



Drowning accidents

in the garden involving children under five

GOVERNMENT CONSUMER SAFETY RESEARCH

dti

Department of Trade and Industry

C o n t e n t s

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THE OBJECTIVES, BACKGROUND & METHOD OF THIS PROJECT

The DTI wishes to reduce drowning incidents occurring in domestic gardens involving children. A study was commissioned to establish the facts behind the fatal incidents and the behavioural factors that increase the risk of an incident occurring.

Objectives

For some time the DTI has been concerned about the number of drowning incidents that take place within the domestic environment, particularly as initial indications point to the fact that a large number of young children are involved. Drowning is the third largest cause of accidental death in the home in under fives.

The DTI has commissioned the Business Strategy Group to carry out a full investigation of child drowning incidents in the garden. The brief was to provide a comprehensive picture of the type of incident, the profile of those affected and the precise behavioural factors that increase the risk of a fatal incident. The resultant detailed information on the incidents can then be used to put appropriate programmes in place to reduce the numbers of fatal incidents involving children in gardens.

Background

Around 82% of households (19.7 million) have a garden. The garden market has expanded rapidly over the last few years. The reasons for growth are perceived to be exposure in the media, particularly television, people moving home less, the possible added-value of a well-laid out garden and the post-war baby boomers have now become empty-nesters with substantial disposable income.

The number of gardens with some form of water feature is estimated at around 13%, giving a total of around 2.5 million water features in UK gardens.

The garden pond industry has reported substantial growth over the past few years, fuelled by press and TV exposure. Many of the garden designs featured on TV programmes incorporate a water feature.

Product availability has also been increased, with DIY chains, garden centres and aquatic specialists all offering a variety of materials and equipment.

Two trade associations are involved in the garden pond area – The Garden Industry Manufacturers Association and The Ornamental Aquatic Trade Association Ltd.

UK CHILD DROWNING INCIDENTS IN GARDEN PONDS, POOLS ETC.

There were 90 fatal drowning incidents involving children five and under from 1992 to 1999; relating to garden ponds (62) swimming pools (18) and other water containers (10). Garden ponds are the main problem but less than 1 in 5 occurs in their own garden. Most pond incidents occur in - neighbours gardens 39%, relatives 29% or friends 10%. 80% of pond incidents occur in other people's gardens. Overall, 73% of all the drowning incidents do not take place at the child's home.

UK Drowning by Category of Dwelling, 1992 - 1999

	1992	1993	1994	1995	1996	1997	1998	1999	Total	%	Av/Yr
PONDS											
Own Home	1	1	3	2	0	0	1	3	11	18%	1
Relatives	4	3	1	1	3	4	1	1	18	29%	2
Friends	1	0	1	0	0	1	1	2	6	10%	1
Neighbours	3	5	3	3	2	2	3	3	24	39%	3
Other *	0	0	0	0	1	1	0	0	2	3%	0
Unknown	1	0	0	0	0	0	0	0	1	2%	0
Total	10	9	8	6	6	8	6	9	62	100%	8
	(* other above in '96 is client & in '97 above is house used as nursery)										
SWIMMING POOLS (Indoor & Outdoor)											
Own Home	0	3	0	1	1	1	0	0	6	33%	1
Relatives	0	0	0	1	0	1	0	0	2	11%	0
Friends	0	2	0	0	0	2	0	1	5	28%	1
Neighbours	0	1	0	0	0	0	0	1	2	11%	0
Other *	1	0	0	0	0	0	0	0	1	6%	0
Unknown	0	0	0	0	1	1	0	0	2	11%	0
Total	1	6	0	2	2	5	0	2	18	100%	2
	(* other above in '92 is house of childminder)										
OTHER (see detail over)											
Own Home	1	0	0	0	1	2	0	1	5	50%	1
Relatives	0	1	0	0	0	0	0	2	3	30%	0
Friends	1	0	0	0	0	0	0	0	1	10%	0
Neighbours	0	0	0	0	0	0	0	1	1	10%	0
Other	0	0	0	0	0	0	0	0	0	0%	0
Unknown	0	0	0	0	0	0	0	0	0	0%	0
Total	2	1	0	0	1	2	0	4	10	100%	1
TOTAL											
Own Home	2	4	3	3	2	3	1	4	22	24%	3
Relatives	4	4	1	2	3	5	1	3	23	26%	3
Friends	2	2	1	0	0	3	1	3	12	13%	2
Neighbours	3	6	3	3	2	2	3	5	27	30%	3
Other	1	0	0	0	1	1	0	0	3	3%	0
Unknown	1	0	0	0	1	1	0	0	3	3%	0
Total	13	16	8	8	9	15	6	15	90	100%	11

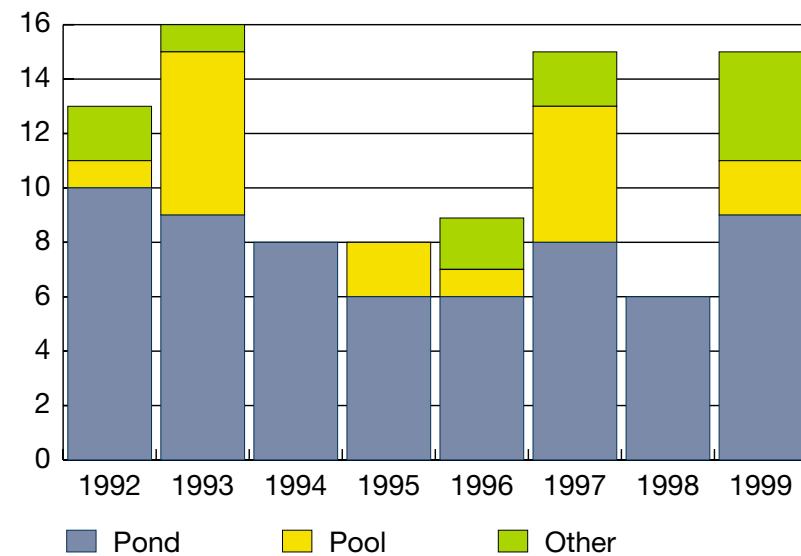
Source: Business Strategy Group by analysis of Coroner survey & RoSPA press cuttings

Approach and the Method for this Project

A complete analysis was made of the ONS (Office of National Statistics) drowning data and domestic drowning incidents identified. Individual Coroners were then contacted so that access could be gained to their notes relating to domestic drowning incidents. These findings were then cross referenced with newspaper reports held on file by RoSPA (Royal Society for the Prevention of Accidents). This approach provides more comprehensive coverage that is possible using any one data source in isolation.

A detailed analysis of the incidents identified was then carried out in order to build a picture of the common scenarios and the behavioural factors involved in the fatal incidents.

Trends in Child Drowning in Domestic Gardens



Detail of 'Other' UK Drowning Incidents in Domestic Gardens, 1992 - 1999

	1992	1993	1994	1995	1996	1997	1998	1999	Total
DETAIL OF OTHER (included above)									
Dustbin/Bin	1					1		1	3
Millpond (at dwelling)	1								1
Tank		1							1
Bucket						1		1	2
Sheep Dip Tank (Farm)					1				1
Water Pot/Container								1	1
Paddling Pool								1	1
Total	2	1	0	0	1	2	0	4	10
Not Clear Whether Dwelling (not included in data above)									
Pool								2	2
Cesspit	1								1
Total	1	0	0	0	0	0	2	0	3

Source: Business Strategy Group by analysis of Coroner survey & RoSPA press cuttings

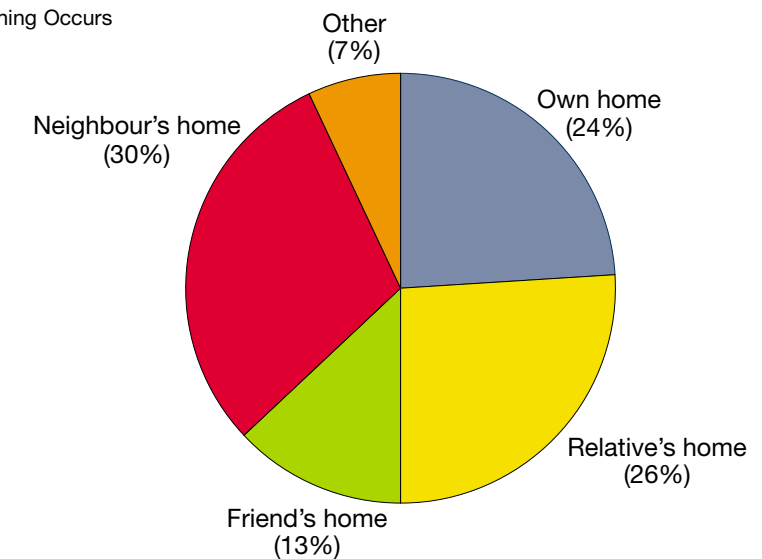
There were 90 drowning incidents in the UK involving children of 5 or under, over the period 1992 to 1999, an average of 11 per year.

Of these incidents, 62 (69%) involved garden ponds, 18 (20%) swimming pools (both indoor and outdoor) and 10 'Other' items (11%).

'Other' items mainly involved containers, such as bins, dustbins, buckets, tanks or pots, in which water is kept or has accumulated e.g. through rainfall. In another incident, the child drowned in a millpond at a friend's house. A child also drowned in a sheep dip tank on their home farm.

Only one fatality was recorded over the period involving a paddling pool. Here the child was being looked after by the grandparents.

Where Child Drowning Occurs

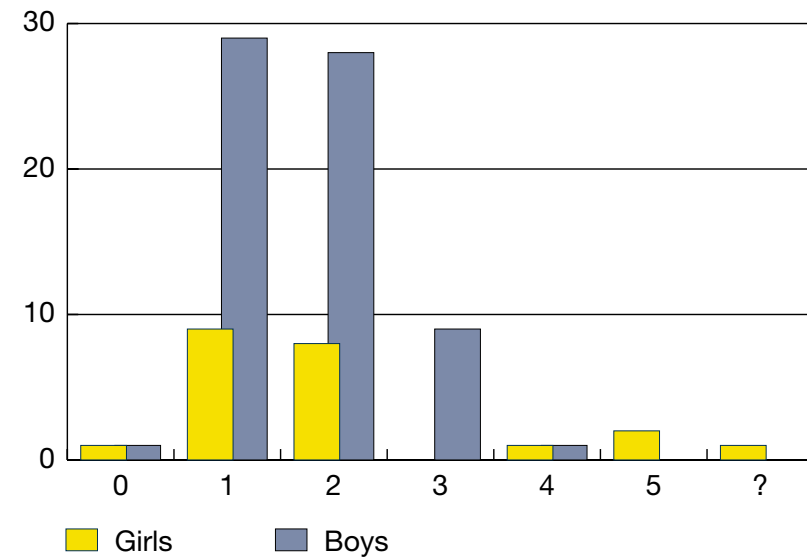


The most striking result is how few incidents occur at the child's home. Only 24% of the incidents overall occurred at home. For garden ponds, this figure is only 18%. Most incidents happen when the child is visiting relatives (26%), friends (13%) or where the child wanders away from their home or the home of the relative/friend and drowns in a neighbouring garden pond/pool (30%). For ponds, this last figure rises to 39% of all garden pond incidents involving neighbouring gardens. Current advice appears to concentrate on protecting ponds/pools in your own home from children. The data suggests a much broader view may be necessary to reduce such incidents.

(In three other incidents it was not possible from the description available to determine whether the incident occurred in a dwelling or elsewhere. These three incidents have, therefore, been excluded from the totals above.)

UK Drowning Incidents - by Age and Gender - Children 5 and under

Boys account for 78% of all incidents. The most at risk are one and two year olds. They accounted for over 80% of incidents.



UK Drowning by Age & Gender, 1992 - 1999

Gender/Age	1992	1993	1994	1995	1996	1997	1998	1999	Total	%	Av/Yr
Male											
0	0	0	0	1	0	0	0	0	1	1%	0
1	6	1	3	1	5	5	3	5	29	43%	4
2	2	7	3	4	2	3	1	6	28	41%	4
3	1	3	1	0	1	2	1	0	9	13%	1
4	0	0	0	0	0	1	0	0	1	1%	0
5	0	0	0	0	0	0	0	0	0	0%	0
Unknown	0	0	0	0	0	0	0	0	0	0%	0
Total	9	11	7	6	8	11	5	11	68	100%	9

Female											
0	1	0	0	0	0	0	0	0	1	5%	0
1	2	2	1	1	1	1	0	1	9	41%	1
2	1	1	0	1	0	3	1	1	8	36%	1
3	0	0	0	0	0	0	0	0	0	0%	0
4	0	0	0	0	0	0	0	1	1	5%	0
5	0	2	0	0	0	0	0	0	2	9%	0
Unknown	0	0	0	0	0	0	0	1	1	5%	0
Total	4	5	1	2	1	4	1	4	22	100%	3

Both Genders											
0	1	0	0	1	0	0	0	0	2	2%	0
1	8	3	4	2	6	6	3	6	38	42%	5
2	3	8	3	5	2	6	2	7	36	40%	5
3	1	3	1	0	1	2	1	0	9	10%	1
4	0	0	0	0	0	1	0	1	2	2%	0
5	0	2	0	0	0	0	0	0	2	2%	0
Unknown	0	0	0	0	0	0	0	1	1	1%	0
Total	13	16	8	8	9	15	6	15	90	100%	11

Source: Business Strategy Group by analysis of Coroner survey & RoSPA press cuttings

The data show that over 80% of incidents overall involved children aged one or two. There were three times as many incidents involving boys (76%) as there were girls (24%). Suggesting that boys are more adventurous, more likely to roam, or more attracted to water.

Location by Age and Gender of Children Aged 5 or Under

**Boys are involved in 83% of incidents in garden pools
79% of others and 62% of swimming pool.**

Detail of 'Other' UK Drowning Incidents in Domestic Gardens, 1992 - 1999

Gender/Age	Pond	Pool	Other	Total	%	Av/Yr
Male						
0	0	1	0	1	1%	0
1	24	1	4	29	43%	4
2	17	7	4	28	41%	4
3	7	2	0	9	13%	1
4	1	0	0	1	1%	0
5	0	0	0	0	0%	0
Unknown	0	0	0	0	0%	0
Total	49	11	8	68	100%	9

Female						
0	0	1	0	1	5%	0
1	6	2	1	9	41%	1
2	6	2	0	8	36%	1
3	0	0	0	0	0%	0
4	1	0	0	1	5%	0
5	0	2	0	2	9%	0
Unknown	0	0	1	1	5%	0
Total	13	7	2	22	100%	3

Both Genders						
0	0	2	0	2	2%	0
1	30	3	5	38	42%	5
2	23	9	4	36	40%	5
3	7	2	0	9	10%	1
4	2	0	0	2	2%	0
5	0	2	0	2	2%	0
Unknown	0	0	1	1	1%	0
Total	62	18	10	90	100%	11

Source: Business Strategy Group by analysis of Coroner survey & RoSPA press cuttings

Children aged 1 & 2 are most at risk overall, representing 82% of fatalities.

Boys account for 79% of garden pond incidents, 61% of swimming pool incidents and 80% of 'Other'. In 'Other', boys account for all of the container incidents i.e. those involving bins, buckets, tanks etc. Girls accounted for two incidents involving a paddling pool and the millpool.

Swimming pools account for a larger proportion of incidents involving girls (32%) than they do for boys (16%), with ponds relatively lower (59% of girls and 72% of boys).

UK Drowning - Type of Dwelling & Place of Incident by Gender

Gender	Home	Relative	Friend	Neighbour	Other/Nk	Total
Pond						
Boys	8	13	3	22	3	49
Girls	3	5	3	2	-	13
Total	11	18	6	24	3	62

Pool						
Boys	4	2	1	2	2	11
Girls	2	-	4	-	1	7
Total	6	2	5	2	3	18

Other						
Boys	5	2	-	1	-	8
Girls	-	1	1	-	-	2
Total	5	3	1	1	-	10

Total						
Boys	17	17	4	25	5	68
%	25%	25%	6%	37%	7%	100%
Girls	5	6	8	2	1	22
%	23%	27%	36%	9%	5%	100%
Total	22	23	12	27	6	90

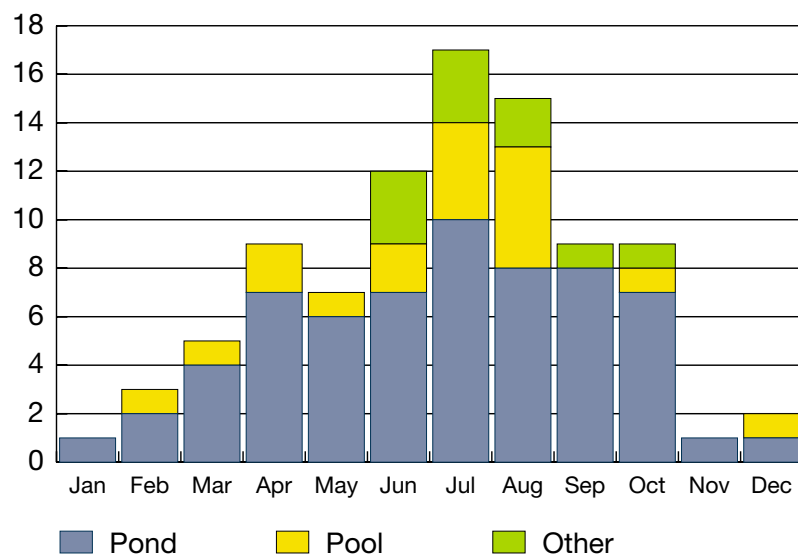
Source: Business Strategy Group by analysis of Coroner survey & RoSPA press cuttings

The figures show clearly that it is boys who are more likely to wander into neighbour's property than girls. Neighbours account for 37% of all incidents involving boys. Though the numbers are smaller, girls are more likely to be involved in incidents at friend's homes (either their own friends or friends of the family).

Timing of Child Drowning Incidents in the Garden

July and August are the peak months for child drowning incidents in the garden. Most incidents occur between March and October. July is the peak month for pond incidents.

Incidents by Month



UK Drowning by Month, 1992-1999

Month/Location	Pond	Pool	Other	Total	%
January	1	-	-	1	1%
February	2	1	-	3	4%
March	4	1	-	6	7%
April	7	2	-	9	10%
May	6	1	-	7	8%
June	7	2	3	11	12%
July	10	4	3	17	19%
August	8	5	2	15	17%
September	8	-	1	9	10%
October	7	1	1	8	9%
November	1	-	-	1	1%
December	1	1	-	2	2%
Total	62	18	10	90	100%

Source: Business Strategy Group by analysis of Coroner survey & RoSPA press cuttings

Child drowning incidents occur all year round. Children will wander out of the house in winter and are perhaps more likely to slip into a pond. Most incidents occur from March to October. The peak months overall are July and August.

Garden Pond incidents peak in July. Most garden pond incidents occur between April and October.

Swimming Pool incidents peak in July and August. Incidents involving 'other' items, such as containers, occur in the summer months.

Overall Summary of the figures 1992 - 1999

Only 24% of the UK fatal drowning incidents in domestic gardens, 1992 to 1999, involving children of 5 or under occurred at the child's home. Children are most at risk from drowning in the gardens of neighbours, relatives or friends. 69% of the incidents involved garden ponds.

Summary – Garden Ponds

- Over the last eight years 62 children, aged 5 and under, have drowned in garden ponds. This is an average of eight a year. This is relatively constant.
- Over 85% involved one or two year old children.
- Boys were involved in 79% of these incidents. Boys would appear to be more adventurous or more attracted to ponds than girls.
- Only 18% drowned in their own gardens.
- 29% drowned while visiting, or being cared for, at a relative's home.
- 10% drowned while their parents were visiting a friend's home.
- The largest percentage (39%) drowned in a neighbour's pond after wandering away from their own home or the home of the people they were visiting.
- Boys are more likely to wander into neighbour's property than girls. Neighbours account for 45% of all garden pond incidents involving boys. For girls the figure was 13%.

COMMON SCENARIOS - DROWNING IN DOMESTIC GARDENS

Below is a list of the common scenarios involved in the drowning of children five and under in different locations.

In some incidents more than one behavioural factor is present and it was the combination of a number of these factors that turned a 'near miss' into a fatality.

Children drown at home or 'other' because:

- Pond/pool covered and child gets on or under the cover (8 examples).
- Pond/pool is fenced off but the gate is left open, or child gets over or under the fence (6 examples).
- Playing in garden with older children who do not notice that the young child has wandered off (6 examples).
- There is confusion as to which parent or carer the child is with (4 examples).
- Parents/carer's attention is distracted (or falls asleep) leaving child unattended (4 examples).
- Bin or bucket is left with water in it (4 examples).
- Door left open (2 examples).
- Child is left asleep (1 example).

Visiting friends/relatives – child drowns because:

- Child is left playing with other child/children (9 examples).
- Socialising distracts adults (5 examples).
- At social gatherings e.g. barbecues, because there are several people present, a false sense of security is created allowing the child to wander off unnoticed (4 examples).
- Parent/carer's attention is distracted (4 examples).
- Pond/pool may be covered or overgrown, child does not even know it is there (4 examples).
- It is believed that child is familiar with the pond/pool and will not play near or in it (3 examples).
- Child left asleep or in a buggy (2 examples).
- Container left with water in it (1 example)
- Gate in protective fence to pond/pool left open (1 example)
- Paddling pool left filled and unattended (1 example).

Summary – Swimming pools

- Over the last eight years 18 children have drowned in domestic swimming pools. An average of two a year, with peaks in 1993 and 1997.
- There is a broader age range involved in swimming pool incidents but two thirds involved one and two year olds.
- Like garden ponds, boys are more likely to be involved in these incidents than girls. Of the 18 drowned, 61% were boys.
- Swimming pools account for a greater proportion of incidents involving girls at 32% than they do for boys at 16%.
- 33% drowned in swimming pools located in their own home.
- 11% drowned in swimming pools at relatives' homes and 28% while visiting friends.
- Only one drowning occurred in a neighbour's swimming pool in the last eight years.

Summary – Other

- Over the last eight years 10 children have drowned within the domestic environment in a wide range of containers.
- The most frequent incidents occurred with buckets, water butts and bins; these account for half the total number.
- Boys account for nearly 80% of these incidents.
- Again one and two year olds were most at risk, accounting for 90%.

Child drowns in neighbour's pool because:

- Toddler is playing with another child or group of older children and wanders off unnoticed (5 examples).
- Child wanders out of house, door left or blown open or child opens gate (4 examples).
- Parent/carer is distracted and child wanders off (4 examples).
- Child is fascinated with water or water feature (3 examples).
- Confusion over who the child is with (2 examples).
- Hole in fence into neighbour's garden or to the road (2 examples).
- Container left with water in it (1 example)
- Child follows a pet (1 example).
- Pond covered by net (1 example).
- Child left asleep in pushchair (1 example)
- Often in situations where a child wanders off, the first place searched is the road. Their own ponds or neighbours ponds are often the last place to be searched (4 examples).

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Research commissioned by Consumer Affairs Directorate, DTI.

Department of Trade and Industry

1 Victoria Street

London

SW1H 0ET

Carried out under contract by:

Business Strategy Group

John Pearson

Peter Davies

21 Dowhills Road

Liverpool

L23 8SH

URN 00/906

