Unintentional Drowning: Toddlers in Dams in Victoria 1989-2001

A joint initiative of the

State Coroner’s Office
&
Department of Human Services

REPORT 1

Compiled by Lyndal Owens
Injury Prevention Research Officer
October 2002
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AWSC</td>
<td>Australian Water Safety Council</td>
</tr>
<tr>
<td>BDM</td>
<td>Registry of Births, Deaths and Marriages</td>
</tr>
<tr>
<td>CSC</td>
<td>Coronial Services Centre</td>
</tr>
<tr>
<td>CWA</td>
<td>Country Women's Association</td>
</tr>
<tr>
<td>DHS</td>
<td>Department of Human Services</td>
</tr>
<tr>
<td>FSA</td>
<td>Farmsafe Australia</td>
</tr>
<tr>
<td>HSPP</td>
<td>Home Safety Parties Project</td>
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<td>LCMS</td>
<td>Local Case Management System</td>
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<td>MUARC</td>
<td>Monash University Accident Research Centre</td>
</tr>
<tr>
<td>NCIS</td>
<td>National Coroners Information System</td>
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<tr>
<td>PRO</td>
<td>Public Records Office</td>
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<td>QISU</td>
<td>Queensland Injury Surveillance Unit</td>
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<td>RLSSA</td>
<td>Royal Life Saving Society Australia</td>
</tr>
<tr>
<td>SCO</td>
<td>State Coroner’s Office</td>
</tr>
<tr>
<td>SQL</td>
<td>Structured Query Language</td>
</tr>
<tr>
<td>SRV</td>
<td>Sport and Recreation Victoria</td>
</tr>
<tr>
<td>VIFM</td>
<td>Victorian Institute of Forensic Medicine</td>
</tr>
<tr>
<td>VCFS</td>
<td>Victorian Coronial Facilitation System</td>
</tr>
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<td>VFF</td>
<td>Victorian Farmers Federation</td>
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</table>
## Acknowledgements

### Steering Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Graeme Johnstone</td>
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<td>State Coroner’s Office</td>
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<td>Jan Bowman</td>
<td>Acting Director, Social and Environmental Health</td>
<td>Department of Human Services</td>
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<td>Rick Roberts</td>
<td>Principal Registrar</td>
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<td>Nicola Rabot</td>
<td>Manager, Injury Prevention</td>
<td>Department of Human Services</td>
</tr>
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### General Acknowledgements

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<tr>
<th>Name</th>
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<tbody>
<tr>
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<td>Victorian Farmer's Federation</td>
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<td>Monash University National Centre for Coronial Information</td>
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<tr>
<td>Katrina Beesley</td>
<td>Secretary to the State Coroner</td>
<td>State Coroner’s Office</td>
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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.
Introduction

This report on toddler drowning in dams is the first of three reports on toddler drowning in Victoria. A second report on toddler drowning in private swimming pools and a third report on toddler drowning in baths will also be undertaken. These three reports will then be included as chapters in a major report on unintentional drowning deaths in Victoria. These reports are part of a joint project of the Department of Human Services (DHS) and the State Coroner’s Office (SCO) to investigate unintentional deaths of Victorians in an effort to contribute to the prevention of future deaths and their associated injuries.

Aims

The purpose of the current investigation was to examine incidents of toddler drowning in dams in Victoria, between January 1989 and December 2001. In particular the investigation aimed to discover how, when and where these deaths occurred. It also aimed to ascertain why drowning deaths have continued to occur at a time when water-safety messages relating to toddlers have been prevalent and successful in reducing rates of drowning in this age group in other aquatic settings.

Definitions

For the purposes of the current investigation a toddler was defined as a child aged up to five years at the time of their death. A dam was defined as an artificial pond or reservoir for the storage of water. A farm was defined as a property where the growing or rearing of some particular type of fruit, vegetable or animal was undertaken as a primary means of income. This was considered to be different from properties defined as hobby farms. These were defined as properties where the growing or rearing of some particular type of fruit, vegetable or animal was undertaken for pleasure not as a primary means of income.

Victorian & National Toddler Drowning Rate

Table 1 illustrates the rate of toddler drowning both in Victoria and Australia since July 1995 on a financial year basis (State Coroner's Office Victoria, Royal Life Saving Society Australia and Royal Life Saving Society Australia - Victoria Branch). Column A and B illustrate the toddler drowning rate in Victoria compared with Australia. Column C illustrates the number of toddler drownings in dams in Victoria, and column D illustrates this as a percentage of total toddler drownings that have occurred in Victoria.
### Table 1  Rate of Total Toddler Drowning vs Toddler Drowning in Dams

<table>
<thead>
<tr>
<th>Year (Financial)</th>
<th>A Total Toddler Drownings Australia</th>
<th>B Total Toddler Drownings Victoria</th>
<th>C Toddler Drownings in Dams Victoria</th>
<th>D % Dams vs Total Victoria</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/07/95 - 30/06/96</td>
<td>68 n</td>
<td>11 n</td>
<td>16% %</td>
<td>0 n</td>
</tr>
<tr>
<td>01/07/96 - 30/06/97</td>
<td>68 n</td>
<td>12 n</td>
<td>18% %</td>
<td>1 n</td>
</tr>
<tr>
<td>01/07/97 - 30/06/98</td>
<td>52 n</td>
<td>9 n</td>
<td>17% %</td>
<td>2 n</td>
</tr>
<tr>
<td>01/07/98 - 30/06/99</td>
<td>55 n</td>
<td>6 n</td>
<td>11% %</td>
<td>0 n</td>
</tr>
<tr>
<td>01/07/99 - 30/06/00</td>
<td>63 n</td>
<td>17 n</td>
<td>27% %</td>
<td>3 n</td>
</tr>
<tr>
<td>01/07/00 - 30/06/01</td>
<td>35 n</td>
<td>7 n</td>
<td>20% %</td>
<td>3 n</td>
</tr>
<tr>
<td>01/07/01 - 31/12/01</td>
<td>- n</td>
<td>5 n</td>
<td>- %</td>
<td>2 n</td>
</tr>
</tbody>
</table>

### Previous Research

Both Australian and international research has reported that unintentional injury is the leading cause of death and disability in young children (Ashby, Clapperton, Ozanne-Smith, Cassell, Sherrard, Chesterman and Routley, 2002; Sellstrom & Bremberg, 1996; Glik, Kronenfeld and Jackson, 1991). It is also commonly reported that most of these injuries occur in the home (Glik et al, 1991). In specific relation to toddlers, drowning is the leading cause death. Previous research in this area has predominantly focused on toddler drowning in private swimming pools, however some recent investigations have been undertaken in relation to toddler drowning in dams.

Baylis, Hockey, Pitt and Miles (2001) conducted an investigation into all non-pool drownings in Queensland of children aged less than 15 years between 1992 and 2000, n=92. It was reported in the Queensland Injury Surveillance Unit's (QISU) publication, Injury Bulletin, that 38% (n=35) of these drownings occurred in static inland waterways, which included dams. It was found that dams not only accounted for the greatest number of fatalities, it also involved the youngest of the children, with the average age being three years.

It was also found that these children most frequently "wandered off" and that generally supervision was not only a factor in explaining these deaths but also the greatest means of preventing future deaths.

Baylis et al address the issue of supervision in terms of carers "risk appreciation". They argue that age data revealed that carers have a graded risk appreciation according to the type of outdoor body of water. As their findings illustrated that younger children drowned in static waterways, rural water hazards and containers, it was argued that carers had a lower risk appreciation of those bodies of water and therefore a lower supervision level (Baylis et al, 2001). As older children drowned in dynamic waterways (e.g. rivers) and no toddlers drowned in the surf, they concluded that carers give a higher level of supervision to the younger children, illustrating a higher risk appreciation of toddlers around those bodies of water (Baylis et al, 2001).
The article concluded that the level of risk appreciation around water hazards such as dams should be raised to that of the sea, perceived by most people as the most dangerous body of water. The authors also acknowledged that it is unreasonable to expect carers to actively supervise their children at all times, and therefore promote the idea of a fenced "safe haven" for toddlers.

Mitchell, Franklin, Driscoll and Fragar (2001) conducted an investigation into all unintentional farm-related deaths in Australia involving children aged less than 15 years of age. They reported that drowning was the leading cause of toddler death on farms (58.3%) and that these drownings most often occurred in dams (71.4%). Mitchell et al argue that because the farm is also a workplace children who reside on farms are exposed to a number of hazards other children are not. It is well documented that childcare is an issue for farming families due to issues such as remoteness, transport, and fluctuating demand (Mitchell et al, 2001). Like Baylis et al, the article concludes that a safe play area is one way to prevent injury to young children.

Franklin, Mitchell, Driscoll and Fragar (2000), investigated all farm-related fatalities in Australia between 1989 and 1992. The following risk factors were identified in relation to toddler drowning in dams:

- victims were commonly young children aged less than five years and were more likely to be male;
- it was unlikely that there was a fenced safe-play area on the property;
- children were often left unsupervised for a short period of time while carers performed work tasks around the property;
- children often followed an animal/pet (such as a dog) down to the dam;
- steep slopes surrounded the dam from which the child slipped; and
- the majority of children were residents of the farm.

Day, Ashby and Stathakis (1997) reported in their Victorian study titled Unintentional Farm Injury, that between July 1989 and June 1994, fifteen children under the age of fifteen years died on farms in Victoria. Nine of these children were under the age of five. They also reported that the leading cause of death among these children was drowning (n=6), five of which occurred in dams. Like Mitchell et al (2001), Day et al address the need for accessible, affordable and flexible childcare in rural areas and advocated enclosed play areas for children.

Maxwell's (2001) article titled Accidents Don't Have to Happen addresses the importance of carer's awareness of hazards around the home. It is argued that the home is the most common place for injuries to toddlers and that such injuries can be linked to developmental stages. From one to two years of age, the child's mobility increases dramatically to walking and exploring (Maxwell, 2001). At this early age drowning is a concern, in particular in the bath and backyard pools. Two to three year olds are able to go up and down stairs, wander and climb (Maxwell, 2001). Dams are particularly hazardous to this age group given their tendency to wander. Maxwell acknowledges that 30% of toddler drownings occur in waterways such as dams, and identifies the need to keep watch when the toddler is near water. Maxwell concludes that being one step ahead of the child's development will allow carers to identify hazards around the home and take preventative action.
Australian and Victorian Water-Safety Initiatives

Australian Water Safety Council

In 1998 the Australian Water Safety Council (AWSC) published the National Water Safety Plan. Toddlers and the rural community were identified as two of the three at risk priority areas for immediate action. The key issues recognised and strategies identified to reduce incidents of drowning of toddlers and in the rural community are outlined in Table 2 and 3 respectively.

Table 2  Issues and Strategies from the National Water Safety Plan in relation to Drowning of Toddlers

<table>
<thead>
<tr>
<th>Issue</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public awareness of key focus areas (e.g. supervision, fencing / legislation requirements, water familiarisation, and infant resuscitation).</td>
<td>▪ Continue <em>Keep Watch</em> Public Awareness Campaign and provide for expansive coverage through various media groups, organisations and industry. To include dissemination of educational material to parents and carers.</td>
</tr>
<tr>
<td>Challenge cultural diversity and attitudes.</td>
<td>▪ Make available <em>Keep Watch</em> information for multi-cultural groups.</td>
</tr>
<tr>
<td>Education on existing Legislation.</td>
<td>▪ Reinforce existing Legislation and promote and evaluate Legislative change.</td>
</tr>
<tr>
<td>Education of parents and carers.</td>
<td>▪ Encourage attendance at Infant Resuscitation courses for all parents linking with the <em>Home Pool Safety Program</em>.</td>
</tr>
<tr>
<td></td>
<td>▪ Infant resuscitation accreditation to be made mandatory for all carers of children 0-5.</td>
</tr>
<tr>
<td></td>
<td>▪ Medicare rebate to be made available to parents and carers attending Infant Resuscitation courses</td>
</tr>
</tbody>
</table>

Table 3  Issues and Strategies from the National Water Safety Plan in relation to Drowning in the Rural Community

<table>
<thead>
<tr>
<th>Issue</th>
<th>Strategy</th>
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</thead>
<tbody>
<tr>
<td>Awareness of potential dangers on farms.</td>
<td>▪ Media campaign, promotion of Farmsafe Australia Child Safety on Farms Strategy.</td>
</tr>
<tr>
<td>Support for the Farmsafe Australia National Child Safety on Farms drowning program targeted at farm parents and farm families.</td>
<td>▪ Working with key stakeholders to promote drowning risk reduction on farms (e.g. rural media, managing farm safety course and rural schools).</td>
</tr>
<tr>
<td>Access and Education.</td>
<td>▪ Increase resources on drowning and injury prevention in inland waterways and of coastal conditions to be encouraged while vacationing.</td>
</tr>
<tr>
<td></td>
<td>▪ Public awareness campaign to target at risk groups within the rural population.</td>
</tr>
<tr>
<td></td>
<td>▪ Significantly increase Water Safety information and programs to rural schools.</td>
</tr>
<tr>
<td>Training</td>
<td>▪ Train appropriate individuals (teachers, managing farm safety instructors, farming organisations and local farm safety action groups) who have access to key groups and supply them with resources and materials.</td>
</tr>
</tbody>
</table>
The National Water Safety Plan was largely informed by a report by Giles (1995), titled *Towards a National Water Safety Strategy*. This report was commissioned by the Federal Minister for the Environment, Sport and Territories and undertaken on his behalf by the Royal Life Saving Society Australia (RLSSA) in conjunction with Surf Life Saving Australia (SLSA). Rural areas and toddlers were two of the six areas identified by Giles for action following a detailed qualitative and quantitative review of each aquatic activity and environment.

One of Giles' safety recommendations in relation to toddler drowning on rural properties was the creation of "child safe areas", a recommendation widely promoted in the public health and injury prevention literature. Giles outlined the guidelines from the Australian Agricultural Health Unit, 'Child Safety on Farms - Fencing the Farm House and Yard' information sheet. See Table 4 below.

**Table 4** Creation of a 'Child Safe Area' Guidelines from the Australian Agricultural Health Unit, 'Child Safety on Farms - Fencing the Farm House and Yard' Information Sheet

<table>
<thead>
<tr>
<th>Create a Safe and Interesting Play Area:</th>
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<tbody>
<tr>
<td>Providing a safe and interesting play area on farms is an ideal way of separating children from dangerous hazards, and preventing potentially fatal accidents. The play area should:</td>
</tr>
<tr>
<td>- include a safe area of reasonable size, the area should be located so that the child can be easily observed at all times i.e. a large area clearly visible from the back verandah, family room or kitchen;</td>
</tr>
<tr>
<td>- be completely surrounded by child resistant fencing, and include a suitable gate, the areas should be free from moveable structures that can be stacked together and allow children to climb over the fencing;</td>
</tr>
<tr>
<td>- include safe and interesting play activities such as sand pits, swings, mini-jungle gym etc.; and</td>
</tr>
<tr>
<td>- exclude water, farm vehicles, sheds, chemicals and working dogs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fence Structure Recommendations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following information is based on the guidelines used in the pool fence legislation restricting access to outdoor private swimming pools.</td>
</tr>
<tr>
<td><strong>Height</strong></td>
</tr>
<tr>
<td><strong>Structure</strong></td>
</tr>
<tr>
<td><strong>Material</strong></td>
</tr>
<tr>
<td><strong>Gate</strong></td>
</tr>
</tbody>
</table>
Royal Life Saving Society Australia (RLSSA)

The RLSSA is the most prominent organisation raising awareness of water-safety issues in Australia. The RLSSA have an office in each State and Territory, as well as a National Office. Each year the RLSSA publish the National Drowning Report, incorporating the number of drownings from each State and Territory. In Victoria, the RLSSA Victoria Branch produces the Victorian Drowning Summary. In recent years, Sport and Recreation Victoria (SRV) have contributed funds to the RLSSA Victoria Branch to expand this summary to provide a more detailed account of drowning rates and key strategies they have employed to reduce these rates.

In addition the RLSSA also run a number of water-safety programs. Currently, the RLSSA run four national programs aimed at toddlers and children. These consist of:

- **Keep Watch**
  A public awareness and education campaign aimed at reducing toddler drowning. The program focuses on four key points: supervision; pool fencing; water familiarisation; and resuscitation.

- **Swim and Survive**
  Launched in 1982, this program is aimed at school children to teach them swimming and aquatic survival skills.

- **Junior Lifeguard Club**
  A program for 8-15 year olds to introduce them to lifesaving activities.

- **Wet 'N' Wise**
  An education resource kit, which was sent to every Australian primary school. It contains water-safety lesson plans, teaching resources, posters and a board game.

The RLSSA have also recently developed the *Infant Aquatics* program. The four key components of this program are: water familiarisation; water safety; early buoyancy; and swimming development.

The RLSSA's key program in relation to toddlers is the national *Keep Watch* campaign, which was launched in 1997. Since July 2000 in Victoria, this campaign has been linked with the *Play it Safe by the Water* campaign by incorporating the "never take your eyes off" message. The focus of this program is on toddler drowning in backyard pools, however it also addresses some of the issues relevant to toddlers in all aquatic environments, such as the need for parental supervision, adequate safety barriers, water familiarisation and knowledge of resuscitation (See Appendix 1).

The RLSSA *Keep Watch Information Manual*, developed as resource material for community health nurses, outlines risk factors associated with toddler drowning. These are divided into factors relating to parents and carers, and factors relating to the child. These are presented in Table 5.
Table 5: Summary of Factors Relating to Drowning in Children under 5 years from RLSSA’s "Keep Watch" Program

<table>
<thead>
<tr>
<th>Factors Relating to Parents / Carers</th>
<th>Factors Relating to the Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Absence or lack of supervision.</td>
<td>9) Young children are attracted to water.</td>
</tr>
<tr>
<td>2) Parental &quot;vulnerable period&quot; such as when family routine broken (e.g. visitor's call).</td>
<td>10) Young children have limited strength, judgment and physical coordination.</td>
</tr>
<tr>
<td>3) Underestimating a young child's capacity to gain access to areas where parental supervision is necessary.</td>
<td>11) A young child is not able to understand the concept of danger and therefore may have difficulty in understanding that water could also cause harm.</td>
</tr>
<tr>
<td>4) Unrealistic expectations of a young child's behaviour and self-control.</td>
<td>12) An active, intensely curious child does not understand the consequences of falling into water.</td>
</tr>
<tr>
<td>5) False sense of security when each parent or carer mistakenly assumes that the other is supervising the toddler.</td>
<td>13) Infants and toddlers generally are not coordinated well enough to swim and breathe at the same time, so they cannot be taught effectively.</td>
</tr>
<tr>
<td>6) False belief that the presence of several children reduces the threat of a child drowning.</td>
<td>14) Young children who know how to swim are not necessarily water safe or &quot;drownproof&quot; as they may lose their swimming skills in an emergency.</td>
</tr>
<tr>
<td>7) False belief that pool safety devices, such as a retractable pool ladder, pool cover, or an inadequate fence provides adequate protection.</td>
<td>15) Very young children are susceptible to drowning because they are top heavy. (A young child leaning forward to look into water or reach for an object, easily topples over and can drown).</td>
</tr>
<tr>
<td>8) Lack of knowledge of CPR.</td>
<td>16) Childhood drowning is a silent event as children do not usually cry out for help.</td>
</tr>
<tr>
<td></td>
<td>17) Illness (e.g. epilepsy).</td>
</tr>
<tr>
<td></td>
<td>18) Acute injury.</td>
</tr>
<tr>
<td></td>
<td>19) Disobeying parent / carer's instructions.</td>
</tr>
</tbody>
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In relation to rural environments, the manual reminds carers to supervise children near ponds, dams, creeks and rivers and advises them to fence off nearby dams, irrigation channels, troughs, open farmyard tanks and creeks. It also encourages parents and carers to create "child safe" zones around the home by fencing the child in, not out.

**Sport and Recreation Victoria (SRV)**

Since 1998 Sport and Recreation Victoria (SRV) have received funding through the Community Support Fund for water-safety initiatives in Victoria. These initiatives include the *Victorian Water Safety Initiative 1998-2001 - Play it Safe by the Water* and the *Safer and Improved Aquatic Recreation Program 2001-2002* ([http://www.watersafety.vic.gov.au/web/wsv/watersafetysite.nsf/pages/waterhome](http://www.watersafety.vic.gov.au/web/wsv/watersafetysite.nsf/pages/waterhome)). The six key strategies in this program include:

- Public Awareness - using the *Play it Safe by the Water* message and key messages for each water environment;
- Education and Training - developing water safety resources and providing training for teachers in schools and pools;
- Toddler Initiative - communicating toddler water safety messages, developing databases and researching information relating to backyard swimming pools and spas
- Improved Water Safety Signage - developing relevant and consistent signage at beaches and inland waterways throughout Victoria;
- Extension of the Lifesaving Season - trailing and extending lifesaving services so that Victorians can continue to enjoy our beaches within the safety of the red and yellow flags; and
- Family Friendly Beaches - investigating and developing the concept of family friendly beaches (See Appendix 2).

As part of the Play it Safe by the Water public awareness campaign, a series of three television commercials were developed. These commercials focused on three different aquatic environment and addressed the associated risks of each. These were: the beach; inland waterways; and backyard swimming pools. The three target audiences of the public awareness campaign were the risk taker aged 18-25 years of age (later extended to 30 years of age), parents of toddlers, and the general community (SRV Manager, Water Safety Project).

Action orientated messages were also used in the public awareness campaign as a means of influencing behavioural practices in and around aquatic environments. These messages were not only prevalent in the television commercials but also in the print media, on the Victorian Water Safety website, and in other publications. These messages included:

- "play it safe by the water"
- "never take your eyes off"
- "always swim between the flags"
- "check it's okay to swim"
- "lifejackets save lives"

**Farmsafe Australia**

Farmsafe Australia (FSA) is an organisation comprising of industry and government agencies with the aim of improving well being and productivity of Australian Agriculture via enhanced health and safety awareness (Farmsafe Australia, 1999). In 1999, FSA developed the National Strategy for Child Safety on Farms with the aim of reducing incidence of injury and death of children on Australian farms and rural properties (Farmsafe Australia, 1999). In their publication Child Safety on Farms: A Framework for a National Strategy 1999, it was reported that bodies of water were the most common agent of injury for children aged 0-4 years on farms.

**Other Rural Focused Initiatives**

In April 2001 a CD Rom package Attack of the Killer Farms was distributed to all primary schools in rural and regional Victoria. It was developed by the Victorian WorkCover Authority for 6 to 12 year olds to teach them about the dangers that exist on farms as well as to increase their awareness of other farm related health and safety issues (http://www.dpc.vic.gov.au/domino/web_notes/newmedia.nsf/). The game involves players moving through various areas of the farm, overcoming dangerous hazards
without getting injured and using up a supply of band-aids. The winner is the player who finishes with the most band-aids left.

Another injury prevention initiative targeted specifically at small rural communities was the Home Safety Parties Project (HSPP). A pilot project was conducted by the Coastal and Wheatbelt Public Health Unit, funded by the Western Australia Health Promotion Foundation, between June and November 1996. The idea of Home Safety Parties was based on the 'home party plan' method, which has been successful in selling Tupperware™. It utilises both educational and environmental strategies in order to promote home safety and thereby prevent childhood injuries.

The pilot aimed to answer the question "How do you reach rural parents, in small communities, at the site at which childhood injuries are occurring and be effective"? More specifically, the project's objectives were to:

- increase awareness of risk situations and steps to prevent home injuries;
- increase the number of home safety checks conducted by parents; and
- increase the number of safety items in homes.

The target audience of these parties were parents of children aged 0-6 years who were recruited through letters sent to playgroups, advertising in the community newspapers and posters at child health clinics. During the four month trial, twenty-six parties were conducted, 54% at playgroups and 46% in homes. In total two hundred and fifty-five people attended.

The main findings from the pilot reported from pre and post questionnaires of participants were:

- 98% of participants found the parties very valuable (67%) or valuable (31%);
- 32% of participants purchased products; and
- safety checks rose from 26% to 64%, with 76% of post questionnaire respondents conducting a safety check for the first time (See Appendix 3).

The project outcomes indicated that Home Safety Parties may be an effective method for promoting home safety and empowering carers to prevent home injuries in children (Coastal and Wheatbelt Public Health Unit, 1997). The project has expanded throughout WA and the Eastern States of Australia.

The HSPP was replicated as a pilot in the East Grampians region of Victoria during 1998. This was undertaken by the Victorian Farmers Federation (VFF) in conjunction with the Royal Children’s Hospital Safety Centre, and the East Grampians Health Service. The aim of the pilot was to ascertain whether Home Safety Parties could provide a means of communicating injury prevention strategies, knowledge and safety products to individuals with children under the age of five who reside on farms (Rich, 1998). It was also hoped that they would also assist in drawing communities together to provide support for implementing injury prevention strategies and providing childcare (Rich, 1998).

Seventy-one people participated in fourteen parties over a three month period. At the completion of the pilot, the Royal Children's Hospital Safety Centre conducted an evaluation of the project via pre and post questionnaires completed by participants. The evaluation sought to verify the findings from the Western Australia HSPP and determine the success of the project in Victoria (Rich, 1998).
The key findings of the evaluation included:

- respondents were reasonably aware of dangers on the farm prior to attending the home safety parties;
- respondents rated farm items/equipment/areas as posing a medium to high risk to children both before and after the home safety parties. More specifically:
  - dams, tractors and machinery were perceived as the greatest risk to children under five years of age.
- most respondents thought the most dangerous places on their farm for children were dams/creeks, machinery and sheds;
- very good general knowledge of injury prevention was shown in the form of car seating options, prevention of scalds and prevention of poisoning by respondents;
- most participants (60%) took some practical injury prevention action as a result of attending a home safety party; and
- participants stated that the main things learnt by attending a home safety party were:
  - understanding of the extent of the problem;
  - an increase in the range of options and solutions to problems; and
  - a more systematic way of approaching injury prevention.

The evaluation supported the finding of the WA trial and concluded that the HSPP trial was effective in raising the general level of awareness about childhood injury (Royal Children's Hospital Safety Centre, 1998).
Methodology

Case Identification & Retrieval

During the course of data collection for a larger investigation into drowning in Victoria between 1999 and 2001, seven cases of toddler drownings in dams were identified. As toddler drowning, particularly in the home, was an issue of interest for the larger study, incidents between 1989 and 1998 were also sought.

To identify cases between 1989 and 1998, a search was conducted on a database called “Topic”. Topic was developed and is maintained by the Victorian Institute of Forensic Medicine (VIFM) for use by Coronial Services Centre (CSC) staff. It contains the following documents produced on coronial cases. [Note that toxicology and neurology examinations are not routinely conducted for all deaths].

- Autopsy Reports (1991-2001);
- Toxicology Reports (1991-2001);
- Neurology Reports (1991-2001);
- Form 83 (Police Report) Circumstances (1988-2001); and

Case identification using Topic was via a key-word search of the words “dam” and “dams” with the age group restricted to 0-5 years. An additional seven cases were identified using Topic.

To validate these numbers a search using a Structured Query Language (SQL) statement was run against the State Coroner's Office (SCO) Local Case Management System (LCMS). The SQL statement requested the local case number and summary of circumstances from the police report of all cases coded as "drowning" or "boat accident" since 1988. The results of this SQL were compiled into a Microsoft Excel spreadsheet and each case was read. One additional case was identified from this search.

The Monash University Accident Research Centre (MUARC) also provided the SCO with a copy of the Victorian Coronial Facilitation System (VCFS). The VCFS is a database that contains information on all closed cases (cases where the Coroner had made a finding) between July 1989 and June 1995. This database was collated and coded by the Caseflow Analysis Section of the Courts and Tribunals Division of the Department of Justice (Stathakis and Scott, 1999). This information was also printed as five annual report like publications titled Unnatural Deaths: Collated from the findings of the State Coroner. These publications contained tables of data listing text descriptions and other codes by manner of death. Each death in the drowning section was read in order to identify relevant cases. Using these two sources, twelve deaths were identified. In total, twenty-seven deaths were identified between 1989 and 2001.

Cases from 1989-1996 were retrieved from the Public Records Office (PRO), and cases from 1997-2001 were retrieved from the SCO.

Data Collection

In all but one of the cases, the Coroner had completed the investigation into the death and made a finding. This meant that all the information collected by the police during
the death investigation was available in the file. Each file generally contained the following information:

- initial police report of death to the Coroner (Victoria Police Form 83);
- post-mortem examination reports:
  - autopsy report; and
  - toxicology report.
- inquest brief:
  - investigating police officer's summary of events from statements;
  - witness statements;
  - photographs; and
  - maps.
- coronial finding.

Once all the cases were retrieved and compiled the following information was recorded from each case:

- local case number;
- type of residence (own, neighbouring, visiting);
- deceased's name;
- date, day and time of incident;
- age at death;
- suburb of incident;
- postcode where incident occurred;
- mother’s occupation;
- father’s occupation; and
- other carer’s occupation;
- distance of dam from where the toddler was last seen; and
- type of property where the incident occurred (farm, hobby farm, non-farm).

A grounded theory approach was taken to identify similar themes and patterns among the cases. Each case was read and declarations made by witnesses were documented under the following theme headings:

- supervision;
- location of parents in relation to the child immediately prior to the incident;
- fencing;
- how deceased accessed the dam;
- child’s experience & prior behaviour with dam;
- child’s behaviour generally;
- child’s motor skills;
- risk perception;
- where parents first looked for deceased;
- parent’s activity at the time the child went missing;
- what alerted the parents to the missing child; and
- presence of other children at the time of the incident.
Once all the emerging themes were identified, each case was re-read to ensure that all the relevant information had been recorded. In some cases data was required to be validated from external sources such as the Registry of Births, Deaths and Marriages (BDM).

**Data Analysis**

Each case was allocated to one of three groups according to the type of property where the incident occurred (farm, hobby farm, non-farm). In each group the recurring themes were compiled under their relevant headings. Similarities and differences amongst the cases in each group and between the cases in each group were examined in order to develop a typology or set of common factors for each group and the total drowning events that occurred over time (See Appendix 4).

**Limitations of the Data Source**

The source of data utilized in the current study consisted of information submitted to the SCO for the purposes of death investigation. As the electronic system of data storage and retrieval is based on case management needs, it has limitations for research purposes.

Each death is reported to the SCO via the Victoria Police Form 83. This and other information relating to the death is recorded in two ways. All paper documentation is put into a manila folder (called the "Body Card") with a sticker on the front containing the following information:

- local case number (a six digit unique identifier for each case for the year e.g. 0012/02 case number twelve for the year 2002);
- deceased's surname;
- deceased's given names;
- deceased's usual residence;
- date reported; and
- incident type code.

Information is also entered into the SCO Local Case Management System (LCMS), which dates back to 1989. One of the fields on the LCMS is a three letter incident type code. This code is assigned when the death is first reported and is generally not updated over time. In many instances there are a number of codes that could be allocated to each case. For instance in the case of the current study the death could be coded as either "INF" for "infant" or "DRW" for "drowning". If the circumstances surrounding the death are unclear and there is no relevant code, the case can simply be coded as "REP" for "reportable". The easiest way to search the LCMS by type of death is via this three letter code. This is problematic because some cases of interest may be coded differently or as "REP". This results in an amount of underreporting and validation is therefore required.

This was a known limitation of the LCMS and subsequently a research officer reclassified cases according to the cause of death reported in the coronial finding. This reclassification was completed for all drowning and boating related deaths. As outlined earlier, the LCMS was searched using Structured Query Language (SQL) to retrieve the police summary of circumstances for these cases. Although this assisted in validating the number of cases already identified it only allowed further identification of one case.
The most significant limitation of the LCMS to the current study were deaths that occurred in rural and regional Victoria where the finding was also made in that jurisdiction. Very little information on these cases was entered onto the LCMS and it has only been since 2000 that the police summary of circumstance and the coronial finding have been included on the LCMS. As a result many cases of toddler drowning in dams could not be identified.

However, these cases were included as part of a project funded by the Department of Justice that ran between July 1989 and July 1994. Statistics were collated on a financial year basis of all deaths where a finding had been made. This consisted of each finding being read and coded according to a number of relevant coding schemes. These statistics were published as five reports titled Unnatural Deaths: Collated from the findings of the State Coroner. These reports included a number of tables that listed cases by manner of death, including drowning. For each case the local case number, age of the deceased and a line of text summarising the incident was present. This data also formed the basis of the Victorian Coronal Facilitation System (VCFS) provided to the Monash University Accident Research Centre (MUARC) for use in their various injury prevention projects. Using these two sources of data an additional twelve cases of toddler drowning in dams were identified.

Given that it takes at least six months from the time of death until a finding is made, some relevant cases from 1994 may not have been included in Unnatural Deaths or the VCFS. Furthermore, as almost all of the incidents occurred in rural and regional Victoria and the police summary of circumstances and the coronial finding were not included on the LCMS between 1994 and 2000, there may be some level of under-reporting during those years.
Results

Trend Over Time

Figure 1 illustrates the distribution of toddler drowning incidents in dams between 1989 and 2001. In total there were 27 deaths from 26 incidents [i.e. two toddlers drowned in one incident in 1993. This will be referred to one incident and two deaths].

Figure 1 – Thirteen Year Trend of Toddler Drowning Incidents in Dams

Gender and Age

Figure 2 illustrates that 20 of the 27 toddlers (74%) were male and 14 of these were aged between one and three years. Of all the toddlers who drowned, 74% were aged between one and three years.

Figure 2 – Gender and Age of Toddler

Time of Day

Figure 3 illustrates that 81% of the drowning incidents occurred between the hours of 11:00 am and 7:00pm. The largest percentage of incidents occurred between the hours of 11:00am and 12:00pm (18%) and 5:00pm and 6:00pm (18%).
**Number of Drowning Incidents by Time of Day**

![Graph showing number of drowning incidents by time of day.](image)

**Figure 3 – Drowning Incidents by Time of Day**

**Day of Week**

Figure 4 illustrates that 50% of the drowning incidents occurred on the weekend.

![Graph showing drowning incidents by day of week.](image)

**Figure 4 – Drowning Incidents by Day of Week**
Time of Year

Figure 5 illustrates that almost 50% of the incidents occurred during the summer months December to February.

![Incidents by Time of Year](image)

**Figure 5 – Incident Number by Time of Year**

Location of Incident

Figure 6 illustrates that of the twenty-six incidents, ten occurred on a farm, five occurred on a hobby farm and eleven occurred on a non-farm property.

![Drowning Incidents by Type of Property](image)

**Figure 6 – Incident Number by Type of Property where Drowning Occurred**

Over the thirteen year time period, there was on average one toddler drowning incident on a farm dam per year, with the exception of 1991, 1995, 1999 and 2000. In 1992 there were two incidents in farm dams. Drowning on non-farm properties fluctuated between one and two, however there was a period between 1995 and 1998
inclusive where there were zero drowning incidents in non-farm dams. In relation to dam drownings on hobby farms, there was one incident in 1992 and two incidents in both 2000 and 2001 (See Appendix 5 for map of incident locations across Victoria).

**Drowning in Non-Farm Dams**

Eleven of the twenty-seven drowning deaths (40%) occurred in dams on properties that were not identified as farms or hobby farms. In ten of these cases the dam was located on a property situated in rural Victoria, and in one case the dam was located at a public park in suburban Melbourne. In addition to these eleven incidents, there was one case where a toddler wandered from a non-farm property onto a farm property containing a dam where they subsequently drowned. This was included in the non-farm section of the results.

In eleven of the twelve incidents the toddler was playing outside the house with their carer’s knowledge and permission. In 50% of the cases the mother of the toddler was home alone with the toddler at the time of the drowning, while the father was either at work or away from the house.

Carer supervision was ranked according to four scenarios, A-D, where A was the lowest level of supervision amongst the cases and D was the highest. This was based on the assumption that the further away the carer was located from the toddler, the lower their level of supervision.

**Scenario A – ‘Carer Inside House’**

The lowest level of supervision was demonstrated when the carers were inside the house while the toddler was outside the house. This level of supervision was evident in three of the twelve cases.

> “I continued doing house work, and at about 9:30 or 9:45 I looked out the kitchen window and saw DECEASED walking towards an area not far from the back of the house where some trees and fern had been bulldozed. I thought to myself at that stage that he would be all right as he couldn't come to much harm there and I thought I would just check him from time to time. About five or ten minutes later I went outside to look for DECEASED but couldn't see him.” [mother's statement] - 0303/91

> “She (neighbour) also advised me that DECEASED was often wandering about with his dog, and that she and her husband were concerned about the lack of supervision of DECEASED by his parents in this type of environment.” [police summary] - 0303/91

> “... DECEASED'S escapade was not an isolated incident, and MOTHER informed me that DECEASED would often play on a partially constructed boat situated on the adjacent southern block, Lot 5. ... I believe that closer supervision by MOTHER and an enclosed back yard may have prevented this death.” [police summary] - 0303/91

◆

> “Deceased was with his mother at their home address in the kitchen area at approximately 11:00am. After receiving a biscuit from his mother he left the house and began playing with his older
brother (5 years) and sister (3 years) in the front yard. Ten minutes later the mother received a phone call from a neighbour stating, whilst driving past they observed the deceased standing near a dam at the rear of the deceased's address.” [police summary of circumstances] - 2238/92

“... A short time later I saw DECEASED wander up in the direction that the other kids had gone. I assumed that he had gone around to where the kids were playing. DECEASED FATHER was in the back room that leads into the kitchen, still on the phone. DECEASED MOTHER and I were still in the kitchen and STEPFATHER DAUGHTER and FAMILY FRIEND DAUGHTER (12 years) were still in her room.” [family friend's statement] - 0292/00

Scenario B – ‘Carer Inside Shed or Recently Inside House’

In four of the twelve incidents the carer either came inside the house or was inside another structure such as a garage, leaving the toddler outside unsupervised. This was considered to be the second lowest level of supervision.

“I made the children some lunch and they went outside the house to play. I was doing some work in the garage and I could see and hear the children playing around the house. I had seen DECEASED playing with BROTHER (11 years) and BROTHER FRIEND and also later playing with SISTER (6 years). ... I came into the house and saw SISTER (9 years).” [mother's statement] - 0947/90

“... I was working in the shed and DECEASED came in from the house. DECEASED was with me for a couple of minutes and then he went outside to the sandpit at the side of the shed and played with his dog. I heard DECEASED banging on the side of the shed and his dog barking about 5 minutes later. 10 minutes later I heard both dogs barking at the front of the house on the driveway ...” [father's statement] - 3121/90

“The deceased was at the side of the house in front of the shed on a small tricycle when last seen by this mother. It appears that the deceased has ridden the tricycle across the front of the shed and then continued along the path to the dam.” [police summary] - 0610/93

“I put her (DECEASED) in the car with me and drove up to the shed. ... When we got to the shed, I opened the door and lifted her out and I went into the shed to grab a couple of spanners and walked back to the house for a drink. After I lifted her out of the car, that was the last time I saw her alive. I don’t recall seeing her
when I was working on the car. ... I got back to the house and went into the kitchen and my wife was on the phone to DECEASED’S MOTHER.” [uncle's statement] - 0891/98

“I further find that UNCLE contributed to the cause of death by failing to provide adequate supervision while the deceased was in his care.” [coronial finding] - 0891/98

Scenario C – ‘Carer Outside Engaged in Home Duties’

In four of the twelve incidents the carer was either outside the house engaged in home duties or coming in and out of the house conducting home duties while the toddler was outside the house.

“I put some washing on the line and brought some in. That was last I saw of him. After about 15 minutes I began to wonder where he was because I couldn’t see or hear him.” [mother's statement] - 1525/89

“... I was hanging out the washing in the rear yard whilst my daughter had been playing in the yard also with the new kittens. I then returned inside to collect another load of washing, when I returned outside I noticed DECEASED missing.” [mother's statement] - 0479/94

“While the women were sitting under the shelter, the men were at the barbecue. It is a custom that we eat while we cook. We do not actually sit down to eat. More we walk around, going back to the barbecue to get food. We would take food over to the women, who would look after the children. All of the children were moving around. I had told my wife and the others to look after the children.” [father's statement] - 3433/99

“I then let DECEASED out the back door where all the boys were playing. They were riding their bikes around the house and DECEASED’S STEP FATHER (DEFACTO) was watering the garden about 8m from the back door. I was washing the dishes ...” [mother's statement] - 0116/00

“The stepfather was occupied watering the garden beds whilst the children were playing and the deceased was last seen by his mother near the rear of the house. It is estimated that the two adults present have lost contact with the deceased for approximately 10-15 minutes as they went about their home duties.” [police statement BR] - 0116/00

Scenario D – ‘Carer and Toddler Inside House / Toddler Escapes to Outside’

In one of the twelve incidents both the carer and the toddler were inside the house. The carer was in the kitchen and the toddler was in their bedroom. This was considered to be the highest level of supervision. Note in this case that the child was
five years of age and accessed the outside of the house via his bedroom window. This meant that the carer was not aware that the toddler was outside.

“I sent DECEASED to have a shower then put him in his room and told him to get dressed. FATHER came home and I spoke to him about the car. I went back in and checked on DECEASED who had not got dressed he was naked on the floor listening to his cassette. I put BROTHER down and waited for him to go to sleep. I went into the kitchen and washed some dishes. I then called out to DECEASED. There was no answer so I called out again.”

[mother's statement] - 0330/94

In 50% (6/12) of the incidents the toddler was playing outside the house in an area where other older children, usually siblings, were playing. This was demonstrated in two of the three incidents in supervision scenario A and two of the four incidents in scenario B and C. It was evident in many of these incidents that carers assumed that the toddler was playing with these other children.

“I was doing some work in the garage and I could see and hear the children playing around the house. I had seen DECEASED playing with BROTHER (11 years) and BROTHER FRIEND and also later playing with SISTER (6 years).”

[mother's statement] – 0947/90

“After receiving a biscuit from his mother he left the house and began playing with his older brother (5 years) and sister (3 years) in the front yard.”

[police summary of circumstances] – 2238/92

“DECEASED was playing with his brother and sister (both aged 7), at their home address. They were all playing in the rear yard and the area in front of a large shed.”

[police summary] – 0610/93

“The last time DECEASED went to my wife, all of the children had been sitting under a tree a fair distance from the dam. Each time he would do this, she told me she would see that he was with the other children. ... I had seen him with the two girls under the tree. I had heard MOTHER tell the two girls to look out for him.”


“I then let DECEASED out the back door where all the boys were playing.”

[mother's statement] – 0116/00

“... a short time later I saw DECEASED wander up in the direction that the other kids had gone. I assumed that he had gone around to where the kids were playing.”

[mother's statement] – 0292/00
In almost all of these cases (5/6) the carers became alerted that the toddler was in the dam by these other children who had either seen or found the toddler there.

“Ten minutes later, the mother received a phone call from a neighbour (7 years) stating, whilst driving past the property with her grandmother, she observed the deceased standing near a dam at the rear of the deceased’s premises.” [police summary of circumstances] – 2238/92

“BROTHER and SISTER (7 years) found DECEASED in dam and took him to their father.” [police summary] – 0610/92

“One of FAMILY FRIEND’S SONS, who is seven years of age, and was with my wife when they were looking for him, told my wife, “Go to the water, he is dying in the water”. My wife told me she did not believe DECEASED was in the water. I believe he may have seen DECEASED go into the water, I do not think he may have recognised the danger DECEASED had placed himself in.” [father's statement] – 3433/99

“I walked out the back door and towards the dam. BROTHER ran up from the dam and he was yelling that DECEASED was in the dam.” [mother's statement] – 0016/00

“About ten minutes later SISTER (5 years) came into the kitchen and said to MOTHER, “Mum, DECEASED’s gone, I can’t find him.” [family friend's statement] – 0292/00

In the remaining incidents (6/12) there was either no other children present (4/6) or the other child was a baby under three months old (2/6). The cases were spread evenly among the supervision scenarios and in most instances (4/6) there was only one carer present at the time of the drowning. In these four cases, the lone carer became alerted to the missing toddler after they realised that they had not seen them for some time, usually ten to fifteen minutes later.

“After about 15 minutes I began to wonder where he was because I couldn’t see or hear him.” [mother's statement] - 1525/89

“I thought I would just check him from time to time. About five or ten minutes later I went outside to look for DECEASED but couldn't see him.” [mother's statement] - 0303/91

“I put BROTHER down and waited for him to go to sleep. I went into the kitchen and washed some dishes. I then called out to DECEASED. There was no answer so I called out again.” [mother's statement] - 0330/94
“I then returned inside to collect another load of washing, when I returned outside I noticed DECEASED missing.” [mother's statement] - 0479/94

In the remaining two incidents, there were two carers present at the time of the drowning. In both cases one carer was inside the house and the other was either inside another structure or had come inside, leaving the toddler outside unsupervised. In one incident the carers were alerted that the toddler was missing when one enquired with the other as to their whereabouts, and in the other case when the toddler’s dogs began barking.

Once out of sight from their carers, the toddler has wandered from the yard to the dam relatively unhindered by fencing or other barriers. In four of the twelve incidents the toddler drowned in a dam on their own premises where there was no fencing between the yard and the dam, only around the perimeter of the property.

“... there is strand wire fencing on the perimeter of the property.” [police summary, photographs] – 1525/89 (See Appendix 6)

“From the photographs it can be seen that the dam does not have any fencing between it and the house. Strand wire fencing marks the perimeter of the property.” [police summary, photographs] – 3121/90 (See Appendix 6)

“It appears that the most probable point of exit by the child from the house was via his bedroom window.” [police statement] – 0330/94

“Our property is seventeen acres fenced in one lot.” [father's statement] – 0330/94

“There were numerous entry points available around the dam, and no fencing or barricading has been erected.” [police statement] – 0116/00 (See Appendix 6)

In five of the twelve incidents the toddler drowned in a dam on a neighbouring property or a property they were visiting. In four of these incidents the toddler accessed the dam by climbing through or under a perimeter barrier, typically a strand wire fence. In the remaining incident the dam was located in a public park, which was not fenced from the barbeque area where the toddler was having lunch with his family.

“This dam is on the rear neighbour’s property. In order for the child to reach this dam he had to pass through a post and wire fence. This fence is easily penetrable in many places along its length.” [police statement] – 0947/90
“A few weeks ago contractors were engaged to put in a fence consisting of steel droppers with ringlock fencing at the bottom and two strands of barbed wire at the top. It wasn’t long after it was completed that we found that it didn’t stop DECEASED from sliding under it or climbing through it.” [mother's statement] – 0303/94

... MOTHER further stated that earlier that week DECEASED had escaped from the rear yard by climbing under the gate.” [police summary] – 0479/94

“Six strand wire fencing surrounding own property and five strand wire fencing surrounding neighbouring property.” [map in file] – 0891/98

“PLACE OF DEATH is deemed as an open space. It is my understanding that due to this, the dams are not required to be surrounded in fencing.” [manager of facility statement] – 3433/99 (See Appendix 6)

In the remaining three incidents there was some type of barrier between the yard where the toddler was last seen playing and the dam. In all three cases there was a gap in the barrier, either between the fence and gate of the fence itself.

“She (mother) then indicated a possible route taken by DECEASED to access the dam. This path was between two sheds where there is no fence restricting access to the dam. MOTHER indicated that a trailer and other items had been moved in the past days and this had removed a barricade preventing access to the dam.” [police statement] – 2238/92

“There is a partial fence around the dam but the path DECEASED was riding on leads to the gate. The gate was open and there was no fence on the left hand side of the gate.” [coronial finding] – 0610/93 (See Appendix 6)

“The house block and this paddock is divided by a wire fence with a square design and there is a gate which when closed has a gap of a foot or so between the gate and the fence post.” [father's statement] – 0292/00 (See Appendix 6)

In 50% (6/12) of the incidents the carers expressed some knowledge of the dam as a danger to the young child as they had made rules about going near the dam. In four of these incidents there were also other older children in the family. Previous experience with these other children and water hazards such as dams may have given rise to the establishment of these rules. In two of the four incidents described below (0610/93
and 0292/00) there was some type of barrier between the yard where the toddler was last seen playing and the dam as outlined above.

“Generally the children are not allowed in the vicinity of the dam unless there is a parent or adult present.” [police summary] – 0610/93

“I am very conscious of the dam being there. The children were not allowed near it. ... The children had been warned not to go near the water.” [father's statement] – 3433/99

“DECEASED never went down to the dam without DEFACTO or I. The other boys were not permitted to go near the dam unless they were asked to check the yabby nets. We have showed them the dam and allowed them near it with us so that there was no curiosity. The four older boys know how to swim. We have never had a problem with the dam except with BROTHER who went down there and was grounded for a week. DECEASED has never shown an interest in the dam. He always played away from the dam. I don’t know why he went down there that day.” [mother's statement] – 0116/00

“MOTHER was strict with any visitors in regard to not going near the dam with DECEASED.” [family friend's statement] – 0292/00

Despite some carers making rules about going to the dam, some of the toddlers were known to be prone to wandering and fascinated by water.

“Over the last six to eight months, DECEASED has been wandering from the house area and getting further and further away from his place on each occasion.” [neighbour's statement] – 0303/91

“About a week to ten days ago, DECEASED went missing and some neighbours helped me search for him. He was missing for about an hour to an hour and a half. He was found on the other side of Blackfellows Road and near a dam further south.” [mother's statement] – 0303/91

“Since moving to the property (6 months) DECEASED would often go to the dam, he appeared fascinated with water, WIFE and I attempted to teach him water safety. DECEASED could dog paddle and keep himself afloat.” [father's statement] – 0330/94

“By nature children love to play in or by the water. They are attracted to it.” [father's statement] – 3433/99
“Since knowing DECEASED, I noticed that he has always loved water. I know of one other incident where DECEASED was found by MOTHER up to his waist in the dam, holding on grass on the dam bank. That was about one week before DECEASED drowned. ... DECEASED also had a habit of climbing things and wandering off.” [family friend's statement] – 0292/00

In summary, approximately 40% of toddler drowning in dams occurred on properties in rural Victoria not classified as farms. Nearly all the toddlers were playing outside the house with their carer’s knowledge and permission. In 50% of cases the toddler was outside the house while the carers were either inside the house, had come inside the house or were inside another structure, obscuring their view of the toddler.

The toddler was then able to wander from the yard unnoticed. In all eleven incidents the dam could be accessed because there was either no barrier between the yard and the dam or the barrier was easily penetrable by the toddler. Strand wire fencing was a common form of barrier, which the toddler was able to climb through or under.

Very few carers expressed any knowledge regarding the dam as a potential hazard to the toddler. Of those who did, only one family had made an attempt to erect a barricade between the yard and dam, which they were aware was ineffective in restraining their young child.

Drowning in Farm Dams

Eleven of the twenty-seven drowning deaths (40%) occurred in dams on properties identified as farms. In 90% of these deaths (10/11), the toddler was a resident of the property. In the remaining one incident the toddler wandered from a non-farm property she was visiting onto a farm property containing the dam where she drowned1. For the purposes of data analysis this incident was included with the non-farm drownings. Also note that two of the ten deaths where the toddler was a resident of the farm resulted from one incident. For the purposes of data analysis, these two deaths were counted as one incident.

In five of the nine incidents (55%) there were two carers present at the time of the drowning. The father of the deceased was outside the house engaged in work activities such as replacing pipes, shearing sheep and digging the yard. The mother of the deceased was inside the house. The location of the carers in relation to the toddler in these incidents were similar to those outlined in supervision scenario C of the non-farm property drownings.

In four of these five incidents the toddler was in the company of another older child relative when they were last seen by their carers.

"I was working at the pig sheds at my property. My son and daughter came over to the piggery from the house. My wife brought them over and on arrival DECEASED wanted to go for a swim in the dam with SISTER. They knew they could go if they were together and we knew they were there. They then went to the dam which is about 50 metres from the sheds." [father's statement] - 4556/90

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1 This case was counted as a farm dam drowning in Figure 6.
"I told the boys to take the papers into mum in the house. I saw them both walking off towards the house, BROTHER leading DECEASED. The boys were walking in the gutter beside the driveway heading towards the house. I went back to washing the ute. I completed the washing of the ute, drove the ute over to the house and I went inside. BROTHER was watching telly." [father's statement] - 1792/92

"At 11:30 am I was digging up an area at the rear of my house. At this time my son approached me and asked if he could take my daughter for a ride on the ride-on mower. ... I gave permission for them to take the mower for a ride as long as the cutting mechanism on the mower was disengaged. This was then done by DECEASED (1) and DECEASED (1) then sat in the drivers seat of the mower. DECEASED (2) sat on the area between DECEASED (1) and the two handles which control the steering on the mower. DECEASED (1) then drove off on the mower and headed towards the front gates of our property which are situated north of the house. I then continued digging." [father's statement] - 3494 & 3495/93

" ... COUSIN TODDLER (22 months) and DECEASED (17 months) were playing in the back yard. I was in the kitchen with SISTER and HUSBAND, had gone down to the shearing shed with his dad and brother. DECEASED came into the kitchen and looked a bit tired so I thought I would put him to bed soon after I did the floor. He went back outside to the back yard and about 10-15 minutes later COUSIN TODDLER walked into the kitchen." [mother's statement] - 0012/94

" ... I had a cup of tea and went out again at about 4:30pm. DECEASED was in the back yard at this time. I started replacing water pipes in the back yard. A bit later I could hear DECEASED playing in the cars, shutting doors etc." [father's statement] - 3687/96

In two of the five incidents the carers were alerted by other children that the toddler had drowned in the dam. In three of the five cases the carers realised the toddler was missing when they enquired with the other carer as to the whereabouts of the toddler. In two of these three incidents, the presence of the other child the toddler was last seen with prompted this enquiry.

"I completed the washing of the ute, drove the ute over to the house and I went inside. BROTHER was watching telly. I enquired where DECEASED was. My wife thought he was with me." [father's statement] - 1792/92
"10-15 minutes later COUSIN TODDLER walked into the kitchen. He was all wet and I said to SISTER that he must have been playing in the sprinkler again. I asked SISTER if she had seen DECEASED and she said she didn't so I went outside to look for him." [mother's statement] - 0012/94

"Shortly before 5pm (DECEASED'S favourite T.V. programme stated at 5pm), MOTHER DECEASED come outside asking where he was. I said in the garden somewhere." [father's statement] - 3687/96

In the remaining four incidents, the carers were inside the house engaged in home duties while the toddler was playing outside. These incidents were similar to those outlined in supervision scenario A of the non-farm property drownings. This scenario was considered to be the lowest level of supervision among the incidents.

In three of the four cases the carer was the mother of the deceased, one in which the deceased's aunty was also present. In one of these cases the toddler was outside with other older children. The carers in these cases became aware that the toddler was missing when they went outside to check on them between 5 and 25 minutes later.

"The deceased was last seen at the family home at 5:15pm by his father and brother. The deceased left the precincts of the house at this time. ... He was then found a short time later at 5:40pm by his brother face down in the dam." [coronial finding] - 4034/89

"I was home with the baby (deceased). My husband had left at 11am. About 11:40am I put socks and boots on DECEASED. I took her outside the front door to play and I shut the door and came back inside to clean up some toys, which I thought would only take a couple of minutes. In fact this may have taken me between 5 and 10 minutes. I then went outside and noticed that she wasn't there. But I thought she was around the back or somewhere else." [mother's statement] - 1836/92

"Deceased and three other children all went out into the backyard where they had a look at the chooks, then were playing in the BBQ and fernery area. I have kept watch of the kids during this time by going out and checking them or by talking to them through the window. This would have gone on for about half an hour. I have then gone out and removed the washing from the line in the backyard and noticed that the four kids were still playing and the gate between the BBQ area and the grass area leading to the dam was still in place. The next thing I recall was hearing the kids arguing over their game. Sometime after this, I'm not sure how long it was but I have heard a sound, I don't really know what it was but it has alarmed me. I have immediately looked out and done a head count and as I have not seen DECEASED." [mother's statement] - 3449/97
"After a while she got bored with that and when she saw her chooks outside the door she wanted to go out there again. After I finished the letter on the computer I sat in the lounge room and phoned my brother to see where he was. Just as I hung up I saw Max, our dog, and the chooks near the back door. It immediately struck me that DECEASED wasn’t with the animals. I realised that I couldn’t hear her outside either. I told SISTER that I was going to find her.” [mother’s statement] - 199/01

In all nine incidents the toddler was able to easily gain access to the dam. In two of the incidents the toddler was given permission by their father to either be in the dam swimming or in the vicinity of the dam on a ride on mower.

"DECEASED wanted to go for a swim in the dam with SISTER. They knew they could go if they were together and we knew they were there. They then went to the dam which is about 50 metres from the sheds." [father’s statement] - 4556/90

"... my son (5 years) approached me and asked if he could take my daughter (3 years) for a ride on the ride-on mower. ... I gave permission for them to take the mower for a ride as long as the cutting mechanism on the mower was disengaged." [father’s statement] - 3494 & 3495/93

In seven of the nine incidents the carers were not aware that the toddler had gained access to the dam. In all instances the toddler was able to wander into the dam area as the barrier was either insufficient for restraining the child or they were located on the outside of the barrier.

"To get to the dam DECEASED would have had to negotiate two fences." [coronial finding] - 4034/89

"The house is fenced by a four feet, six inch cyclone fence. The dam is about 15 metres from where FATHER was washing his vehicle and not in full sight." [police statement] - 1792/92

"I noticed that the house was enclosed by tin fences, a wire mesh fence and a treated pine fence. There were three gates from the house area, two into paths leading north to a dairy and one south towards the driveway to the Ocean Rd. The gate leading to the drive had a plank of wood suspended from the bottom rung to ground level. ... South from the front door of the house is a steel gate. This gate had a wood plank slung from the bottom to ground level. ... Opposite this gate is the fence line of the paddock south from the farmhouse. The fence is a barbed wire three stranded one. In front of this fence is a line of trees and scrub. I noticed several
There were only two incidents where the carers expressed some awareness of the dam as a potential danger to the toddler. In both instances the carers erected barriers to secure the yard from the dam. Despite these attempts the toddler was able to access the dam via gaps in their barriers as outlined above.

"Because she was prone to wandering about the property my husband made a point of reinforcing all the gates and fences around the house. We always made sure that all the gates were closed." [mother's statement] - 1836/92

"I headed towards the dairy dam as fast as I could as that was the nearest place of danger." [mother's statement] - 1836/92

"MOTHER and I decided we would erect a fence around the back of the house so that DECEASED could play outside and be secure." [father's statement] - 0012/94

"I have always taught the boys that they were not to go to the dam unless BROTHER (10 years) or I was with them and told them about the dangers of the water." [father's statement] - 0012/94
"I believe the FAMILY were aware of the dangers for infants on their property and had taken steps to make their home safe.”
[police summary] - 0012/94

In summary, 40% of the toddler's drowned in farm dams on properties in rural Victoria. In every incident the toddler was known to be playing outside by their carers. In over 50% of these incidents the toddler's father was also outside working and, when last seen by him, the toddler was almost always in the company of another child family member.

Regardless of the presence of these other children, the toddler was able to wander away and gain access to the dam. Excluding the two incidents where the toddlers had permission to be in the vicinity of the dam, tin and wire mesh fences purpose built by carers in an attempt to secure the toddler in the yard were easily overcome because of gaps in the fence.

**Drowning in Hobby-Farm Dams**

Five of the twenty-seven drowning deaths (18%) occurred in dams on properties identified as hobby farms. In four of these five cases the dam was situated on a rural property where the toddler lived. In the remaining case, the dam was situated on a property in suburban Melbourne where the toddler was visiting. In 80% of these cases (4/5) the drowning incident occurred on the weekend.

In all but one incident the carers were outside with the toddler who was playing in the rear yard of the property. The carers were engaged in home maintenance activities such as mowing the lawn or watering the garden. The carers have then returned inside or moved to a separate area of the yard, leaving the toddler unsupervised for between five and fifteen minutes.

“... I went out to our rear garden to do some work. I took my son with me. Whilst I worked in the garden, DECEASED was playing and he was within my sight at all times. I went inside to get a drink. I left DECEASED outside because he was playing chasing the chooks. When I went inside, I left DECEASED at the back door.” [father's statement] - 0380/92

“... I was out the back working on a truck and MOTHER was mowing the front lawn with a push mower and both boys were with her. ... As I was walking I looked for the kids and could not see them, but I heard the lawn mower still going at the side of the house and presumed that the kids were with her. ... As I came back to the house MOTHER called me from the back door and told me that there was a phone call. ... The call took about five minutes. I walked into the kitchen and took a quick drink of water and discussed the phone call with MOTHER, about this time BROTHER (5 years) walked in the house from the backyard for a drink. MOTHER told BROTHER to go and get DECEASED for a drink. I saw BROTHER put his head out of the door and told me that he could not see him.” [father's statement] - 3227/00
“DECEASED then went into the side yard where there is a shed and DECEASED started to play behind the shed with an old box there. I went to put the sprinkler on a patch of lawn between the house and the shed. I did this and then said to DECEASED “Come with mum to water the plants out the front”. She replied “No”. I then decided to leave her where she was and I went out into the front garden and commenced to water the plants, I was gone for about 15 minutes, and I then turned the hose off and called out to DECEASED “Where are you”. There was no answer.”  [mother's statement] - 4012/00

◆

“When I finished feeding DECEASED, I left him in the yard and went into the study with DAUGHTER, where I remained for five minutes helping put pictures on the walls. MOTHER asked me where was DECEASED, and I thought he was in the rear yard still, but MOTHER said she had seen him out the front of the house a short time earlier.”  [father's statement] - 2649/01

The toddler was then left alone unsupervised in the yard. There were either no other people present on the property or other family members (including brothers and sisters) were inside the house or garage. The toddler has then wandered to the area where the dam was located. In three of the five incidents, the dam was fenced with strand wire, netting and a gate, however in one of these cases the gate was left open and in the other two cases the toddler managed to climb over, under or through the fence or gate. In the remaining two of the five cases the dam was not fenced from the rest of the yard.

“In between the house and dam there is a sheep fence with a gate which was shut.”  [father's statement] - 0380/92 (See Appendix 6)

"I don’t know how DECEASED got passed the fence as I believed that he could not have climbed through it."  [father's statement] - 0380/92 (See Appendix 6)

◆

“The dam is located in a separate paddock from the main house with standard strand fencing. The fences at the property are typical of a farming property and it would be very easy for the deceased to climb through or under a fence.”  [police statement] - 3227/00

◆

“The dam was not fenced and there was no barrier or fence between where DECEASED was playing and the dam.”  [coronial finding] - 4012/00

“On the north and south sides of the shed is fencing that runs in an east west direction about 10m in width. This fencing almost creates a corridor directly to the dam.”  [police statement] - 4012/00

◆
“I noted that the rear house yard fence was of timber railing construction covered with wire netting. A steel gate leading into the front yard from the rear alongside the garage was constructed with vertical steel bars and a common gate latch attached. The gate latch could be manipulated from inside the gate by passing hand between the vertical bars. I believe the gate latch was at a height that could be reached by an infant. A large gravel surfaced area is at the front of the house, the front yard being enclosed by a similar fence. A steel cattle grate divides the front house yard from the driveway and paddock area. Large steel gates are attached to brick walls on either end of the cattle grate. MOTHER states these gates were open at the time of the incident because she was about to go to work.” [police statement] - 2649/01

“... in the short time no one was watching DECEASED he must have got off the mower and picked up the basketball. Walked outside with it and around to the back of the garage. For whatever reason the basketball has gone into the dam and DECEASED has tried to retrieve it.” [uncle's statement] - 2736/01

Between five and fifteen minutes later, the carers became alerted that the toddler was missing by either looking for the toddler where they were last seen (2/5) or enquiring with the other carer (3/5).

“MOTHER then enquired of her husband the whereabouts of the deceased. She called out to him but received not reply.” [finding] - 0380/92

“WIFE told BROTHER to go get DECEASED for a drink. I saw BROTHER put his head out of the door and he told me that he could not see him.” [father's statement] - 3227/00

“I was gone for about fifteen minutes and I then turned the hose off and called out to DECEASED "Where are you?" There was no answer. I then looked behind the shed and could not see her.” [mother's statement] - 4012/00

“MOTHER asked me where was DECEASED, and I thought he was in the rear yard still, but MOTHER said she had seen him out the front of the house a short time earlier.” [father's statement] - 2649/01

“Then I looked for DECEASED. I looked through the windows of the car in the garage. I couldn't see him on the mower, so I stood up and had another look around the garage. I then asked, "Does
anyone know where DECEASED is?" No one did." [father's statement] - 2736/01

Once the carers were alerted that the toddler was missing, one of the first places they searched was the dam and other waterways.

“I don’t know how DECEASED got passed the fence as I believed that he could not have climbed through it.” [father's statement] - 0380/92

“I told her [MOTHER] to look in the front yard, neighbours front yard and the main channel that runs across Cassidy Lane about 60 yards from the house. As I continued to look through other outer shedding, MOTHER came back and called out that DECEASED was not there. I immediately ran towards the dam that is about 120 metres north west from the house.” [father's statement] - 3227/00

“I then immediately ran to the dam which is situated about 30 metres from the rear of the shed.” [mother's statement] - 4012/00

“That's when I rushed down the front driveway to the two dams, across the cattle grid, which only a week or so earlier DECEASED had been able to cross by crawling on all fours. Normally he would not have been allowed outside the yard but I know he was encouraged by the kids to cross the grid and play near the causeway with the other children, but only with our supervision.” [father's statement] - 2649/01

“There were two places of danger for DECEASED that I immediately thought of. There was a dam about 20 metres from the back of the garage near one side of the five acre property. On the other side of the property was a paddock with 5 or so horses.” [uncle's statement] - 2736/01

“My first thought was the dam, which is behind the garage, but you couldn't see it for the solid brick wall.” [father's statement] - 2736/01

In summary, approximately 20% of the drowning incidents occurred on properties classified as hobby farms. In almost all instances, the toddler was outside the house playing while at least one of their carers was engaged in home maintenance activities. The carer has then moved away from the area where the toddler was playing, leaving them alone. In the cases where some form of barricade was present, it was not suitable for restraining a young child.
Discussion

The results of the current investigation revealed that while there were some differences among the drowning incidents between dams on farm, hobby farm and non-farm properties, there were five major factors that were present in all the incidents. These factors were:

1. the toddler had reached a stage in their development where their gross motor skills enabled them to climb and wander some distance and their social skills had developed to a point where they were content to play on their own. In some cases the onset of this stage in their development had been recent;
2. low level of carer supervision immediately prior to the incident;
3. toddler located outside the house;
4. dam located in the vicinity of the house; and
5. insufficient barriers between the yard and the dam.

In terms of supervision, carers on farms and hobby farms were more likely to be located outside the house with the toddler while they worked or conducted home maintenance activities. This accounted for approximately 60% and 80% of incidents respectively. This situation was only the case in just over 30% of the incidents on non-farm properties. In the non-farm property incidents, the carers were mostly inside the house engaged in home duties. The toddlers on non-farm and farm properties were also more likely to be in the company of another older child. This was not the case in any of the incidents on hobby farms.

Despite these differences, it appeared that the level of carer’s supervision was influenced by the kinds of activities they were undertaking at the time of the incident, which was a function of their lifestyle. As farming and hobby farm properties require work to be done on the land, and given that most of the incidents occurred during the warmer months of the year, it appears reasonable that the carers of these toddlers were more likely to be outside.

Alternatively, half of the incidents on non-farm properties occurred when the mother of the toddler was home alone engaged in home duties inside the house while the father was away from the house, usually at work. In all but one of the remaining incidents, the drowning occurred after working hours or on a weekend when both carers were home.

Where other older children were present at the time of the incident, many carers assumed that they would ensure the toddler's safety. This assumption may have impacted on the level of the carer's supervision by allowing them to become complacent about their own supervising role. In almost all the cases it was evident that the other children felt no responsibility for ensuring that the toddler was safe. This was most likely because they had little or no awareness of the dam as a danger to the toddler. This is not a surprising finding given the young age of some of the other children and that very few of the carers expressed such awareness themselves. It was only once the carers were alerted that the toddler was missing that they seemed to recognize the danger of the dam. This finding supports a known risk factor relating to carers identified in the RLSSA Keep Watch Information Manual, which states:
"False belief that the presence of several children reduces the threat of a child drowning. Other children may not appreciate that a drowning child is in danger."

The absence of adequate safety barriers also featured as a major contributing factor to these drownings. Regardless of the type of property where the toddler drowned, all forms of barricades were negotiated by the toddler. In 74% of the incidents (20/27) there was some form of barricade between the yard and the dam. In 70% of these incidents the barricade was inadequate for preventing access to the toddler. In many instances there were large gaps in the fencing and between the fence and the gate. In other cases the gate was left open or was high enough from the ground for the toddler to crawl underneath.

Of the fences that were in good condition and complete, they were constructed from strand wire. While this can be effective in securing animals, the toddlers were able to climb between the strands and easily access the dam area.

In only three cases had the carers attempted to erect a barricade to secure the toddler in the yard. In one instance the carers were aware that the toddler could penetrate it, and in the other two cases the carers were confident the yard was secure. Again this finding supports a known risk factor relating to carers identified in the RLSSA Keep Watch Information Manual, which states:

"False belief that an inadequate fence provides adequate protection."

A number of other known risk factors relating to carers and toddlers as outlined in the RLSSA Keep Watch Information Manual were also evident in the findings of the current study.

In relation to carers, there was evidence that they underestimated the toddler’s capacity to gain access to areas where supervision was necessary. In many cases the toddler not only traveled to a dam some distance away, but also through and under strand wire fences. Carers commented in their statements that they could not believe that their child could have traveled so far and negotiated such barriers. The Monash University Accident Research Centre (MUARC) in their publication Hazard, Edition 27 June 1996, reported that Kidsafe run programs on child development and associated risk, which are aimed at addressing this issue (Routley et al, 1996). A similar program for carers of toddlers in rural areas could be developed to educate them about this. Similarly Maxwell (2001) recommended that carers gain knowledge ahead of their child's development. This would allow them to be aware of the dangers and hazards toddlers are exposed to as they develop and enable them to take preventative action.

In relation to child specific risk factors outlined in the RLSSA Keep Watch Information Manual, the current study supported the belief that young children are attracted to water. Some of the carers commented that their toddler was fascinated with and attracted to water. This was also evident from the toddlers who wandered to dams a great distance away, having never even seen it before. In one particular case a 20-month-old girl traveled 266 metres to a dam on a neighbouring property she had never seen. This attraction is understandable given that during early infancy children's primary experience with water is during bath time. It is likely that the toddler associates water with having fun and playing, which may explain why they actively seek it out.
The results of the current investigation also supported a considerable amount of recent Australian research findings in the area of drowning deaths of toddlers in dams. In particular Franklin et al’s (2000) findings were supported in regard to fencing and supervision. Whilst Franklin et al found that many children followed animals to the dam, this was not found in the current study.

The current investigation also supported Baylis et al’s contention that carers of young children have a low risk appreciation in relation to static inland waterways such as dams, which impacts on their level of supervision. The results of the current study illustrated that the level of supervision undertaken by carers was not sufficient to prevent their toddler from easily wandering out of sight unnoticed. Not only was this evident in incidents where the carers were inside the house, but also when the carers were outside the house in the vicinity of the toddler.

The issues discussed above have been acknowledged as reasons for the high drowning rate in the toddler age group. Although the overall rate of toddler drowning in Victoria and Australia has fallen over the years, incidents of toddler drowning in dams have been high in recent years. Although these numbers are small and there have been no deaths of this kind as of August 2002, it is important that safety messages addressing the issue of toddler drowning in dams reach the rural and regional section of the Victorian community.

In recent years, water-safety messages in relation to toddlers have centered on adult supervision. The Royal Life Saving Society Australia (RLSSA), in their "Keep Watch" campaign, define adequate supervision as (See Appendix 1):

"Supervision means your child is being continually watched by you or an appropriate adult. Supervision should be constant, not the occasional glance whilst you read a book or relax. Regardless of what you are doing, always keep watch when children are around the water. Take your child with you whenever you leave the swimming pool or bathtub. Never under any circumstances leave them alone."

Similarly, Sport and Recreation Victoria (SRV) in their Play it Safe by the Water public awareness campaign, developed the slogan "never take your eyes off" as one of their action orientated water-safety messages.

While these water-safety campaigns have been successful in reducing incidents of toddler drowning, particularly in private swimming pools, it appears that the carers in the current study have not embraced these messages. Attempts have been made to raise awareness of the dangers of dams to toddlers, however a number of issues may have impacted on why these messages have not been reflected in safety practices.

The RLSSA and SRV messages recommending vigilant parental supervision around water are reasonable in the context of the toddler and the backyard swimming pool. However, it is questionable whether this approach is practical in the context of the toddler on a property containing a dam. The results illustrated that nearly all of the carers were working or engaged in maintenance activities inside and outside the house while the toddler was presumed to be playing in the rear yard. It would have been impossible for the carers to complete their home duties around these large, high maintenance properties, if they were keeping constant visual eye contact with their toddler.
It was also found that constant visual eye contact was not maintained with the toddler in any of the incidents. In many cases the average time period between when the toddler was last seen by their carers and the time the carers realised they were missing was five to fifteen minutes. This suggests a lack of realisation by the carers of the time necessary for a toddler to come to harm.

Another issue that may have hampered the uptake of RLSSA and SRV’s parental supervision message, was the presentation of the messages. Much of the imagery and references that accompanied the parental supervision message, both on television and in printed publications, were associated with backyard swimming pools (See Appendix 1). While such a focus is reasonable given that backyard pools have accounted for the highest rate of toddler drowning, the campaigns aimed to target all parents of toddlers. The concentration on backyard pools may have impacted on the messages' perceived relevance to parents of toddlers who reside on rural properties with dams.

Although the main focus of RLSSA and SRV’s parental supervision campaigns have been on backyard swimming pools, there was an attempt by these organisations to raise awareness of the dangers of dams to toddlers. In their “Keep Watch” pamphlet, the RLSSA included the following information in reference to rural properties (See Appendix 1):

"Rural Properties

30% of toddler drownings occur in lakes, rivers and dams. You can restrict your child's access to these dangers by creating a "Child Safe Area" in and around your home. Remember dams are dangerous."

Similarly, "be dam careful” was a slogan developed in line with the Play it Safe by the Water Campaign's action orientated messages. Victorian farming industry representatives were consulted regarding their views of this slogan, and raised concerns that the message may portray the agriculture industry in a negative light, an industry already associated with a high fatality rate. They also felt that farmers are already extremely aware of child safety issues on farms and are proactive regarding safety practices. Not only did they feel farmers are vigilant in relation to child supervision, but also take other measures such as fencing off play areas as a means of creating a safe play environment.

As a result “be dam careful” was not included as part of Play it Safe by the Water’s public awareness campaign, with the farming industry preferring to promote their injury prevention messages in a more positive manner. An example of two initiatives by the Victorian Farmsafe Alliance, the CD Rom “Attack of the Killer Farm” and the Home Safety Parties Project, targets the population most at risk of drowning in dams. However, the CD Rom was aimed at school-aged children, not toddlers or their carers, and the Home Safety Parties Project has only been trailed and was primarily aimed at farming families.

Future public awareness campaigns should broaden their safety messages to take into account the differences in terms of hazards between rural and urban environments, given that there is a relatively even distribution between drownings in Victorian rural and urban bodies of water. Despite this, it must be acknowledged that there has been an enormous reduction in the rate of toddler drowning in Victoria since the RLSSA and SRV have developed their water-safety initiatives. These organisations and their
campaigns are also limited by the level of information available to them, which allows them to produce information largely of a statistical nature. While these statistics have informed some successful strategies, more in depth analysis may reveal other factors contributing to these drownings.

There is now a national database, the National Coroner’s Information System (NCIS) that stores information on all deaths reported to the Coroner, which includes all drowning deaths in Australia. This internet-based database makes accessible the police report, post-mortem reports (including toxicology) and the coroner's finding. This information will allow drowning deaths that have occurred since July 2000 to be monitored in a more timely and accessible way.
Recommendations

This study aimed to examine the situations and circumstances in which children aged up to five years have drowned in dams between 1989 and 2001 in Victoria. Five major factors were identified amongst the incidents, which provided some insight as to why these deaths occurred. Age was a salient factor with 74% of the toddlers aged between one and three years. The two other most common components of these deaths were an absence of carer supervision immediately prior to the incident and the absence of adequate safety barriers.

There has already been an enormous focus on the issue of carer supervision of toddlers around water hazards by water-safety organizations in their public awareness campaigns. This has been extremely successful in reducing the number of toddler drownings in backyard swimming pools. The results of the current study illustrated that most often carers did not demonstrate any awareness of the dam as a danger to the toddler. It is therefore recommended that future public awareness campaigns by water-safety organizations be broadened to include safety messages that take into account the differences between rural and urban water hazards. In particular, after considering the results of the current investigation the State Coroner recommends that the Victorian farming industry reconsider the use of the "be dam careful" slogan.

It is also recommended that any public awareness campaign should address carers' consciousness of how quickly toddlers can get into danger, especially those most at risk in the one to three years age bracket. The findings demonstrated that when these young toddler's "get their legs" carers are not aware of the potential for them to travel a distance relatively quickly. In one case a two year old traveled 600 metres from their rear yard to the dam. Emphasis should be given to raising awareness of the toddler's sudden development in motor skills, not only walking but also the ability to climb over, under and through objects. These physical developments in conjunction with the toddler's social development of exploring and playing on their own allow them to come into contact with many hazards that can cause injury and even endanger their lives. Accordingly, a slogan or message warning carers about this potential might be an effective strategy in future public awareness campaigns.

One other strategy that could be utilized to assess whether carers do in fact underestimate how quickly and far toddlers can travel would be to conduct a survey or focus group with rural families where there is a child under the age of five. Carers would be asked to mark on a map (see Appendix 7) how far they think a child aged one year, two years and three years could travel in five to ten minutes. A transparency with all the dams mapped at the distance the toddlers in the current study traveled would then be overlaid to illustrate the carer's accuracy (See Appendix 8). This could have two effects. Either it supports evidence in the current study that carers underestimate how far their toddler's can travel and subsequently they become aware of the risks. Or it is found that carers do possess an awareness of how far toddlers can travel and there is some other explanation for why the toddlers were able to travel so far unnoticed by the carers.

In relation to the Home Safety Parties Project, it is recommended that a feasibility study into conducting the project in towns such as Ballarat, Bendigo, Echuca, Warrigal, Geelong and Horsham be undertaken. The Victorian Farmers Federation (VFF) and the Royal Children's Hospital Safety Centre in conjunction with Kidsafe
and the Country Women's Association (CWA) would be the organizations most appropriate to consider this. With the reports and evaluations from the Coastal and Wheatbelt Public Health Unit in Western Australia, the VFF and the Royal Children's Hospital Safety Centre, these organization should be able to determine whether this forum is likely to be a successful method of educating carers of toddlers on general issues of safety around the home and disseminating appropriate information on toddler drowning prevention measures in the rural environment. Farmsafe, the RLSSA and SRV may be able to assist with this project by developing an information kit on drowning prevention and hazard identification to include as part of the Home Safety Parties. This project should not focus only on farming families, but all families with children under five years of age who live in a rural environment.

In relation to safety barriers, it is recommended that the strategy of creating "child safe areas" on properties containing dams be widely publicly promoted. This idea has been around for almost a decade and recommended by many people in the field of agriculture, injury prevention, water-safety. The Australian Agricultural Health Unit's, 'Child Safety on Farms - Fencing the Farm House and Yard' information sheet could be a starting point for disseminating guidelines to those living in rural Victoria. Again, Home Safety Parties could be a place to further distribute this information.

This recommendation is a more practical and cost effective alternative to fencing the dam itself. Not only would requiring property owners to fence dams be a financial strain, enforcement and monitoring compliance would be almost impossible given the remoteness of some rural locations. Child safe havens would not only protect children from the dangers of dams but also the many other dangers that exist on rural properties.
References


**Web Sites**


Appendix 1 – RLSSA "Keep Watch" Brochure

Parent Water Safety Cassette
The Royal Life Saving Society Australia and Pfizer are working together to save young lives.

The Keep Watch Parent Water Safety Cassette has been produced to educate parents and centres of young children.

Did You Know?
In Australia, the number one cause of preventable death in children under the age of five is drowning. In fact, an average one child dies each week as a result of preventable drowning.

For each child that drowns there are at least three near misses, each requiring hospitalisation.

Whenever children are in or around the water, remember to always keep watch. Keep watch and keep them alive.

Supervise Your Child
Vigilantly, many drowning happen in the five seconds that parents are distracted. Supervision means your child is being continually watched by you or an appropriate adult.

Supervision should be constant, not the occasional glance whilst you read a book or relax. Regardless of what you are doing,

Fence Your Pool
Statistics show half of the children under the age of five that drown, do so in private swimming pools or spas.

Does your pool have isolation fencing with a secure magnetic self-locking gate? Pool fencing is low in most states.

If you have a pool, you should check to see that your fence meets the Australian Standard AS1526.1. Ensure the gate self closes and latches from any position. Never leave any circumstances have the pool gate propped open.

Check to see there is nothing leaning against the fence that would help a child climb over and gain access.

Familiarise Your Child With Water
Water familiarisation classes build confidence and introduce children to boost water safety. Your child can start classes as young as six months.

The Aquastar video provides an ideal reference source and should be used as a starting point for water familiarisation activities in your home.

Always keep watch when children are in or around the water:

1. Take your child with you whenever you leave the swimming pool or bath. Never allow any circumstances leave them alone!

2. Create a checklist:
   1. Is your child being supervised?
   2. Have you emptied the bath tub?
   3. Is the lid on the willy bucket?
   4. Can your child gain access to the pool or spa?
   5. Have you checked for other water dangers such as on glass doors, garden ponds, docks or dams?

3. Fence the pool to meet the Australian Standard AS1526.1. Ensure the gate self closes and latches from any position. Never leave any circumstances have the pool gate propped open.

4. Check to see there is nothing leaning against the fence that would help a child climb over and gain access.

Water familiarisation is no substitute for adult supervision:
Remember, always keep watch when children are in or around water.

Learn Resuscitation
A child’s life may be saved if the parents or some have the proper knowledge and skills to rescue and resuscitate a child in difficulty.

Royal Life Saving conducts resuscitation courses and also sells resuscitation posters. These posters should be openly displayed in a prominent position by your pool.

Remember the details, resuscitation posters and Aquastar video alone please contact the Royal Life Saving Society branch in your area.

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Appendix 2 – SRV's "Play it Safe by the Water" Key Strategies


Welcome to the Play it Safe by the Water Website

This site is part of the Victorian Government's new $2.2M Safer and Improved Aquatic Recreation Program 2001-2002, funded through the Community Support Fund. The program builds on the highly successful Victorian Water Safety Initiative 1998-2001 - Play it Safe by the Water. The program has the strong support of the Victorian Aquatic Industry and is driven by six key strategies.

1. Public Awareness - using the Play it Safe by the Water message and key messages for each water environment. This strategy also includes a Water Safety Week for the community to participate in a range of activities.

2. Education and Training - developing water safety resources and providing training for teachers in schools and pools.

3. Toddler Initiative - communicating toddler water safety messages, developing databases and researching information relating to backyard swimming pools and spas.

4. Improved Water Safety Signage - developing relevant and consistent signage at beaches and inland waterways throughout Victoria.

5. Extension of the Lifesaving Season - trialing and extending lifesaving services so that Victorians can continue to enjoy our beaches within the safety of the red and yellow flags.

6. Family Friendly Beaches - investigating and developing the concept of family friendly beaches.
## Appendix 3 – Home Safety Checklist

### HOME ENVIRONMENT

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have a safety switch to prevent electrocution?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can your hot water be turned down to 50 degrees Celsius to prevent scalds?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have a smoke detector located between the kitchen and the bedrooms?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are safety plugs fitted in spare power points?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are appliances, plugs and cords in good condition?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are cords of appliances dangling or lying across traffic areas?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are heaters and fans guarded?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there barriers near stairs to stop falls?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there railings children could climb?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are guns, bolts and ammunition stored separately in locked areas?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GARDEN SHED/OUTDOORS

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are pesticides, paints and other poisons stored in tightly covered, labelled, original containers out of reach of children?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can the shed or garage be locked?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there drowning hazards?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the play area separate from the driveway?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the play equipment stable and in good condition?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there a soft fall surface under play equipment to cushion falls?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are pathways clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do branches hang at child’s eye level?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### CHILD’S BEDROOM

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the cot too near a window?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Are curtain cords too near the cot?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Are the cot rails 50-85cm apart?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Is everything I need close to the changing table?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Do bunks have strong rails?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Are the toys kept where children can reach them without climbing?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Does the furniture have sharp corner?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Are the toys suitable for the child’s age?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

### KITCHEN

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do your appliances have short cords that do not dangle over the bench?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Do you use the back hot plates and turn pot handles around to prevent pots being pulled from the hot plates?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Are matches, knives and other sharp objects stored in a place where a child cannot reach them?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Are cleaning products, chemicals and medication stored in a place where a child cannot reach them?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Can a child reach the kettle?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Is the high chair stable?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Do you have a fire blanket or a woollen one handy?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

### BATHROOM

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the bath have non-slip mats or hand rails?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Are medicines and sharp objects, (eg razors), kept in a locked cupboard out of reach of children?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Is the bath water temperature always “tested” before putting the child in?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Are the shampoos, soaps and cosmetics out of reach of children?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Can you fit child-resistant taps?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Are medicines in a lockable cupboard?</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>LAUNDRY</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Are cleaners, bleaches and detergents stored out of reach, in a child</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>resistant cupboard?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the nappy bucket used with a lid on and kept out of reach of</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>children?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are troughs and washing machines empty when not in use?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>Do appliances with lids or doors switch off when machine is opened?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>Is the floor kept dry and non slippery?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIVING AREAS</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are sharp edges on tables and furniture covered?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>Are blind and curtain cords out of reach?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>Are glass doors protected by safety film, colourful or stickers made</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>by safety glass?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is alcohol stored in a child resistant cupboard?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>Are toys stored in an area to allow free passage after use?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>Are rugs and mats secure to prevent a fall?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>Are chairs and tables not easily overturned?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>Are cigarettes, ashtrays, matches and lighters out of reach of</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>children?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are table mats used instead of tablecloths?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
<tr>
<td>Will hot drinks be placed down low?</td>
<td>[   ]</td>
<td>[   ]</td>
</tr>
</tbody>
</table>

Supplied by KIDSAFE WA
## Appendix 4 – Summary of Cases by Location

<table>
<thead>
<tr>
<th>Case Number</th>
<th>Child Mobility</th>
<th>Parent / Carer Supervision &amp; Location of Both</th>
<th>Presence of Dam Within 1km radius</th>
<th>Presence of Barriers</th>
<th>Presence of Other People / Dogs</th>
<th>Alert to Missing Toddler</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dams on Non-Farm Properties</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1525/89</td>
<td>2 years, 2 months (26 months). Walking</td>
<td>1 adult (mother) bringing washing inside and putting washing on. Toddler outside the house playing.</td>
<td>600m from where child last seen.</td>
<td>Strand wire fencing on the perimeter of the property. Unclear whether there was fencing between the house and the dam.</td>
<td>No other person outside. Mother inside with 2.5 week old baby.</td>
<td>- couldn’t hear toddler. - had not seen toddler for approximately 15mins.</td>
</tr>
<tr>
<td>4034/89</td>
<td>5 years. Walking.</td>
<td>Father and brother at premises with toddler. Exact location not specified.</td>
<td>50 metres north of the house.</td>
<td>Toddler would have had to negotiate two fences.</td>
<td>Father and brother present at the time of the incident.</td>
<td>Not specified.</td>
</tr>
<tr>
<td>0947/90</td>
<td>2 years, 7 months (31 months). Walking.</td>
<td>1 adult (mother) inside garage working. Toddler outside house playing.</td>
<td>100m on neighbouring property.</td>
<td>Post and wire fence easily penetrable in many places along it's length.</td>
<td>Mother in garage. Four other children around house.</td>
<td>Asked 9 year old sister where deceased was.</td>
</tr>
<tr>
<td>3121/90</td>
<td>2 years, 4 months (28 months)</td>
<td>2 adults (mother) inside house, (father) working inside the shed. Toddler outside playing</td>
<td>150m from house.</td>
<td>No fencing between house and dam.</td>
<td>Mother inside, father inside garage. Two dogs with deceased.</td>
<td>- Dogs barking. - Could no longer hear toddler playing.</td>
</tr>
<tr>
<td>0303/91</td>
<td>2 years, 2 months (26 months). Walking.</td>
<td>1 adult (mother) inside house doing house work. Toddler outside house playing.</td>
<td>&gt;300m from where deceased was last seen on neighbouring property.</td>
<td>Ringlock and strand wire fencing erected to specifically restrain deceased. Parents aware that deceased could negotiate it.</td>
<td>Dog with deceased, found wet.</td>
<td>Went outside to check deceased and could not locate him.</td>
</tr>
<tr>
<td>2238/92</td>
<td>1 year, 2 months (14 months). Walking for 4-6 weeks prior to incident.</td>
<td>1 adult (mother) inside house (kitchen). Toddler outside with 2 other children.</td>
<td>Own property unclear distance.</td>
<td>Partially fenced with strand wire fencing and ringlock gate. Trailer forming barricade in unfenced area recently moved.</td>
<td>Two other children (5 and 3 years) playing outside.</td>
<td>Mother contacted via telephone by passing neighbour that deceased in the dam.</td>
</tr>
<tr>
<td>Case Number</td>
<td>Child Mobility</td>
<td>Parent / Carer Supervision &amp; Location of Both</td>
<td>Presence of Dam Within 1km radius</td>
<td>Presence of Barriers</td>
<td>Presence of Other People / Dogs</td>
<td>Alert to Missing Toddler</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------</td>
<td>---------------------</td>
<td>---------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>0610/93</td>
<td>1 year, 8 months (20 months). Walking and riding tricycle only recently.</td>
<td>3 adults present. Mother inside house, father and neighbour in shed. Two children (7 years) playing outside. Deceased playing outside.</td>
<td>40m from house at own premises.</td>
<td>Partial fence around the dam but the path leads to the gate and the gate was open.</td>
<td>Two other children (both 7 years) playing outside.</td>
<td>Other children found deceased in dam.</td>
</tr>
<tr>
<td>0330/94</td>
<td>5 years. Walking.</td>
<td>Mother inside house (kitchen). Deceased inside house (bedroom) and exited out of his window.</td>
<td>80m from house at own premises.</td>
<td>Entire property fenced. No barrier between house and dam.</td>
<td>Dog standing next to the dam.</td>
<td>Checked on deceased and could not locate him inside the house. Saw dog standing near house.</td>
</tr>
<tr>
<td>0479/94</td>
<td>1 year, 10 months (22 months). Walking and prone to wandering.</td>
<td>Mother inside collecting washing to hang out. Toddler outside playing.</td>
<td>Unspecified distance on neighbouring property.</td>
<td>Not specified, but had escaped previously by climbing under the gate.</td>
<td>No other person outside.</td>
<td>Come outside to hang washing out and toddler was missing.</td>
</tr>
<tr>
<td>3433/99</td>
<td>1 year, 2 months. (14 months). Walking and is very mobile.</td>
<td>6 adults and &gt;6 other children under 10 years of age outside. Toddler outside.</td>
<td>15m from when gathering was taking place.</td>
<td>No barriers.</td>
<td>6 adults including parents of deceased.</td>
<td>Mother realised toddler was not with other children.</td>
</tr>
<tr>
<td>0116/00</td>
<td>1 year, 6 months (18 months)</td>
<td>2 adults (mother) inside washing dishes, (step-father) outside watering garden. Deceased outside.</td>
<td>38m from house.</td>
<td>No fencing.</td>
<td>4 other children outside.</td>
<td>Alerted by other children.</td>
</tr>
<tr>
<td>0292/00</td>
<td>3 years, 7 months (43 months). Walking.</td>
<td>3 adults (mother) and (friend) inside house talking, (step-father) inside on the phone. Toddler outside.</td>
<td>50m from house. Own premises (only for two weeks)</td>
<td>House block and dam divided by a wire fence. Gate which has a gap of a foot or so between the gate and the fence post when closed.</td>
<td>5 other children, all older. 3 outside with deceased. 2 inside.</td>
<td>Alerted by other child that toddler not with other children.</td>
</tr>
<tr>
<td><strong>Case Number</strong></td>
<td><strong>Child Mobility</strong></td>
<td><strong>Parent / Carer Supervision &amp; Location of Both</strong></td>
<td><strong>Presence of Dam Within 1km radius</strong></td>
<td><strong>Presence of Barriers</strong></td>
<td><strong>Presence of Other People / Dogs</strong></td>
<td><strong>Alert to Missing Toddler</strong></td>
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<tr>
<td>4556/90</td>
<td>4 years (48 months). Walking.</td>
<td>Mother inside. Father in piggery. Deceased outside in dam with knowledge and permission of father.</td>
<td>50 m from shed where father was. Own premises.</td>
<td>N/A in dam with permission.</td>
<td>7 year old sister.</td>
<td>Alerted by sister of deceased.</td>
</tr>
<tr>
<td>1792/92</td>
<td>1 year, 11 months (23 months)</td>
<td>Father outside washing car, mother inside house. Toddler and brother outside and were sent inside by father.</td>
<td>100m from house, 15m from father washing car.</td>
<td>House fenced but not specified if dam was.</td>
<td>Last seen outside with brother. Father outside washing car.</td>
<td></td>
</tr>
<tr>
<td>1836/92</td>
<td>1 year, 8 months (20 months). Walking and prone to wandering.</td>
<td>Toddler taken outside to play and mother returned inside to clean up some toys.</td>
<td>100m from house at own premises.</td>
<td>House enclosed by fences with three gates. An effort had been made to reinforce the fences and gates because the toddler was prone to wandering. In front of one fence is a line of trees and scrub which had several gaps in it through which a child could wander.</td>
<td>No other person outside. Mother inside.</td>
<td>Mother went outside to check on deceased and noticed that she was missing.</td>
</tr>
<tr>
<td>3494/93</td>
<td>5 years (60 months). Capable of operating ride-on mower.</td>
<td>Deceased given permission to take sister for a ride on mower outside in rear yard. Father was outside digging up an area of the yard.</td>
<td>80m from house at own premises.</td>
<td>Gates located at the entrance to the house area were left open.</td>
<td>Deceased in company with his younger sister. Father also outside.</td>
<td>Father approached by 7 year old daughter who informed him that 3 year old toddler was in the dam.</td>
</tr>
<tr>
<td>Case Number</td>
<td>Child Mobility</td>
<td>Parent / Carer Supervision &amp; Location of Both</td>
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<tr>
<td>3495/93</td>
<td>3 years (36 months). Walking.</td>
<td>Deceased outside on ride-on mower with brother with father's permission. Father outside digging up an area of the rear yard.</td>
<td>80m from house at own premises.</td>
<td>Gates located at the entrance to the house area were left open.</td>
<td>Deceased in company with her older brother. Father also outside.</td>
<td>Father approached by 7 year old daughter who informed him that 3 year old toddler was in the dam.</td>
</tr>
<tr>
<td>0012/94</td>
<td>1 year, 5 months (17 months). Walking.</td>
<td>Mother inside house (kitchen) with sister. Father in shed with brother and father. Deceased and another toddler in rear yard.</td>
<td>155m from where toddler was playing.</td>
<td>Yard is fenced off from the house with tin sheeting. There is a gap on one corner which is blocked by wire mesh.</td>
<td>Another toddler with deceased.</td>
<td>Other toddler came inside wet.</td>
</tr>
<tr>
<td>3687/96</td>
<td>4 years (48 months). Walking.</td>
<td>2 adults (mother) inside house, (father) working outside. Toddler outside.</td>
<td>179m from house at own premises.</td>
<td>The gateway from the house yard to the rear paddock was open.</td>
<td>Father outside working.</td>
<td>Mother came outside and asked father where deceased was.</td>
</tr>
<tr>
<td>3449/97</td>
<td>1 year, 3 months (15 months)</td>
<td>1 adult (mother) inside house. Deceased outside playing.</td>
<td>25m.</td>
<td>Makeshift gate leading to dam fallen over.</td>
<td>Outside with 3 other children. Mother inside.</td>
<td>Heard a sound and went outside to check and realized toddler was missing.</td>
</tr>
<tr>
<td>0891/98</td>
<td>1 year, 8 months (20 months). Walking.</td>
<td>2 adults (aunt) inside on the phone, (uncle) came inside from working in the shed. Deceased outside.</td>
<td>266m</td>
<td>5-strand wire fence between house and neighbouring property.</td>
<td>No other people outside.</td>
<td>Aunt asked Uncle where toddler was when he came inside.</td>
</tr>
<tr>
<td>0199/01</td>
<td>1 year, 10 months (22 months). Walking.</td>
<td>2 adults. Mother talking to brother on phone. Aunty looking after baby.</td>
<td>150- 200m</td>
<td>Gate leads from house to paddock containing dam, gate open.</td>
<td>No other people outside. Toddler outside with dog. Mother and Aunty inside house.</td>
<td>After hanging up the phone Mother saw the dog near the door and realized the toddler was not with the dog.</td>
</tr>
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<tr>
<td>0380/92</td>
<td>1 year, 10 months (22 months). Walking.</td>
<td>2 adults (mother) asleep inside house, (father) came inside house to get a drink. Deceased outside. 20m</td>
<td>Fenced with strand wire and netting, gate closed.</td>
<td>No other people outside with deceased. Father had just come inside.</td>
<td></td>
<td>Mother awoke and asked Father where toddler was when he came inside.</td>
</tr>
<tr>
<td>3227/00</td>
<td>1 year, 10 months (22 months). Walking.</td>
<td>2 adults (mother &amp; father) came inside for a drink and discussed a phone call. Deceased outside. 120m</td>
<td>Strand fencing between house and dam, gate was closed</td>
<td>1 other older child. Brother of deceased.</td>
<td></td>
<td>Alerted by presence of other child who was alone.</td>
</tr>
<tr>
<td>4012/00</td>
<td>1 year, 10 months (22 months). Walking.</td>
<td>1 adult (mother) outside watering garden. Deceased outside. 60m</td>
<td>No fencing</td>
<td>Mother and deceased both outside.</td>
<td></td>
<td>called out to toddler and received no reply.</td>
</tr>
<tr>
<td>2649/01</td>
<td>2 years, 6 months (30 months). Walking.</td>
<td>2 adult inside. One cleaning up lunch, one getting ready for work. Deceased outside. 50m.</td>
<td>Front and back yard enclosed with a fence. Front gate was open as mother was going to work.</td>
<td>3 other children. All siblings, all inside house.</td>
<td></td>
<td>Mother asked father where deceased was.</td>
</tr>
<tr>
<td>2736/01</td>
<td>1 year, 6 months (18 months). Walking.</td>
<td>&gt;5 adults all inside garage. Deceased wandered outside from garage. 20m</td>
<td>No fencing</td>
<td>Many other children (2 older step sisters).</td>
<td></td>
<td>Father hadn’t noticed toddler as being with other children for a couple of minutes.</td>
</tr>
</tbody>
</table>
Appendix 5 – Map of Incident Locations Across Victoria
Appendix 6 – Annotated Photographs

1525/89 - #1
There is strand wire fencing on the perimeter of the property.

1525/89 - #1
Strand wire fencing on the perimeter of the property.
3121/90
No fencing between the house and the dam.

0380/92
Sheep fence between yard and dam.
3433/99
The proximity of the dam to the area where the gathering was taking place.

0116/00
Looking from back door of house to dam.
0292/00 - #1
Gate leading to dam in relation to the house and the yard where the toddler was playing.

0292/00 - #2
Dam in relation to the house [in background].
The dam was not fenced and there was no barrier or fence between where DECEASED was playing and the dam.

On the north and south sides of the shed is fencing that runs in an east west direction about 10m in width. This fencing almost creates a corridor directly to the dam.
0199/01
Barrier between yard and dam but toddler could have easily crawled under it.
Appendix 7 – Map of Carer's Perception of Distance Traveled

How far do you think your toddler travel in five to ten minutes?
Appendix 8 – Transparency Map of Dam Distances

[Diagram showing concentric circles labeled with distances in meters, ranging from 20m to 600m.]