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Appendix A

List of Research Reports

Reports of work undertaken by researchers in the State Coroner’s Office include:


The full reports are available on-line from the Coronial Services website or from the Institute Library. The Executive Summaries of some of them are included below:
Executive Summaries and Conclusions of Research Reports

West Gate Bridge Deaths
Report by Annette Graham
Thursday June 10 2004

Summary

1. Since 1989 there have been approximately eight suicides a year from the West Gate Bridge.
2. There is clear evidence that erecting safety barriers on a bridge prevents people from using that particular structure to prevent suicide.
3. Evidence has been provided from Engineers contracted to VicRoads to review safety issues on the West Gate Bridge that it is structurally feasible to place safety barriers on the West gate.
4. Evidence suggests that not all those who commit suicide would use a different means if they were unable to suicide using their first preference.
5. A significant proportion of Victorian suicides are impulsive acts. Working on restricting access the means of suicide may have an effect reducing the extent of those suicides that are impulsive acts.
Motor Vehicle exhaust gassing suicides in Australia: An update
Report by Virginia Routley, Andrew Short and Joan Ozanne Smith
June 2004

Executive Summary

Introduction

When catalytic converters coinciding with 9.4g/kg (carbon monoxide) CO emissions became mandatory in Australia in 1960, suicides by this method were expected to reduce, as had been observed in the US and more recently in the UK. However, in Australia, motor vehicle exhaust gassing suicides (MVEGS) as measured by rates, frequencies or percentage of total suicides continued to rise and only since 1997 appears to be reducing.

Of the 2,320 suicides registered for the year 2002 in Australia, ABS statistics indicate that 416 persons (17.9%) died thorough MVEG inhalation, accounting for the second highest proportion of suicides after hanging. The majority of exhaust gassing victims have been male (83.3%), with the most frequently occurring age group for males being 25-44 years (53.3%). MVEGS declines have been mostly in NSW and to a lesser extent Victoria.

The number of vehicles on the register per 1,000 population has progressively risen from 567 in 1985 to 662 in 2003. Over the last 30 years the average age of the vehicle fleet has increased steadily, from 6.1 years in 1971 to 10.4 years in 2003. It is of interest that NSW has the newest vehicles ad has shown the sharpest decline.

Aim

The aim was to provide the Commonwealth Department of Health and Ageing with evidence of the extent to which the 1997/97 regulation of 2.1 g, CO/km prevents MVEGS in new vehicles in Australia.

Method

Approval was firstly obtained from relevant university ethics and government registration bodies. An analysis was undertaken by ABS suicide data between the years 1990 and 2002, with a focus on exhaust gassings. Medline was then searched and the literature reviewed for relevant literature published since the earlier Victorian study.

A cross-sectional study was undertaken of Victorian and the rest of Australia MVEGS cases, as recorded on the NCIS between September and November 2003, where death occurred in 2001 or 2002. Age, sex, employment status, year of death, name and date of incident were accessed, where possible, for each identified case. Additionally toxicology, pathology, police description of circumstances and the coronial findings attachments were searched, where available, for COHb and BACV levels, location, means of exhaust gas reaching victim and vehicle details. Any identified drugs were noted where the COHb level was low or the vehicle manufactured since 1997. For Victoria, hard copy coronial manual records were searched for information missing from NCIS electronic records, especially vehicle registration numbers as shown in death scene photos. This step was not available for other states. Victorian hospital admissions data was extracted from the Victorian Admitted Episodes Database (VAED) using the ICD-10 CM code X67.0 Intentional self-poisoning by and exposure to other gases and vapours. Data relating to the level of care required, the length of stay and the discharge destination were
variables extracted and analysed. Recent Australia-wide hospital admissions data was unavailable at the time of the research and on finalisation of the study in June 2004 remains unavailable. Literature relevant to MCEGS survivors was reviewed to supplement the available data.

Study Capture
Using ABS ‘suicides by other gases and vapours’ as a proxy for exhaust gassing suicides, the National Coroners System (NCIS), at the time of interrogation, had captures 85.9% of the number of 2001 MVEGS ABS cases, 64.2% of the 2002 ABS cases and 75.8% of the number of ABS cases over both years. According to the NCIS the percentage of total cases closed as at November 2003 (ie data entry finalised) was 76.1%. Of total cases a police report was attached to 82.4%, 28% had an autopsy report, 14% a toxicology report and 24% a coronial finding. Compared with the ABS cases Victoria had the highest capture rate (95.3%), followed by SA (83.8%). There is therefore a bias in the NCIS based data towards 2001 and Victoria. In total 680 exhaust gassing cases were progressively interrogated on the NCIS between September and November 2003.

Results of NCIS interrogation

Personal characteristics
The mean age was 42 years and 83% were male. There were two very young cases (child murders but there were an additional 3 on the ABS). Of those with known marital status, 72% had been or were married (including de facto). Of those where employment status was known, 54% were employed and of these 28 were drivers (15 truck, 3 taxi and 7 other/unspecified), 14 labourers and 12 in sales work. There were 328 cases for which the COHb reading was provided, the mean 72.8%, the minimum value 2% and the maximum 95%.

Logistical characteristics
Of the 331 cases where location was ascertained, 30% were inside a vehicle in a domestic garage, 22% in a vehicle in a bushland or parkland setting and 10% parked in a vehicle on the side of the road or in a domestic driveway. Hoses, particularly garden, represented a total of 76% of connecting mechanisms. In the 102 cases where it could be determined the entrance point into the vehicle cabin was most commonly through the rear window or door (39.2%), followed by the front window or door (16.7%). Where recorded (n=102), towels and tape such as duct or electrical were the most common sealing materials.
Vehicle characteristics compared with the total vehicle fleet

The current study had a larger proportion of older vehicles (49.2% current study v 22.5% vehicle fleet) and a lesser proportion of recent vehicles (7.4% v 26.1% vehicle fleet). The number of suicide vehicles per 100,000 vehicles in the Australian fleet increased with the Vehicle age-group. The median age for a suicide vehicle was 16 years (as for the Victorian study) compared with that for an Australian fleet vehicle of 10.6 years. Of the most common vehicle makes in the Australian fleet, Ford and Holden were over-represented in exhaust gassing suicides and Toyota slightly under-represented. Other makes were roughly in proportion to their representation in the Australian fleet.

Unusual cases

There were 21 vehicles manufactured since 1997, representing 7.6% of the study population where year of manufacture was available. There appeared to be no clear differences in the pattern of these suicides from those using vehicles manufactured earlier.

Of the 21 cases with low COHb levels (less than 5-0% COHb), over half were associated with high BAC levels, other drugs, other methods of suicide or cardiac problems. Only one victim, at 7%COHb, had carbon dioxide poisoning (ie asphyxia, probable CO2 and coronary artherosed condition) recorded as a cause of death. Another 7% COHb case had asphyxia (oxygen deprivation) secondary to exhaust gases. Both these 7% COHb cases were in new vehicles.

Comparison with previous Victorian study

The Victorian study was undertaken for VicHealth to investigate MVEGS deaths in the years 1998-2000 using the Victorian State Coroner’s Office electronic data and manual files. The personal characteristics are very similar in the two studies. In the earlier study reasons for the suicide and all drugs were recorded. Depression and relationship breakdown were the major reasons for the suicide, in that study, drugs were detected in 50% of cases and benzodiazepines, paracetamol, temazepam, codeine were those most commonly detected.

Hospital admissions

Over the last 15 years for which the Victorian Admitted Episodes Database (VAED) (formerly Victorian Inpatient Minimum Dataset) data has been collected there have been a total of 866 exhaust gassing attempted suicides admitted to Victorian hospitals. There was a rise in hospital admissions both in rates and in cases from 1990/91, reaching a maximum of just below 100 cases and a peak of 5.2 per 100,000 population between 1994 and 1996. In the last six years of data the rate has ranged between three and four hospital admission per 100,000 population. The Alfred Hospital clearly had the majority of cases but these were concentrated in the period 1992/96 (hyperbaric unit located in the hospital and all cases attended there). The most common hospitals are now those located in outer suburbia.

The length of stay was most commonly under two days *( 53% overall) with 37.6% staying between two and seven days. Over the five year period 1992/93 to 1995/96 however, coinciding with the period of Alfred hyperbaric treatment being the norm, a stay of between two and seven days was the most common. Over the 15 year period 1987/88 to 2001/02 there were 81 ie 9.3% oc cases admitted for eight days or more. It is postulated that a
proportion of these long stay cases had significant neurological impairment. Clearly the prevalence of impaired non-fatal cases is cumulative resulting in a considerable social and economic burden. The rate and cost of disability due to attempted MVEGS warrants further investigation. The most common separation overall and in each year was to private accommodation or a home without support (63%).

In 1997/98 there were 416 hospital separations Australia-wide for MVEGS attempts compared with 526 suicides by this method. MCEGS is a relatively effective method as the ratio of 1.5 deaths per admission contrasts with 0.113 for suicides overall (VAED, ABS Victoria 2001/02, 2001). Approximately 2% of those cases admitted to hospital have resulted in death.

The age and sex distribution of MVEG related hospital admissions is generally similar to that seen for completed suicides. It appears however that younger males are relatively more common among hospitalisations, presumably due to higher involvement of the family in intervention.

Given the high lethality of this method, that many attempters and completers are likely to have dependants, deaths do occur in new vehicles, many survivors regret the attempt, a proportion of survivors have long-term neurological impairment, there has been an average of between 400 and 600 deaths per annum in recent years and MVEGS represent approximately 20% of suicides, a serious effort should be made to prevent these suicides. Benefit/cost analyses should be undertaken to determine the economic basis for recommending, or not recommending, cabin gas sensors for new vehicles on the basis of potential MVEGS prevention. Other potential advantages of cabin gas sensors also warrant investigation. The case for recommending the development and use of modified tail pipes at replacement in existing vehicles and in new vehicles is strong.

Strengths
A major strength of this study is that a very large case series of 1.095 cases of MCEGS has been studied in detail for both Victoria (1998-2000) and Australia (20001-20002). Access was available to the source documents (Coroners’ files for Victoria, to complement the NCIS data where key information was missing for the purposes of this research.

Weaknesses
Important data was missing from the NCIS. The proportion of cases identified form the NCIS, using all the recommended search methods, fell well short of the Australian Bureau of Statistics MVEGS data for the same period. In 2002 the NCIS cases identified as MVEGS made up only 64% of ABS cases. However attempts to validate the available cases as representative of total cases did not reveal any specific bias apart from geographical location which is weighted towards Victoria where the best data was available.

Importantly, more than 5000 deaths have occurred in Australia from MVEGS since attention has been drawn to this problem and its potential preventability by design changes to motor vehicles. Furthermore, this method provides a convenient, but fortunately uncommon, means for multiple child homicides.

Recommendations
1. Mandating of exhaust pipes as per on refit for vehicles manufactured prior to 1997.
2. Advise that similar designs be incorporated in new vehicles
3. Consideration be given to the use of cabin sensors in new vehicles or through fleet owners to achieve the trickle down effect.

4. Research be undertaken to identify the actual burden to Australia of non-fatal MVEG.

5. Vehicle details (make model, year of manufacture, vehicle registration number) required to be recorded on MVEGS police reports for the Coroner and recorded on the NCIS.

6. The NCIS continue to improve the completeness and recording of cases, including attachments.

7. Quality control to improve the unknown category for the employment and especially marital variables for the NCIS.
Executive Summary

This report presents the findings of an investigation into farm-related fatalities in Victoria between 1 July 2000 and 30 June 2003. The study was commissioned by the Victorian State Coroner for the Rural and Regional Services and Development Committee to inform the Parliamentary Inquiry into the causes of fatal injury on Victorian farms.

The aims of the study were to:

1. Identify all deaths of:
   a. individuals who were considered a ‘farmer’ or ‘farm worker’; and
   b. deaths where the fatal incident occurred on a property identified as a ‘farm’.

   Examine the nature and extent of such fatalities and identify contributing factors. Report on areas where high number of fatalities occur and areas where there is potential for future prevention.

2. Examine known contributing factors across groups of cases in order to identify common themes and potential prevention measures. Report on any increases or decreases in previously identified problem areas, such as tractor roll over deaths.

3. Examine the extent to which Victorian data on the National Coroners Information System (the NCIS) could be used as a:
   a. case identification tool; and
   b. data collection tool.

4. Assess current coronial death investigation process in relation to fatal incidents on farms and of farmers.

Using the NCIS, 251 Victorian farm-related fatal incidents were identified during the three-year study period. Information about these deaths was accessed from both the NCIS and case records stored at State Coroner’s Office (SCO), Victoria. Data was recorded as both free text and coded using agriculture specific classification systems. Cases were categorised according to cause (natural and external) and intent (unintentional, intentional self-harm and interpersonal violence).

One-hundred of these deaths (40%) were determined by the Coroner to be a result of natural causes and 147 (59%) were determined to be a result of external causes. Further classification of the external cause deaths revealed that:

- 87 (59%) were determined by the Coroner to be a result of an unintentional injury;
- 57 (39%) were determined to be a result of intentional self-harm; and
- two resulted from interpersonal violence.

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The 87 unintentional injury deaths were categorised according to activity and age. By activity:

- 42 of the 87 unintentional injury deaths (48%) were categorised as work-related;
- 26 (30%) were categorised as transport-related; and
- the remaining 19 cases were categorised as other unintentional.

Included in the abovementioned categories (work-related, transport-related and other unintentional) there were 18 deaths of children (up to the age of 18), seven work-related, four transport related, six drownings and one firearm-related.

These groups of cases were examined using a combination of quantitative and qualitative methods. From this analysis the two most significant issues identified were intentional self-harm and work activities, contributing to 23% and 17% of all identified farm deaths respectively.

In relation to self-harm, it was found that firearm use and mental illness were two prominent themes emerging from an examination of the cases. It was concluded that, given the complex nature of self-harm generally, which was also evident in the current study, further information should be sought from relevant experts in the field, particularly in relation to mental health service usage and access to mental health services by the farming community.

In relation to the work-related fatalities, it was found that tractor run overs and all terrain vehicles (ATVs) contributed to a large number of these deaths.

Comparisons between the current study and previous studies illustrated that, while reductions in some areas of fatal work-related injury on farms have occurred, many of the recommendations developed by coroners, occupational health and safety organisations and researchers in the last decade were still relevant.

The NCIS, was limited in the extent to which it could provide information on the farming operation, the precise location of the incident and the activity at the time of the incident. This was due to incomplete fields and the classification systems used to code case information. It is understood however, that the NCIS will be in a position to overcome coding limitations in relation to agriculture and work-related deaths within the next year once the agreements with the Australian Bureau of Statistics (ABS) and the National Occupational Health and Safety Commission (NOHSC) to code data are implemented.

The NCIS proved essential to the current study for the purposes of case identification, as compared to previous research using coronial data, which have relied on key word searches of text documents and an extensive review of the circumstances of death for all cases reported (totalling between 4,000 and 4,500 cases per year). NCIS has the potential to more effectively monitor trends and patterns in farm-related fatal injury on a national basis than any other existing method of coronial data analysis currently performed in Victoria.

The current study found that information prepared during the coronial process, particularly rural autopsy reports and Coroners' findings had some limitations:

- autopsies conducted in rural and regional locations were only available in hard copy; and
some cases where a detailed brief of evidence, including contributory factors and prevention issues, was prepared by Victoria Police and the Victorian WorkCover Authority were neither discussed nor included in the Coroner's finding. It was therefore difficult to determine whether the Coroner felt that the factors identified did in fact contribute to the death, and the validity of any future prevention issues.

From these findings it is recommended that:

1. the Parliamentary Inquiry consider the idea of the development of a Victorian Farm Safety Strategy that complements the National strategies developed by Farmsafe Australia, the National Injury Prevention Plan (forthcoming) and the Victorian Injury Prevention Plan (forthcoming);

2. a coronial finding protocol be developed by the State Coroner's Office in collaboration with key Coroners to ensure that, where appropriate, factors involved in the death are identified in the finding. It is noted that an investigation protocol has been developed for Police in relation to deaths reported to the Coroner, which is in the process of being implemented across Australia;

3. WorkSafe, Victoria Police and the State Coroner's Office consider the development of a standard investigation protocol for agriculture-related deaths based on the farm injury optimal dataset (developed by the National Farm Injury Data Centre) to assist Coroners; and

4. the NCIS consider that the ACAHS code farm-related fatality information using the farm injury optimal dataset developed by the National Farm Injury Data Centre. The feasibility of this would depend largely on resourcing both the NCIS and ACAHS. Fatalities on farms is a significant enough problem throughout Australia to warrant monitoring and ACAHS has the expertise and the relevant established relationships with organisations such as NOHSC to assist NCIS with coding decisions.
Fire, Contact Burn and Scald Injury Fatalities among Children (0-9 years) and Seniors (70+ years) in Victoria, 2000-2003

This study is a joint initiative of the State Coroner’s Office & Department of Human Services
Compiled by Lyndal Bugeja
Injury Prevention Research Officer, State Coroner’s Office, Victoria
October 2004

Executive Summary
An Injury Prevention Research Officer position, funded by the Public Health Group of the Department of Human Services (DHS), was established at the State Coroner’s Office (SCO) in October 2001 for a period of three years. The role of the Research Officer was to undertake a number of projects investigating unintentional injury deaths for patterns and contributory factors. This report presents the findings of an investigation into fatal injury resulting from fire (burns and smoke inhalation), contact burns or scalds in children (aged 0-9 years) and the older seniors (aged 70 years and over) that occurred in Victoria between 2000 and 2003. Of particular interest was the identification of contributory factors related to safety practices and behaviours, such as:

- the presence and use of smoke alarms;
- barriers to escape from fire;
- the contribution of consumer products; and
- the role of the temperature of hot tap water at bathroom outlets in domestic dwellings in scald-related fatalities.

Forty deaths of children (aged 0-9 years) and seniors (aged 70 years and older) due to fire, burn and scald injury were identified on the National Coroners Information System (NCIS) and the State Coroner’s Office Local Case Management System over the four-year study period 2000-2003. Coronial case files were retrieved and examined for issues of interest using a combination of quantitative and qualitative methods.

The main findings of the study were:

- Fire-related fatalities: (n=27 deaths (68%) from 25 incidents)
  - 70% of fatalities were seniors aged 70 years and over
    - alcohol intoxication contributed to only a small number of deaths among seniors (n=4)
    - 74% of 70+ year olds were described as being in poor health, which may have impacted on their ability to escape the fire
    - ~60% of seniors lived alone;
  - 36% of fatal fires involving children and seniors originated in the bedroom, 28% fires originated in the lounge room;
40% of fatal fires were ignited from an electrical appliance, a further 28% were ignited from a lit or improperly discarded cigarette.

56% of fatal fire incidents occurred at night between 8:00 pm and 8:00 am, and 72% incidents occurred on a weekday.

44% incidents occurred in the winter months (June-August).

- Contact burn fatalities: (n=2 deaths, 5%)
  - both fatal incidents involved women aged 70+ years
  - in both cases the burn injuries causing death were sustained from portable heaters following a fall.

- Scald fatalities: (n=11 deaths, 27%)
  - ten of the 11 scald deaths (91%) were seniors (aged 70 years and over)
  - ten of the 11 scald fatalities (91%) occurred in the bathroom, eight of which occurred when the deceased was bathing or showering
  - the major contributing factor to scald-related deaths was difficulty controlling or adjusting the hot tap water flow or water temperature.

Based on these findings it is recommended that:
Recommendation 1: The CFA and MFB promote the use of wall mounted heaters as an alternative to upright / portable heaters through programs the fire services deliver to older people.
Recommendation 2: Cigarette-related fire and fire fatality data should be collated by the MFB and CFA using FIRS and the NCIS to provide up to date evidence to inform a campaign for the development of regulations for fire-safe cigarettes in Australia. In the interim, in view of the number of fatalities, the tobacco industry may consider developing an industry based Code of Practice or Standard for fire-safe cigarettes with the assistance of Standards Australia.
Recommendation 3: The CFA and MFB continue to raise awareness amongst older adults of the risks of smoking in bed through programs the fire services deliver to older people.
Recommendation 4: Ten-year single purpose lithium battery smoke alarms should be promoted and there should be an outreach give-away and installation program for low income households with young children and house bound older people.
Recommendation 5: Renewed effort should be made to convince all householders to lower the maximum temperature of hot water delivered to bathroom outlets to 50° Celsius.
This study is a joint initiative of the State Coroner’s Office & Department of Human Services
Compiled by Lyndal Bugeja
Injury Prevention Research Officer, State Coroner’s Office, Victoria
October 2004
Executive Summary
An Injury Prevention Research Officer position, funded by the Public Health Group of the Department of Human Services (DHS), was established at the State Coroner’s Office (SCO). The purpose of this position was to undertake a number of projects across a range of topic areas relating to unintentional injury death.
This current study examined unintentional deaths resulting from falls of children aged 0-14 years in Victoria between 1989 and 2002. The purpose of the study was to identify and examine the factors associated with fatal injury from falls. Of particular interest were issues such as the role of recreation / play, the relationship between fall height and injury and the location of the fall. During the 14-year study period there were 26 deaths. An analysis of these deaths revealed that:

- 62% (n=16) were male;
- 42% aged 0-4 years (23% < 1 year and 19% 1-4 years); 27% aged 5-9 years; and 31% aged 10-14 years;
- 44% (n=11) occurred between 3:00-6:00 pm;
- 58% (n=15) occurred on weekends;
- 64% (n=17) occurred in the home;
- 46% (n=12) were engaged in leisure activities;
- 45% (n=9) of direct fall deaths occurred from a height between 1 and 3 metres; and
- ~70% (n=18) deaths resulted from a head injury.

It was found that fatal falls of children were rare events in comparison to all unintentional injury deaths and non-fatal fall injury. A review of the literature on non-fatal fall injury found that falls is the leading cause of emergency department presentations and hospital admissions in Victoria, Australia and in some overseas countries. Comparisons were made between fatal and non-fatal fall injury by age group and it was found that the circumstances surrounding both fatal and non-fatal falls varied according to the child's age and location.
Fatal falls of infants and young children primarily occurred in the home while they were sleeping, being cared for or were playing. In these cases, the fall height was often less than three metres and the child died from a head injury. Deaths of older children were more common in public spaces during informal recreation activities. In these cases the falls were from a greater height and also resulted in fatal head injuries.
A number of prevention strategies were identified from the literature in relation to promotion of best practice, review of legislation and increases in child safety awareness. In addition to these strategies, the current study identified the need for infants to be placed in age appropriate sleeping devices to ensure they do not roll off adult sized beds or other furniture onto the floor, as it was demonstrated that a relatively short fall can be fatal for very young children.
Drowning of 0-5 Year Old Children in Bathtubs in Victoria 1989-2001

This study is a joint initiative of the State Coroner's Office & Department of Human Services
Compiled by Lyndal Bugeja
Injury Prevention Research Officer, State Coroner’s Office, Victoria
October 2004

Executive Summary
An Injury Prevention Research Officer position, funded by the Public Health Group of the Department of Human Services (DHS), was established at the State Coroner's Office (SCO) to conduct a number of projects across a range of topic areas on unintentional death. One area under investigation was unintentional drowning. This report presents the findings of an investigation into drowning deaths of young children in bathtubs in Victoria between 1989 and 2001.

The purpose of the investigation was to examine factors contributing to these deaths, in particular lack of carer supervision. Twenty-five deaths occurred during the 13 year period, primarily when the child was bathing. It was found that almost 80% of the children were aged two years of age and under, a large percentage of whom were male. Over 60% of incidents occurred in the context of shared bathing, most often with an older sibling. Incidents occurred primarily in the afternoon, on weekdays and nearly always at the child’s own residence. Interestingly, almost 50% of the incidents occurred in winter.

Absence of direct carer supervision immediately prior to the incident was found to be the most significant factor contributing to these deaths. Evidence from the cases illustrated that carers placed their young child in the bath and then made a conscious decision to leave the bathroom in order to engage in home duties or tend to themselves or other people.

Based on these findings it is recommended that:

1. Royal Life Saving Society Australia (RLSSA) refine their definition of adequate supervision in the context of bathing of young children to within carers arm’s reach.
2. A fact sheet on recommended bathing practices of children five years and under be developed and distributed (See Appendix 2). For example:
   - gather adequate towels and clothes and take them into the bathroom;
   - insert plug and fill bath with warm water to an appropriate level for the child’s size;
   - remain in the bathroom with the child / children at all times keeping them within arm’s reach of you until ready to remove;
   - another child is not a substitute for adult supervision;
   - immediately remove the plug and all children from the bath;
   - ensure that no toys have obstructed the plughole before leaving the bathroom and that the bath is free of any water.
• NOTE: Bathtub seats and cradles are not safety devices and are not a substitute for constant and competent adult supervision.

3. The findings and recommendations from the NSW Product Safety Committee’s review of infant bathtub seats and cradles be forwarded to all State and Chief Coroners in Australia and New Zealand;

4. Further Australian based research into carers’ perceptions of bathtub seats, rings and cradles as a safety device and bathing aid is required to resolve the issue of whether to ban their sale in Australia; and

5. In the interim, the development of an Australian Standard on bathtub seats should continue to completion.
Drowning of 0-5 Year Old Children in Private Swimming Pools & Spas in Victoria 1997-2001
This study is a joint initiative of the State Coroner’s Office & Department of Human Services
Compiled by Lyndal Bugeja
Injury Prevention Research Officer, State Coroner’s Office, Victoria
October 2004
Executive Summary
An Injury Prevention Research Officer position, funded by the Public Health Group of the Department of Human Services (DHS), was established at the State Coroner's Office (SCO) for a three-year period in October 2001. The role of the Research Officer was to conduct a number of projects across a range of topic areas on unintentional death. One of the areas under investigation was unintentional drowning.
This report presents the findings of an investigation into drowning deaths of young children in private swimming pools and spas in Victorian between 1997 and 2001. This is the second of three reports examining the issue of unintentional drowning of young children in Victoria. Report 1 examined drowning of young children in dams and Report 3 examines drowning of young children in bathtubs.
The purpose of the investigation was to examine factors contributing to these deaths, in particular the role of carer supervision and efficacy of safety barriers.
The major findings of the study were:
• 20 deaths occurred during the five year period;
• there was a gradual reduction in the number of deaths from 12 in 1989 to two in 2001;
• 65% of the deaths were of male children;
• 50% of the incidents occurred between 6:00 pm and 9:00 pm;
• 50% of the incidents occurred on the weekend, particularly a Sunday;
• 60% of the incidents occurred in Summer (December to February);
• there was an even distribution between the number of incidents that occurred at a premises the child was visiting and the child's own premises; and
• 75% of incidents occurred in metropolitan Melbourne.
It was found that the deaths primarily resulted from a combination of inadequate carer supervision immediately prior to the drowning incident and inadequate safety barriers, primarily doors and gates, between the location of the child and the pool/spa. It was concluded that although drowning deaths of 0-5 year old children in swimming pools and spas has been significantly reduced in Victoria, there is concern that a resurgence of this problem could occur if public awareness does not remain high and an effective enforcement regime is not implemented in Victoria. The results of the current study
identified a number of issues that could be addressed to prevent future deaths of this nature. These issues include:

1. amendments should be made to the Private Swimming Pool and Spa Safety Barrier to require the erection of safety barriers between the pool/spa and the remainder of the outside area. This should be a requirement for new pools and the feasibility of requiring this for existing pools should be determined.

2. improvements should be made to the current level of safety barrier compliance to relevant regulations by promoting and supporting measures to establish a safety barrier inspections program, such as a database of pools and spas in Victoria and the Municipal Pool and Spa Safety Guideline; and

3. continued education / public awareness:
   a. awareness that many young children drown because the child re-entered the pool or spa in the period of time immediately following the cessation of water recreation, therefore carer supervision needs to be vigilant during this time and ensure that access points to the pool (doors and gates) and locked and never propped open;
   b. development and distribution of education materials to:
      i. Real Estate Agents selling or buying property and those wishing to sell and / or buy a property with a swimming pool or spa whether inground or above ground; and
      ii. retailers of portable and / or inflatable swimming pools.
   c. education material to include information on:
      i. safety barriers;
      ii. supervision such as the RLSSA Keep Watch;
      iii. water familiarisation benefits and location of classes; and
      iv. CPR, including contacts for classes.
   d. establish an information hotline both web site and telephone hotline for:
      i. swimming pool and spa retailers, installers and maintenance personnel;
      ii. Local Government Authorities;
      iii. building surveyors;
      iv. home sellers or buyers;
      v. Real Estate Agents;
      vi. swimming pool and spa owners; and
      vii. prospective swimming pool and spa owners.

Drowning Deaths at Public Swimming Pools in Victoria - July 1988 - June 2002

Compiled by Lyndal Bugeja
Injury Prevention Research Officer, State Coroner’s Office, Victoria
February 2004

Introduction

This report was compiled in conjunction with the Royal Life Saving Society Australia (RLSSA), Victoria Branch in response to the drowning death of a 14 year old child at Coburg Memorial Swimming Pool in December 1998. The child was found at the bottom of the outdoor three metre diving pool. It is
unknown how the child entered the pool and how long he had been there. At the time of the incident all pools, including the diving pool, were open for use. The pool was operating as low patronage and there was one lifeguard on duty.

The purpose of the investigation was to examine the coroner’s findings of all drowning deaths at public swimming pools reported to the State Coroner’s Office between July 1988 and June 2002. This examination was undertaken in order to provide the Coroner investigating the above-mentioned death with contextual information about the nature and extent of preventable drowning deaths at public swimming pools.

The examination aimed to gain an understanding of the circumstances in which the deaths occurred and to identify any systemic factors that could be addressed by the aquatic industry to ensure that drowning deaths at public swimming pools do not continue to occur. Consideration was given to the issues of lifeguard supervision, particularly of diving pools and low patronage requirements.
Commercial Vessel Fatalities in Victoria 1991-2001
Compiled by Maria Batchelor and Lyndal Bugeja
State Coroner’s Office, Victoria
February 2003
Introduction
Aim
The aim of the current study was to identify fatal incidents on commercial vessels in Victoria, Australia between 1991 and 2001. Coronial investigations of the identified fatal incidents were examined in order to highlight potential improvements to safety equipment and procedures, in particular the use of personal flotation devices (PFDs).
Definitions
According to Marine Safety Victoria (MSV) (formerly the Marine Board of Victoria), commercial vessels are defined as:

- ‘fishing vessel’ - a vessel used or intended to be used for catching fish, whales, seals or other living resources of the sea or seabed for profit or reward and includes any such vessel in the course of construction but excludes any vessel:
  - engaged in harvesting or transport of algae or aquatic plants; or
  - that is primarily a carrier or mother vessel.

- ‘trading vessel’ - a vessel used or intended to be used for, or in connection with any business or commercial activity and includes (but is not limited to) a vessel used or intended to be used wholly or principally for:
  - carrying passengers or cargo for hire or reward; or
  - providing services to vessels and shipping, whether for reward or otherwise - but does not include a government vessel or a fishing vessel.

The current report investigated both fishing and trading vessel deaths, the differentiation being made between ‘recreational’ and ‘commercial’ in both cases. Commercial vessels were determined to be those where work was being performed for payment (where clear) or as part of a commercial operation/business, rather than for personal gain or recreational purposes. This investigation did not include fatalities involving yachts, regardless of any payment received.

The Current State of Commercial Fishing in Australia
The Australian fishing and aquaculture industries are Australia’s fifth most valuable rural industry after wool, beef, wheat and dairy, according to the Department of Agriculture, Fisheries, Forestry - Australia (AFFA). Despite having the world’s third largest fishing zone area, Australia ranks only about fiftieth in world fisheries production in terms of tonnes of fish landed. However, Australian commercial fishing targets many high-value species resulting in a gross value in 1996-97 of approximately A$1761 million. There are four major areas of fishery activity within Australia’s fishing zone, including the northern prawn fishery, the southern bluefin tuna fishery, the south shark fishery, and the south east fishery (multispecies) (Dept. AFFA, 1998).
Executive Summary
An Injury Prevention Research Officer position, funded by the Public Health Branch of the Department of Human Services (DHS), was established at the State Coroner's Office (SCO) to undertake a number of projects across a range of topic areas on unintentional death. The first topic area under investigation is unintentional drowning. This report is the first of a number of reports on this area and presents the findings of an investigation into the drowning deaths of toddlers (0-5 years) in dams in Victoria, Australia. The purpose of the investigation was to examine the factors contributing to these deaths and identify means of preventing drowning incidents in the future. Twenty-seven deaths occurred between 1989 and 2001, eleven on properties defined as farms, five on hobby farms and eleven on non-farm properties. It was found that there were five major factors common amongst the incidents: age of the toddler; low level of carer supervision; toddler located outside the house; dam within a 600 metre vicinity of the toddler; and insufficient barriers between the dam and the toddler.

Based on these findings the following recommendations were made:

- future public awareness campaigns by water-safety organisations should be broadened to include safety messages that account for the differences between rural and urban water hazards, in particular the use of the ‘be dam careful’ slogan should be reconsidered by the Victorian farming industry;

- any public awareness campaign should address carer’s consciousness of how quickly toddlers can get into danger, especially those most at risk in the one to three years age bracket;

- the idea of creating ‘child safe areas’ on properties containing dams should be widely publicly promoted; and

- the feasibility of conducting Home Safety Parties in rural towns such as Ballarat, Bendigo, Echuca, Warrigal, Geelong and Horsham should be undertaken by the Victorian Farmer's Federation (VFF) in conjunction with the Royal Children’s Hospital Safety Centre, the Country Women’s Association (CWA) and Kidsafe to determine whether they would be a successful forum for educating carers and disseminating information on appropriate safety measures for children.
Non-Intentional Death from Poisoning in Children Victoria 1988 - 2000

A joint initiative of the State Coroner’s Office & Department of Human Services
Compiled by Lyndal Owens
Injury Prevention Research Officer, State Coroner’s Office, Victoria

Incidence of Non-Intentional Poisoning Fatalities
Deaths from non-intentional poisoning in children (0-14 years of age) are rare in Victoria, n=12. All known incidents that occurred between January 1988 and December 2000 are listed in the table below. This information was sourced from the Victorian State Coroner’s Office files, the Monash University Accident Research Centre (MUARC) publication Hazard and the Consultative Council on Obstetric and Pediatric Mortality and Morbidity (CCOPPM) annual reports.

Cases where children died from carbon monoxide poisoning in either house fires or motor vehicle accidents were not included in this investigation. These cases will be subject to future investigation. Also cases where children (up to and including the age of 18) intentionally ingested substances to end their own life were not investigated in detail. However, the following three cases were identified:

Table: Intentional Self-Harm by Poisoning in Children (0-18 years) in Victoria 1988-2000

<table>
<thead>
<tr>
<th>Month &amp; Year</th>
<th>Gender</th>
<th>Age</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1990</td>
<td>Female</td>
<td>15 years</td>
<td>paracetamol overdose</td>
</tr>
<tr>
<td>August 1992</td>
<td>Female</td>
<td>17 years</td>
<td>15 “Sunequin” tablets and 6 “Act 3” tablets.</td>
</tr>
<tr>
<td>October 1998</td>
<td>Male</td>
<td>18 years</td>
<td>paracetamol overdose</td>
</tr>
</tbody>
</table>

Although it is difficult to draw conclusions and make recommendations from such a small number of cases, there were some similarities among cases. All the incidents involving animal and plant poisonings and chemical ingestions (n=7) occurred in rural areas, all but one at a location other than the child’s home. These locations were either other people’s homes or an area frequently populated with people, such as a camping grounds and caravan parks. This finding was not surprising given the circumstances of the cases, for example 25% (n=4) of all the cases involved snake envenomation. Snakes are commonly found in rural areas as opposed to more urban environments. Where the poisoning involved the ingestion of medical and chemical substances, access was an issue because the child was either old enough to negotiate a childproof cap or safety behaviours were not exhibited. Overall a lack of parental supervision was a factor in these children coming into contact with toxic substances.
The NCIS AND Water-Related death data NEEDS
Feasibility Study
Final Report to the Commonwealth Department of Health and Aged Care
29 September 2000
Executive Summary
This report presents the findings and recommendations of a study into the feasibility of using the National Coroners Information System (NCIS) to capture improved data on water-related fatalities in Australia. The NCIS is a national data storage and retrieval system for coronial cases on a national basis. It is accessible to authorised users via the Internet. The study was conducted by the Monash University National Centre for Coronial Information (MUNCCI) for the Injury Prevention Section of the Department of Health and Aged Care (DHAC). MUNCCI is a research centre of Monash University specifically established to develop and manage the NCIS.

The study found that it is feasible to use the NCIS as a vehicle for collecting additional data on drownings and other water related fatalities. Two key strategies were identified to achieve this: 1) seek to influence the adoption by State and Territory police services of a minimum data set for coronial investigations, including data on water-related fatalities; and 2) implement enhancements to the NCIS to expand coding options for existing fields and create new fields.

The main issue for water-safety agencies is timeliness and quality of data. Currently agencies rely predominantly on ABS data, which may be published up to 18 months after the event and not contain all desired variables. The NCIS was developed in response to the need for timeliness and data quality for all coronial cases. The need for improved data collection for both water-related injuries and water-related fatalities was identified at a meeting in Sydney in December 1999 convened jointly by the Royal Life Saving Society of Australia (RLSSA) and Surf Life Saving Australia (SLSA). At the meeting, MUNCCI indicated that it had established links with coronial investigation agencies and coronial data stakeholder groups and, if funded to do so, could undertake a feasibility study in respect of improving water-related fatalities data for the NCIS.

The primary source of all fatality data is the coronial investigation process, ie collection by police. While a number of water-safety agencies may collate their own data sets, the primary source remains the coronial investigative process. Therefore any improvement in data collection will depend on the feasibility of police obtaining and reporting additional information.

In August 2000, MUNCCI established a Water-Related Death Reference Group to provide expertise and feedback on the conduct of the study. The group consisted of representatives of major water safety, research and industry groups.

The methodology for the study included 1) a Stakeholder Questionnaire and 2) telephone interviews with water-police members. The Stakeholder Questionnaire aimed to identify desirable data items that are not currently collected by either the Australian Bureau of Statistics (ABS) or the NCIS but which were desirable for collection. The interviews with members of the water police were designed to elicit information about their methods of data collection on water-related deaths in Australia. The jurisdiction of water police
covers mainly incidents in natural bodies of water (eg. ocean, lakes, rivers). General police investigate other water-related incidents (eg swimming pools, farm dams). MUNCCI already had a clear understanding of the role and procedures of general police in respect of coronial deaths. This information has been used to identify which of the desirable data items would be feasible for collection by police.

The study identified 66 additional desirable data items. Of these, nine can be addressed solely by enhancements to the NCIS; 30 may be provided by police and 27 were considered not feasible for collection at this stage. To assist in ranking the 30 that may be collected by police, a study was undertaken of Victorian water-related deaths for the period 1/1/98 to 17/6/00. Currently police forms ask only general death investigation questions. In August/September 2000, MUNCCI developed a Minimum Data Set for Police Investigation of Coronial Deaths. This minimum data set includes the 30 additional desirable data items. (The minimum data set also includes questions particular to other categories of coronial death). Following consultation with Coroners and investigating police members, MUNCCI proposes to submit the minimum data set to police command in all States and Territories for consideration.

Recommendations
MUNCCI recommends three key strategies to achieve improved data collection and quality:

1. promotion of the minimum data set for death investigation by police;
2. implementation of enhancements to the NCIS (including additional data items approved by police for collection); and
3. development of specific NCIS Data Dictionary definitions and coding instructions for clerks on water-related death variables.

Ongoing quality assurance of water-related deaths data would be incorporated in the ongoing quality assurance strategy for the NCIS.

Timing
Should the Department agree to fund MUNCCI to implement the recommendations, all three strategies could be in place by the end of November 2001. This would allow concurrent development of database enhancements for other categories of deaths currently being considered by MUNCCI.

Cost
An assessment of the likely cost to MUNCCI of implementing the recommendations has been provided to the Department separately. MUNCCI anticipates that, should the police services of participating jurisdictions accept the proposed minimum data set for death investigation, the cost of implementing the minimum data set would be borne by respective police services within existing budgets.

The cost to participating coronial offices will be minimised by the implementation of changes to their local databases to facilitate data entry of new variables and the provision of relevant Data Dictionary definitions and coding manual assistance. Training can also be provided were required.
AIRCRAFT-RELATED DEATHS IN VICTORIA
1992 - 2003

CONCLUSIONS

The current study identified 50 incidents over the time period 1992-2003 in Victoria that involved some form of aircraft. This is high compared to other quoted literature (CASA, 2001; BASI, 1996; ATSB, 2004), however, includes a wider population of craft types. It would undoubtedly be an underestimation of actual numbers of all general aviation, sports aviation and recreational aviation figures, due to methodological issues in the current study. These 50 incidents resulted in 72 deaths, the majority of which were pilots. The average age of pilots was 44 years, and most were male. Pilot experience, as measured by total flight hours of experience was high (the average was 1289.47 hours), however, this appeared to be the result of skewing from several very experienced pilots (the maximum was 8406 hours). At the other end of the scale were six student pilots, whose average total flight hours was just under 30 hours. Similarly, flight experience on the type of aircraft involved in the incident was apparently high (approximately 1000 hours), but was skewed by one individual having over 5000 hours past experience in the helicopter involved in the fatal incident (the average once this pilot was withdrawn from the sample became closer to 100 hours). It also appeared that a number of pilots had past experience rather than recent experience, as the average recent flight experience was only 43.3 hours.

A total of 54 craft were involved in this study. The most prevalent was "aircraft" (36% or 19 incidents), followed by "ultralight/micro-light aircraft" and "helicopter" craft types (each 16% or 8 incidents). It is clear that ultralight/microlight aircraft crashes in Australia need further study as published literature on these craft types appears to be scarce. The majority of incidents were caused by an "unexpected loss of control while in-flight" (58% or 29 incidents), followed by a "crash on landing" (14% or 7 incidents), and "mid-air collision" and "contact with objects" (both 8% or 4 incidents). Time of day and month of year results were inconsistent but generally showed a trend towards the summer months and the afternoon (12.01pm to 6pm). A geographical representation of the crashes does not appear to show any particular pattern, except for some clusters around airports as would be expected by number of take off/landing crashes.

In terms of the task being performed, the highest number of incidents were recreational in nature (N=24, or 48%), followed by work-related incidents (N=17, or 34%), and flights for the purpose of instruction (N=6, or 12%). According to BASI (1995:1), nearly half of Australian general aviation fatal incidents between 1991 and 2000 were commercial in nature. The higher number of recreational deaths found in the current study reflect the inclusion of craft types that BASI's definition of general aviation would exclude (for example, hang gliders). Work-related flights included: charter for the purposes of transport of persons (5 incidents), formation practice (3 incidents), fire bombing (2 incidents), agricultural spraying (2 incidents), commuting to-from work (2 incidents), aerial photography (1 incident), powerline clearance (1 incident), and charter for the purposes of transport of goods (1 incident).

Pilot error was most likely to contribute to crashes (N=39 cases). Given the hypotheses of Golaszewski, Booze and Baker and Lamb (all cited in Li, 1994) that recent flight experience and flight experience in the same type of craft increases the skill of pilots, thereby decreasing the risk of crashes, the high rate of pilot error in the
current study is not surprising. Averages for flight experience on type of craft and recent flight experience were low in the current study. Weather was also a contributory factor that was identified in a number of cases (N=21), followed by mechanical faults (N=16 cases). Contributory factors also included insufficient training/qualifications, poor design, medical issues, inefficient search and rescue efforts and other factors such as powerline placement, landing strip specifications, night flight, use of radios, time pressure and failure of pilots to 'see and avoid'.

Coronial recommendations were made in 13 incidents. These dealt with issues of licensing and training, use of radio equipment, clarification of rules around airfields, aircraft design issues, powerlines, medical monitoring of pilots, and improved investigation of aviation incidents.
Commercial Vessel Fatalities in Victoria 1991-2001

DISCUSSION

It has been acknowledged that the limitations of case identification methods may have resulted in an unknown amount of under-reporting in this study, although this is likely to be minimal. All figures should be interpreted with an appropriate degree of caution.

The results of the current investigation revealed that commercial vessel fatalities in Victoria have occurred in a number of industries. Two-thirds of these fatalities involved the commercial fishing industry. Drowning was the most common cause of death with all but four deaths on the open water a result of immersion in the sea following a capsize or man overboard.

The results also illustrated that nearly all of the deaths were of males and almost half were aged between 40 and 60 years. Where information was available, safety equipment or procedures were present on the vessels, but were most often not utilized, in particular the wearing of personal flotation devices (PFDs). Witness statements from other commercial fishermen and survivors of incidents revealed that there was strong opposition to the use of PFDs in the industry. Fishermen consider them uncomfortable to wear, dangerous in the working environment and in the surf and most importantly make it impossible to complete their duties.

At present, it appears that the PFDs required by Marine Safety Victoria to be carried on board commercial vessels are of a design that can only be worn while inflated. Given the dangers outlined by the fishermen associated with wearing inflated devices, in and out of the water, the current practices of these fishermen may be arguably valid. Safety regulators and organisations should investigate and trial devices that allow fishermen to wear PFDs without them endangering their lives and hindering their work activities.

One example of these types of devices are the Stormy Seas brand PFDs (See Appendix 1). These jackets feature a water activated or manual removable inflatable system, which would allow fishermen to wear the garment as a normal jacket or vest. A surviving crayfisherman from one incident was given a Stormy Seas brand jacket to wear following the drowning death of his two colleagues. He commented at the coronial inquest into these deaths that the Stormy Seas jacket was a big improvement in comfort and could be worn more often than other brands he had tried. He also stated that he would never go out to seas without it on (case numbers 1411/95 and 1242/95).

Marine Safety Victoria and WorkSafe Victoria would be the two organizations most appropriate to conduct any investigation into trialling the use of other PFDs and any subsequent change to the requirements regarding the wearing of PFDs. This investigation may be incorporated into initiatives already being undertaken, outlined below. See the Recommendations section for more detail.
“Falls from Heights in the Transport Industry: An investigation of falls from car-carrying vehicles”

CONCLUSIONS

Falls from car carriers are not a new phenomenon, although there is little reported research.

The major risk identified in this study is that of falling from the cab frame or from the front upper deck on the trailer while loading. Most vehicles in current use have no fall protection on these areas. Walkways and ladders were also identified as hazards. They are often of an inconsistent design and provide little resistance to slipping.

A number of fall risk controls are already known within the industry. Railings have been tried by a number of car carrier operators. Some further effort is needed to determine appropriate heights and dimensions, spacing, and railing material and strategies to increase adoption.

The use of alternatives to road transport is increasing in Victoria, particularly for interstate transportation. Some Victorian operators are investigating means of transferring vehicles directly from manufacturer to point of sale in rail-compatible containers. The benefits of containerisation are increased efficiency, reduced potential for vehicle damage and decreased ‘handling’ of stock, as well as the reduced risk of falls.

Enclosed trailers of various kinds afford a high level of protection against falls, although open trailers are likely to continue to be the vehicles of choice for some operations.

Barriers such as cost, existing equipment that is already at maximum allowable width, height or weight limits for Australian roads, and the potential for conflict between OHS agencies in each state (in terms of legislation and perceived need for or safety of different types of equipment) are typical reasons for limited adoption of solutions.

This project is currently working with industry, WorkCover, unions and other transport organisations to identify solutions and to identify mechanisms to increase adoption.
Using work-related fatalities to target prevention in Victoria (1993/94 to 1996/97)

SUMMARY

The Work Related Fatalities Project extracted data from the Coronial database, the Victorian WorkCover Authority’s Compensation database, and the Victorian WorkCover Authority’s Inspections database for the four years from 1993/94 to 1996/97.

A total of 332 ‘work-related’ deaths were found, with the top five types of work-related fatalities including:
♦ Motor vehicle accident – truck and car
♦ Falls from heights
♦ Tractor
♦ Struck by moving object
♦ Struck by falling object

The occupations most frequently involved in work related fatalities were ‘drivers, road transport’, ‘farmers/farm manager’ and ‘motor & van drivers/deliveryman’. Subsequent standardisation of these figures with ABS exposure data demonstrated that ‘labourers’, ‘electronic instrument trades’, ‘mechanical engineering trades’, and ‘forestry & logging workers’ have a high incidence of work-related fatalities.

A set of criteria was used to determine the three priority areas that would be the focus of the project’s prevention activity. The three areas chosen were:
♦ Falls from heights
♦ Struck by falling objects (trees)
♦ Hydraulics related fatalities

There are a number of falls from heights projects being initiated by WorkCover and other Victorian agencies. The current project will collaborate with these projects where possible in order to share resources and knowledge in order to reduce fall injuries.

Work is progressing on tree falling related fatalities. Focus groups assessed issues late 1998 - subsequently, the ‘Tree Felling Safety Group’ (TFSG) was formed to develop recommendations for prevention activities. The TFSG is currently organizing a series of regional seminars/workshops to further develop prevention strategies.

With regard to hydraulics, three areas are currently being investigated: safe rams, safe jacks and jacking procedures, and upper detection limit cables. These issues will be further investigated during the coming months.

Future directions for the project involve:
♦ further development and implementation of interventions in 3 areas identified
♦ upgrading of data with the possibility of an automated data link between WorkCover and Coroner’s Office
♦ improved liaison with other research agencies
♦ greater dissemination of information to other agencies who can use it
Workplace Fatalities in Victoria - A New Integrated Approach to Injury Prevention

Conclusion / Future Directions

The primary benefit of the current study is the linkage between the State Coroner’s Office and Victorian WorkCover Authority and their respective data sources. This is already beginning to result in a more comprehensive understanding of the patterns and trends in workplace fatalities, and a more direct approach to research and prevention development of strategies to prevent workplace fatalities.

Results from the 1993/94 financial year have already indicated the types of fatalities most prevalent in the combined data, including vehicular deaths, heart-related deaths, and tractor-related fatalities. Patterns in job position also indicate that a high proportion of workplace fatalities occur within the construction, transport, and rural industries. Further, gender and age trends appear to indicate that more workplace fatalities are recorded for males than for females, and for those persons aged 45 to 59, and in the 20 to 24 year age group. Trends such as these have already been used to recommend potential areas of concern to both the Victorian State Coroner’s Office and WorkCover.

As noted in the body of this document, this study is on-going. In the next stage of the study, the data from 1994 to 1997 financial years will be analysed for trends in workplace related fatalities in Victoria. This will allow the comparison of the current 1993/94 financial year data with other years, and may also yield yearly patterns. At the conclusion of that stage, it should also be possible to calculate more meaningful patterns and trends given the larger number of cases that will have been gathered. The project will then identify three preventative workplace hazards, and initiate strategies to reduce workplace injury and death.

The existence of a rich and comprehensive data source on workplace fatalities, as well as the stronger communication links that have been forged between the State Coroner’s Office and WorkCover means that we should now be able, as never before, to efficiently monitor and prevent workplace fatalities. It is essential that we realise the full potential of this information to reduce the high social and economic costs of workplace death and injury.
Traumatic Fatalities Report

Discussion

The current study found 175 work-related traumatic deaths for 1999 and 2000 in Victoria. The following discussion will focus on the most salient points for targeting and development of intervention programs based on the trends identified in this population.

Young, inexperienced persons were over-represented in the current study. The most frequently occurring age in the population was 28 years, even though the average age of the population was 41 years. Of the 43 bystanders to work in the population, 21 were persons at or under the age of 18 years. Of all persons at or under the age of 18 years, only 4 persons weren't bystanders to work (being 2 volunteers, 1 unknown and 1 apprentice builder). A number of the bystander category might also be thought to be 'assisting in work with no method of payment' with a number of the children assisting family members on farms (the youngest of which was a 7 year old assisting his father to dole out hay from the tractor on a dairy farm). In terms of "workers" in the current study, most were categorised as "new" workers, that is, people who had worked in the job for less than 6 months. In looking at the detail of how long these 12 workers had worked, the minimum length of employment was 1 day with the average being 45 days (roughly a month and a half). Lack of supervision and training was one of the major contributory factors in such cases.

A number of workers in the current study had worked in their job for more than 10 years. This suggests that OHS intervention perhaps also needs to be repeated amongst workers who have been working in their jobs for a long time. There may also be other factors at work in the long term workers category such as age-related factors (that is, age-related deterioration in hearing, motor co-ordination or reaction time). With an increasingly aging workforce, the issues of keeping up with training and the effects of aging will need to be considered by employers carefully in the future.

The industry most represented amongst workers in the current study was Agriculture (being a mixture of forestry, fishing, general farming and services to farming related industry categories). Tractor related deaths accounted for a high percentage of Agricultural deaths. There were five deaths from a roll over of a tractor despite legislation in place in Victoria specifying a requirement for tractors to have a roll over protection structure (ROPS). There were four deaths from tractors running over a person. A further four deaths involved an auger attached to a tractor.

Livestock also played a part in agricultural deaths with two fatalities being caused by the action of livestock in pens (deceased persons were struck by the livestock causing head injuries and blunt trauma to the chest). Livestock escaping onto roadways also caused two deaths of drivers.

A number of the farm/rural workplace deaths also occurred to children, as noted above, particularly young children drowning in farm dams. Four children (all under the age of 4 years) died from drowning in unfenced or inappropriately fenced farm dams (all of which were within 100-200m of the farmhouse).

The majority of deaths examined in this study resulted from vehicle-related incidents. The predominant type of vehicle involved in all vehicle-related fatalities (single and
multiple) was trucks. Some of the major issues for truck incidents remain speed (particularly speed relative to the road conditions and condition of the vehicle), fatigue (generally through lack of appropriate rest stops and long driving hours), not wearing seatbelts and the presence of drugs/alcohol (particularly illicit drugs). More generally in the Transport industry, a number of fatalities involved being struck by moving vehicles (typically trucks but also forklifts).

Drowning was involved in a surprisingly large number of deaths in the current study. Out of the 14 deaths, 6 of these occurred to professional fishermen whilst at sea. Not wearing personal floatation devices was the most common contributory factor amongst this group, followed by working too close to shore (predominantly amongst crayfish fishermen who need to place their pots often within twenty metres to the shoreline), and working alone. A further five drowning deaths were children drowning in farm dams (as noted above), with the remaining cases being a horse dam (one death) and two in a swimming pool (one during cleaning and one during training).

The use of alcohol and drugs also contributed to a small number of deaths. Predominantly, in the case of drugs, it was the interaction between illicit drugs (for example, stimulants like pseudoephedrine and amphetamines and marijuana) and driving for work. There were also some concerns with drug treatments used in epilepsy and the effects the dosage used by patients might have played in their fitness for work, especially in the case of the epileptic who was working near a swimming pool when he appears to have suffered a seizure. The telling point in this example was that the worker was working alone.

Working alone was a contributory factor across industries in the current study. For example fishing where working alone exacerbated the hazards by delaying rescue attempts. There are a number of industries where it is common industry practice to work alone (for example, agriculture and construction).

Data quality issues were generally of concern in the current study. Despite, in most cases, a number of statements from fellow workers, family members and witnesses to the event, it was often difficult to assess the background of the deceased in any meaningful way. The focus of investigations (both Police and WorkSafe) seemed to be the actual incident, rather than any of the factors leading up to the event.

The ability to get reliable data about the variables such as occupation, length of employment, and number of hours worked prior to death mean that more can be known (and acted upon) in terms of peak times of danger in people's shifts, or when it is best in a person's working life to target them for training or re-training, and even which parts of industry to target in more detail. Even variables such as marital status of deceased persons may influence the choice of ways of influencing deceased persons to improve safety. For example, in many farming communities, work is being done through the country women's associations to influence male farmers to improve safety. This is of less value if it most males in the area are single, or if it's unknown whether they're single or not.

In conclusion, it should be noted that the remaining 32 open cases have not yet been analysed, except in a basic, superficial way. It may be that these cases are so atypical that they change the trends reported above. It is hoped that the majority of the remaining open cases will be concluded before the final report of the WRFP2 is made available thereby allowing for their inclusion into the results.
CONCLUSION

In conclusion, it can be seen that despite caution in allocating cases to the more rigorous H1 and D1 codes, there is still some evidence that work-related cardiovascular and other occupational diseases exist. If it is acknowledged that some of the cases currently coded as H2 and D2 are in fact also appropriate to be nominated as “clearly” work-related disease, then the scope of occupational disease in Victoria for 1999 and 2000 becomes sizeable. It should be noted that there are still two open cases within the current population. In looking at the future of occupational disease research in Victoria, it should also be noted that there may well have been an increase in the quality of data collected after 2000 as the National Coronial Information System (NCIS) began to utilise a more extensive initial police report (or Form 83). The following recommendations may also assist in improving not only the information we can analyse about such deaths, but also, hopefully to prevent people dying unnecessarily of occupational disease.
Work Related Fatalities Prevention Project

SUMMARY

The Work Related Fatalities Prevention Project (WRFP project) began in August 1997, collecting data from the State Coroner’s Office database, the Victorian WorkCover Authority’s compensation claims database, and the Victorian WorkCover Authority field operator’s database for the years 1993/94 to 1996/97. Three priority areas were chosen after analysis of this data: tree felling fatalities, deaths involving hydraulic equipment and falls from trucks and their loads.

There were 15 tree felling fatalities over this period, in forestry, arboricultural and urban tree work industries. A group of industry representatives (including relevant unions and WorkCover) known as the ‘Tree Felling Safety Group’ (TFSG) was convened to develop recommendations for prevention work in these areas. The TFSG presented draft recommendations to industry in a series of seven regional seminars, the outcomes of which were integrated into a set of final recommendations that was presented to the WRFP project steering committee in December 1999. WorkCover is working with the TFSG to develop an agreed strategy that incorporates many of their recommendations including research into fatigue and a likely review of the Code of Practice for Safety in Forest Operations.

Deaths involving hydraulic equipment totalled six between 1993/94 and 1996/97. However, the area was felt to be suitable for prevention work as there is a definable piece of equipment (a hydraulic hoist) and a well regarded solution (controlled descent devices). The main thrust of the intended intervention is to liaise with hoist fitters (those who fit component parts onto the truck equipment) in order to influence manufacturers of hoists (their suppliers) and owners/users of hydraulic equipment (their customers), increase awareness of the problems of hydraulic hoist failure, and to increase uptake of known solutions (such as controlled descent devices).

There were 26 fatal falls from heights during 1993/94 to 1996/97. Three of these were in the transport industry. National statistics and injury claims data indicate a higher percentage of injuries from falls from trucks and their loads. The project will target transport and storage workers in Victoria, with the possible selection of sub-groups by industry or geographical location. The project will test the use of existing industry organisations to disseminate information to increase uptake of solutions that are already present within industry.
Appendix B

Victorian legislation which creates indictable offences

The 46 Acts of Parliament (apart from the Crimes Act 1958) that create indictable offences are:

Farm Water Supplies Advances Act 1944
Unlawful Assemblies and Processions Act 1958
Evidence Act 1958
Goods Act 1958
Religious Successory and Charitable Trusts Act 1958
Trade Unions Act 1958
Cemeteries Act 1958
Country Fire Authority Act 1958
Administration and Probate Act 1958
Wrongs act 1958
Forests Act 1958
Mines Act 1958
Transfer of Land Act 1958
Collusive Practices Act 1965
Environment Protection Act 1970
Wildlife Act 1975
Securities Industry Act 1975
Charities Act 1978
Court Security Act 1980
Estate Agents Act 1980
Drugs, Poisons and Controlled Substances Act 1981
Prisoners (Interstate Transfer) Act 1983
Food Act 1984
Occupational Health and Safety Act 1985
Dangerous Goods Act 1985
Pollution of Waters by Oil and Noxious Substances Act 1986
Road Safety Act 1986
Corrections Act 1986
Marine Act 1988
Health Services Act 1988
Equipment (Public Safety) Act 1994
Prostitution Control Act 1994
Gas Industry Act 1994
Infertility Treatment Act 1995
Fisheries Act 1995
Heritage Act 1995
Firearms Act 1996
Gas Safety Act 1997
Serious Sex Offenders Monitoring Act 2005-06-27
Confiscations Act 1997
Juries Act 2000
Whistleblowers Protection Act 2001
Occupational Health and Safety Act 2004
Major Crime (Investigative Powers) Act 2004

**Summary of Content of Indictable Offences**

*Unlawful Assemblies and Processions Act 1958*
Any persons who meet and provoke animosity etc and prevent the reading of a notice by a Magistrate will be deemed and taken guilty of an indictable offence.

*Collusive Practices Act 1965*
A person who makes a collusive tendering agreements shall be guilty of an indictable offence.

*Equipment Public Safety Act 1994*
A person hinders in any way an inspector.
Not complying with an improvement notice.

*Prostitution Control Act 1994*
Causing or inducing child to take part in prostitution.
Agreement for provision of sexual services by a child
Forcing person into or to remain in prostitution.
Forcing person to provide financial support out of prostitution
Living on earnings of prostitute.
Allowing child to take part in prostitution
Operating brothel other than in a building with no permit (inserted in 1996)
Being a prostitution service provider without a licence (amended 1997)

*Occupational Health & Safety Act 2004*
Failure of an employer to provide and maintain a working environment that is safe and without risks to health (contains explicit provisions re: maintenance of plants, thus use, handling, storage of plant or substances; providing adequate facilities for welfare of employees etc.)
Failure to ensure that other persons are not exposed to risks arising from the conduct of employer.
Failure of s self employed person must ensure that persons are not exposed to risks from their conduct.
Failure to take reasonable care by employees.
Failure of Manager to ensure that the workplace is safe and without risks.
Failure of designer of plants, manufacturers, suppliers, installers to ensure that workplace is safe etc.
Persons recklessly endangering another person in the workplace
Contravening a provisional improvement notice
Prohibition on discrimination
Failure to comply with a non-disturbance, improvement and prohibition notice.
Failure to comply with a direction

*Infertility Treatment Act 1995*
Inserted in 2003:
Use of excess ART embryo
Use of embryo that is not an excess ART embryo
Breaching a licence condition
Creating a human embryo clone
Placing a human embryo clone in the human body or the body of an animal
Importing or exporting a human embryo clone
Creating a human embryo other than by fertilisation (and other prohibited practices)

Inserted in 1998: Possession or copying of commercial quantity of RC or X 18= films
Inserted in 2001: Publication or transmission of child pornography
Possession of child pornography

Environment Protection Act 1970
Offences relating to discharging or emitting waste; contravening work approval permits; concealing information from Authority, noise control etc.

Evidence Act 1958
Giving, recording, using false evidence etc.

Charities Act 1978
Concealing, altering or destroying certain documents.

Court Security Act 1980
Carrying a firearm etc. without lawful excuse on court premises.

Juries Act 2000
Offences by officials re: jury records, members etc.

Major Crime (Investigative Powers) Act 2004
Offence to publish record of proceedings re: coercive powers order.
Offences by witnesses re: investigations eg. failure to attend and answer questions etc.

Occupational Health and Safety Act 1985
“Any person who contravenes or fails to comply with any provisions of Act is guilty of an indictable offence.” Includes:
- disclosure of information by Director
- non-compliance with provisional improvement, improvement and prohibition notice
- forgery of identification card
- re: inspections
- assaulting, threatening etc. an inspector

Farm Water Supplies Advances Act 1944
Commit any fraudulent act re: any advance under this Act.
Food Act 1984
Knowingly handling food in unsafe manner
Knowingly selling food in unsafe manner
Knowingly falsely describing food
**Drugs, Poisons and Controlled Substances Act 1981**
Sell or supply heroin without an appropriate licence
Inserted or substituted in 2001:
Trafficking in drugs of dependence – large commercial quantities
Trafficking in drugs of dependence to a child
Cultivation of narcotic plants etc.

**Pollution of Waters by Oil and Noxious Substances Act 1986**
Inserted 1991:
Discharge of oil or oily mixtures, garbage, harmful substances etc. into State water

**Goods Act 1958**
Signing or dealing with untrue bills of lading.

**Australian Crime Commission (State Provisions) Act 2003**
Failure to comply with notice served.
Giving false or misleading evidence.

**Religious Successory and Charitable Trusts Act 1958**
Fraudulent acts, forgery etc.

**Wildlife Act 1975**
Inserted 1988:
Killing, taking whales etc.

**Marine Act 1988**
Using distress signals if not in distress, accepting bribes, endangering vessels etc.

**Trade Unions Act 1958**
Circulating false copies of rules.

**Fisheries 1995**
Trafficking commercial quantities of species...

**Cemeteries Act 1958**
Cremation without permission

**Prisoners (interstate Transfer) Act 1983**
Escape from custody

**Serious Sex Offenders Monitoring Act 2005**
Breach of supervision order

**Confiscation Act 1997**
Contravention of restraining order

**Heritage Act 1995**
Removing, demolishing etc. registered objects

*Securities Industry Act 1975*
False trading etc.

*Dangerous Goods Act 1985*
False or misleading statements to inspectors.

*Country Fire Authority Act 1958*
Causing fire with intent to cause damage

*Firearms Act 1996*
Inserted 1997 and amended 2003:
Offences about the carriage and use of firearms

*Estate Agents Act 1980*
Deficiency in trust account

*Gas Industry Act 1994*
Non-compliance with directions

*Administration and Probate Act 1958*
Concealment of will

*Gas Safety Act 1997*
Inserted 1991:
Non Compliance with directions (additional powers, emergencies)

*Health Services Act 1988*
Inserted 1997:
Personal hygiene of residents

*Wrongs Act 1958*
Inserted 1989:
Offences under this Act are deemed to be indictable offences

*Whistleblowers Protection Act 2001*
Inserted 2004:
Not answering questions or producing documents.

*Forests Act 1958*
Placing inflammable material for the purpose of causing of fires etc.

*Mines Act 1958*
Forgery, counterfeit, false statements etc.

*Road Safety Act 1986*
Duties of drivers.

*Corrections Act 1986*
Escape from custody.

*Transfer of Land Act 1958*
Misleading, deception, fraud etc.
Appendix C

State Coroner's Delegations, Protocols and Directions

State Coroner's Delegation to Coroners' Clerks

I, Graeme Johnstone State Coroner for the State of Victoria hereby delegate to:

- a registrar or deputy registrar of the Magistrates' Court of Victoria acting as a coroner's clerk if the investigation is being held at the Magistrates' Court
- a person employed under Part 3 of the Public Sector Management Act 1998, performing duties as a coroner's clerk

All powers and duties of a coroner other than a power under Section 17, a prescribed power or duty, or this power of delegation.

Dated this 15th March 2005

signed

Graeme Johnstone
State Coroner
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Falls Investigation Procedure
Coroner’s ‘Investigation Standard’: Fall-related deaths in Hospital
Introduction
The investigation standard is applicable to falls in all Victorian hospitals (public and private). The investigation commences on return of a preliminary cause of death from a pathologist indicating that a fall is either the direct or contributing cause of the death. Medical records will be obtained and reviewed by the Clinical Liaison Service at the State Coroner’s Office (for any issues additional to the fall/s).

Details to be provided to the State Coroner
1. A list from the hospital of all staff involved in:
   ▪ Initially assessing or reviewing the patient for falls risk
   ▪ The actual fall incident(s) and the events leading to the fall
   ▪ Who have knowledge of the incident
2. The Incident report (if completed)
3. Risk screening policy and protocol documents and/or procedure manuals
4. Falls prevention policy and protocol documents and/or procedure manuals
5. Falls management policy and protocol documents and/or procedure manuals
6. Additional material will be required setting out:
   ▪ When the policy or procedure documents were last reviewed (a copy of any earlier documents will be required);
   ▪ Documentation explaining how the policy and protocol documents and/or procedure manuals were developed, by whom and the sources of information used.

If as a result of the incident under investigation by the coroner, there have been changes to the hospital’s policies or procedures, please forward the details of the changes and how they occurred.
(That is. how was the new policy or procedure developed and what additional information was sought from other agencies/hospitals as to the preferable countermeasures to be adopted to address the perceived problem).
Protocol for the Management of Skeletal Remains

Introduction
One of the key issues upon discovery of skeletal human remains is to establish their origin and time of burial. If it can be unequivocally established that bones are from an era before European settlement, these remains are not of interest to the Coronial Services Centre or the police. However, until these facts are established the remains fall under the jurisdiction of the State Coroner and are investigated by police.

It is ideal for all suspected human remains to be examined in situ. However, due to the fact that a large number of suspected human remains examined by police and pathologists are found to be animal bones, it is neither practical or a good utilisation of resources to send a person to every location when skeletal remains are discovered.

With regard to the above issues, the following protocol is proposed:

- In the event of skeletal remains brought into the Police/Coroner's office or otherwise entirely removed from their original burial site before being reported to the Police/Coroner.
  Transport remains to the Coronial Services Centre as soon as possible. The on-call pathologist is notified and makes the initial assessment. If the remains are suspected to be human, Chris Briggs is contacted by the pathologist for further assessment.
  If the remains are established to be of Aboriginal origin AND from an era before European settlement, Aboriginal Affairs Victoria (AAV) is to be notified for consultation and arrangement for the return of remains for reburial.
- In the event of suspected skeletal human remains discovered partly or entirely in situ.
  The remains are to be left in situ until further information is obtained. Notify the Coronial Services Centre who in turn will notify the on-call anthropologist. Once a strong suspicion that the remains are human is established, the pathologist will liaise with Chris Briggs (forensic anthropologist) about attendance at the scene. If the bones are suspected to be Aboriginal AND from an era before European settlement, AAV is to be notified by the 24 hour office. AAV is also to liaise with the pathologist about attendance at the scene.

Notes
All notifications of specialist services, such as AAV and Chris Briggs (forensic anthropologist) are to be via the coroner's 24 hour office and in consultation with the pathologist on-call and the State Coroner.
In each case, where remains are found to be Aboriginal and ‘ancient’, AAV is to provide a report to the coroner outlining the reasons for this conclusion.
Press access is not to be permitted to human remains which are suspected to be Aboriginal (subject to the coroner’s direction).
Minimum Investigation Protocol for Heroin related Deaths

Police Investigation: Death Scene Investigation

1 Referral of death
   A. Date/time
   B. Reporting Person/agency
   C. Type of death
   D. Body Location
   E. Elapsed time between notification and death of this report

2 Arrival at the scene
   A. Date/time
   B. Other agencies present/names and I.D./arrival time
   C. Collaboration on investigation
   D. Emergency Aid Given/by whom/procedure used/medication given

3 Deceased found
   A. Date/time
   B. By whom/agency or relationship to deceased

4 Pronounced dead & identification of deceased
   A. Date/time/where
   B. By whom/agency
   C. Authority
   D. Method of identification
   E. By whom
   F. When/where
   G. Second or back-up identification/by whom/when/where

5 Death Scene details
   A. Location (Address)
   B. General Description
   C. Weather conditions at and time since death
   D. Detailed description of site where body found
   E. Police photography
   F. Scene documentation/notes

6 Description of deceased
   A. Sex/age/race
   B. Clothing condition
   C. Jewellery or other valuables on body
   D. Last seen alive/physical and mental state/activity/reported by whom
   E. Condition of body (normal/decomposed)
   F. Injuries

7 Physical evidence of drug use present
   A. Illicit drugs
   B. Drug paraphernalia/syringes/spoons/powders/swabs
   C. Other medication or drugs

8 Information on drug use
   A. Known user
   B. Dealer
   C. Prior drug treatment
   D. Route of administration/oral/iv/skin/popping/snorting/smoking
E. Evidence of prior use (old needle and track marks)
F. Injection site logical for self administration (left handed person-right arm)
G. Injection sites present from ambulance personnel
H. Evidence of resuscitation efforts by unknown persons

9 Transport of body to Victorian Institute of Forensic Medicine-Mortuary
A. Protect and preserve trace evidence on body
B. Physical exhibits to be kept with the body
C. Contact government undertakers (through State Coroners Office-9684 4369)

10 Action at State Coroners Office
A. Continue identification/confirmation
B. Notify nest of kin (according to procedure)
C. Consult with pathologist for autopsy date and time
D. Consult with Senior Project officer for further inquiries concerning deceased’s medical history
Radiology Investigation Procedure
Draft Coroner’s “Investigation Routine”
Hospital Deaths Possibly Related to Radiological Investigations

Introduction

A working party was established during 2004 to assist the State Coroner’s Office to develop, pilot, implement and evaluate the introduction of a routine process for the Coroner’s investigation of reported deaths where radiological investigations may be relevant.

It is anticipated that the development and implementation of a routine process will strengthen and streamline the Coroner’s investigation of deaths possibly related to radiological investigations. This routine process should help to improve the Coroner’s understanding of these incidents and help to improve patient safety and quality in health care.

During the coronial investigation, the questions below will be directed to the Hospital’s Medical Administration for distribution to the relevant departments. If specific issues arise which are not fully clarified by the following questions, the State Coroner’s Assistant Unit (Police Officers working at the State Coroner’s Office) may seek supplementary statements. There may also be additional specific questions incorporated into the following list that relate to a particular case event.

Specific examples of radiological examinations which will flag coronial investigations include missed radiological diagnoses, cervical spine injuries, incomplete investigations and Pulmonary Emboli.

Note: The term “radiological examination” is used in place of radiological investigation to prevent confusion with the coronial investigation. The term “radiological examination” is meant to be synonymous with diagnostic imaging including radiological ultrasound, MRI and nuclear medicine.

Please answer the following questions:

1. Patient clinical course
   What is the patient’s medical history? (include co-morbidities, current medications, previous surgery, and reasons for admission)

2. The radiological examination(s) and surrounding events
   a. What was the specific clinical indication for requesting the radiological examination(s)?
   b. What information was provided to the radiologist (please specify if verbal or written) regarding the clinical indication for the radiological examination(s)?
   c. Were there any delays in performing the radiological examination(s)?
   d. How was the urgency of the exam conveyed to the radiographer?
e. At what time was a radiology report (including verbal report) issued?

f. What clinical management plans were made prior to the radiological examination(s)?

g. What management decisions were made following the radiological examination(s). Please include those based on both the formal radiological report and, where appropriate, those based on non-radiologists’ reports?

3. The organisation’s system for monitoring the use of the radiology service

At the time of the incident, what were the facility’s policy, protocol and practice regarding:

a. Requesting such radiological examinations. Please include the process and authorised staff?

b. Reporting of radiological examination. Please include the process and authorised staff?

c. Communication of radiology results. Please include all steps from reporting to delivery to the requesting clinician?

d. Documentation of verbal radiology results?

e. Systematic reviewing and correlation of radiology results by clinical departments?

f. Management decisions based on the results of radiological examination prior to the formal radiological report?

g. Monitoring of Turn-Around-Time for radiological examinations?

4. Relevant equipment or work practice

If equipment or a particular work practice was involved in the incident:

a. Has the use of the equipment/work practice been reviewed to see whether any improvements can be made? If so, has the product manufacturer or some other expert been required to assist with the review?

b. Has the equipment been replaced or upgraded as a result of the incident under investigation by the State Coroner?

c. If a particular product was involved, were the manufacturer’s instructions available and followed? Please report the reasons, where appropriate, why instructions were not followed.

d. If a particular work practice was involved, how often has that practice (or part thereof) been reviewed? Is this practice standard or usual across Victorian hospitals?
Prior to submission, please ensure that relevant documentation is included together with your response.

Note: The term “radiological examination” is used in place of radiological investigation to prevent confusion with the coronial investigation. The term “radiological examination” is meant to be synonymous with a radiological investigation or test.

- A list from the hospital of staff
  - involved in requesting the radiological examination(s)
  - involved in performing the radiological examination(s)
  - involved in reviewing the radiological examination(s). This should include non-radiological staff who have commented on the results.
  - involved in formal reporting of the radiological examination(s)
  - involved in communicating the formal results of the radiological examination(s)

- A list from the hospital of staff involved with managing the patient after the radiological examination(s), when the result, reported formally or informally, is known to them.

- Copy of radiological examination request(s) including documentation of verbal requests or instructions.

- Copy of examination report(s) including any documentation of verbal report.

- Copy of reports of all recent radiology examinations performed on the patient. This should include those performed during this admission and those performed prior to admission at the hospital or elsewhere.

- Clinical guidelines or pathways used at the hospital for patients with these symptoms, problems or diagnoses, including an account of the process of development or adoption of these guidelines, and the date of promulgation used.

- Completed “In house” incident reports

If any subsequent changes are made to the hospital’s policies or procedures in the 12 months following this incident, would you please forward the details to this office? (i.e. Please describe how these changes occurred, how the new policy or procedure developed and any additional information sought from other agencies/hospitals).
State Coroner’s Guidelines: When To Hold An Inquest

These Guidelines are provided as a matter of general information and assistance for coroners on issues associated with when an inquest is necessary and on related matters. Any decision is ultimately a matter for the investigating coroner and there may be situations where the Guidelines may need to be modified or not followed.

Graeme Johnstone
State Coroner
1st June 2003

Mandatory Inquests

Section 17 (1) of the Coroners Act 1985 provides that an inquest must be held if the body is in Victoria or it appears to the coroner that the death or cause of death occurred in Victoria and:
(a) the coroner suspects homicide; or
(b) the deceased was immediately before death a person held in care; or
(c) the identity of the deceased is not known; or
(d) the death occurred in prescribed circumstances: or
(e) the Attorney General directs; or
(f) the State Coroner directs.

‘Prescribed’ means prescribed in the Regulations to the Coroners Act. Currently there are no prescribed circumstances [17(1) (d)] in the Regulations.

‘A person held in care” is defined under Section 3 of the Coroners Act and means:
(a) a person under the control, care or custody of the Secretary to the Department of Human Services; or
(b) a person -
   (i) in the legal custody of the Secretary to the Department of Justice or the Chief Commissioner of Police; or
   (ii) in the custody of a member of the police force; or
   (iii) in the custody of a protective services officer appointed under the Police Regulation Act 1958; or
(b) a patient in an assessment or treatment centre under the Alcoholics and Drug-dependent Persons Act 1968; or
(c) a patient in an approved mental health service within the meaning of the Mental Health Act 1986.

As a matter of guidance all deaths in correctional custody (including those from natural causes) are to be a mandatory inquest. Obviously deaths in police cells are the subject of a mandatory inquest. Where police operations are involved and the deceased is in the process of either being arrested; secured in an area during the management of an incident; chased by police (on foot or by a police vehicle); etc this should be considered as a mandatory inquest situation. Thus the issue of ‘custody’ in the police context is construed broadly.

Where a person was, immediately before death, subject to an Intensive Corrections Order or is on Parole then a mandatory inquest is necessary.
Similarly if on a Community Treatment Order but not if on a Community Based Order.

If the deceased was, immediately before death, ‘a patient in an assessment or treatment centre under the Alcoholics and Drug-dependent Persons Act 1968’ then an inquest is mandatory.

In the case of a patient being held ‘in an approved mental health service within the meaning of the Mental Health Act 1986’ an inquest is regarded as being required when the individual is held as an "involuntary" patient.

‘Ordinarily Resided’ in Victoria

Under section 3 the definition of a ‘reportable death’ also applies to the death of a person ‘who ordinarily resided in Victoria at the time of death’ if the death is one of a particular class of death i.e: ‘unexpected, unnatural or violent or to have resulted directly or indirectly, from accident or injury.’ The investigating coroner may choose to hold an inquest into the death of a person who ‘ordinarily resided’ in Victoria if the coroner ‘believes it desirable.’ Ultimately, the Attorney General may direct the State Coroner (or a coroner) to hold an inquest if the death occurs outside Victoria in a situation where the person ‘ordinarily resided’ in the State.

As an added complication if the coroner has jurisdiction, and the ‘body is in Victoria’ (of a person who ‘ordinarily resided’) an inquest is required if ‘the coroner suspects homicide’ or the State Coroner/Attorney ‘directs’ (however, also see ‘The Holding of on Inquest after a Criminal Trial’ below).

The Holding of on Inquest after a Criminal Trial

Under section 17 (3) of the Coroners Act 1985 if the investigating coroner ‘is satisfied’ that:

(a) one or more persons have been charged before a court with-
   (i) the murder, manslaughter, infanticide or child destruction of the deceased; or
   (ii) an offence under section 6B (2) of the Crimes Act 1958 in relation to the commission of suicide by the deceased; or
   (iii) causing the death of the deceased by the culpable driving of a motor vehicle; or

(b) a presentment has been made before a court of one or more persons for an offence referred to in paragraph (a)…

And that ‘one or more of those persons has been found guilty of the offence or acquitted or found not guilty’ the investigating coroner may choose not to hold an inquest; adjourn the holding of an inquest which has already commenced; determine not to recommence the adjourned inquest.

Generally, an inquest is not held after the completion of a trial unless there is a public health and safety issue that requires further investigation or public hearing. In the event that the trial raises the prospect that other persons, not previously identified, have caused the death then further investigation and inquest may be required.

The Exercise of Discretion as to when an Inquest may be required

A general explanation
It is noted that a coroner ‘who has jurisdiction to investigate a death may hold an inquest if the coroner considers it desirable.’ This means that the ultimate discretion (subject only to a mandatory inquest or direction of the State Coroner/Attorney General) is with the investigating coroner.

Notwithstanding the above comments it is generally considered that an inquest should be held where the hearing is likely to improve the quality of the investigation (as, under the Coroners Act, Section 3, an ‘investigation’ includes ‘an inquest’ - thus the inquest is part of the investigation process). Therefore where the facts (on the material in the Brief) are unclear and a hearing would be likely to clarify issues then an inquest should be considered. Also a hearing may be necessary where it is considered that the publicity may result in additional information forthcoming that may help provide some answers on the following issues (which the coroner must find if possible):

- identity of the deceased; and
- how death occurred; and
- the cause of death [see Section 19(1)].

Where there is a particular localised or general public health or safety issue an inquest should be considered to explore the issues, alert the public to the problem and if necessary make public comments and recommendations (although it is noted that health and safety issues can be covered in ‘chambers findings’ and recommendations can also be made in these findings. However if a recommendation is proposed in a chambers finding care needs to be taken as other parties may not have had the chance to comment on proposed recommendations).

An inquest may also be required where issues of fairness necessitate a hearing in order to clarify facts, where the coroner may need to be critical of a party, or it may provide a reasonable opportunity for a party to present an explanation of how an incident occurred or dispute involvement. These issues require a balanced decision by the investigating coroner.

The right of a party to request an inquest

A person can also request the coroner to hold an inquest [section 18(1)]. The investigating coroner may agree with the request and hold an inquest. If he/she refuses the request then reasons in writing (to the applicant and the State Coroner) are required. If three months expires and the coroner has not agreed to hold the inquest or given reasons then the applicant may apply to the Supreme Court for an order that an inquest be held. The Court may make an order for an inquest ‘if it is satisfied that it is necessary or desirable in the interests of justice.’ [Section 18 (3)].

‘Chambers Findings’

It must be remembered that a coroner completing a ‘chambers finding’ can still provide a detailed assessment of the facts and also make significant comments and recommendations on public health and safety. (However, please note comments under ‘General Explanation’ in the case of recommendations and chambers findings.)

In the event that a party disputes the conclusions in a chambers finding or requests further investigation, the investigating coroner may consider
reviewing his/her ‘chambers’ finding in the light of what the party requests (provided it is appropriate and the request has occurred in a reasonable time) the finding may be redrafted. If the coroner considers the request for further investigation reasonable this should be undertaken (this may result in a review of the ‘chambers’ finding or, in some cases an inquest).
Asbestos Related Death and Reporting to the State Coroner

An Information Sheet for Reporting Medical Practitioners, Palliative Care Practitioners and Asbestos Support Groups

The State Coroner has a responsibility under the Coroners Act 1985 to investigate unnatural death or a death that has been caused directly or indirectly from accident or injury. Asbestos related death falls into these categories and are therefore required to be reported to the State Coroner. An "asbestos related death" would include: asbestos related lung cancer, asbestosis, mesothelioma. If the attending medical practitioner is of the view that an asbestos related condition was a contributing factor (along with others) in the death, then the death is reportable to the Coroner.

All deaths caused by asbestos or where asbestos is a contributory factor will now be managed by The State Coroner's Office, Coronial Services Centre, 57 Kavanagh Street, Southbank.

This information sheet is designed to provide basic information to assist professionals and specialist groups who work with patients who have died from asbestos-related disease and their families, with a new and simplified process for the reporting of this type of death to the State Coroner and release of the body for the funeral.

When a death occurs, the attending medical practitioner should, on assessing that the death was caused by asbestos-related disease or that asbestos was a contributory factor, telephone the State Coroner's Office (See 24 hour telephone numbers above) and advise the Coroner's staff about the death. The attending medical practitioner will be asked to provide the following initial information:

(1) The attending medical practitioner's assessment as to the cause of death.
   ; and
(2) A brief deposition relating the deceased's identity, the cause of death and where the deceased's medical records are located. If the medical practitioner is able to depose as to the history of exposure in this document or provide other documentary material on exposure this is also requested; and
(3) Existing clinical material upon which the attending medical practitioner's diagnosis is based, for example, biopsy, radiology or histology reports. If this is unavailable, the medical practitioner will need to provide a source for these documents and the body's release will depend on their becoming available to the State Coroner.

Provided this information is supplied, the body will not normally be required to be taken to the Coroner's mortuary and can be released to the Funeral Director.
Note: The attending medical practitioner may wish to discuss the death with a Forensic Pathologist at the Victorian Institute of Forensic Medicine or the State Coroner (03-9684 4444).
When this information has been faxed to the Coronial Services Centre and assessed, the body will not usually need to be taken to the Coroner's mortuary. If the death occurs in the home, then the deceased may be taken to the Funeral Parlour and will be released for burial or cremation when the Coroner gives the authorization.
Upon receipt and assessment of this initial information, the State Coroner will authorise release of the body directly to the Funeral Director so that funeral arrangements can proceed without delay. This initial, investigation process does not require the attendance of Police.
Note: Where there are circumstances which mean that the death is a reportable death for other reasons (e.g. the death occurs during or as a result of an anaesthetic or during surgery) the body will be required to be taken to the mortuary and an autopsy may be required. In this event, police may become involved.
The attending medical practitioner should advise the family to contact the State Coroner (03 - 96844444 or the Toll Free number and ask for the Initial Investigations Office) if they wish to exercise their right to have an autopsy. They should also be informed that investigation of the circumstances surrounding the death will continue after the body is released and they will be contacted by the State Coroners Office with further information about this. On completion of the investigation, a Coroner will complete a Finding based on all the information available to him or her, and may also comment or make recommendations relating to public health and safety.
The reporting of asbestos related death to the Coroner is designed to ensure that an investigation into these deaths is undertaken and, where appropriate, potential prevention activity identified.

Graeme Johnstone
State Coroner
13/12/04
Appendix D

Services provided to the State Coroner's Office

The Clinical Liaison Service

The Clinical Liaison Service is a new and unique initiative of the State Coroners Office and the Victorian Institute of Forensic Medicine (VIFM) to improve patient safety. The need to establish this service is supported by an expanding body of research evidence indicating that addressing the contributing underlying system factors may prevent a significant proportion of adverse events.

The State Coroners Office and the Victorian Institute of Forensic Medicine recognises the increasing need for data relating to patient safety in health care institutions and the existing coronial information regarding deaths in health care settings is a unique and valuable resource that is under utilised. Furthermore, there is a need for a systematic process to ensure that the coronial recommendations and findings are applied towards system improvements. This is currently staffed by two physicians, two registered nurses, a research assistant and an administrative officer.

Tasks

The tasks of the Clinical Liaison Services include

- To assist the established coronial processes investigating adverse events.

- The formation of a validated method for classifying and recording information that may be related to adverse events within health care institutions. This information will have many uses, including the analysis of individual or clusters of such cases and the reporting of trends that may be useful in the early recognition of underlying systems issues in health care organisations.

- Explore how coronial data can be used effectively to inform changes to the health care system and whether there are possible reforms to the coronial process that will enhance the value of coronial data for patient safety initiatives.

- Identifying the reform priorities that reflect the interests of coroners, health departments and health care professionals throughout Australia for patient safety.

- Improving dialogue between coroners, health departments and health care professionals about adverse events.
Coronial Communiqué

The Coronial Communiqué highlights selected cases that have been reported to the State Coroner's Office and are of interest to healthcare professionals. The aims of the Communiqué are:

- To improve the awareness of clinicians and those in positions of governance about adverse events resulting from systems failures. Lessons from past cases can then be applied to their own institutions.
- To improve healthcare organisations’ understanding of the coronial system and the work performed by the Clinical Liaison Service.

The Communiqué will be produced quarterly and distributed electronically to subscribers who have registered their interest with the publication team. Subscription is free of charge and can be sent to your preferred email address. To be added to our distribution list, please email Megan Bohensky: meganb@vifm.org

Latest edition of Coronial Communiqué:

Volume 3 Issue 1 (February 2005)
This latest edition of Coronial Communiqué was released on the 24 March 2005. This edition describes three cases that were reported to the Victorian State Coroner.

Previous editions:
Volume 2 issue 3 (August 2004) as a PDF Coronial Communique Vol 2 Issue 3
Volume 2 Issue 2 (May 2004) as a PDF Coronial Communique Volume 2 Issue 2
Volume 2 Issue 1 (February 2004) Coronial Communique Vol 2 Iss 1
Volume 1 Issue 1 (December 2003) Coronial Communique Vol 1 Iss 1

If required Adobe Acrobat reader can be downloaded from:
Direction to Initial Investigation Office

The On-call Coroner should be immediately notified of the following matters:

1. All incident involving multiple deaths (including road deaths) or where there are potential public interest issues (e.g. foreign traveller deaths, unusual circumstances).

2. All deaths involving one or more deaths if an incident involves:
   (a) aviation deaths (including aircraft, parachute, hang glider, balloon, etc.);
   (b) industrial deaths (including farm, industrial toxins, etc);
   (c) death in any activity involving public or government department, instrumentality or agency including police (police car, death of or by police, death in police custody and in any police operations) and including death in prison (cell death);
   (d) death involving public or government interest or concern (e.g. Deaths at racing circuits, product related deaths, medical adverse events, pedestrian or vehicle rail crossing deaths, traumatic deaths in public or commercial transport vehicles);
   (e) death involving homicide or suspected homicide (only where there is significant public issue (e.g. Gangland); and
   (f) deaths where tissue retention issues are involved.

3. Major fires (commercial, residential and bushland)

The above notifications are not intended to be exhaustive.

If in doubt, notify!
Counselling and Support Program Practice Instruction

This ‘Practice Instruction’ has been designed as guide only and is not expected to be read verbatim.

1. Reportable death
   - Brief explanation of coroner’s legal responsibility to investigate a death in these circumstances

2. Post Mortem
   - Normally part of the coroner’s investigation involves an autopsy, to establish why and how a person has died. Query if requires more information regarding what an autopsy involves.
   - Toxicology and Histology
   - Approximate timelines for determining a Cause of Death
   - Benefits of an autopsy
   - How to access reports (with caution given regarding distressing nature of the reports)

3. Sections 29 & 28/Adverse events
   - The Senior Next of Kin has the right to object to an autopsy being performed. There are some things you need to consider if you are intending to go down this path. The objection application can be granted or refused by the coroner.
     If you intend to object, you should contact the coroner’s office today without delay. I can transfer you at the end of this call. You will also need to object in writing by close of business hours today. You can fax your letter to 9682 1206 (fax available at Police Station or Post Office), and you must state your reasons for objecting. Staff need to ensure we can contact Senior Next of Kin with outcome at later time.
     - Consideration should be given to the cause of death will be established as ‘unascertained’ and may have legal implications in some cases
     - Objecting to an autopsy can actually cause a delay for the release of your family member for a funeral.
     - A representative from the Coroner’s Office will be in contact with you to let you know the outcome of your application as soon as possible.
     - Can contact be made with you on this number over the next day or two?

4. Coronial process and timelines
   - Each case is individual and differs in the time it can take to investigate a death. For every coroner’s case there are two investigations - the medical cause of death which must be dealt with first - the legal investigation follows this where necessary.
• If …… has died from natural causes, you will receive a letter notifying you of this - otherwise, it may take some time for the coroner’s finding to be brought down. This will be sent to you automatically if you have signed the funeral directors form to allow …… to be transferred from the centre to the funeral home.

• In any event, further written information will be forwarded to you in the near future.

5. Funeral arrangements

Have you given any thought to making funeral arrangements?

If queried, staff should advise families that we are not permitted to recommend any funeral directors and are not obliged to use our contractors.

The funeral director will make all arrangements for …… necessary with this office as to when ……… can be transferred to the funeral directors as soon as possible.

6. Identification

Only need to discuss when ID outstanding or in cases of decomposition.

7. Return of property/clothing

Any property and clothing held at this office will be released with ……… to your funeral director.

If any property is in the custody of Police you should make enquiries directly with them regarding it’s return.

8. Contact with VIFM

You may be contacted by someone else from the CSC at a later time. This may be in regard to issues arising from the autopsy or the need for further medical information.

9. Cause of Death

As soon as the cause of death is known, a representative from the Coroner’s Office will forward the cause of death with Births, Deaths, and Marriages so they can issue the death certificate. You will get this in the mail if you have pre-paid for this when you made your funeral arrangements. Otherwise you can make an application to Births, Deaths, and Marriages.

10. Donor/Research

Only for discussion by Donor Tissue Bank staff. Donor Tissue Bank protocols to be followed.

11. Services/Support

The Coroner’s Office has a counselling service that offers short term support and referral to other appropriate services. You can contact us to discuss any support needs you may have including assistance at Identification at the centre Ph: 9684 4395 or 9684 4396.

If you require any further information or assistance, you can contact me on Ph: 9684 4444 or …………… My name is ………….

12. Recording of Contact
Following any contact, any aspect of the coronial process that was discussed is to be recorded on the 'Family Contact Screen' by clicking in the appropriate left hand box and entering information in the Contact log. The minimum requirement of the State Coroner’s Office is that the right to object to an autopsy is made known and the coronial timelines and process are explained. Any issues that may need clarification should be recorded in the text area and referred to the appropriate staff.
National Coroners Information Service (NCIS)

The National Coroners Information System (NCIS) is a world first database which contains information on every death reported to a coroner around Australia since July 2000 (January 2001 for Queensland data). As at August 2004 there were over 77,000 deaths stored on the system. This system has been designed to assist coroners in easily accessing national coronial information which may be of assistance when investigating deaths. The NCIS can therefore act as a valuable tool in terms of death and injury prevention. Information such as the frequency of a particular manner of death, the circumstances surrounding a type of death, and whether coronial recommendations have previously been made on an issue can all assist a coroner to make appropriate findings. For example:

- How many deaths involving naltrexone have there been?
- Have there previously been any recommendations made in relation to the safety of rock fishing?
- Have there been any other deaths where an individual fell through clear roof sheeting?

A range of information about each case is recorded on the NCIS, such as demographic details of the deceased, contextual information including the date, time and location of the incident and death, the intent of the deceased, the medical cause of death, and the mechanisms/objects involved in external deaths (eg drowning in a swimming pool). This coded information is supplemented by key full text reports, being the police summary of circumstances, the post mortem and toxicology reports, and the coronial finding. The full text reports can be searched via keywords, along with coded fields.

Access to the NCIS is available through the Internet, once a username and password has been allocated. Alternatively, requests for information can be made to the NCIS team. A regular publication entitled ‘Fatal Facts’ which is produced for coroners also details recent findings that have been uploaded to the NCIS.

Should you wish to apply for access to the NCIS, or obtain further information about the system, please contact the NCIS on 03 9684 4414, on ncis@vifm.org or visit the web site at http://www.ncis.org.au

An independent evaluation assesses the strengths and weaknesses of the National Coroners Information System (NCIS), particularly in terms of its coverage and data integrity and in supporting injury prevention initiatives, primarily by comparing it to the ABS Deaths Data Collection. Specific injury topic areas are considered to aid this assessment, but the focus is on illustrating the functions of the NCIS rather than providing a comprehensive description of the topic area.

The NCIS was found to be potentially very useful for injury prevention purposes because of the considerable detail available in the coded and text
variables and in the attached text documents. However, there are still a number of limitations that need to be addressed. ¹

¹ Tim Driscoll, Geoff Henley & James E Harrison, “The National Coroners Information System as an information tool for injury surveillance”, Research Centre for Injury Studies, Flinders University, SA 2003 , Australian Institute of Health and Welfare , Canberra, AIHW cat no INJCAT 60