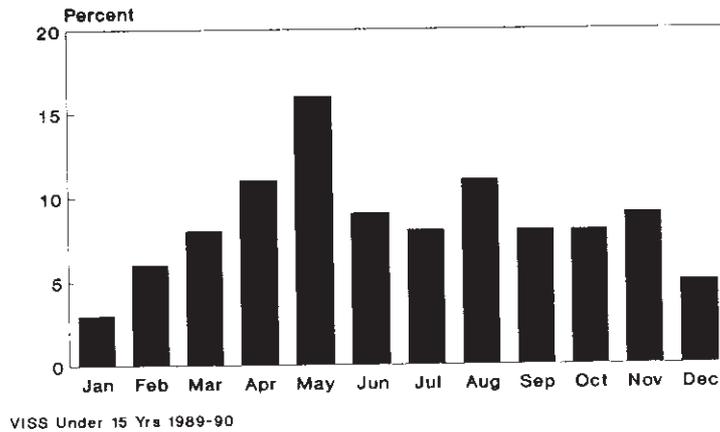
Weekday lunchtimes were the most common time of day for injuries suggesting school lunchtimes (Figure 3)

Time of Day
All Sports Injuries



- May was the month when the highest monthly rate of injuries occurred (Figure 4).

Monthly Pattern All Sports Injuries (N = 2558)



- Injuries occurred most frequently to arms and hands (50% of injuries), followed by legs and feet (27%) and injuries to the head including face, neck, mouth and concussion (18%)
- The most common types of injuries were fractures and sprains or strains (both 27%)
- 7% of sport-injured persons were admitted to hospital. Fractures represented 49% of these admissions.

Location All Sports Injuries

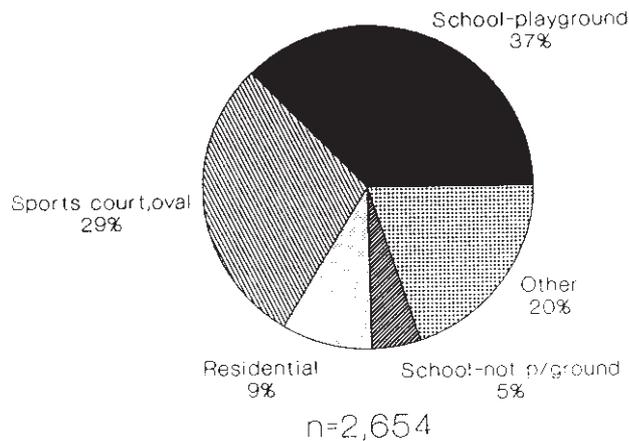


Figure 5 shows the location at which sporting injuries occurred. Although comparative exposures are unknown the frequency of sports injury at schools suggests that some interventions should be targeted there. Because of the “controlled” environment in schools, there may be particularly good opportunities for injury reductions there (e.g. modified rules; decreased density).



TYPES OF INJURY

Injuries by body part
Percentage of injuries

Table 3

<i>BODY PART</i>	<i>FOOTBALL</i>	<i>SOCCER</i>	<i>BASKETBALL</i>	<i>CRICKET</i>	<i>NETBALL</i>
Head injuries (incl. face)	15	14	10	42	5
Upper extremities	54	41	61	35	58
Lower extremities	23	40	23	18	33
Injuries to trunk	6	3	3	2	2
Internal organs and digestive	1	1	1	1	-
Other	1	1	2	2	2
	100%	100%	100%	100%	100%

Nature of injury by sport
Percentage of injuries

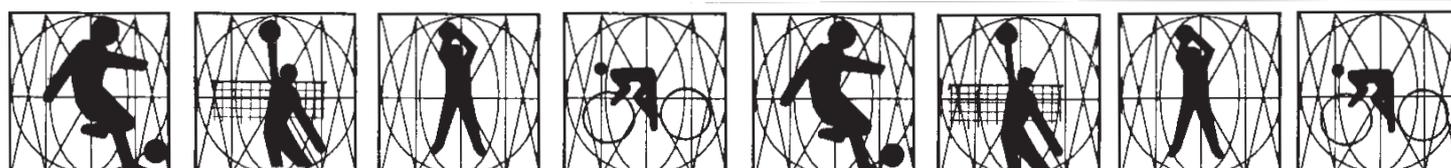
Table 4

<i>INJURY</i>	<i>FOOTBALL</i>	<i>SOCCER</i>	<i>BASKETBALL</i>	<i>CRICKET</i>	<i>NETBALL</i>
Cuts and lacerations	5	7	3	15	1
Superficial abrasion	1	3	1	3	2
Haematoma	20	21	21	30	14
Inflammation, swelling oedema pain	10	6	7	7	8
Crushing injury	-	1	-	1	2
Fracture	30	30	26	19	21
Dislocation, subluxation	2	2	2	1	1
Sprain, strain	24	24	36	15	46
Systematic injuries	6	2	1	5	2
Other	2	4	3	4	3
	100%	100%	100%	100%	100%

Tables 3 & 4 above summarize the various types of injury presented to VISS hospitals for under 15 year olds for the 5 major sports.

The upper extremity was the body part most commonly injured and haematoma, fractures and sprains/strains were the most common injury types.

The next edition of *Hazard* will examine the nature of injuries by body part for individual sports including Australian Rules Football, Soccer, Basketball, Cricket and Netball. Specific injury countermeasures will be discussed for each of these sports.



RECOMMENDATIONS

The frequency of sporting injuries and the evident widespread lack of application of the general principles of injury prevention, suggest that there is much scope for prevention. However, gaps exist between knowledge of the problem in many cases and developing appropriate countermeasures and implementation strategies. In particular, exposure studies are required to determine which sports are actually the most risky (where risk is defined as injury frequency ÷ exposure).

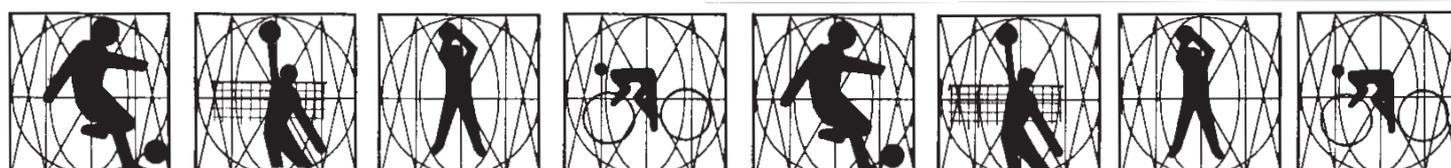
While sporting bodies could use this information to determine means of injury reduction in their sport, such information could also be used by parents and schools in choosing sports in which children could participate relatively safely.

General considerations in reducing sporting injuries should include the following:

- Competing players in contact sports should be of similar height and body weight.
- The density of players and their proximity to bats and other hazards should be limited by junior rules aimed at decreasing the number of players per side, or increasing the distance required between bat and field, and decreasing the hardness of balls. It may be necessary for state and national sporting organizations to review the level of emphasis placed on safety in their sport in some cases.
- Technical skills training should be provided, particularly at the beginning of the season, to maximise safe behaviour.
- Playing sport at school or in clubs should be contingent on wearing protective gear wherever appropriate.
- Guidelines should be provided to school principals and school councils regarding safety measures for which budget provisions should be made, and enforcement mechanisms established (e.g. school or club subsidises the purchase of cricket helmets, or safety glasses for squash and badminton). Check lists could be developed for environmental, maintenance and safety gear checks for each sport.
- Fitness and warm-up programs should be established.
- Attention should be directed in schools to the provision of appropriate surfaces (or the use of neighbouring sportsfields) and the removal of hazards such as taps from the area.
- Sports should be separated from other activities in school playgrounds. It may be necessary to stagger play times to achieve this.
- Coach training may be required to assist with the implementation of the above measures.

References:

- *Better Health Commission 1986 Looking Forward to Better Health Vol 2 A.G.P.S., Canberra*
- *Egger G. 1990 Sports Injuries in Australia, A.G.P.S., Canberra*
- *Sanders T., Draper J., Fricker P. 1989, ASMF Sports Injury Survey - Pilot Projects in the ACT 1988-89*



Injuries in the First Year of Life

Lesley Day

Children aged less than one year make up a small proportion of cases in the VISS database (5% of all injuries and poisonings for children less than 15 years old). Drugs and furniture are the focus in this article. Previously unreported causes of injury are concerning: twenty-six infants who over a two year period received either the wrong medication or the incorrect dosage of the right medicine; and fifty-nine infants who were placed on a bed or couch to sleep fell onto the floor (3 of whom sustained serious head or facial injuries).

An improved knowledge of age-specific hazards would enable current injury control measures to be improved, and provide additional information for safety professionals to alert parents to potential hazards. Future editions of *Hazard* will present detailed analyses of injury patterns for different age groups.

Despite the relatively low frequencies of some of the new problems identified in the first year of life, there are often simple counter-measures which could be readily applied.

Introduction

The nature of the child injury problem (other than road injuries) in Victoria has been the subject of an extensive report. The broad analysis of injury patterns by year of age which was included in this report, identified four breakdown factors as major contributors to hospital admissions for the under one year age group: food and drink (14.9%), nurse equipment (12%), furniture (13%)

and medications (11%) (Ozanne-Smith et al., 1990). The majority of incidents for which food or drink were factors involved scalds from hot beverages and these have been reported on in an earlier edition in some detail. Ozanne-Smith and Heffernan-Colman (1990) described injuries related to nursery furniture. This *Hazard* deals with remaining significant breakdown factors for children under 1 year old: furniture and medications.

During the first year of life, a child becomes increasingly mobile and begins to explore his or her environment with an avid curiosity. Infants examine objects with their mouths and consequently their first reaction to new objects is to put them into their mouths. Children gradually become mobile and move through the following stages: rolling, reaching for and holding objects, crawling, sitting, standing and walking. Not every child is walking by his/her first birthday but almost all one year olds will be standing, either with support or alone. At this age, children have little concept of height or changes in level and no concept of danger.

Method:

Injuries which occurred in 1989 and 1990 to children under 1 year old were selected from the VISS database (N = 1482). Furniture accounted for 15% of these, and poisonings were responsible for 9%. The data were collected from emergency departments in the Royal Children's Hospital, Preston & Northcote Community Hospital, and the Western Hospital (Footscray & Sunshine campuses). Regular audits

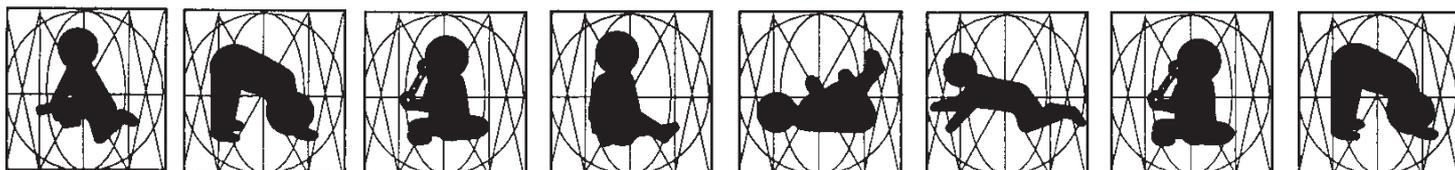
show that VISS received data for at least 90% of injured and poisoned children who presented to Emergency in participating hospitals.

Poisonings – Drugs and Related Substances

Overview

Sixty-seven infants (4.5%) presented as a result of ingesting a drug. This category includes both internal and external medications as well as items containing a substance classified as a drug. For example, cigarettes are included because they contain the drug nicotine. In this article “drugs and related substances” will be shortened to “drugs” and used throughout. A further 40 children in this age group presented to hospital as a result of exposure to other poisons such as dishwasher detergents and pesticides. Altogether, the proportion of poisonings for the 0-11 month age group was similar to that of all children under 5 years old (8.5%).

The admission rate was 39% for all drugs poisonings in this age group, compared to the average of 21% for all injuries. There are several possible explanations for this higher admission rate: the more serious nature of drug poisonings in relation to the dose/weight ratio of infants; there is greater difficulty in establishing how much was ingested; and parental and medical concern for infants. The major contributors to admission were nicotine and inhalant ingestions.



There was a general trend for the number of incidents to increase with increasing age (Figure 1), probably due to a combination of curiosity, increasing mobility and developing motor skills. The peak injury times were between 9 and 10 am and another smaller peak from 5 to 6 pm. Ninety-four percent occurred in a private home and only three of these were not in the usual place of dwelling.

Mechanisms

Table 1 demonstrates the mechanisms of drug poisonings. A total of 27 infants required admission to hospital. Half of the poisonings occurred when the infant itself gained access to drugs. In 22% of cases, the incorrect dose was administered by a parent or other adult and in a further 13%, the incorrect medication was given. An older child gained access to the drug and administered it in 15% of cases.

Drug related poisonings: mechanism **Table 1**

Mechanism	Presentations	
	N	%
Accessed drug	33	50
Incorrect dose	15	22
Sibling gave drug	10	15
Incorrect medication	9	13
Totals	67	100

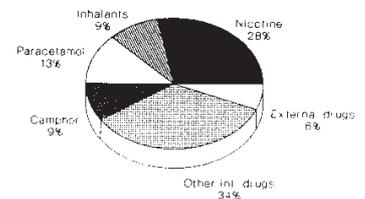
*VISS presentations: 1989 & 1990
Age: 0-11 months
Drug-related poisons*

Infants gaining access to drugs (50% of total)

The types of drugs and other substances involved are shown in Figure 2. Forty-two percent of infants injured by themselves gaining access to drugs were admitted. It is disturbing that over a quarter of cases involved cigarettes, tobacco or ash, since nicotine ingestion from one or more cigarettes can be highly toxic and potentially fatal for an infant (Poisindex 1991).

In 11 of these cases the respondents specified where the drug was stored. Most of the medications were in a cupboard or medicine cabinet (5), one was on a table and tobacco was accessed from a table in 2 cases. Camphor was found in a drawer, cupboard and wardrobe. It appears that in the remaining 20 cases the drug was left within reach of the injured child. Infants under 1 year old do not generally have the strength, motor skills or the planning skills required to access high cupboards or open properly closed child-resistant lids.

Figure 2: Accessed by infants (N=33)



*VISS presentations: 1989 & 1990
Age: 0-11 months
Poisonings from drugs & related subst.*

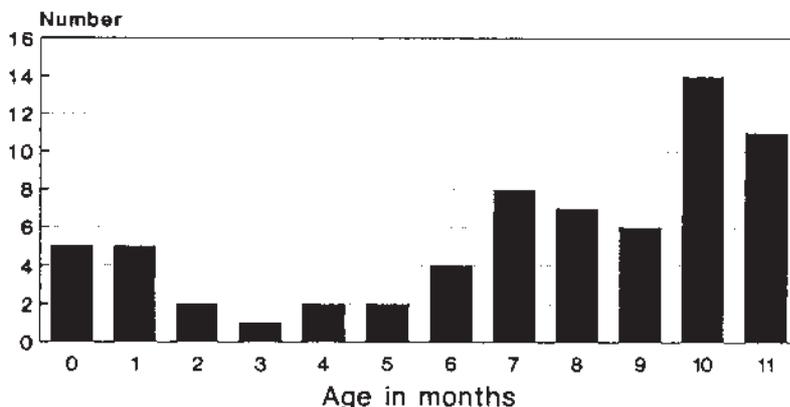
Administration of incorrect dose (22% of total)

In 10 of the 15 cases where children received the wrong (or excessive) dose, the reasons for the error were given. In three cases the parent misread the directions; the decimal point was misplaced in three cases; the medication was given too often (2); the label was mis-typed by the pharmacist (1) and one incident occurred in a doctor's surgery.

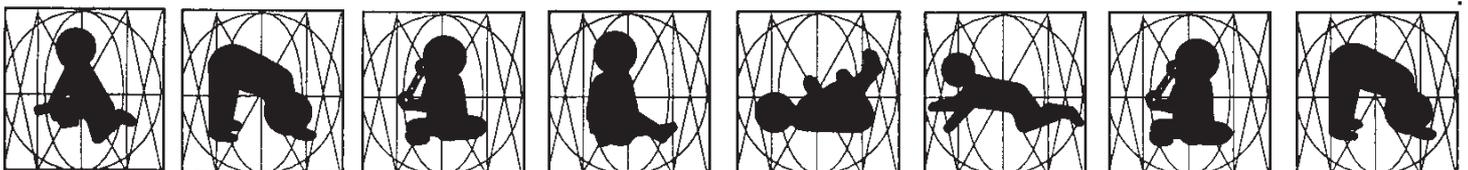
The majority of these cases involved three of the most common medications given to infants: Donnalex (for colic), paracetamol (Panadol, given for pain-relief &/or to reduce fever) and Dimetapp (for upper respiratory tract infections) (Table 2). Only 3 of the 15 required admission which

Figure 1: Age pattern

(N = 67)



*VISS presentations: 1989 & 1990
Age: 0-11 months
Poisoning from drugs or related subst.*



suggests that most presentations resulted from parental concern and these suggest the need for improved parent education.

Incorrect dose: drug breakdown

Table 2

Drug	N	% of cases
Donnalix	5	33
Panadol	4	26
Dimetapp	2	13
Cough medicine	1	7
Polaramine	1	7
Promethazine	1	7
Not specified	1	7
Totals	15	100

*VISS presentations: 1989 & 1990
Age: 0-11 months
Drug-related poisons*

Administration of incorrect medication (13% of total)

In 8 out of the 9 cases the incorrect medication given was an inhalant solution which was mistaken for a range of other medications and administered orally. They were eucalyptus oil (3), Mentholaire (3) and Kaz (2). In one of these incidents, the baby’s parent did not speak English and had intended to give Amoxil (antibiotic). The ninth case involved 2 oral medications, both of which were stored in the fridge (cough mixture given instead of antibiotics). This would suggest that the presentation of inhalants is of a type easily confused with other medications.

RECOMMENDATIONS

Several countermeasures should be considered to reduce the risk of serious injury from drug-related poisonings to infants.

The three substances most frequently reported here were inhalants (18%), paracetamol (15%) and cigarettes and tobacco (13%). These agents are all commonly available without prescription and their use is widespread. Consequently, there is the possibility that they are not regarded as dangerous substances. However this is not the case.

Incorrect dose

The restriction of the sale of infant medications to pharmacies where advice could be given might be an effective way of educating parents. Paracetamol in particular is available in many supermarkets where no advice is given concerning its proper use. The location of all infant

medications behind the counter would give the pharmacist the opportunity to inform the parents, at the time of purchase, of the correct dose for the age and weight of their infant. Pharmacists not already doing so should be encouraged to take up this important role. This could be backed up with the requirement for manufacturers to print the dose regimes (often in very small print) in as large a print as possible on the bottles.

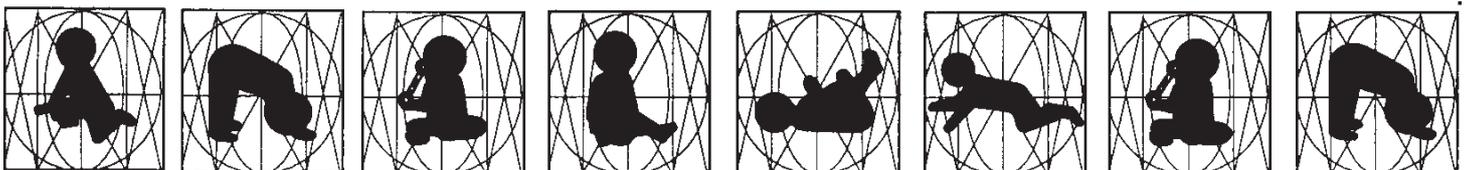
Inhalants

Most inhalants contain varying percentages of eucalyptus oil. The ingestion of this substance is potentially serious and has an admission rate of 47%. The effects can be unpredictable but as little as 4mls of eucalyptus oil is enough to cause central nervous system depression resulting in respiratory depression and coma within half an hour of ingestion. Recovery usually

occurs within 24 hours but hospitalization is obviously required. If aspirated, eucalyptus oil may cause chemical pneumonitis.

The inhalants Kaz and Mentholaire are identical in that they contain the same proportions of eucalyptus oil (10%), menthol (10%) and camphor (5%). These active ingredients are present in relatively high concentrations and as little as 5 mls (or 1.25 grams of the above constituents) is considered dangerous. The Poison Information Centre recommends that if a child 2 years old or less ingests 5 mls of an inhalant solution parents should seek medical attention.

Inhalants need to be treated as poisonous substances. Some brands, e.g. Mentholaire, are sold without a child resistant lid which, if present, would help to reduce accessibility. Parents need to be made aware of its



dangers so that it can be stored in a safe place. Another possible avenue for preventing the harm caused by inhalants is to reduce the percentage content of the eucalyptus oil. The concentration could be significantly reduced by diluting the present solutions and the only cost involved would be that of a larger container. A large container should also reduce the risk of confusion with other medications.

More important in this age group the fact that in two-thirds of inhalant poisonings (8 out of 12), the parent gave an inhalant instead of the correct oral medication. It was not accessed by the child. For this reason people should be educated to store topical and oral medications separately.

Nicotine

A small amount of nicotine or tobacco ingestion poses a potentially serious threat to an infant's health. It is unrealistic to expect that cigarettes would be stored between use in a locked cupboard. However, parents and smokers need to be aware of the hazard that cigarettes pose and encouraged to ensure that they are at

least not left lying around the house where infants and older siblings can easily access them.

Paracetamol

Overdosage of paracetamol can be fatal by causing severe liver damage. When its use is indicated, it is often administered a number of times during the course of a day, tempting parents to leave it out rather than securing it in a locked cupboard. Some brands of 'infant panadol' (paracetamol drops) come in bottles with drop dispenser lids which simply screw on. Therefore it is recommended that this packaging also be made child resistant, which may require a modification of the present design of child-resistant lids, (*Hazard*, November 1989.)

An additional problem with paracetamol drops is that it comes in a much higher concentration than paracetamol elixir (100 mg/ml compared to 120 or 240 mg/5ml. This means that it requires half the amount of medicine to have the same toxicity. There may also be a perception in the community that it is less harmful

because it is designed specifically for infants.

An ingestion of 140mg per kg considered by the Royal Children's Hospital Poison Information Centre to be toxic. For example a child weighing 6 kg would need to drink 17.5 mls of paracetamol elixir (240 mg/5ml) to reach this level. This is less than the amount held in an average household medicine cup.

Storage

It is apparent from these data that there are frequent opportunities for infants under 12 months to access drugs not stored in a lockable cupboard. This suggests that parents are under-estimating the ability of infants to reach medications left out on tables, benches etc. In 10 cases siblings were involved - either accessing the drug from a cupboard (2) or finding it within reach (8). This suggests that the level of mobility and dexterity of all children in the household should also be taken into account by the parents when administering or storing drugs.

FURNITURE RELATED INJUIRES

Introduction

A total of 215 infants were injured as a direct result of falling from a piece of furniture or as a result of impact with furniture. These furniture related injuries accounted for 15% of the total injury cases (N=1482) in the VISS database for children aged less than 1 year during 1989 and 1990. The pattern of furniture related injury reflects the developmental stage of children aged less than 1 year. Case narratives indicate that falls from furniture result largely from parents

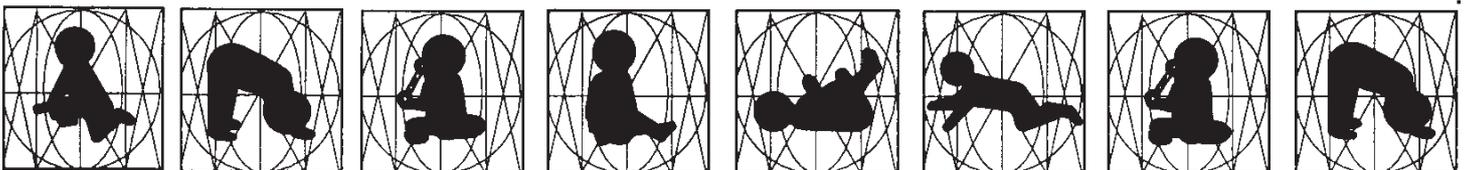
underestimating their baby's ability to crawl or wriggle, particularly when they have been placed on a bed to sleep. Falling onto furniture usually results from children using furniture to balance as they are learning how to stand and walk.

Furniture poses a hazard to very young children in a number of ways. Children can fall from furniture, run into or fall onto a piece of furniture, or other hazards can be made more accessible by their placement on certain pieces of furniture. In this

last category, hot drinks on coffee tables or benches, medications or other poisons, foreign bodies (such as picture hooks, drawing pins or coins) and fragile ornaments are the most common. Furniture as a contributing factor for this group was incidental. In this article only the cases where furniture led directly to the injury or the injury event have been included.

Overview

In the VISS database the number of incidents increased with increasing



age (Figure 3) and this is related to increasing mobility as will be evident from the analysis of contributing factors given below. The ratio of males to females was 1.2 to 1, equivalent to that for all injuries in this age group. It is interesting to note that even at this early age more males than females present with an injury. Male predominance starts to become established at 10 months, coinciding with the milestone of crawling and thereafter standing and walking. There is a marked increase in the number of furniture-related incidents at the age of 12 months, particularly among boys,

The time pattern for these incidents was spread fairly evenly throughout the day with a broad peak from 5 to 9 pm with the maximum number occurring between 6 and 7 pm. Saturday was the busiest day. Ninety percent of the injuries occurred in a private home and the majority (97%) of these were in the child's own home.

The admission rate (12%) was low compared to the average rate (21%) for this age group. Two thirds (67%) of the children presenting to Emergency required little or no treatment. This is a much higher

proportion than is found with older children (usually 46%), probably reflecting the difficulties parents have in determining whether or not their very young child has been injured and if so, to what extent.

Mechanisms

Furniture related injuries Table 3 - How the children were injured

	N	% of cases
Falling from furniture	130	60
Colliding from furniture	44	20
Knocked over furniture	17	8
Dropped/fell onto furniture	12	6
Miscellaneous	12	6
Total	215	100

*VISS presentations: 1989 & 1990
Age: 0- 11 months
Furniture-related injuries*

More than half (60%) resulted from a child falling from a piece of furniture, almost always onto the floor. An additional 6% fell onto a piece of furniture from a height. These children were either dropped by an adult, or fell from another piece of furniture. Children who ran into or fell onto furniture from the same level accounted for 20% of presentations. Another 8% were injured when they

knocked over furniture, usually as they were attempting to stand up or climb.

The miscellaneous category (6%) included 6 children who were using furniture for balance when fell; 2 who were pulled or pushed off furniture by a sibling; 1 child who caught her arm in a gap of a cane chair and 2 others. There was one death, which occurred when a baby was placed on a couch to sleep overnight. The baby fell off the couch and become wedged between the couch and a mattress which had been placed next to the couch. The baby suffocated.

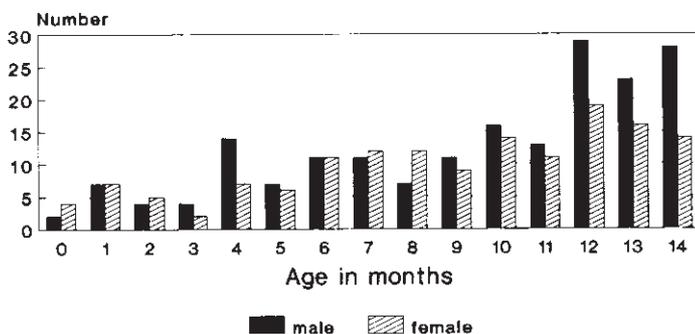
The Two Most Common Types of Incidents

Falling from furniture (60%)

The large proportion of babies who fell out of bed raises questions about this unsafe practice. Most (N=45) were passive (sleeping or waking from a sleep) as opposed to playing or having their nappy changed - active and more or less supervised (N=19). This suggests that the majority were left unattended.

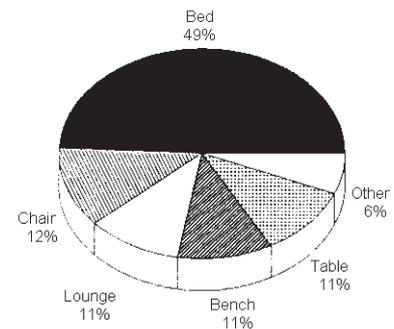
Figure 3: Age & sex pattern

(N = 336)

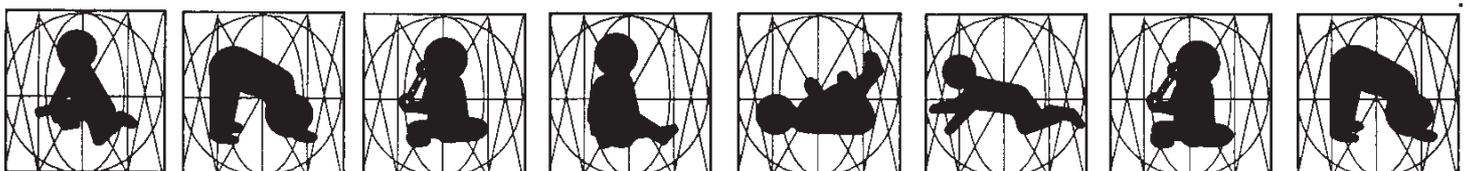


*VISS presentations: 1989 & 1990
Age: 0-14 months
Furniture related injuries*

Figure 4: Falls
Types of furniture involved (N = 130)



*VISS presentations: 1989 & 1990
Age: 0-11 months
Furniture related injuries*



The children who fell from chairs were generally active - climbing, sitting or standing on them, whereas many of the children who fell from a couch were passive (lying or sleeping and rolled off). The incidents where children fell from benches are of concern for several reasons. The height involved is significant (over a metre); the landing surface is generally uncarpetted; and the child was placed there by an adult. Seven were in a bouncinette or bassinet and several were held by parents who lost their grip as the child wriggled or moved away.

The types of furniture from which infants fell is shown in Figure 4.

While the overall admission rate is quite low (9%), 56% of those admitted sustained an injury to the head or face indicating the potentially serious nature of this kind of event. The head injuries sustained by these children were a fractured skull (4), concussion (4), and other serious head injuries (3). The facial injuries were all lacerations, mostly to the outside of the mouth. Other injuries included fractures to the femur, forearm or finger.

Knocking over or colliding with furniture (20%)

Infants of the age 9-12 months are beginning to stand and learning to walk, first with support and then

finally on their own. Falling over is part of this development as is using furniture to balance. Consequently falling and hitting a piece of furniture is a frequent event. Again the admission rate was low (11%). The most common piece of furniture specified was coffee tables (12 cases) with corners and edges being particularly hazardous. Injuries from this type of event consisted of facial bruising or lacerations, and no infants were admitted.

The action of an infant using furniture to pull themselves upright resulted most commonly in stools, chairs or small tables being knocked over onto the infants, bringing into question the stability of the furniture.

RECOMMENDATIONS

Improved safety in the home for this particular age group requires two tactics:

1. The design, use and position of household furniture could be modified to reduce the number or severity of injuries
2. Educate parents to make use of environmental or design safety features wherever possible and to provide supervision when and where those techniques are not applicable.

SAFETY FEATURES FOR SPECIFIC AREAS OF THE HOUSE INCLUDE:

Bedroom

- Infants should sleep only in cots, bassinets or other nursery furniture such as porta-cots which meet the present safety standards. It is not known to what extent babies sleep in beds rather than cots and a follow-up study would be required to do this.

Living areas

- rounded corners and edges, especially on coffee tables
- enhanced stability of chairs and small tables
- advice when purchasing furniture for family homes
- advice on re-organisation of living and sleeping areas to remove potential hazards during this period of their infants life, e.g., coffee tables removed from living areas or at least moved from centre of room to the periphery; unstable chairs and tables removed; removal of ornaments, clocks, lamps etc., or placing them out of reach or on stable pieces of furniture.

Acknowledgements

Marga Penny for editorial advice and provision of data and statistical analyses. The staff of the Royal Children's Hospital Poisons Information Centre and Pharmacy Department for technical advice and

the staff of the Royal Children's Hospital Child Safety Centre for editorial comment.

REFERENCES

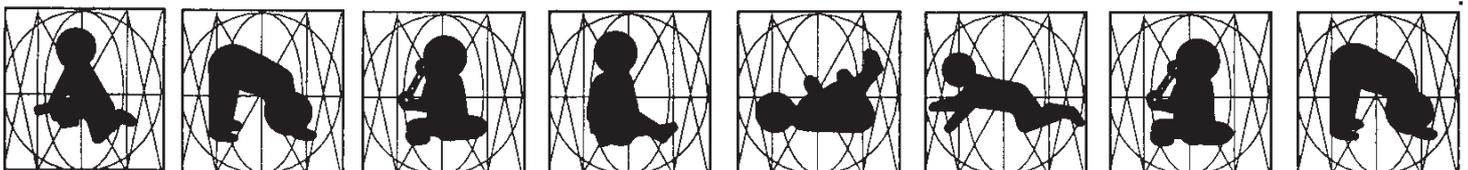
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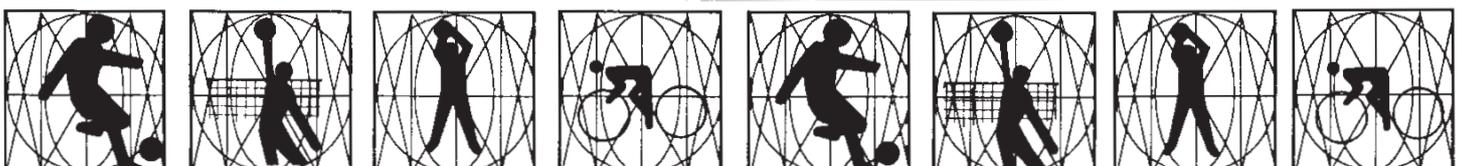


Update of Head Injuries to Bicyclists

Table 1 is an update from previous editions of Hazard, showing the effects of compulsory bicycle helmet legislation on head injuries to bicyclists under 15 years of age presenting to VISS hospitals in the first year post-legislation. The reduction in head injuries for all months cumulatively shows a statistically significant reduction compared with the previous trend line. The actual number of head injuries fell from 87 in the twelve months preceding legislation (July 1989-June 1990) to 52 in the post-legislation period (July 1990-June 1991), a 40% reduction.

UPDATE OF HEAD INJURIES TO BICYCLISTS											
Table 1: Frequency of VISS presentations under 15 years – all cyclists and cyclists with a head injury, including quarterly totals											
Year & Month	Cyclist Total	Quarter Total	Cyclist Head Injury	Quarter Total	Quarter Percent*	Year & Month	Cyclist Total	Quarter Total	Cyclist Head Injury	Quarter Total	Quarter Percent*
1989						1990					
JAN	116		15			JAN	125		8		
FEB	120		16			FEB	75		3		
MAR	118	354	13	44	12	MAR	97	297	11	22	7
APR	105		9			APR	91		13		
MAY	60		8			MAY	39		4		
JUNE	28	193	1	18	9	JUNE	17	147	4	21	14
JULY	34		9			JULY	20		1		
AUG	23		2			AUG	25		2		
SEP	49	106	7	18	17	SEP	40	85	2	5	6
OCT	60		7			OCT	53		5		
NOV	85		9			NOV	59		8		
DEC	118	263	10	26	10	DEC	72	184	9	22	12
						1991					
						JAN	62		2		
						FEB	84		6		
						MAR	63	209	3	11	5
						APR	61		10		
						MAY	35		2		
						JUNE	25	121	2	14	12

* Cycling head injuries per quarter as a percentage of cycling injuries per quarter.



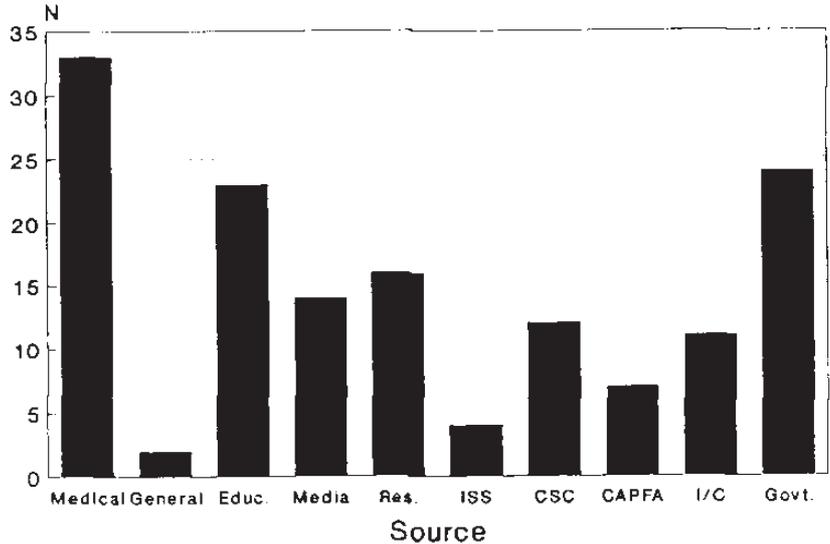
VISS Activities

While VISS continues its expansion of data collection, with the completion of the first three months of Latrobe Regional Hospital data collection in September 1991, it is also increasingly focusing on data output and injury prevention.

During the twelve month period July 1990 - June 1991, 146 information requests were made to VISS, which required the generation of reports from the database and interpretation of the results. Table 1 shows a breakdown of the frequency of requests by organization type.

VISS Information Requests July 1990-June 1991 Table 1

VISS Data Information Requests



(1.7.90 - 30.6.91)

*Res. = Research; ISS = injury Surveillance Systems (except VISS)
 CSC = RCH Child Safety Centre; I/C = Industry/Commerce
 CAPFA = Child Accident Prevention Foundation of Australia
 Govt. = Local, State or Federal government*

Hazard 9

The next edition of *Hazard* will examine sport-related injuries in more detail, and will focus on the five most common sports recorded in the VISS database: football, soccer, basketball, cricket and netball.

VISS began data collection at the Latrobe Regional Hospital (Moe and Traralgon) on the 1.7.91. The unit and its aims will be introduced and the first reports on their data will be presented.

VISS Staff

Director:

Dr. Joan Ozanne-Smith

Co-ordinators:

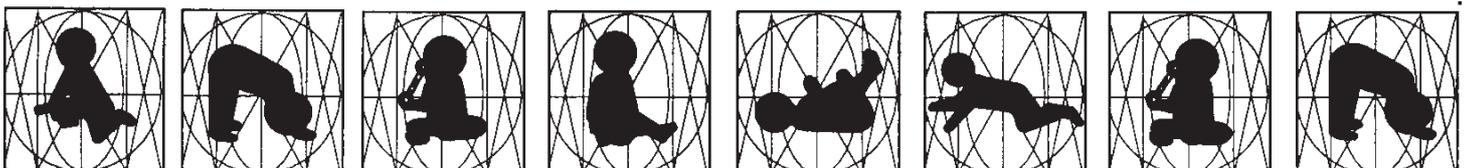
Marga Penny
 Virginia Routley

Data processors:

Odhette Nelson
 Christine Chesterman
 Julia Coffey
 Janice Grothe
 Wendy Murgia
 Julia Palmer
 Grace Volpe

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 Coordinators or the Director by phoning (03) 9905 1805. **The VISS fax number is (03) 9905 1809.**



General Acknowledgements

Participating Hospitals

Royal Children's Hospital
Western Hospital (Footscray and Sunshine)
Preston and Northcote Community Hospital
Royal Victorian Eye and Ear Hospital
Latrobe Regional Hospital (Traralgon and Moe)

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Coronial Services

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National Injury Surveillance Unit

The advice and technical back-up provided by NISU is of fundamental importance to VISS.

Hewlett-Packard

Hewlett-Packard Australia have continued to support us and we wish to thank them for their prompt service.

Business Model Systems

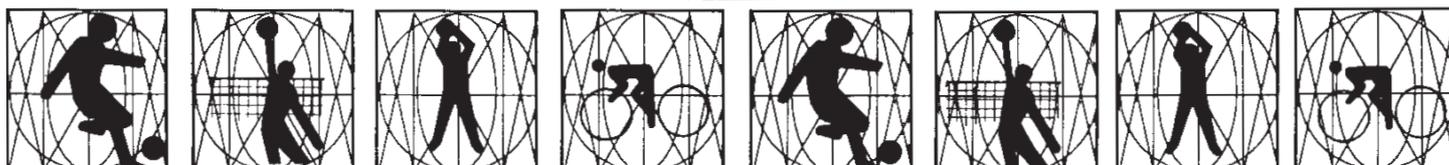
Mark Jarzebowski (Southern Regional Manager of BMS) has provided valuable technical assistance for the programming of PARADOX (relational database program).

Hazard Readers

Hazard readers for their overwhelming support and positive comments expressed both informally and in response to the Hazard mailing list update.

National Better Health Program

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This .pdf version re-created by Glenda Cairns.

