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# Injury Surveillance and Prevention in the Latrobe Valley

*This report examines the first two years of the Latrobe Regional Hospital injury data collection and death and hospital admissions data. It also reports on the translation of Victorian Injury Surveillance System data into injury prevention and the Latrobe Valley Better Health Injury Prevention Project. This special edition follows on from "VISS in the Latrobe Valley-the First three months", Hazard 9 and the special Hazard edition "Injury Surveillance in the Latrobe Valley - First Six Months".*

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## Introduction

The Victorian Injury Surveillance System commenced data collection from injury and poison victims of all ages at the Latrobe Regional Hospital (LRH) on the 1/7/91. It was timed to coincide with the amalgamation of the Moe and Traralgon hospitals and is the only provincial town/rural surveillance collection in Victoria. It is a major source of data for the Latrobe Valley Better Health Project which commenced in

Map of Latrobe Region

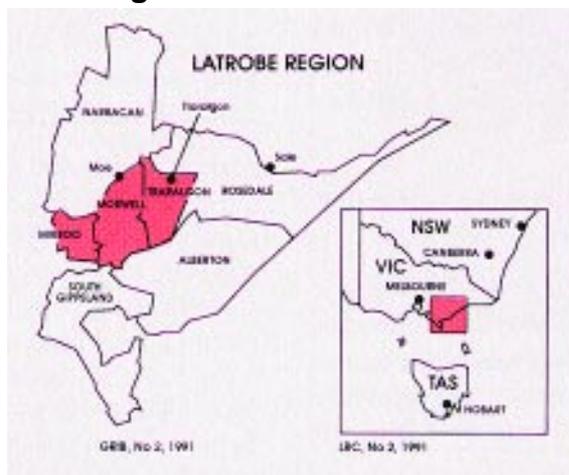
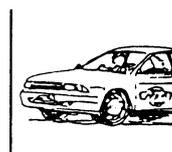
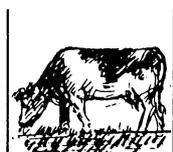


Figure 1



April 1992 and has injury as one of its major components.

The area serviced by the LRH comprises the cities of Moe, Morwell and Traralgon and the shires of Mirboo and Traralgon (See Figure 1). The population of this sub-region was estimated to be 72,390 in 1992 (ABS,1991). Additionally two thirds of those admitted to hospital in the Narracan Shire (ppn 1992, 11,380) also presented to the LRH. Since 1991 the population has increased by 0.2%.

The previous VISS Latrobe Valley publications (Hazard 9 and Special Edition, March 1992) described the demographics of the area. There was particular reference to its population profile dominated by young families and the higher proportion of males in the 25-44 year age group, reflecting also the dominance of males in the high profile construction and energy industries. Recent restructuring and resulting high unemployment has reduced these differences, particularly the dominance of males.

An update of the industrial groupings from the ABS is shown in Table 1 (ABS Census, 1991). Since the 1986 Census the service industry has declined (26% to 19%) whereas community services and trade have gained (formerly each 14%). There has been no change however in the order of importance. Overall the numbers employed have declined by 6% despite a fairly stable population (increase of 0.2%).

### How representative are the data?

Injuries presented to the LRH tend to be less severe than those presented to Melbourne hospitals since admissions as a proportion of LRH presenta-

## Industry Groupings

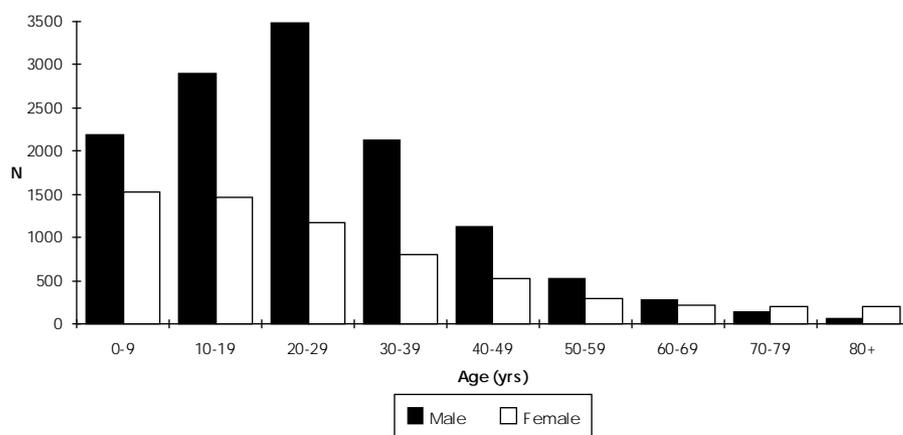
Table 1

Industry Group	Numbers employed	%
Service industry, mainly electricity	5997	19
Community services	5321	17
Trade (wholesale, retail)	5000	16
Manufacturing	3235	10
Construction	2162	7
Finance	1933	6
Agriculture, forestry	1679	5
Recreation, personal services	1558	5
Public Administration	1421	4
Transport	680	2
Mining	625	2
Communication	412	1
Not elsewhere classified (nec)	51	0.2
Not specified (ns)	1999	6
<b>Total</b>	<b>32,073</b>	<b>100</b>

Source: Australian Bureau of Statistics, 1991 Census  
(Cities of Morwell, Traralgon and Moe and Shires of Traralgon, Mirboo and Narracan)

## Age and Sex Distribution

Figure 2

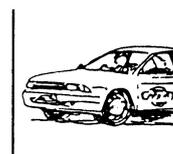
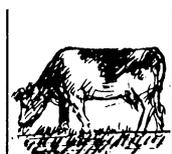


VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93) n = 19121

tions have been lower than at all age Melbourne hospital collections (LRH (9%), Melbourne - Western Hospital (18%), PANCH (18%)). This suggests residents regard the Latrobe Regional Hospital as a general practice as well as an emergency hospital.

Data capture rates have consistently been high (95% of presenting injuries

and poisonings). According to the Department of Health and Community Services the Latrobe Regional Hospital services 88% of the residents who require hospital admission. These three factors combined with the all age nature of the collection make VISS data highly representative of the injury patterns in the area.



Analysis presented in this report focuses on home, sports and playground injuries which are primary targets of the LV Better Health Project. In addition eye, power generation and farming injuries are discussed because they are considered to be of particular significance to the area. These are described under the relevant sections - location, context, causes of injury, injuries, industry and location respectively.

## Analysis

### Age and Sex Distribution

There were 19,121 injury and poisoning cases who presented to the emergency department of the Latrobe Regional Hospital at Moe and Traralgon during the first two years of VISS data collection. Children, defined as being under 15 years, made up almost a third of these injuries. Injuries occurred most frequently in the 20 to 29 and 10 to 19 year age groups, each with 24% of cases.

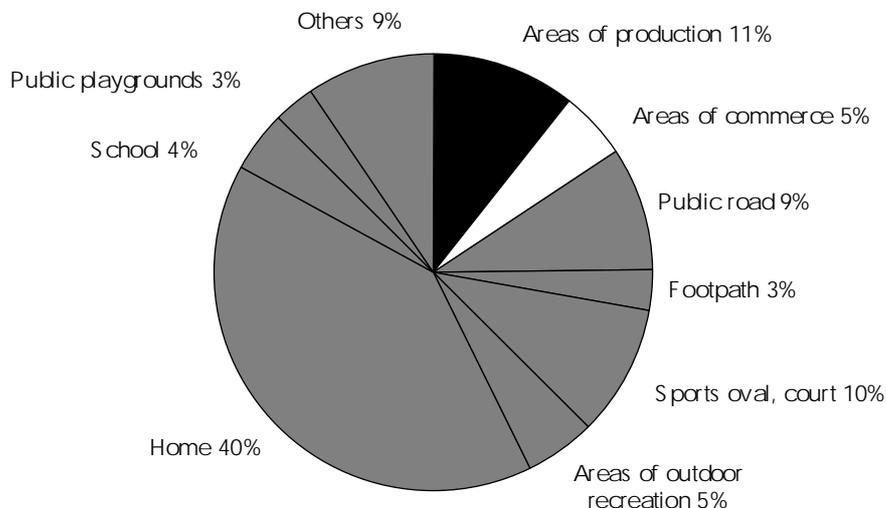
As shown in figure 2, more males than females presented with injuries in each age group until the age of 60 years and over. The sex ratio for all injuries is 2 to 1 (male:female), the highest ratio of 3 to 1 being in the 20 to 29 year age group.

Nine percent of presentations were admitted to hospital or transferred to another hospital for treatment. Admission rates for both adults and children were similar with 9% and 8% respectively. There were 6 patients who either died in the emergency department or were dead on arrival. Five of these were road traffic accidents, the other a drowning.

### Location of Injury

The most common location for injury (as shown in figure 3) was in the home, especially in the garden or garage and in the living/sleeping area. Areas of

### Location



VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93) n = 19121

production included factory/warehouse, construction sites, farm/primary production and mine/quarry. Areas of outdoor recreation included both water and land based recreation particularly lakes, rivers, fields and parks.

### Home Injuries

There were 7680 injuries in the home, making up 40% of all injuries. Sixty-one percent were male and over a third of the injuries (38%) were to children, mostly occurring to victims aged 1 to 4 years of age (16% of all home injuries). Almost half of the injuries occurred in the garden or garage, 36% in the living/sleeping area, 12% in the kitchen and 4% in the bathroom, laundry or toilet.

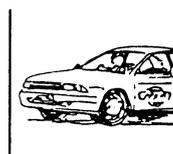
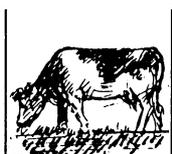
The factors mostly associated with home injuries were structures (14%) mainly stairs/steps, floors, doors; furniture (10%); workshop tools and appliances (8%), mostly grinders and sports and recreation (7%), mainly trampolines and bicycles.

Most injuries were lacerations (32%), especially to the fingers, face and scalp. Nine percent were burns, sprain/strains

and bruising each 8%, fractures and inflammation each 7% and abrasions and poisonings each 4%.

### Prevention

1. To prevent injuries from stairs and steps, they should be clear, well lit, and edges highlighted.
2. To prevent door injuries occurring a vinyl plastic covering device can be fitted on vulnerable hinges, especially in homes with children. Also door-stops on the closing side can be fitted to retain the door in an open position and prevent doors slamming shut. These are available from the Child Safety Centre at the Royal Children's Hospital.
3. Education and information are available on home safety, e.g. A Safer Home for Children (available from KIDSAFE).
4. For further details on home injury prevention refer to Hazard 14 Home Injuries.



## Farm Injuries

There were 478 cases of injuries occurring on farms (includes any location defined as farm, paddock, or field), of these 77% were males. The farm injury rate was 339 injuries per 1000 farms (based on 705 farms as at 31/3/92 from the ABS). This is somewhat lower than rates reported elsewhere which have ranged from 280 to 900 per 1000 farms (Clarke & Wolfenden 1991; Clarke 1992). However VISS data is not currently collected in a way which would identify all farm injury presenting to Latrobe Regional Hospital.

The majority of injuries were to adults (83%) which was also identified by Clarke (1992). Over a third (38%) of farm injuries were work related and maintenance activities caused 32%.

Animals were the major contributing factor in causing injuries with 31% of all farm injuries. These included horses (7%), cows (7%) and sheep (4%). Vehicles, especially motorcycles, led to 13% of injuries occurring, yard and garden equipment 8%, agricultural equipment (mainly farm tractors) 6%, workshop tools and appliances 6% and horseback riding 4%.

Most injuries were caused when the victim fell onto a surface (21%); directly impacted with animals, mainly cows (15%); or with yard and garden equipment 8%, agricultural equipment 5% and industrial equipment 4%.

Most injuries were lacerations (24%) especially to the fingers, face and scalp, fractures 14%, sprain/strains 11%, foreign bodies (mainly to the eyes) 9% and bruising 8%.

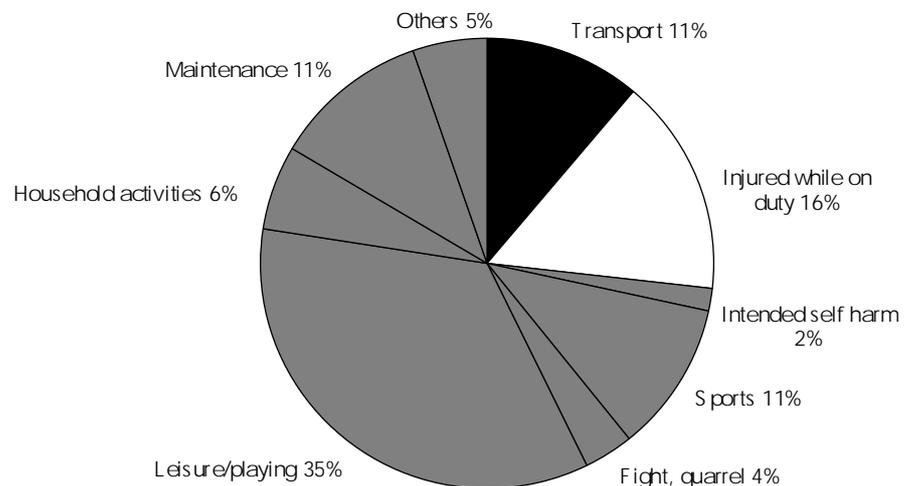
## Prevention

1. The farmhouse and garden should be fenced, thus separating children from hazards such as irrigation ditches, dams, farm machinery and farm animals.
2. Animal handling, equipment design and protective clothing would seem to be worthwhile areas on which to focus other preventive ef-

forts. Farmsafe Australia have proposed a national strategy for improving health and safety on farms in which tractor, farm machinery, agbike and horse handling safety have been identified as priority issues (Farmsafe Australia, 1993). The Victorian Farmers Federation is in the process of forming a Victorian Farmsafe Committee.

## Context - Activity Being Undertaken at the Time

Figure 4



VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93) n = 19121

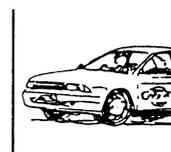
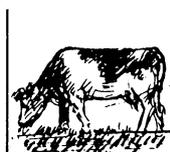
## Sports Injuries

Table 2

Activity	Children		Adults	
	N	%	N	%
Football	150	31	517	38
Basketball	118	24	230	17
Netball	51	11	129	9
Cricket	33	7	122	9
Soccer	26	5	90	6
Gymnastics	12	3	4	0.3
Rugby	2	0.4	51	4
Others	94	19	230	17
<b>Total</b>	<b>486</b>	<b>100</b>	<b>1373</b>	<b>100</b>

VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93)

NB: Up to 2 factors can be recorded per patient.



## Context - Activity being undertaken

Over half of the people injured while participating in a leisure/playing activity were children who were playing at the time of the injury, and almost half of these children were under 5 years of age (see figure 4).

## Sports Injuries

There were 2044 people injured while playing sport which accounted for 11% of all injury cases. The majority of injuries (75%) occurred to adults and males were over-represented in both children and adults, making up 76% of sports injuries overall.

The majority of sports injuries (84%) occurred in a sports oval or court. Injuries at this location were considerably higher for adults than for children (91% and 65% respectively), and injuries in a school playground were more likely to occur to children. (20% compared to 3%).

The activities or factors that led to the majority of sports injuries occurring were football (36%), basketball (19%), netball (10%) and cricket (8%). Table 2 lists the factors involved in sports injuries for adults and children.

Persons were directly involved in causing almost a third of sports injuries, mostly to adults, and surfaces contributed to 26% of injuries, which in children was a higher percentage.

Most injuries occurring were sprains/strains (33%), mainly to the ankle, knee and fingers; fractures (16%), mainly to the fingers and radius/ulna; bruising (13%) and lacerations (12%).

## Prevention

1. Protective equipment should be worn at training and at matches, eg. mouthguards.
2. Modified rules should be used for children.
3. Removal of extraneous objects from the playing area.

## Causes of Injuries

Over-exertion/over-reaching led to 35% of injuries occurring, mainly during leisure/playing activities, while at work, playing sports and doing maintenance activities. Falls (including slips and trips) accounted for 21% of injuries and almost half of these occurred at home, mainly involving stairs/steps, playground equipment and surfaces.

People involved in fights and quarrels made up 6% of all injury cases.

Table 3 lists the more common non person factors involved in causing an injury, persons accounted for an additional 5397 factors. Most injuries were associated with sports and recreation and the most common activities or factors involved were football, bicycles, basketball and playground equipment. Stairs/steps, floors and concrete were the major surfaces associated with structures and ground and other natural surfaces with environmental factors. Dogs and horses caused most of the animal injuries.

## Public Playgrounds

Of the injury presentations, 160 cases occurred in a playground. The majority (78%) were to children and predominantly to males (59%).

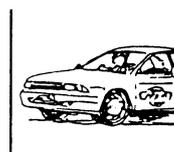
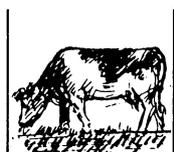
## Causes of Injury (Non-person)

Table 3

Causes of Injury	Total	Admissions	Adm/pres
	Presentations N	N	%
Sports and recreation (incl. bicycles)	3625	311	9
Vehicles	1966	297	15
Structures	1802	170	9
Workshop tools and appliances	1221	40	3
Environmental factors	1183	114	10
Animals and insects	1119	91	8
Furniture	870	83	10
Industrial/retail plant or equipment	782	54	7
Kitchenware	698	30	4
Yard and garden equipment	678	56	8
Food and drink	463	24	5
Drugs and medication	304	202	66
Misc. cleaning/maintenance products	262	6	2
Packaging materials and containers	258	11	4
Toys	168	12	7
Others	1987	116	6
<b>Total</b>	<b>17386</b>	<b>1617</b>	

VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93)

NB: Up to 2 factors can be noted per case.



Over half of the injuries (52%) were from falls and mainly from playground equipment. The victim hitting against an object or surface directly caused 68% of injuries and most occurred when the victim landed on the ground.

### Playground Equipment

Injuries from playground equipment accounted for 2% of all injuries (336 cases) and they were concentrated in the 5 to 9 year age group. Nineteen percent of presentations were admitted to hospital which is substantially higher than the overall admission rate of 9%. This high proportion can be attributed to the high percentage of fractures (32%) associated with playground equipment and 40% of these fractures being admitted to hospital.

Over a third of playground equipment injuries occurred in the school playground, 26% in public playgrounds and 21% at home.

Falls from playground equipment led to 68% of injuries occurring. Of the playground equipment that led to injuries, monkey bars or other climbing apparatus were associated with 31% of the incidents, slides/sliding boards 16% and swings/swing sets 15%.

The victim hitting against an object or surface directly caused 82% of injuries. These mainly involved the victim falling onto the ground (58%) or hitting against playground equipment such as slides/sliding boards, swings/swing sets or monkey bars and other climbing apparatus (25%). Impact absorbing undersurfaces were stated as being present with 4% of the injuries.

The majority of the injuries (51%) occurred in the upper body, especially fractures to the radius/ulna (11%) and wrist (7%) and sprains/strains to the wrist (3%). Other injuries included

lacerations (7%) and bruising (3%) to the face and scalp.

### Prevention

1. Impact absorbing undersurfaces to a depth of 250mm eg. pine bark, wood chips.
2. Equipment purchased should comply with the Australia/New Zealand standards when these are finalised.

### Occupational Injuries

Injuries while at work accounted for 16% of all injuries. Figure 5 shows that most of the work related injuries occurred in the service utilities industry (mainly electricity), manufacturing and community services (mainly in the health sector).

People working in the trades incurred the most injuries (see Table 4), especially welding tradespeople, metal fitters & machinists, carpenters & joiners and meat tradespeople. The managers/adminis-

### Industry Groups

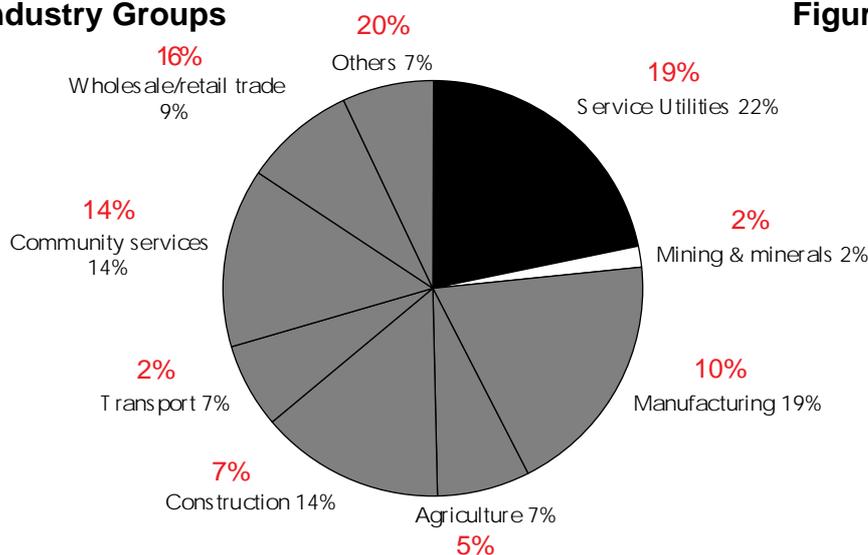


Figure 5

VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93) n = 3015

Red = workers (See Table 1)

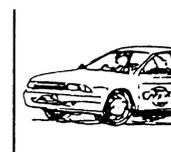
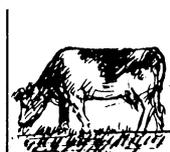
Black = Injured Workers

### Occupational Distribution

Table 4

Occupations	N	%
Tradespersons	1345	45
Plant & machine operators/drivers	509	17
Labourers, related workers	458	15
Managers and administrators	248	8
Para-professionals	200	7
Salesperson/personal service workers	127	4
Professionals	100	3
Others	29	1
<b>Total</b>	<b>3016</b>	<b>100</b>

VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93)



trators category included farmers and farm managers, these two occupations accounting for 4% of all occupational injuries. Injuries to registered nurses and police accounted for most of the injuries (3% and 2% respectively) in the para-professional group.

### Power Generation Industry

The power generation industry has power stations and/or open-cut mines at Morwell, Hazelwood, Yallourn and Loy Yang. All major sites have occupational health centres where minor injuries eg coal dust in the eye, are treated by staff trained in first aid. The more serious injuries are seen by medical staff at the LRH or the patient's own doctor. Most sites are operated by Generation Victoria, previously the State Electricity Commission of Victoria.

There were 591 injury cases from the power generation industry who presented to the LRH, representing 20% of all workers injured on the job. This percentage approximates power generation employees as a percentage of employees in the area (See Table 1.) Almost all were male and injuries were relatively less severe in that only 5% were admitted to hospital. Injuries occurred across all workforce ages but were most frequent in the 25-29 year age group.

Injuries were most frequent in early afternoons and between August and October. There were fewer cases on Mondays, the weekends and the holiday periods April and January.

Almost one third of injuries were to the eye (30%) and the majority of these were foreign bodies (20% injuries) and superficial abrasions (4%). None were admitted to hospital. Hand (including finger) lacerations were other frequent causes of injury (10% of injuries), as were face and scalp lacerations and ankle sprains/strains (each 3%).

## Power Generation Industry - Causes of Injury

Table 5

Causes of Injury (Non-person)	N
Foreign bodies, metal parts, pieces	73
Industrial equipment nec	55
Welding equipment	45
Grinders	39
Wind	30
Passengers cars or station wagons	18
Stairs/steps	14
Knives	12
Hammers, sledges and mallets	12
Pipes	10
Trucks	9
Nails, screws, carpet tacks	8
Ladders	8
Earthmoving equipment	8
Scaffolding equipment	8
Electrical wiring	7
Other	241
<b>Total</b>	<b>597</b>

NB: Up to 2 factors can be noted per case. Additionally persons were associated with 102 cases.

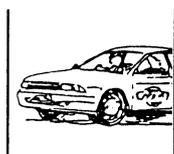
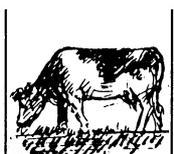
VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93)

## Occupational Distribution Power Generation Industry

Table 6

Occupations	N
Power generation plant operators	113
Metal fitters & machinists	92
Structural steel boilermaking & welding tradespersons	83
Other trades persons	57
Trades assistants	42
Production managers	26
Electrical fitters	23
Truck drivers	20
Carpenters & joiners	13
Electrical mechanics	10
Cleaners	8
Other	104
<b>Total</b>	<b>591</b>

VISS: Latrobe Regional Hospital, All ages 1/7/91 to 30/6/93



In Table 5, items coded as industrial equipment were varied. Examples were 'Cutting steel with plasma cutter. Hot slag went into eye.' and 'Trying to dislodge boiler clinker with crow bar. Crow bar slipped. Jammed him'. Lacerations to the hand, including fingers were the most frequent injuries caused by such equipment (25% injuries). Foreign bodies, metal parts and pieces were usually associated with welding equipment, grinders or industrial equipment causing eye injuries. (See eye injury section).

In reference to Table 6, power plant operators incurred injuries from industrial equipment, stairs and steps and foreign bodies; metal fitters from foreign bodies, hammers, sledges and mallets and industrial equipment; structural steel boilermaking and welding tradespersons from welding, grinding and foreign bodies; other tradespersons from foreign bodies, industrial equip-

ment and scaffolding; trades assistants from grinding and welding; production managers from cars and industrial equipment and truck drivers from incidents which were rarely motor vehicle crashes, although usually occurred in the quarry.

### Prevention

1. Appropriate protective clothing should be worn by employees at all times eg wide vision goggles, hand protection.
2. At night stairs and steps should be well lit and have luminous edges. They should have rails where practical.

See Hazard 17 (Dec 1993) and Hazard 18 (to be published March 1994) for further details of work-related injuries and prevention measures.

## Injuries

Most injuries (35%) occurred in the upper extremities of the body. The head and face area accounted for 31% of injuries, the lower extremities 22%, and 7% the trunk area. Figure 6 shows the distribution of the nature of injury. Cuts and lacerations were mainly to the hands and fingers, and to the face. Sprains/strains were mainly to the ankle and fractures to the wrist and radius/ulna.

### Eye Injuries

Eyes and fingers were the most frequently injured body parts. Although eye injuries were not usually severe, they are discussed here in some detail because they are relatively frequent in the Latrobe Valley (12% of Latrobe Regional Hospital injuries, cf 5% Melbourne all-age VISS hospitals) and because they are considered to be particularly amenable to prevention.

During the two years of data collection, 2,237 people presented with eye injuries. The majority of these injuries (87%) occurred to people aged 15 years and over, with almost a third of all eye injuries occurring to the 20 to 29 year age group.

Table 7 shows the nature of eye injuries. Foreign bodies to the eye accounted for over half of these injuries.

### Occupational

Over a third of the eye injuries were work related and mainly to men. Most of the injuries occurred in areas of production such as, a construction site (18%), factory/warehouse (10%), mine/quarry (4%) or farm/primary production (3%).

Tradespersons incurred the majority of eye injuries especially boilermaking/welding tradespersons, metal fitters and machinists, carpenters, plumbers and

## Nature of Injury

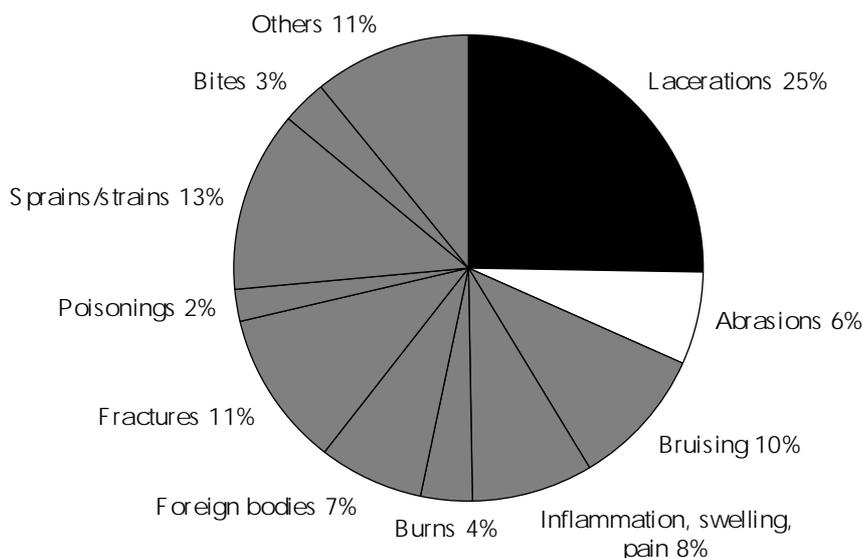
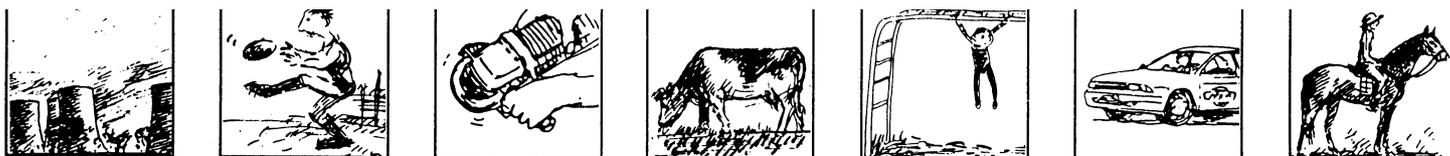


Figure 6

VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93) n = 21228  
NB: up to 3 injuries can be recorded per patient.



## Nature of Eye Injury

**Table 7**

Nature of Injury	N	%
Foreign bodies	1135	51
Abrasions	333	15
Inflammation, swelling, pain	267	12
Lacerations	219	10
Bruising	119	5
Burns	89	4
Penetrating wound	19	1
Haemorrhage	19	1
Others	37	2
<b>Total</b>	<b>2237</b>	<b>100</b>

VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93)

NB: Up to 3 injuries can be recorded per patient.

## Activity being undertaken - Non-occupational

**Table 8**

Activity	N	%
Maintenance	561	40
Leisure/playing	385	27
Transport	105	8
Personal activities (showering, sleeping, etc)	82	6
Sports	79	6
Fight, quarrel	67	5
Household activities (cleaning, cooking etc)	60	4
Others	63	4
<b>Total</b>	<b>1402</b>	<b>100</b>

VISS: Latrobe Regional Hospital, All ages (1/7/91 to 30/6/93)

vehicle mechanics. The major factors causing the injuries were welding equipment (23%), workshop grinders (16%), foreign bodies (13%), wind (10%) and industrial equipment (9%).

Of those presenting to hospital with work related eye injuries, 47% stated they were wearing eye protection when the injury occurred. This suggests that the eye protection they are using may not be appropriate and that further research is required to determine why the eye protection was not effective.

### Non-Occupational

Over half of the non-occupational eye injuries occurred at home (61%), predominantly in the garden or garage. Injuries while undertaking a maintenance activity (eg. home maintenance, gardening, vehicle maintenance) accounted for a high proportion of non-occupational eye injuries. Table 8 lists the activities that were being undertaken at the time of the injury.

Almost half of the injuries were foreign bodies to the eyes and only 12% were recorded as wearing eye protec-

tion at the time of injury which is lower than that recorded for work related eye injuries. Only 2% were admitted to hospital.

### Prevention

1. Approved eye protection should be worn at work and at home, eg. wide vision goggles while grinding (S.A. Injury Surveillance, 1991) and face shields while welding if there is a chance that splatter will come into contact with the operator's face (Draft Code of Practice for the Metals Manufacturing Industry).
2. Approved eye protection should also be worn by people (including children) who are either watching or nearby.
3. Further research is required to determine why the eye protection stated as being worn was not effective.
4. Safety shields provided with equipment (eg. grinding wheels) should be used.

### References

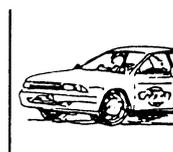
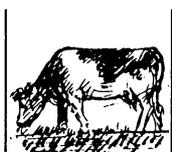
Australian Bureau of Statistics Censuses 1986, 1991.

Clarke, L. Profile of Farm Health and Safety, A Preliminary Report Prepared for the National Farmsafe Secretariat, May 1992.

Clarke, L, Wolfenden, K. Community Organisation to Reduce Injury on Australian Farms, Health Promotion Journal of Australia, Vol 1 No. 2, Dec 1991.

Farmsafe Australia. A Proposed Strategy for Improving Health and Safety on Australian Farms, April 1993.

(Cont. over page)



(References cont.)

Generation Victoria, Richardson, K.(Manager Public Relations). Personal Communications.

Gippsland Regional Information Bureau.

Hazard 9. VISS in the Latrobe Valley - the First three Months. December 1991.

Injury Surveillance in the Latrobe Valley, March, 1992.

Hazard 14. Home Injuries March 1993.

Hazard 15. Adult Sports Injuries. July 1993.

Hazard 17. Work Related Injuries. December 1993.

Occupational Health & Safety Authority. Draft Code of Practice for the Metals Manufacturing Industry, Occupational Health & Safety Act 1985, Version 21/7/92.

S.A. Health Commission, Injury Surveillance Monthly Bulletin, No. 31, March 1991.

# Injury in the Defined Program Region of the Latrobe Valley Better Health Injury Prevention Program

*Lesley Day*

## Program Region

For the purposes of the evaluation of the Latrobe Valley Better Health Injury Prevention Program, the program region has been defined on the basis of post code, since this is the common variable by which data may readily be extracted from all the relevant data bases. The post code areas relate closely to the municipalities of Moe and Morwell and the City and Shire of Traralgon. The injury profile presented in this section is specific to the program region. Injury data for the program region were extracted from the Victorian Coroner's Data Base (deaths), the Victorian Inpatient Minimum Dataset, (hospitalisations in public hospitals), and the Victorian Injury Surveillance System (emergency department presentations). The ascertainment rate for the two former data bases is very close to 100%, and for the latter, it is 95%.

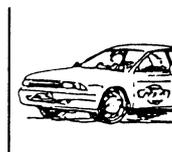
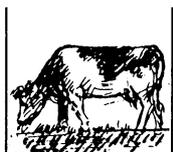
## Injury Deaths

In the financial year of 1990/91, there were 38 injury deaths among residents of the program region recorded in the Victorian Coroner's data base, giving a crude injury mortality rate of 51 per 100,000 (95% CI 35-68).

Comparable Victorian data for the same year are not readily available to date. However, the 1990/91 injury mortality rate, age standardised to allow comparison, for the program region is higher

than the age standardised rate for Victoria for the previous financial year (52 per 100,000 compared to 40 per 100,000). The difference is not statistically significant, which may be due to the small numbers involved in one year of data. Analysis of further comparable years of data would be required to determine if the injury mortality rate for the program region is in fact higher than that for Victoria.

Slightly more than half (53%) of the program region deaths were suicides, most commonly due to hanging, with a further 29% due to motor vehicle crashes. Residents in the 15-24 year age group were over-represented, making up 32% of the injury deaths while accounting for 16% of the total program region population. Males were also over-represented, accounting for 76% of the injury deaths. Some differences to the 1989/90 Victorian data are noted, while recognising that the comparison is between two different, albeit, consecutive, years (Table 1). In 1989/90, 26% of injury deaths in Victoria were due to suicide with a further 40% due to motor vehicle crashes (State Coroner's Office). The 15-24 year age group was also over-represented in Victoria, making up 22% of injury deaths, while accounting for 16% of the total population. Males were over-represented in Victoria to a similar extent as in the program region.



## Injury Hospitalisations

Hospitalisation data for injury for the six year period from 1986/87 to 1991/92 have been analysed to date. The average annual injury hospitalisation rate (age standardised) for the program region was 1175 per 100,000 (95% CI 1097-1253), slightly higher than that for Victoria (1043, 95% CI 1034-1053). While it is generally acknowledged that injury rates are higher in non-urban areas, the higher hospitalisation rate may be partly explained by differing admission criteria. The injury hospitalisation rate for the program region has been declining since 1987/88, as has the rate for Victoria.

Falls are the leading cause of injury hospitalisation in the program region (26% of injury admissions), as in Victoria (31% of injury admissions). Motor vehicle crashes (traffic) are the second leading cause of injury hospitalisation for both the program region (13% of injury admissions) and Victoria (15% of injury admissions) (Langlois et al., 1992).

## Emergency Department Presentations

There were 16,073 injury presentations, among program region residents, to the Latrobe Regional Hospital over the two year collection period. This represents 84% of all injury presentations to the Latrobe Regional Hospital. The crude annual all-age presentation rate (including admitted cases and adjusted for the ascertainment rate) over the two collection years for the program region is 11,298 per 100,000 (95% CI 11,071-11,525). Rates of emergency department attendance for all-age injury in Victoria are not available. The pattern of injury presenting to the emergency department for the program region is similar to that described for the

Latrobe Valley Region in this publication.

## References

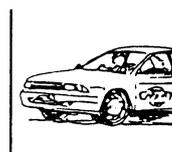
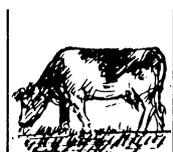
Langlois, J., Hawkins, C., Penny, M., Brumen, I. and Saldana, R. (1992) Nonfatal Injuries in Victoria: An Overview. Report No 36. Monash University Accident Research Centre, Melbourne, Australia

State Coroner's Office. (1990) Unnatural Deaths: Collated From the Findings of the State Coroner 1989/90. Victoria, Australia.

**Causes of injury death, Program region 1990/91 and Victoria 1989/90 (State Coroner's Office)**

**Table 1**

	Latrobe Valley Moe, Morwell, Traralgon and Traralgon Shire 1990/91 n=38		Victoria 1989/90 n=1,698	
Ranking	Injury	Percent of Total Injury Deaths	Injury	Percent of Total Injury Deaths
1	suicide	53	motor vehicle crash (traffic)	40
2	motor vehicle crash (traffic)	29	suicide	27
3	drowning	5	drowning	5
4	homicide	5	poisoning	4



# Translating Local Data into Prevention

Joan Ozanne-Smith

## Introduction

This discussion of the translation of local injury data into prevention applies generally. However, the discussion focusses on the Victorian Injury Surveillance System (VISS) and examples are drawn here from the Latrobe Valley.

## Nature of local data

To the extent possible local injury data should provide detailed information on the nature and circumstances of injury occurring to local residents and within defined geographic areas. Ideally, information would be available for all levels of severity of injury. Within the Latrobe Valley, information is available for deaths, hospital admissions and emergency department presentations. General practice injury data are not yet available.

## Functions

There are many ways in which good quality injury data can contribute to injury prevention.

Evidence from several community based injury prevention programs both in Australia and overseas indicates the relevance of local data to communities. Overview data are required for problem identification, the monitoring of trends and for evaluation. The detailed one line narrative collected for each case within Australian injury surveillance systems, including VISS, has particular utility for specific problem identification and for targetting interventions.

Local injury data allows initial analyses to determine the major causes of

injury thus providing a natural focus for injury prevention programs. The extent to which community concerns are reflected by the data can also be determined.

In targetting interventions, data can be used to identify risk factors in various ways. In this edition of *Hazard*, examples of risk factors are identified by location (farms, power plants) injury sites (eye, finger) activity (football, basketball) and age group and sex. More specifically, narrative data have been used to determine that a substantial proportion of eye injuries are occurring in the workplace in the presence of reported use of eye protection, and playground equipment injuries occur locally most frequently in schools followed by public playgrounds and homes in similar proportions.

Where injury prevention programs are operating, as in the Latrobe Valley, monitoring and evaluation of the effectiveness of interventions in actually reducing injury are dependent on on-going data collections.

Finally, and probably most importantly, local data appear to be a powerful means of motivating the community to recognise its injury problems and to participate in action to reduce them.

## Methods

Several methods are used by VISS to translate its emergency department and other injury data into prevention.

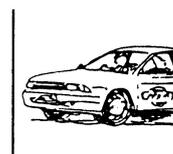
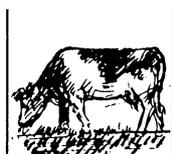
*Hazard*, the quarterly publication of VISS is a major vehicle for the analysis, and dissemination of injury data together with recommendations for pre-

vention based on both the interpretation of the data and available references in the literature. The official circulation for each edition is approximately 2500, although this is multiplied by reproduction and circulation of much of the content by other agencies within Australia and overseas.

VISS also responds to information requests for analysis and interpretation of its database of approximately 150,000 cases. Since the collection of VISS data in the Latrobe Regional Hospital commenced in July 1991 there has been a total of 334 information requests involving Latrobe Valley injury data. Of these, 10% originated from the Latrobe Valley itself. These local requests particularly related to farming, sports, playground and traffic related injuries. Information is also frequently provided for media promotion of injury prevention issues.

VISS supports the Latrobe Valley Better Health Program by supplying local injury data and interpretation, graphics and advice. It also supports a range of research including projects on farm injury, child and adolescent motorcycle related injury, and alcohol related injury.

Much can be done to prevent injury by all local communities. Current opportunities exist for input into the development of Municipal Public Health Plans and other local strategies. As local injury data becomes more widely available the opportunities for informed injury prevention programs will further increase.





Henk Harberts\*

The Latrobe Valley Better Health Project, which has a dual focus on Injury Prevention and Improved Nutrition, began in May 1992. Utilising a community-based approach to health promotion/education, the project covers the Municipalities of Moe, Morwell and the City and Shire of Traralgon. Funding is currently provided by the Victorian Health Promotion Foundation and commenced under the Federal Better Health strategy.

Home Safety, Youth Alcohol, Sports Injury Reduction and Playground Safety form the Injury Prevention component; and were developed in response to the findings of the Latrobe Valley Health Study (the Streeton Report utilising mortality data from 1969-83) and subsequent community consultation. The Injury Prevention component is closely allied with the Latrobe Regional Hospital through the Victorian Injury Surveillance System (VISS). This system collects injury and poisoning data through the Emergency Departments at Moe and Traralgon campuses. Both components of the Project share a common, representative Management Committee and established separate Reference Groups and Interest/Working Groups that essentially drive the Project.

## Intersectoral Approach

In the short time since establishment, the injury prevention stream of the Project has set in train a number of initiatives that are slowly making a

social and environmental impact on the community of the Valley. An example is the contribution and consultation on Municipal Public Health Plans of the local municipalities.

Many successful initiatives have been achieved and particular programs have had a very significant impact, the establishment of the Safety Features Home Design Award and its presentation is but one. With the success of this initiative, the builder made a commitment to incorporate the safety features as a standard in future homes built by the firm. The Project used the established home to provide educational sessions on residential safety and injury prevention to various groups of parents, carers, home help and other related groups. The project is currently undertaking the development of residential safety into aged accommodation and public housing provision.

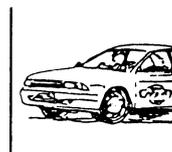
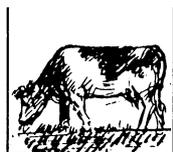
Working relationships have been established with many agencies operating in the Valley. In the case of Youth Alcohol Action, the project has facilitated interaction between the three individual campaigns (Moe, Morwell & Traralgon), the Central Gippsland Alcohol and Drug Service, the Police Community Consultation Committees, schools and the local Youth Development workers/networks. Project programs have frequently initiated contact between various agencies/individuals working in a particular field who previously may not have had an oppor-

tunity to cooperate and combine/share their efforts.

Much work has gone into developing a relationship with the sporting clubs and specifically the Australian Rules Football groups. VISS data revealed that this code accounted for 38% of sport related injuries in the Valley. Developmental work utilising VicHealth grants and services of various individuals has seen tentative, initial steps into highlighting the importance of injury prevention as concern for this group of sports players and administrators. A close ally has been the Gippsland Sports Assembly.

Establishment of the Project in the Latrobe Valley Community is complete and coalitions between other agencies and the Latrobe Valley community are reinforced by the nature of "Community Based" health interventions. The Project has been active in promoting a reputation of 'good work' and as a consequence is busy publicising its efforts, via seminars and articles.

The role of Management, Reference groups and the specific work of working parties have provided a solid foundation on which to build further. This particular feature of the Latrobe Valley Better Health Project is its strongest asset - it has provided for intersectoral cooperation, community participation and ownership. The synergistic effect of multiple interventions has allowed for relatively cheap



health promotion, the results of which are anticipated to greatly benefit the people of the Valley.

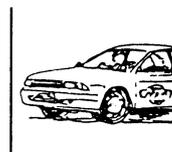
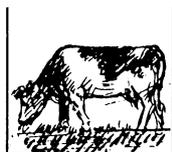
## Some Highlights

- *Established a Safety Features Display Home in Traralgon, with 800-1000 visitors over a ten week period.*
- *Home Safety tutor training in collaboration with Latrobe Valley Education Provider (SCOPE).*
- *Public promotions during Latrobe Valley Community Health Weeks and World Health Day "Injury and Violence" April 1993.*
- *Numerous program displays and presentations including Latrobe Regional Hospital Fete, Children's Week, Senior Citizens and local Council Home and Community Care staff, Maternal & Child Health Nurses, Nursing Mothers, Child Care students and staff, and other public functions.*
- *Project publicity, via printed and electronic Media, Rotary, Crest, senior citizens and other service clubs/community groups.*
- *Sports Injury Reduction - The Working Party, developed materials incorporating injury data and recommendations for prevention, which were provided for various Coach and Trainers' Accreditation and Professional Training sessions.*
- *Playground Safety - establishment of a Playground Safety working party incorporating municipal and school representatives.*
- *Adoption of good maintenance and equipment audit routines by local government authorities.*
- *Promotion of School Nurse initiated School Safety audits.*
- *Non Alcoholic Cocktail Promotions at numerous public and private functions.*
- *Development of Young Persons' Business Non Alcoholic Cocktail Business in Moe (existing business in Morwell and proposed in Traralgon).*
- *Submissions to Municipal Health Plans.*
- *Responsible Servicing of Alcohol Course, in conjunction with the local community Road Safety Council.*

## Evaluation

Monash University Accident Research Centre is responsible for evaluation of the Injury Prevention Project.

\* Henk Harberts is the Injury Prevention Program Worker



## VISS Staff

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<b>Coronial Data:</b>	Barbara Fox
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## GENERAL ACKNOWLEDGEMENTS

Latrobe Regional Hospital  
(Traralgon and Moe)

The contributions to the collection of VISS data by the director and staff of the Emergency Departments of this hospital, other participating clinicians, Medical Records Departments, and ward staff are all gratefully acknowledged. The surveillance system could not exist without their help and co-operation.

### Coronial Services

Access to coronial data and links with the development of the Coronial Service's statistical database are valued by VISS.

## 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-ordinators or the Director by contacting them at the VISS office.

## VISS is located at:

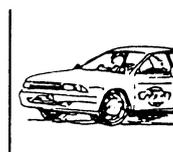
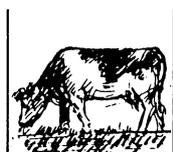
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*VISS is a project of the Monash University Accident Research Centre.*



*Hazard was produced by the Victorian Injury Surveillance System with the graphics assistance of Glenda Cairns, Monash University Accident Research Centre. Illustrations by Jocelyn Bell, Education Resource Centre, Royal Children's Hospital.*

