

V.I.S.S.

Hazard
(Edition No. 4)
November 1989

Victorian Injury
Surveillance System

Royal Children's Hospital
Parkville, Victoria
Australia 3052



Drug Safety & Poison Control

Unintentional ingestions or poisonings in children are almost totally preventable. Over the last 15 years, efforts to insert a barrier between the child and the potentially poisonous drug or chemical have resulted in a reduction in the numbers, and changes in the types of poisonings that have occurred. This healthy trend is largely attributable to the use of child-resistant packaging for selected agents, and possibly to increased awareness of the hazard that, for example, grandparents' medicines, or the kitchen detergents and cleaners represent. But despite this relative success, we still see very large numbers of children in our hospital emergency departments following the ingestion of a potentially harmful agent. Most parents are shocked and flabbergasted when it happens to them, and frequently admit that they thought "it could never happen to my child!"

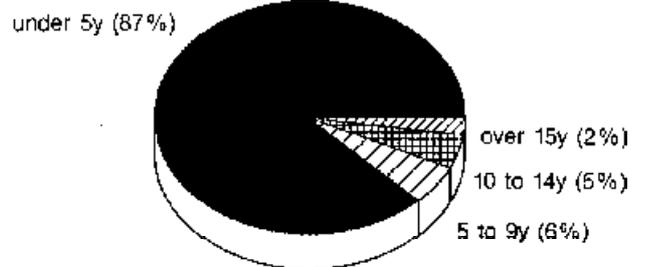
Hazard 4 focuses on this problem. In it, we present some of what we have learned through surveillance of non-intentional poisonings resulting in parents bringing their children to one of the VISS hospitals since January 1988. Episodes known or suspected to have been associated with suicidal or harmful intent have been excluded.

There have been 654 separate presentations following poisoning episodes for the period January 1988 to September 1989 (RCH for the whole period, PANCH and Western General Hospital from November 1988). While this represents only about 3% of all injury presentations, the admission rate, severity, and eminent preventability make this an important control area.

Poisoning is mainly a problem of pre-school children. Figure 1 shows that 87% of episodes occurred in children aged 4 years or younger.

Attendances by Age

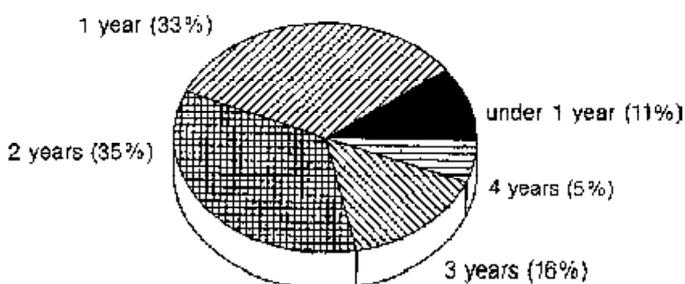
Figure 1



A breakdown of this younger age-group reveals that 68% of episodes occurred between the first and third birthdays (Figure 2).

Children under 5 years

Figure 2



One- and two-year olds are inquisitive, oral and unaware of the hazards that they discover while exploring their environment. Unlike the sex pattern for most other injuries, approximately equal numbers of boys and girls were involved. The peak times of occurrence are between 8 am and 10 am, and then again between 5 pm and 7 pm.

Poisoning Agents

Table 1 shows that 387 episodes of non-intentional drug ingestions occurred, representing nearly two out of every three poisoning presentations.

All Poisonings

Table 1

Agent	n	%	% admitted
Drugs	387	59	56
Chemicals	204	31	46
Pesticides	35	5	32
Cosmetics	20	3	10
Other	8	1	28
Total	654		49

Of the children who ingested drugs, 56% were admitted to hospital for treatment or observation. Chemical poisonings were also an important cause of presentation and admission (204 presentations representing 31% of the total: 46% were admitted). Pesticides and cosmetics were important but less common causes of presentation. Overall, a child attending an Emergency Department following an ingestion had a 49% chance of being admitted to hospital.

VISS surveillance of deaths throughout Victoria which were attributable to non-intentional ingestion since 1987 reveals only 3 child deaths. One was due to strychnine ingestion by a 3 year old child in a rural area, the second was due to carbon monoxide asphyxiation in a 13 year old, and the third was due to an antiseizure drug (carbamazepine) ingested by a 2 year old child in 1989 (see below).

Drugs

Most of the attention of those concerned about poisoning has focused on drugs because of their availability and toxicity. With respect to drug ingestions; the most common reasons for parents to bring their children to a VISS Emergency Department were ingestions of either sedatives/tranquillizers or paracetamol (Table 2). These two types of drug alone accounted for over a quarter of all presentations.

Drugs

Table 2

Agent	n	%	% admitted
Sedatives /tranquillizers	52	13	60
Paracetamol	49	13	25
Topical /inhalational agents	40	10	82
Salbutamol /Terbutaline	26	7	38
Anti-histamines	22	6	36
Anti-seizures *	18	5	83
Theophyllines	15	4	73
Migraine	15	4	73
Cold medicines	14	4	71
Tricyclics	13	3	69
Iron preparations	12	3	75
Anti-hypertensives	10	3	60
Combination analgesics	11	3	33
Cardiac	8	2	77
Antibiotics	8	2	38
Oral contraceptives	8	2	0
Cigarettes	7	2	86
Alcohol	4	1	25
Aspirin	3	1	33
Other	52	13	-
Total	387		54

* 1 child died

Paracetamol has now replaced aspirin in this leading role as a cause of poisoning. In fact only 3 children (just over 1 %) presented following aspirin ingestion. In 69% of the paracetamol ingestions (34 episodes), the child consumed the drug in its elixir form. Of these episodes, we were able to contact the parents of 16 of the children in a telephone follow-up. In 15 cases a child-resistant cap was fitted. Of these, the parent reported that the child had successfully removed the lid to gain access to the paracetamol in 12 (80%) cases. The average age of the 20 children whose parents reported on the VISS form that they had removed the child-resistant lid was only 29 months.

In 9 cases (18%) paracetamol from a droplet dispenser (which does not have a child-resistant lid) had been consumed, and in 6 cases (12%) tablets were ingested. Of parents who were contacted by telephone (24 of those 49 whose children had ingested paracetamol), 13 (54%) had called the Poisons Information Centre before attending.

The sedative/tranquillizer group contained drugs such as benzodiazepines (e.g. diazepam or Valium, Serepax, etc) and phenothiazines (e.g. chlorpromazine or Largactil). The frequent use of asthma medication, and therefore its availability for



inappropriate ingestion by toddlers, is reflected in the large numbers of those presenting following ingestion of salbutamol and theophyllines (together representing 11% of presentations). The topical /inhalational agents mainly included eucalyptus compounds (e.g. eucalyptus oil, Kaz inhalant, Mentholair).

The only drug-related fatality in Victoria was the carbamazepine episode included under anti-seizure medications. Migraine medications were almost entirely pizotifen (Sandomigran). Tricyclic anti-depressants continue to appear, and their cardiac toxicity is well known. Despite this, general practitioners and paediatricians continue to prescribe imipramine to youngsters with enuresis. The National Health and Medical Research Council has recently highlighted the inappropriateness of the use of this agent for enuresis on the grounds of its lack of therapeutic efficacy.

The nicotine in a single ingested cigarette butt is enough to kill an infant. It is perhaps surprising that not more than 7 children presented with this type of episode. This hazard represents yet another good reason to do something about stopping smoking.

If one looks at the rank ordering of these agents by the number of children that were admitted to hospital, there is only a modest rearrangement in the Table. Table 3 shows the top 15 agents.

Drugs Ingestions Admitted to Hospital (top 15 only) **Table 3**

Agent	N	% of Admitted
209 total		
Topical /inhalational agents	32	15
Sedatives /tranquillizers	31	15
Anti-seizures	15	7
Paracetamol	12	6
Theophyllines	11	5
Cold medicines	10	5
Salbutamol /Terbutaline	10	5
Iron preparations	9	4
Tricyclics	9	4
Migraine	8	4
Anti-histamines	8	4
Cardiac	6	3
Cigarettes	6	3
Anti-hypertensives	6	3
Combination analgesics	4	2

Similarly, the relative importance of these ingestions can be assessed in another way with respect to those requiring admission to the Royal Children's Hospital Intensive Care Unit. In Table 4, the importance and potentially life-threatening toxicity of tricyclic agents, theophyllines and some of the anti-seizure medications is reflected both in their frequency of presentation and in their high rate of ICU admission.

Admissions to RCH Intensive Care Unit **Table 4**

Agent	Total n	ICU	ICU %
Tricyclics	13	7	54
Theophyllines	15	6	40
Anti-seizures	18	7	39
Cardiac	8	3	38
Anti-hypertensives	10	4	40
Topical /inhalational agents	36	4	11

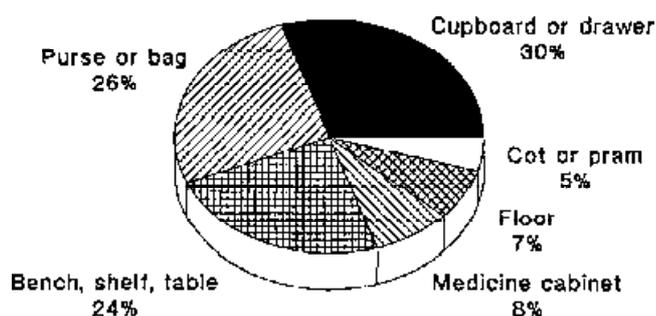
Cardiac drugs (all 3 ICU admissions were for digoxin ingestion), anti-hypertensive agents, and topical/inhalational agents (2 eucalyptus oil compounds, 2 salbutamol respirator solution ingestions) were also important.

Source of Ingested Drug

Homes accounted for 92% of the poisoning sites. When the poisoning episode occurred in a residence, 88% of affected children were in their own home. We do not have reliable data about how many ingestions resulted from the child obtaining a drug from the handbag of a visitor to the home.

Within the home, the child had ingested the drug in a living room or bedroom in 219 cases, while the kitchen in 85 cases, and the bathroom in 30 cases, was the location of the ingestion. In about 45% of cases, parents specified on the VISS form from where in the room their child had gained access to the ingested drug. In living and sleeping areas (Figure 3), half of all the episodes involved access from either a cupboard or drawer (30%), or shelf or table (24%). A further 26% of children raided a bag or purse. It was also reported in 22% of cases that a similarly-aged sibling or friend was playing with the child at the time of the ingestion, and may have contributed to the ingestion, or also ingested the drug.

Living and Sleeping Areas **Figure 3**

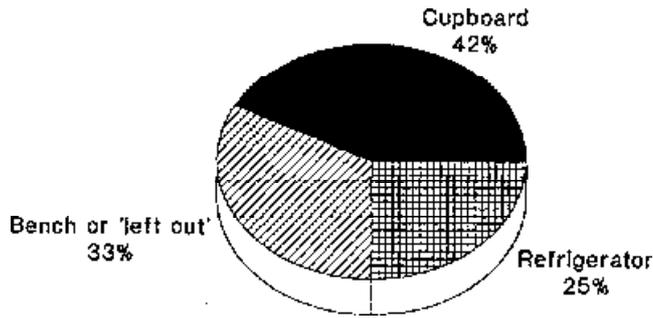


In the kitchen, drugs had been left out in one-third of cases. In 42%, the child had retrieved the drug from a cupboard or shelf, and in 25% the interior of the refrigerator was the source.



Kitchen

Figure 4



Parents nominated a “medicine cabinet” as the place in the bathroom (Figure 5) most commonly involved (in 68% of cases). Where a medicine cabinet was specified, information was rarely obtained about a child-resistant latch being present or penetrated. Whether this means that such latches have been dramatically successful in preventing access to drugs cannot be determined from our data without some idea as to how frequently such devices are used.

Errors in Drug Administration

Few cases of accidental poisoning resulted from parent- or self-administration of medication due to miscalculation or error. In fact, this occurred in only 24 cases. Of these, the incorrect dose amount was administered by an adult in 11 cases, and incorrect dose frequency occurred in 2 cases. The wrong drug was given in 7 cases, and in 4 cases an older child had incorrectly self-administered medication.

Chemicals

The domestic environment is replete with chemicals and other potentially toxic compounds. Often they are packaged in attractive containers which invite exploration by toddlers. There were 207 attendances for chemical exposures (Table 5).

Chemicals

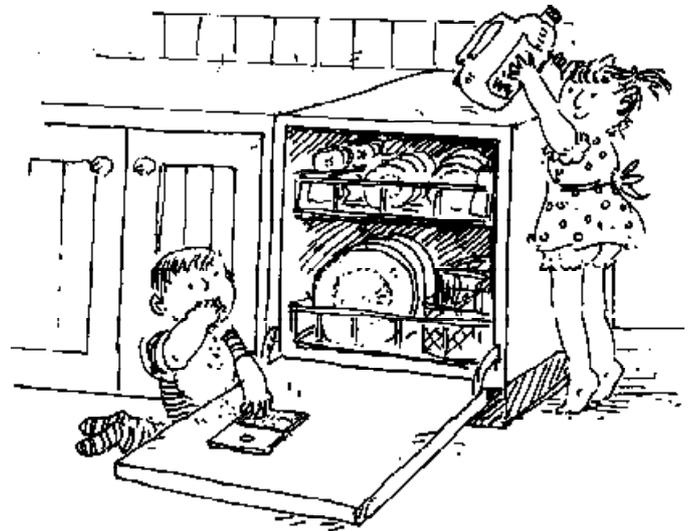
Agent	n	%	% admitted
Soaps and detergents	36	18	50
Volatile solvents	34	17	50
Bleaches & pool chemicals	24	12	37
Caustics	22	11	73
Cosmetics	20	10	10
Naphthalene	11	5	36
Batteries	12	6	0
Other	45	22	-
Total	204		46

Table 5

Dishwasher Detergents

It is well known that the highly alkaline dishwasher detergents present a corrosive risk when ingested by children. Over the past 2 years, detergent manufacturers have voluntarily commenced packaging their dishwasher powders in child-resistant containers. This is an admirable example of industry acting responsibly in the public interest. However, we were prompted to ask recently whether we could be sure that the package was the only source of this ingestion hazard. We searched the VISS database for all episodes of dishwasher detergent ingestions and carried out a more detailed follow-up by telephone on identified cases.

We initially identified 15 cases, and a further 2 cases have subsequently occurred. The results of this evaluation are shown in Table 6.



Child No.	Age mo.	Type	Form	How detergent obtained by child	Outcome
FROM DISHWASHER					
1	14	P	F	From dispenser in door. Approx half a cup	A - oesophagoscopy - NAD
2	22	L	F	Open door. Put fingers in dispenser	A - oesophagoscopy - NAD
3	13	G	?	From dishwasher	A - oesophagoscopy - NAD
4	12	P	R	Door open. End of cycle.	A - oesophagoscopy - NAD
5	9	P	R	Open door.	A - no oesophagoscopy
6	18	P	R	Door open. Ate residue from dispenser.	A - no oesophagoscopy
7	13	G	R	Door open, half a teaspoon.	A - oesophagoscopy - NAD
8	13	P	R	From dishwasher.	A - oesophagoscopy - minor burns
9	28	P	R	From dispenser (not working properly).	A - no oesophagoscopy
10	12	?	R	From dispenser. Door open, loading dishes.	Reviewed in Emergency later
11	10	P	R	Powder sprinkled on door. Liquid and powder.	A - oesophagoscopy - mod. burns
12	11	P	R	Residue obtained from dispenser.	A - short stay ward
FROM CONTAINER					
13	12	P	F	1 tsp powder from box, at grandparent's home.	Treated - no referral
14	29	P	F	Ate small amount from packet.	No treatment
15	24	P	F	Disabled grandparent. Open container in cupboard.	A - no oesophagoscopy or injury
16	23	P	F	Reached box on bench.	Treated - no referral
17	28	P	F	Spoonful of powder from packet.	A - oesophagoscopy - NAD

Note: P=powder; L = liquid; G=granules; F=Fresh powder; R=residue; A=admitted; NAD=no injury.

Twelve of the seventeen presenting cases (71%) involved infants or toddlers ingesting detergent obtained not from the container, but from the dishwasher itself. Furthermore, in 9 of these cases, the child had ingested residue rather than dry powder. The two children who had oesophageal burns had ingested residue. Seven of these 12 children, and one of the 5 children who ingested powder from the original detergent package, were admitted to hospital and submitted to oesophagoscopy under general anaesthetic. This procedure is conducted by a surgeon and involves passing an instrument down into the child's oesophagus while anaesthetised to ensure that internal burns have not occurred. If the child has evidence of a burn, dilatation of the oesophagus is required because of the risk of subsequent fibrosis and stricture formation.

It is important to note that those children who ingested detergent from the machine itself were on average nearly half the age of those who obtained detergent from the package. The mean ages of these groups (14.6 months and 23.2 months, respectively) are significantly different (P=.015).

We notified the Victorian Ministry of Consumer Affairs, and shortly thereafter the Minister, Mr Tom Roper, issued a press release to warn the public of this hazard. The following week, the Medical Journal of Australia carried a report from Brisbane which had reached the same conclusions on the basis of a study

of 18 children over a 3 year period at the Brisbane Royal Children's and Mater Children's Hospitals (Kynaston and others, Medical Journal of Australia 1989; 151: 5-7). Ten of these 18 children had gained access to detergent residue on completion of a wash cycle.

It is clear that the design of automatic dishwashers makes it particularly inviting to infants starting to walk to explore the surface of the open door. The fact that corrosive residue remains after the wash cycle in some machines is also of concern.

As a result of these findings, the Ministry of Consumer Affairs is working with the Standards Association of Australia to investigate the possibility of incorporating safety features in 8 dishwasher standard which acknowledge recognised hazard. Health Department Victoria and the Poisons Information Centre are looking at the possibility of placing warning labels on dishwashers to alert users of the hazard to toddlers. The Coles-Myer group have promised support for a promotional campaign in their stores and possibly in Maternal Child Health Centres to highlight this problem. Other companies may also be involved.



Pesticides and Garden Products

Although much less of a problem than drugs and household chemicals, pesticides and other garden products continue to be a source of concern (Table 7). Most cases related to various forms of rodent poisons, while insect sprays, snail pellets and ant poisons continue to pose a threat.

Pesticides and Garden Products Table 7

Agent	n	%	% admitted
Rodent poison	20	54	30
Insect sprays	6	16	17
Snail pellets	5	14	60
Ant poison	4	11	60
Fertiliser	1	3	0
Weed killer	1	3	100
Total	37		32

Countermeasures

The prevention of poisoning and its complications deserves serious attention. The VISS surveillance reveals that large numbers of children continue to be placed at high risk for fatal or other serious injury. Our data mainly tells us about incidents where prevention has failed. We can still infer, however, how well safety measures work.

Primary prevention (preventing it happening at all) is most desirable. If the child is not poisoned at all, we are in the best possible position. But prevention of the consequences of poisoning through first aid and effective resuscitation are also important. As a general rule, passive rather than active preventive strategies are more likely to be successful. The less we have to rely on parent vigilance, and the more environmental or product safeguards we build into the system, the better. In this respect standards and legislation have an important role to play. But even these avenues are not fail-safe.

Child-resistant lids are not child-proof. The current Australian standard requires a test procedure in which only 80% of children aged 42 months to 51 months cannot open such a lid after 5 minutes, or after a demonstration and a further 5 minutes (AS1928-1982). The progressive development of stricter and safer standards which also protect against newly-recognised hazards is fundamental to the success of a standards system. Our data show that review of standards involving child-resistant closures, and dishwasher detergent accessibility in the machine should be considered.

What opportunities exist for greater drug safety and poison control? Starting with primary prevention, we will examine existing control measures and make some suggestions for new strategies based on what we have learned from the VISS data.

Limiting Availability

Don't produce the drug or chemical at all! This type of restriction is very severe, but we could perhaps think more

often whether safer and equally effective alternatives exist. Removal from the market of unnecessary and hazardous agents should always at least be considered. For example, it has been suggested that caustic soda should be eliminated from all drain cleaners. Second, restricting the availability or unnecessary prescription of hazardous agents needs to be thought of more often. The use of imipramine in childhood enuresis is one example. Unit dose packaging of medications, and the packaging of medicines in small (sub-toxic) quantities is another strategy.

Public Awareness & Education

The long term importance of progressive public education and increased awareness is obvious. It also provides a means to expedite and facilitate legislation. A supportive public promotes the development and improvement of product standards, and innovation in the design of new safety mechanisms. But education on its own it is not likely to have a major effect on reducing poisoning.

Nevertheless parent awareness of the poison hazards confronting their child is fundamental. Linking a knowledge of their child's developmental level to specific hazards is the way to make that awareness effective. An example is the dishwasher detergent hazard which appears to relate to the machine itself for the one year old, and the detergent package for the two year old.

Health professionals have a special responsibility to educate and inform their patients, clients and colleagues about the hazards of ordinary pharmaceuticals and everyday household products. A similar obligation applies with respect to first aid procedures.

Product Warning Labels

The use of hazard warnings in the form of standard symbols on containers is a sensible and worthwhile practice, although what difference it makes to the risk of ingestion by children is uncertain. A New Zealand study evaluated the impact on poisoning incidence of the Mr. Yuk symbol (Figure 6) in a large controlled trial and found that it had no effect. However, the provision of such labels without a concomitant educational campaign is a possible reason for this disappointing result.

Mr. Yuk Symbol

Figure 6



Protected Storage

The frequency with which children obtained drugs from bathroom medicine cabinets and kitchen cupboards and refrigerators tells us several things. First, parents have some general awareness of poisonous hazards, enough to put them in a special place. Second, it is clear that there is a lack of knowledge about the accessibility, and therefore danger, of such storage. Third, it is probable that child-resistant latches are not being used anywhere near enough in our community. The availability, attractiveness, cost and awareness of purpose built medicine cabinets remains a problem to be addressed. The possible role for building standards to incorporate cupboards with child-resistant latches in all new kitchens and bathrooms seems worth exploring.

Child-Resistant Packaging

It seems clear that there is a strong argument to have all drugs dispensed or marketed in child-resistant containers. This would not add great cost to the purchase of medications. Industry would be less likely to oppose this move if all drugs were covered by such a law since all companies would be similarly affected. We have not yet seen litigation based on manufacturers' or distributors' failure to adequately protect potentially hazardous substances, but it is a possibility.

The question of protecting chemicals and household products also needs serious consideration. The case for naphthalene and camphor to be protected seems especially strong. The dishwasher detergent suppliers have shown the way with their prompt response to package their products in child-resistant containers. Should we be looking more carefully at the whole range of domestic products?

In Victoria at this time, theophyllines and digoxin elixir are not covered under the Drugs, Poisons and Controlled Substances Act 1981 (Statutory Rules 1985, No. 61, Division 2). Neither are compounds containing less than 50% eucalyptus oil. The VISS data show that these three agents are a serious problem.

The information gained from VISS data also suggests that quite young children are penetrating child-resistant containers at a rate that might be unacceptably high. (Although this relative over-representation of younger children might have occurred because child-resistant containers have effectively prevented older children from gaining access to medications). This brings into question the adequacy of the standard for closures. The test procedure under the standard relates to children who are substantially older than those most at risk for ingestions. Children at the age of two are possibly more likely to use their teeth to penetrate lids, and could be more successful than older children who would only attempt to open them with their hands.

Additives

The use of bittering agents (e.g. Bitrex which is denatonium benzoate) has been suggested for mild to moderately toxic substances. The idea is to discourage the child from taking more than just a taste. This area needs further research.

Poisons Information Centres

The role of Poisons Information Centres relates mainly to first aid advice, but they also offer a more general benefit in public education and surveillance. The Victorian Poisons Information Centre took 41,000 calls in 1988.

First Aid

Whether ipecac (an emetic agent) should be in every city and suburban home is now being debated because of the proximity of hospital emergency services, and the availability of Poisons Information Centre advice within seconds on the telephone. Ipecac has drawbacks too. It is variable in its onset and a lone parent driving a vomiting child to hospital could be a risky endeavour (for parent and child alike). Its shelf life is 2 years and it requires regular replacement. A recent study has demonstrated in adults the superiority of activated charcoal alone compared with ipecac and activated charcoal together in the treatment of acute toxic ingestions (Albertson and others, *Annals of Emergency Medicine* 1989; 18:1). This study needs replication in children. A reasonable alternative seems to be a prompt telephone call to the Poisons Information Centre and safe and rapid transit to hospital. A different recommendation might apply to country areas because of their remoteness from emergency services.

Resuscitation

Skill is needed for child resuscitation and monitoring following serious ingestions. The responsibility of emergency department staff is to ensure that they are up to par with modern and aggressive resuscitation procedures.



VISS Users

Dog Bites

The Melbourne Herald published a feature article, headed 'When Rover turns on Junior' which warned "... your pet dog can, and often does, attack your children". Data, graphs, and other material from Hazard (June 1989) were used extensively and this was supported and complemented by comments from Dr Hugh Wirth, President of the RSPCA.

Baby Walkers

A plastic surgeon, concerned about facial injuries sustained by small children in baby walkers or prams, particularly following a fall down a step or stairs is conducting a study based on VISS data.

Cyclists

A doctor from the Maribyrnong Medical Centre will be one of the attending medical officers on the Great Victorian Bike Ride, to be held in December, and is using the data on injuries sustained by cyclists on the road to plan for the anticipated needs of injured cyclists, and in particular to select first aid materials.

Bunk Beds

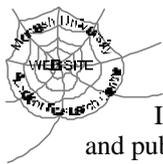
Community Services Victoria is preparing guidelines on the recommended use of bunk beds with particular reference to age and associated medical conditions such as epilepsy. Data on the types of injuries sustained by children who either fell off the top bunk or were caught in part of a bunk bed were analysed. At present there is no Australian standard or mandatory regulations regarding bunk beds.

Home Injuries

VISS provided data and analyses on hazards in and around the home to the Royal Children's Hospital Safety Centre for the October 6 launch of their 1990 Safety Calendar 'There's no place like a safe home'.

School Injuries

Comparative data on injuries at school for different ages of children and different parts of the school (e.g. inside or outdoors) was provided for an in-service lecture to teachers by staff of the Royal Children's Hospital Safety Centre.



Issues of *Hazard*, along with other information and publications of the Monash University Accident Research Centre, can be found on our internet home page:

<http://www.general.monash.edu.au/muarc>

VISS Activities

Wood Heaters

VISS noted with concern that 10 children had sustained burns from touching either the exposed glass door (4 children) or main body (5 children) of solid fuel heaters, or in another case, the body of a gas 'pot belly' stove. Two children required surgery for skin grafts. The report was sent to the Executive Officer of the Australian Wood Heating Association, an organisation set up by manufacturers, importers and distributors whose aim is to improve the design, safety and installation of solid fuel heaters. They have circulated the report to seventy members of the Victorian branch of the Association (predominantly manufacturers), and will raise the matter at their Annual General Meeting in November. Consumer Affairs has referred the matter to the Australian Standards Association.

To date the only Australian Standard which relates to such appliances is AS2918 which covers the installation and operation of solid fuel burning appliances. There is a draft Australian Standard currently under consideration which will cover manufacture and design.

It is not yet known whether this will adequately address the hazardous design features we have noted.

Playgrounds

A seminar run by the Royal Australian Institute of Playgrounds and Recreation gave us an opportunity to present analyses of playground injuries to 50 playground specialists, including industry representatives and local government employees (engineers, planners, parks and recreation officers).

Locomotive

A technical report prepared by the Playground and Recreation Association of Victoria (PRAV) in response to a notification by VISS about children injured on the steam train in Edinburgh Gardens, North Fitzroy has led to move by the Fitzroy Council to have the train removed altogether. According to the Council (The Melbourne Times, September 20, page 3) it could cost \$7,000 to carry out the necessary repairs required to comply with the PRAV recommendations. PRAV carried out a site inspection and sent a report to the Council detailing hazards and possible solutions to reduce or eliminate the injury risks, and with them the risk of litigation. Alternatives include building a child-resistant fence around the train so that it can be retained as part of the Council's long term plan for the Gardens, or removing the train altogether. The future of the train is now being decided by Council.

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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- Mr Barry Parsons, Pharmacy Director, Royal Children's Hospital: data, technical advice and comments
- Ms Liz Naphthine, Administrator, Royal Children's Hospital Safety Centre: educational materials on poisoning and comments. VISS staff would like to thank Liz for the professional advice and personal support she has given VISS during its first two years and extend their best wishes to her for her maternity leave. We welcome her successor, Brigid Nossal, and look forward to working with her.
- Thanks to the clerks, nurses and doctors of the three Emergency Departments of the VISS network.
- Alcatel Datakey have continued their support with donations of equipment and excellent service.
- Hewlett-Packard Australia (see box).

Hewlett-Packard sponsorship continues



We would like to make special mention of Hewlett-Packard Australia for their generosity and continued sponsorship of the Victorian Injury Surveillance System. The recent donation of a Vectra RS25C with a 320Mb hard disk and 8Mb of RAM has greatly enhanced our capacity for data storage and rapid analysis of large datasets.

VISS is located at:

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Victorian Injury Surveillance System

The VISS database records details of child and adolescent injuries treated at the three VISS hospitals, Royal Children's Hospital, Preston and Northcote Community Hospital and the Western General Hospital of the Maribyrnong Medical Centre. It is based on information provided by parents of injured children and the attending doctor. Please contact us for further information on data and interpretation. If you wish to be on our mailing list, please contact us. The material in this publication is not copyright, but acknowledgement of VISS as the source is required by those who wish to use it.

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