

# Thematic review of deaths of children and young people through drowning

Child Death Review Programme

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## Your feedback

How did you use the information in this report? Do you have any other comments? Please let us know via our website at [www.publichealthwales.org/childdeathreview](http://www.publichealthwales.org/childdeathreview)

# About child death review in Wales

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## Why review child deaths in Wales?

- Any death of a child is a tragedy.
- The loss often has devastating and life changing effects on the parents, siblings, grandparents and the wider family and community.
- Unexpected deaths in childhood are often preventable.

## What does the Child Death Review Programme do?

- The Child Death Review (CDR) Programme routinely collects information on deaths of children who were born alive, who died after 1st October 2009 but before their 18th birthday, and who were normally resident in Wales or died within Wales (including children under local authority care and placed outside of Wales and those temporarily living outside of Wales for healthcare or education reasons).
- The CDR Programme aims to identify and describe patterns and causes of child deaths and to recommend actions that could prevent child deaths in Wales.

## What have we achieved?

The CDR Programme has delivered:

- Thematic reviews that consider the evidence and discuss deaths that have common circumstances. We have looked at deaths of teenagers in motor vehicles (2013), of children and young people through probable suicide (2014) and at sudden unexpected death in infancy (2015).
- Rapid reviews are on a smaller-scale than thematic reviews; they have covered deaths from dog bites and from meningitis or meningococcal disease.
- Annual reports published since 2013 contain information on deaths and summarise the activity of the CDR Programme during the previous year.
- Stakeholder events to share learning from these reviews and reports and to invite partners to share their ideas on actions that take our recommendations forward.

We also discuss how we can work together to encourage changes to prevent child deaths with partners across Wales and the rest of the UK.

The details of each death are extremely important to those most affected by it, but public health also considers the broad population-level picture. Our role in the Child Death Review Programme is to understand and connect the detail with the wider issues, to learn from what happened and to share advice on preventing further incidents in similar circumstances.



# Contents

<b>Foreword</b>	<b>7</b>	<b>4. Theme: Working together</b>	<b>25</b>
<b>Summary</b>	<b>9</b>	(Recommendation 1)	
<b>1. Why look into deaths from drowning?</b>	<b>11</b>	<b>5. Theme: Shared messages</b>	<b>27</b>
1.1 How common is it?	11	(Recommendation 2)	
1.2 What impact does it have?	11	<b>6. Theme: Epilepsy and water</b>	<b>29</b>
1.3 Can it be prevented?	12	(Recommendation 3)	
1.4 Who makes a case for action?	12	<b>7. Theme: Alcohol</b>	<b>31</b>
<b>2. What did this review involve?</b>	<b>17</b>	<b>8. Theme: Supervision</b>	<b>33</b>
2.1 What was our aim?	17	<b>9. Theme: Safe access</b>	<b>37</b>
2.2 Which deaths did we include?	17	<b>10. Theme: Learning to swim</b>	<b>41</b>
2.3 Where did our information on deaths come from?	17	<b>11. Theme: Risks and plans</b>	<b>43</b>
2.4 How did we search for evidence in the literature?	18	<b>12. Theme: Safer holidays</b>	<b>45</b>
2.5 What was the role of the thematic panel?	18	<b>13. Theme: Data issues</b>	<b>47</b>
2.6 Were there limits to our approach?	20	<b>14. Theme: Support</b>	<b>49</b>
<b>3. Thematic overview</b>	<b>21</b>	<b>Appendix</b>	<b>51</b>
3.1 What did our information tell us?	21	Stakeholders in relation to recommendations	
3.2 What did the literature tell us?	22		
3.3 What themes emerged from panel discussion?	23		



# Foreword



The death of a child or young person is tragic under any circumstances and the loss felt by families, friends and the wider community is immeasurable. As the Children's Champion for Public Health Wales I was grateful for the opportunity to contribute to the review and help identify modifiable factors to prevent future deaths through drowning.

Participation in activities based in, on or around water is encouraged for play, recreation, or sporting purposes; these are benefits I personally appreciate as a keen recreational swimmer and scuba diver over many years. In Wales we have some wonderful opportunities to appreciate and use the water around our scenic coasts and lakes; informed consideration of the risks here is as important as considering those present in our own homes and at local amenities. This review highlights opportunities to improve water safety around all water.

This report describes the themes that have emerged from reviewing the deaths from drowning of children and young people up to 24 years of age. These themes have given rise to three recommendations and eight key messages aimed at keeping people safe in and around water. The partnership work of the thematic panel demonstrates the value of working together; an All Wales forum to address common water safety concerns is our first recommendation. Such an approach is needed to find consensus on promotion of a single water safety message for each setting where there is a drowning risk (*Recommendation 2*). Consensus advice and its promotion to children and young people with epilepsy and their carers will enable informed decision making about safer bathing (*Recommendation 3*).

As Chair of the review panel I would like to thank those involved in the detailed work needed to support and deliver this review. My thanks also go to the individual panel members who joined us from a variety of organisations, all of whom demonstrated their personal commitment through active participation in panel discussions. We need to ensure a similar level of commitment at organisational level that reflects the public health importance of drowning prevention and its alignment with current policy and strategic direction, as clearly identified in this report. It is vitally important that those of us in Wales with a water safety remit (however indirect) play a full part in helping to realise our common goal of a reduction in avoidable child and young person deaths through drowning.

A handwritten signature in black ink that reads "Simon Smal".

Prof. Simon Smal, CBE





# Summary

## Why look into deaths from drowning?

Although drowning is relatively rare in Wales many drowning deaths are preventable and the consequences and costs are substantial.

## What did this review involve?

We considered information on drownings in Wales, or involving Welsh residents elsewhere, alongside evidence from the literature and thematic panel discussion of each drowning incident to develop advice for the prevention of future drowning deaths.

## What were our recommendations?

We made the following recommendations:

1. An All Wales forum for water safety should be established.
2. For each setting where there is a drowning risk, a single water safety message shared by all relevant organisations is needed.
3. Consistent guidance on safer bathing for people with epilepsy is needed.

## What were our key messages?

We identified the following key messages:

1. Alcohol appears to be a contributory factor in some drownings.
2. More active and appropriate adult supervision may have prevented some drownings.
3. There are interventions that may encourage safer swimming or prevent unintended contact with water.
4. We commend the Welsh Government vision to ensure every child in Wales is able to swim by 2020. We suggest including water safety education on how pool-based lessons relate to open water.
5. Planning is needed in Wales to take forward the UK national drowning prevention strategy (2016–2026) goal of producing publicly available community-level risk assessment and water safety plans.
6. Holidaymakers at home and abroad could be encouraged to be more aware of water safety. This could be supported by the tourist industry routinely providing advice and guidance on water safety.
7. There are opportunities to improve sharing of data. It is also important to look at how information is communicated to support prevention, including reports by coroners.
8. Appropriate support for those involved in drowning events in Wales is important.



# 1. Why look into deaths from drowning?

## 1.1 How common is it?

Drowning is relatively rare in Wales.

- Drowning can follow planned or unplanned activity in, on or around water.
- Globally, drowning is a leading cause of death amongst children and young people. The risk of drowning is strongly linked to age, with younger children aged one to four years at the highest risk, followed by older children aged five to 14 years (World Health Organization, 2014).
- On average there are less than three drowning deaths of under 18 year olds in Wales every year.

## 1.2 What impact does it have?

Drowning has important consequences and costs.

- The impacts of a drowning are wide; these include effects on the emotional health and well-being of families as well as the economic costs of search and rescue.
- Each death exposes those involved to a higher risk of long-term poor health (Macintyre, 2014).
- Each death represents lost potential for the individual, their family and the whole of society.
- Near drownings can be life changing (for example, due to brain injury).
- Estimates from Canada and Australia put the cost of a drowning death at between \$US265,000 and \$US373,000 (Table 1.1). Assuming equivalent costs, the total financial impact of drowning in the United Kingdom (UK) could be £81–114 million per year, and for Wales £4–5.7 million per year.

**Table 1.1:** Estimating the financial costs of drowning

	Population (millions)	Total drowning deaths	Cost of drowning (\$US million)	Drowning rate (per 100,000)	Cost per population (\$US)	Cost per drowning (\$US)
<b>Australia</b>	23.0	322	85.5	1.4	3.70	265,528
<b>Canada</b>	35.5	578	173	1.6	4.90	373,650
<b>United Kingdom</b>	64.1	463		0.7		
<b>Wales</b>	3.2	~23				

Source: Office of National Statistics; <http://www.who.int/mediacentre/factsheets/fs347/en/>

Notes:

1. Assuming the population of Wales is 3.2M, that the cost per drowning in the UK is the same as in Canada and Australia, and that 1\$US = £0.66, then the total cost of drowning in Wales is £4M to £5.7M per year.
2. The United Kingdom drowning rate is around half that of Australia or Canada, which may affect cost estimates. However, whether this would increase (because services that are rarely mobilised are being used) or decrease costs is not known.
3. These estimates are based on all drownings, not just those involving children and young people.

### 1.3 Can it be prevented?

Most drownings could be prevented.

- Some risk factors for drowning are similar to those for other injuries and illnesses. For example, excess alcohol consumption could lead to drowning or involvement in a road traffic crash, assault, or sexually transmitted infection.
- Efforts to prevent drowning should therefore have a much wider effect on health, and beyond health, including effects on the economy.
- In the future our weather is expected to change and so will risks of drowning. It is important to think about these risks now and how we deal with them.
- Interventions to prevent drowning can also encourage safe participation in water-based sports. This could also help to prevent illness linked to inactivity or social isolation, such as obesity or mental health problems.

### 1.4 Who makes a case for action?

Drowning occurs in many different places and the people most at risk varies between these places. As a result, there are many different organisations involved in prevention and coordination of their efforts is needed. The importance of preventing drowning is recognised by several key documents (*Table 1.2*) including:

- the World Health Organization 2014 report on drowning, which sets out 10 global actions
- the European Child Safety Alliance/EuroSafe child safety report cards, which in 2012 highlighted that Wales scored poorly in legislation and policy for water safety and drowning prevention
- the recently published UK drowning prevention strategy from the National Water Safety Forum.

In Wales three broad strategies (*Our healthy future*, *Building a brighter future* and *Well-being of Future Generations*) have links to injury prevention and, therefore, to reducing drowning.

**Table 1.2:** A summary of the policy context for prevention of drowning

Policy and reach	Summary	Comment
<p><b>Global report on drowning, 2014</b></p> <p><i>Global</i></p> <p><i>All ages</i></p> <p><i>Drowning</i></p>	<p>Aims to address a 'highly preventable public health challenge that has never been targeted by a global strategic prevention effort'. Sets out 10 actions to prevent drowning:</p> <ol style="list-style-type: none"> <li>1. Install barriers controlling access to water;</li> <li>2. Provide safe places away from water for preschool children, with capable child care;</li> <li>3. Teach school aged children basic swimming, water safety and safe rescue skills;</li> <li>4. Train bystanders in safe rescue and resuscitation;</li> <li>5. Strengthen public awareness of drowning and highlight the vulnerability of children;</li> <li>6. Set and enforce safe boating, shipping and ferry regulations;</li> <li>7. Build resilience and manage flood risks and other hazards locally and nationally;</li> <li>8. Coordinate drowning prevention efforts with those of other sectors and agendas;</li> <li>9. Develop a national water safety plan;</li> <li>10. Address priority research questions with well designed studies.</li> </ol>	<p>This is a global document, with low and middle-income countries particular targets for effort. It also emphasises the wider public health relevance of drowning, namely climate change, mass migration and child and adolescent health.</p>
<p><b>Child safety report cards</b></p> <p><i>European programme with assessment of Wales</i></p> <p><i>0 to 19 years</i></p> <p><i>Unintentional injuries</i></p>	<p>This programme aims to assess performance of different countries in Europe in terms of national-level policies to address unintentional injury in various areas, including water safety/ drowning prevention. There were 16 items assessed for water safety; for Wales performance was graded as poor for 10 of these, namely:</p> <ol style="list-style-type: none"> <li>1. Barrier fencing for public pools;</li> <li>2. Barrier fencing for private pools;</li> <li>3. National recertification for lifeguards on a regular basis;</li> <li>4. Minimum number of lifeguards on beaches;</li> <li>5. Minimum number of lifeguards at public pools;</li> <li>6. Risk assessment of all designated public water recreational areas;</li> <li>7. Equitable access to public swimming pools for swimming lessons for school aged children;</li> <li>8. Mandatory use of personal floatation devices/ lifejackets on the water;</li> <li>9. Government department with mandated responsibility for child/adolescent water safety;</li> <li>10. National injury prevention strategy with specific targets and timelines for child/adolescent water safety.</li> </ol>	<p>The most recent assessment was carried out in 2012. The focus is legislation and policy.</p>
<p><b>A future without drowning: The UK national drowning prevention strategy 2016–2026</b></p> <p><i>UK</i></p> <p><i>All ages</i></p> <p><i>Drowning prevention</i></p>	<p>This strategy, developed by the National Water Safety Forum, aims to stimulate action by all partners in water safety with a view to reducing drowning deaths in the UK by 50% by 2026.</p>	<p>This provides the UK context and relates specifically to water safety/drowning prevention.</p>

Policy and reach	Summary	Comment
<p><b>Our healthy future, 2009</b></p> <p>Wales</p> <p>All ages</p> <p>Healthy lives</p>	<p>This policy statement sets out Welsh Government ambitions for public health. It includes prevention as one of six areas for action and seeks a reduction in accidents and injuries as one of 10 priority outcomes. Reducing differences in health outcomes (inequities) is also a stated ambition.</p>	<p>This is consistent with activity to prevent accidental drowning.</p>
<p><b>Building a brighter future, 2013</b></p> <p>Wales</p> <p>Early years</p> <p>All aspects of health and well-being</p>	<p>This policy makes the case for investing in early years, outlines the importance of good health and well-being, strong and positive families, high quality early education and child care, good primary education and raising standards. Within the health and well-being section, hospital admission due to injury is specified as an indicator under the heading 'Creating healthy environments'. Welsh Government state that they will:</p> <ul style="list-style-type: none"> <li>• take a lead in early years injury prevention by considering the recommendations from <i>The burden of injury in Wales report</i> (NHS, 2012) and the European Child Safety Alliance/ EuroSafe child safety report card in order to reduce childhood accidents</li> <li>• develop an All Wales child injury prevention strategy that is coordinated across all services and settings to reduce the risk of child death and harm due to injury.</li> </ul>	<p>As with <i>Our healthy future</i>, this is fully consistent with activity to prevent drowning.</p>
<p><b>Well-being of Future Generations (Wales) Act 2015</b></p> <p>Wales</p> <p>All ages</p> <p>Well-being</p>	<p>This law requires public bodies to contribute to well-being goals as part of sustainable development. This means that non-health public bodies also need to be mindful of their duty to promote healthier (less risky) behaviours. Public bodies need to plan for change (e.g. climate change), to work with others collaboratively and to consider opportunities for prevention when making decisions that may impact upon the people of Wales in the future.</p>	<p>Active participation in drowning prevention activities may help public bodies to make this contribution.</p>
<p><b>Changes to funding formula for Free Swimming Initiative</b></p> <p>Wales</p> <p>Under 16s and over 60s</p> <p>Swimming</p>	<p>Free swimming was introduced as a pilot in 2003, becoming a national programme in 2007 to provide free swimming for over 60s year round and for under 16s during school holidays. In 2015 it was announced that the funding for Free Swimming had been altered and that the Welsh Government priority was now for 'every child to be a swimmer' irrespective of social circumstance or wealth.</p>	<p>The links between swimming ability and drowning prevention are logical.</p>

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# 2. What did this review involve?

## 2.1 What was our aim?

This review aimed to develop recommendations, based on evidence and the knowledge and experience of the panel, to support the prevention of drowning deaths and to communicate these findings to appropriate agencies to inform action.

## 2.2 Which deaths did we include?

The age range for this review was from birth to 24 years. This is an extension beyond the age group (up to 18 years) included in previous reviews. The review included deaths where:

- The death occurred between 1st October 2009 and 30th September 2014.
- The event that led to the death was in Wales, or occurred outside of Wales but the child or young person was normally living in Wales.
- The mode of death was recorded as drowning, including when the underlying cause of death was due to another condition (for example, epilepsy). Deaths in open and closed waters, including baths and other domestic settings were considered.
- The codes used to classify the death<sup>1</sup> were reviewed to assess intent (accidental or intentional) and whether it had already been covered by a previous review. Deaths that appeared to be intentional (for example, suicide) or due to motor vehicle crashes were excluded.

## 2.3 Where did our information on deaths come from?

A number of sources of information were used, including:

- death registration from the Office of National Statistics (ONS)
- reports submitted to the Child Death Review (CDR) Programme, for example by health care professionals involved in the medical response
- records from services involved in reviewing deaths, such as serious case reviews, child practice reviews and the Procedural Response to Unexpected Deaths in Childhood (PRUDiC)
- information from heads of safeguarding in the health boards
- verdicts and reports from coroners
- emergency services information on the response to the incident
- the Water Incident Database (WAID) of the National Water Safety Forum
- media and online reports.

The level of information available on drowning events varied, but every effort was made to cross-check sources to verify the details.

<sup>1</sup> These codes are part of the ICD-10 system. We included deaths assigned codes for accidental drowning and submersion (V90, V92, W65–W74) and for the mechanism of drowning and nonfatal submersion (T75.1). When there was no code assigned, or where intent was undetermined (Y21), or the code was non-specific (V94) the Professional Lead and Child Death Review team judged whether the death should be included or not.

## 2.4 How did we search for evidence in the literature?

We searched for evidence that would help answer two questions:

- What are the risk and protective factors associated with drowning in children and young people under 25 years of age?
- What is the effectiveness of interventions aimed at addressing risk factors, increasing protective factors and preventing deaths from drowning in children and young people under 25 years of age?

The approach to answering these questions was developed by the Public Health Wales Observatory Evidence Service. The method and findings are on the CDR Programme website. In summary, the work involved:

- agreeing a set of rules for reviewing the evidence (a review protocol)
- carrying out literature searches to find evidence
- deciding which studies did or did not meet criteria for inclusion in the review (called study selection or filtering, which involves several steps)
- assessing the quality of the research included (for example, whether studies used proper scientific methods and how well these were described)
- extracting the important information from included studies.

We searched for expert body reports and systematic reviews (SRs) of original (primary) research published between January 2000 and July 2015. These dates were felt to balance the need to find sufficient relevant evidence to inform decisions and time available.

## 2.5 What was the role of the thematic panel?

Thematic panel members were selected and met as a group with the CDR team to bring together (triangulate) all of the evidence, to identify themes for this review, and to develop and agree recommendations or key messages.

### The panel

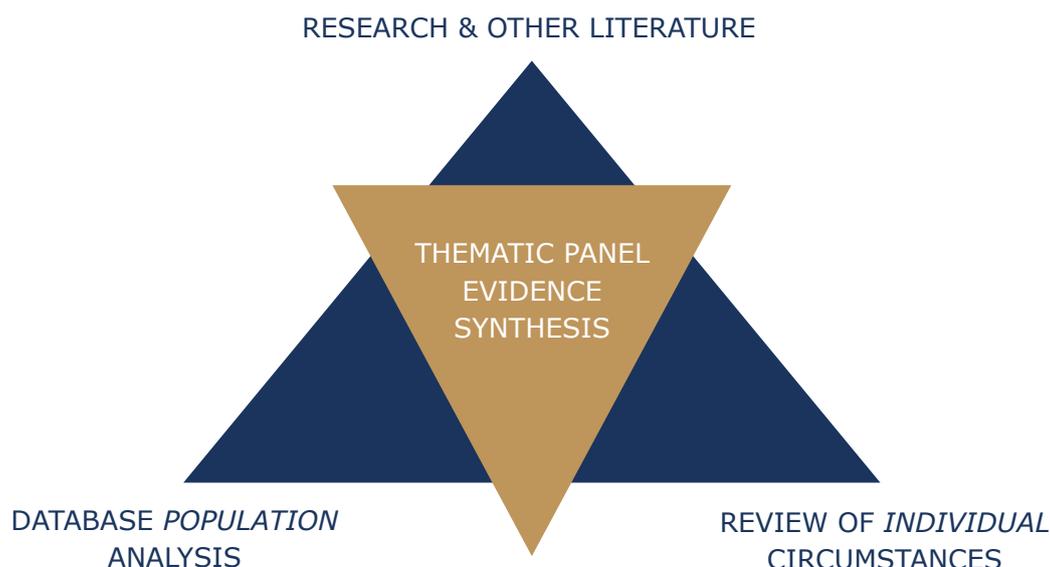
- Panel members had to have experience or expertise around drowning, and be able to represent their organisation or professional body. Panel membership is given at the beginning of this report.
- A thematic panel was convened following invitations to organisations involved in water safety as well as emergency services, unscheduled care, intensive care, paediatrics, public health and local authorities.
- A panel chair managed the agenda for each of three panel meetings.
- Although information was anonymised, panel members were reminded of their common law duty of confidentiality and signed a confidentiality statement. All printed materials shared with members and their notes were collected at the end of each meeting and securely stored.
- Panel members were asked to declare any potential conflicts of interest.

### Triangulation of evidence

The panel members reviewed three main types of evidence (*Figure 2.1*). These were:

- information from the CDR database
- evidence from the literature review on drowning risks and the effectiveness of interventions to reduce risk
- discussion of individual events.

The Observatory Evidence Service attended two of the three panel meetings and presented their findings to the panel.



**Figure 2.1:** Illustration of the panel’s role in triangulation of three types of evidence used to determine thematic review recommendations and key messages.

### Identification of themes

- Panel members were asked to make notes throughout the discussions.
- The CDR team collated the notes and organised them into themes for presentation back to the panel.
- Panel members reviewed the themes and agreed, rejected or reorganised them to reflect the discussions held.

### Development of panel advice

The panel provided advice on each theme in one of two ways:

- As a recommendation: This advice was generally well-supported by triangulation of the evidence, but not necessarily by the research literature alone.
- As a key message: This was more appropriate where the evidence was less strong or the theme had broader public health relevance than just drownings.

All proposed recommendations were assessed against SMART criteria; they should be specific, measurable, achievable, realistic and time-bound. The panel considered this in terms of four questions:

- *What needs to happen?* Identification of the specific area of concern for improvement and the remedial action needed.
- *Who needs to act?* Identification of the organisations responsible for taking action.
- *What measure, by when?* Identification of the baseline (Where we are now?), the change we expect (Where we want to be?) and the measurement of change (How will we know when we’ve got there?). It was also important to state a timescale for implementation and when the change should be measured.
- *Is this doable and sensible?* The effort required to change, what this might involve and the capability or resources of the responsible organisation to deliver. Panel considered whether the change could conceivably reduce child deaths from drowning.

The panel also considered whether each recommendation or key message might cause harm or, if withheld, whether harm could result.

## 2.6 Were there limits to our approach?

### Included deaths

- A small number of deaths were reviewed and we only reviewed unintentional drowning deaths. There are also deliberate water-related deaths, such as by suicide, and some of these may also be preventable.
- Near drownings also occur; some of these could have been fatal but for interventions already in place. Studying near drownings could have provided additional learning, but this is beyond the scope of the CDR Programme and, as a result, this information was not available.
- None of the deaths reviewed occurred in floodwaters. However, climate change poses potentially significant implications for water safety, drowning prevention and drowning risk.

### Information sources

- Our data are incomplete and may not contain all relevant information on all accidental drowning deaths.

### Literature review

- Conducting research on drowning is both ethically and methodologically challenging, which limits the quality and quantity of evidence that is (or will become) available.
- Recent SRs were the main form of research evidence sought. Although SRs are generally the most reliable type of evidence, where information was scarce or quality poor we looked at some original studies. This affects the repeatability of our review and could have introduced bias in favour of particular studies.

- The included studies are spread over a wide range of settings and interventions, meaning that few address the same question and so cannot reinforce the same conclusion. Furthermore, a lack of good quality research evidence does not mean a risk factor is unimportant or an intervention is ineffective.

The full evidence review report is available alongside this report from the CDR Programme website.

### Panel process

- Research evidence is not the only type of evidence, but it can receive too much emphasis during triangulation, whether there is little or much of it.
- Themes do not emerge until after panel has discussed the evidence, meaning that there will not always be research evidence to correspond to every theme.

# 3. Thematic overview

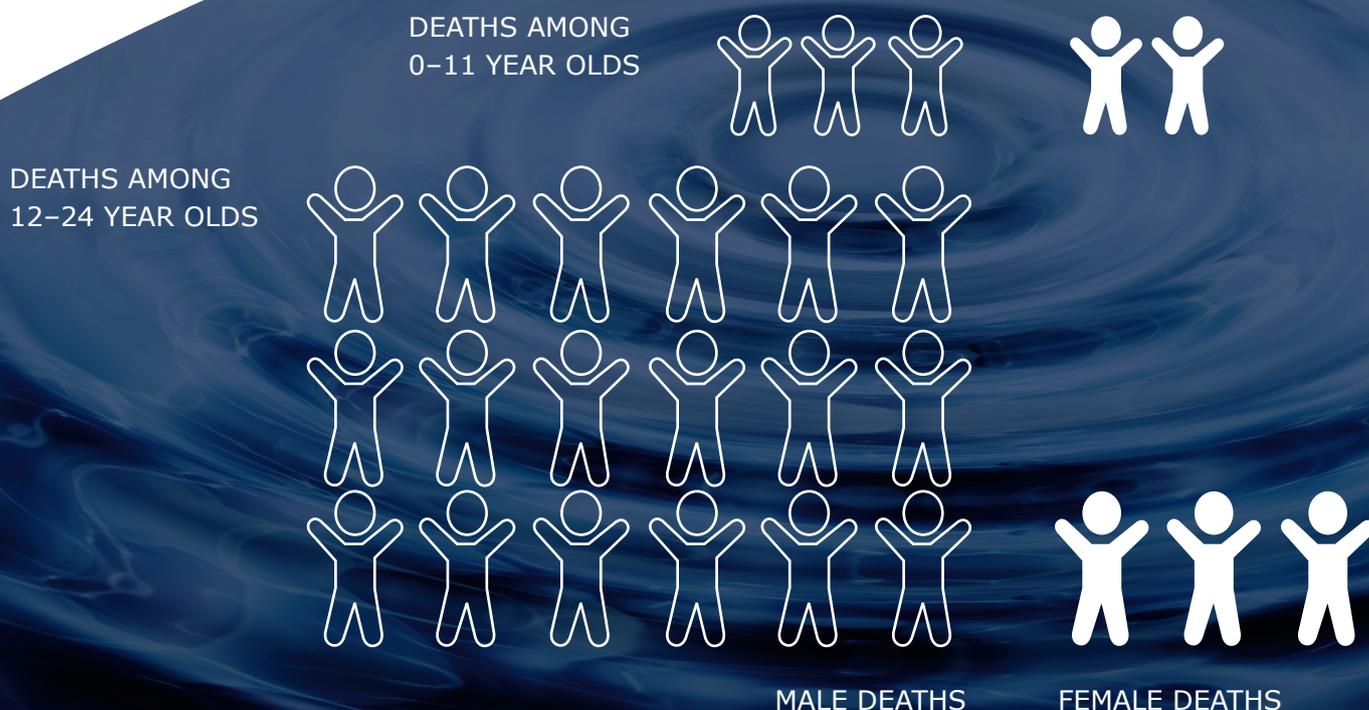
## 3.1 What did our information tell us?

- Initial searches identified 39 deaths among 0–24 year olds; 32 (82%) were male and seven (18%) female.
- Of these, 13 deaths did not meet our inclusion criteria, either because they occurred following a motor vehicle crash or were likely intentional (homicide, suicide, or of undetermined intent).

## Age and sex

Following these 13 exclusions, 26 deaths were included in our review (*Figure 3.1*):

- Twenty one (81%) were aged 12–24 years.
- Five (19%) were aged 11 years or under (three males and two females).
- Of the 26, 21 (81%) were male and five (19%) were female.
- Eighteen (69%) deaths were of males aged 12–24 years.



**Figure 3.1:** Illustration of the proportion of 26 included deaths by age band and sex, where a smaller figure represents a younger child and a filled-in outline figure is a female.

## Setting

Settings were grouped as open water (seas, rivers, lakes, quarries) and closed waters (swimming pools, baths, ponds, paddling pools):

- For those aged 11 years or under, four of five deaths (80%) occurred in closed waters.
- For those aged 12–24 years, 20 of 21 deaths occurred in open water.
- Open water deaths accounted for eight of nine deaths among 12–17 year olds and all 12 deaths among 18–24 year olds.

## Seasonality

- Half of the deaths (13, 50%) occurred between June and August, while five (19%) occurred between March and May.
- Warm weather, school and public holidays are likely to be factors in seasonal patterns.

## Usual residence

- Seven (27%) of the 26 deaths were of Welsh children and young people who were on holiday or residing outside Wales temporarily.

## 3.2 What did the literature tell us?

This is a summary of the findings of the evidence review; each thematic chapter in this report has more detail and the full evidence review is available from the Child Death Review Programme website.

### Risk factors

- Sixty nine articles relating to risk factors were found, with five systematic reviews (SRs) being selected for inclusion in our evidence review.
- One SR identified four main areas as potential modifiable risk factors for drowning and near-drowning: alcohol use, lack of quality supervision, use of infant bath seats and risk-taking behaviour (Purnell and McNoe, 2008).

- There is a lack of high quality evidence in relation to the risks and role of alcohol in recreational water activity, but risk of drowning has been found to increase with increasing blood alcohol concentration.
- Lack of supervision has been found to be a contributory factor in drowning deaths of 0–18 year olds.
- Limited evidence suggests that males are more likely to engage in risky behaviours, including alcohol consumption, when involved in water related activities.
- Drug taking and failure to follow safe diving practice guidelines are also risky behaviours that have been linked to drowning deaths.
- Expert opinion is that drowning risk is higher among males, under fives and teenagers, where there is a lack of adequate supervision of children, in the presence of risk-taking behaviour (particularly amongst teenagers), epilepsy and alcohol use when engaging in water-related activities.
- Higher risk is also associated with inland water, summer and activities such as walking/running near water, swimming, boating and angling.
- United Kingdom data for adults aged 18–93 years suggest that people with epilepsy are around 15 times more likely to drown than those without epilepsy.

### Effective interventions

- One hundred and seven articles were found to cover drowning prevention; seven SRs and one National Institute for Health and Care Excellence (NICE) evidence update were included in our review.
- There is a lack of research evidence about interventions to prevent drowning. Although a leading cause of death globally, numbers of drownings in high-income countries are small. This, and ethical issues, make robust intervention studies difficult to achieve.
- For infants and young children there is evidence that general home safety education is an ineffective intervention to prevent children being left alone in the bath.
- For infants and young children there is evidence that pool fencing is an effective

- intervention for the prevention of drowning and that isolation fencing (four-sided) is more effective than perimeter fencing (three-sided). Research evidence suggests legislation allowing three-sided pool fencing is an ineffective intervention for the prevention of drowning.
- Among younger children formal swimming lessons may reduce drowning risk. Formal lessons for older children do not appear to increase or decrease risk.
  - There is inconclusive evidence on the use of personal floatation devices by children or young people.

### 3.3 What themes emerged from panel discussion?

Each theme emerging from panel discussion was closely linked with at least one other theme, as shown in Figure 3.2. The diversity and dynamism of the panel meant that these covered all water settings, not merely the open water settings traditionally covered by organisations focussed on water safety.

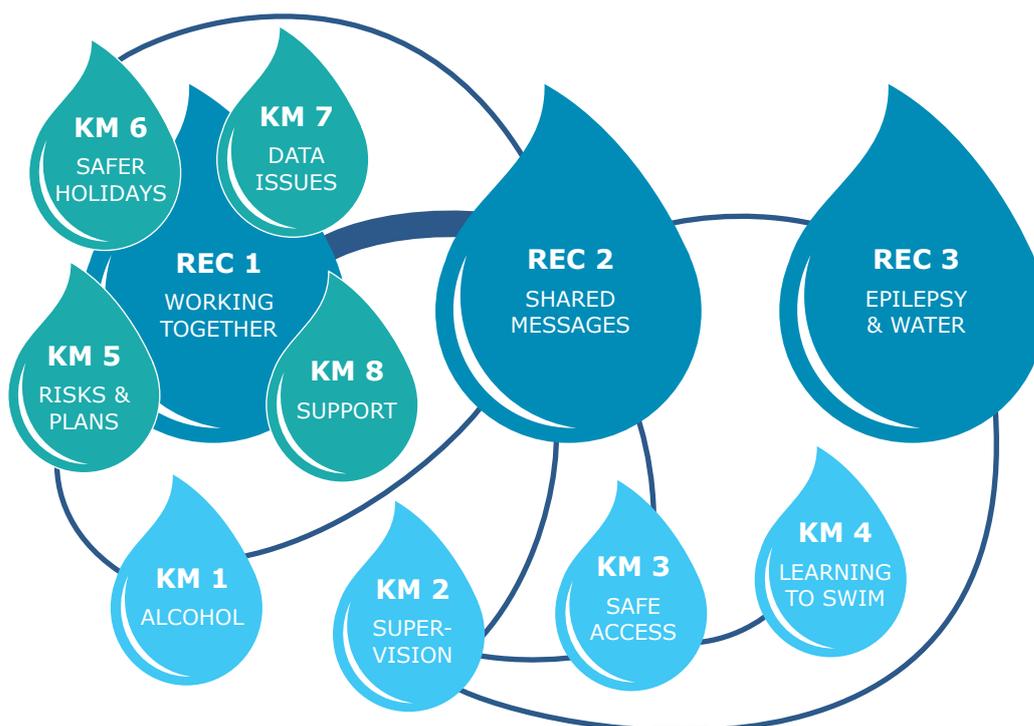
Eleven themes provided the basis for developing recommendations and key messages:

- Three themes were used to make recommendations and eight became key messages.
- The recommendations also offer a means to take forward certain key messages. For example, alcohol-related risk reduction could be achieved on its own, but action is more likely to be effective as a part of shared messages and working together.

The following chapters summarise our information on each theme. However, many potential interventions could be directed towards more than one theme, since this is a more effective approach. As a result, and due to other measurement challenges, it will be difficult to attribute any future reduction in drowning deaths to implementation of a specific recommendation or key message given by this thematic panel.

### Reference

Purnell M and McNoe B. (2008). *Systematic review of drowning interventions and risk factors and an international comparison of water safety policies and programs*. Otago: University of Otago. Available at: [http://www.acc.co.nz/PRD\\_EXT\\_CSMP\\_idcplg?IdcService=GET\\_FILE&dID=3794](http://www.acc.co.nz/PRD_EXT_CSMP_idcplg?IdcService=GET_FILE&dID=3794) [Accessed 4 Jan 2016]



**Figure 3.2:** Illustration of themes emerging during panel discussions showing interrelationships (marked as blue streams) and distinguishing recommendations (larger droplets) from key messages.





# 4. Theme: Working together

## 4.1 Recommendation 1

### An All Wales forum for water safety should be established.

**What needs to happen?** A forum should be established with all stakeholders represented. The main aim of the forum should be to develop and disseminate water safety messages, so that for each setting where there is a drowning risk there is one water safety message, shared by all relevant organisations (*Recommendation 2*).

The forum should also take forward some of the key messages in this report, including:

- advising on and review of community water safety risk assessments and mitigation plans (*Key message 5*)
- supporting actions to make holidays in, on and around water at home or abroad safer (*Key message 6*)
- improving the sharing and quality of information (*Key message 7*)
- guiding those involved in drowning events to appropriate support (*Key message 8*).

This recommendation applies to all water safety settings.

**Who needs to act?** Action and participation is required by all stakeholders, not just traditional water safety organisations, with a remit for or interest in keeping people safe in, on, or near water (see Appendix).

**What measure, by when?** There is currently no All Wales forum for water safety; one should have been established (the measure of action) and a first meeting held by September 2016.

**Is this doable and sensible?** The forum should increase partnership working, reduce duplication through pooling of resource, and improve clarity of purpose. This will require a willingness to engage with the forum and to set aside some organisational differences.

**What evidence was considered?** This recommendation derives from panel discussion in the absence of database information or robust evidence from the literature.



## 4.2 What did our information tell us?

- The information we collected on drownings among children and young people did not directly relate to the benefits or otherwise of partnership working to prevent drownings.

## 4.3 What did the literature tell us?

### Risk factors

- Our search of the literature was unable to comment on whether the presence or absence of partnership working directly affected drowning risk.

### Effective interventions

- The *Child safety report card* (2012) includes government level accountability for water safety in its assessment criteria.
- The *Global report on drowning* (2014) advised there should be coordination of drowning prevention activity across sectors and agendas.
- *A future without drowning* (2015) calls for stakeholder collaboration to reduce drownings by 50% by 2026.
- None of the above documents clearly link to underlying evidence about the effectiveness of partnership working in reducing drowning.

## 4.4 What did panel discussions add?

- Working better together is believed to offer greater opportunity for prevention and water safety. Duplication could be avoided, number of people reached by the message increased and consistency promoted.

- There is also a potential for this to improve support for those involved in drowning incidents, whether family members, survivors or rescuers (*Key message 8*).

## 4.5 Commentary

- The evidence base does not and likely never will be able to support or refute the value of an All Wales forum for water safety in preventing drowning. However, it is unlikely that such a forum would increase risk of drowning.
- There is already a National Water Safety Forum for the United Kingdom (UK), but it only includes traditional water safety agencies. An All Wales forum would give greater representation to organisations with a Wales-specific remit. Membership should also ensure broader coverage of water-related hazards—from in the home to open water environments. The UK and Wales fora should work together.
- If this forum is established a number of issues need to be resolved, including who owns and convenes the forum, who takes responsibility for it and who holds it to account.

## References

MacKay M and Vincenten J. (2012). *Child safety report card 2012*, Wales. Birmingham: European Child Safety Alliance, Eurosafe; 2012. Available at: <http://www.childsafetyeurope.org/reportcards/info/wales-report-card.pdf> [Accessed 25 Dec 2015]

National Water Safety Forum. (2015). *A future without drowning: The UK national drowning prevention strategy*. National Water Safety Forum.

World Health Organization. (2014). *Global report on drowning: Preventing a leading killer*. Geneva; World Health Organization. Available at: [http://www.who.int/violence\\_injury\\_prevention/publications/drowning\\_global\\_report/Final\\_report\\_full\\_web.pdf](http://www.who.int/violence_injury_prevention/publications/drowning_global_report/Final_report_full_web.pdf) [Accessed 25 Dec 2015]



# 5. Theme: Shared messages

## 5.1 Recommendation 2

**For each setting where there is a drowning risk, a single water safety message shared by all relevant organisations is needed.**

**What needs to happen?** All stakeholders need to work together to develop or adopt and disseminate, for each setting where there is a risk of drowning, a shared single water safety message for Wales. This applies to open and closed waters, including domestic settings.

**Who needs to act?** All stakeholder organisations with a role in promoting water safety in Wales (see Appendix).

**What measure, by when?** There is currently no consensus on shared messages. An agreed set of shared setting-specific water safety messages should be made public and actively promoted through participating organisations by March 2017.

**Is this doable and sensible?** Consensus on a shared water safety message for each setting with drowning risks is achievable through partnership working. This action would be made easier by establishing the forum outlined in *Recommendation 1*. Stakeholders already have expertise in communicating water safety messages and will be able to build on this.

**What evidence was considered?** This recommendation derives from panel discussion in the absence of database information or robust evidence from the literature.

Clarity not confusion

Once for Wales



## 5.2 What did our information tell us?

- The information we collected on drowning among children and young people did not directly relate to the benefits or otherwise of shared messages to prevent drowning.

## 5.3 What did the literature tell us?

### Risk factors

- Our search of the literature was not directly relevant to whether the presence or absence of shared messages directly affected drowning risk.

### Effective interventions

- Both the *Child safety report card* (2012) and National Institute for Health and Care Excellence (NICE) guidance on *Unintentional injuries: Prevention strategies for under-15s* [PH29] (2010) encourage the provision of water safety information.
- The *Global report on drowning* (2014) and *A future without drowning* (2015) advocate strengthening public awareness of drowning and water safety risks.
- Direct links to the underlying evidence informing this policy advice are not clear.
- There was a lack of evidence in our literature review about the effectiveness of drowning prevention campaigns. One study suggested that beachgoers changed safety-related behaviours after education, but a poor study design made firm conclusions difficult.
- Leavy and colleagues (2015) concluded that education and information should be part of a broader, multi-component approach to reducing drowning deaths and that the specific context of these interventions was important.

## 5.4 What did panel discussions add?

- Safety messages are closely linked to educational interventions and aim to encourage behaviours that reduce risk.

- Many organisations are looking to communicate similar messages to the public about water safety. The panel felt that this might cause confusion.
- Using setting-specific single shared messages would make the message clearer and improve public awareness and understanding.

## 5.5 Commentary

- There is no formal evidence base to support the development of one shared water safety message for each setting with drowning risks.
- The panel agreed that shared setting-specific messages would support efforts to reduce the chance of drowning, and that this approach would be more effective than no message or multiple competing messages.
- The panel agreed that there is unlikely to be an increase in the risk of drowning through the use of shared setting-specific messages.

## References

Leavy JE *et al.* (2015). A review of drowning prevention interventions for children and young people in high, low and middle income countries. *J Commun Health* DOI 10.1007/s 10900-015-0105-2. Abstract only

MacKay M and Vincenten J. (2012). *Child safety report card 2012*, Wales. Birmingham: European Child Safety Alliance, Eurosafe; 2012. Available at: <http://www.childsafetysafetyeurope.org/reportcards/info/wales-report-card.pdf> [Accessed 25 Dec 2015]

National Water Safety Forum. (2015). *A future without drowning: The UK national drowning prevention strategy*. National Water Safety Forum.

National Institute for Health and Care Excellence. (2010). *Strategies to prevent unintentional injuries among the under-15s*. PH29. London; NICE. Available at: <https://www.nice.org.uk/guidance/ph29> [Accessed 28 Dec 2015]

World Health Organization. (2014). *Global report on drowning: Preventing a leading killer*. Geneva; World Health Organization. Available at: [http://www.who.int/violence\\_injury\\_prevention/publications/drowning\\_global\\_report/Final\\_report\\_full\\_web.pdf](http://www.who.int/violence_injury_prevention/publications/drowning_global_report/Final_report_full_web.pdf) [Accessed 25 Dec 2015]



# 6. Theme: **Epilepsy and water**

## 6.1 Recommendation 3

### **Consistent guidance on safer bathing for people with epilepsy is needed.**

**What needs to happen?** There needs to be consistent advice on safer bathing for healthcare professionals, children and young people with epilepsy and their carers. This should specifically refer to the relative safety of showering compared to bathing and include safety precautions to reduce risk in both situations.

**Who needs to act?** The National Institute for Health and Care Excellence (NICE) should review their *Epilepsies: diagnosis and management* guideline (CG137) to ensure that it helps practitioners deliver evidence-based safety messages around epilepsy and bathing.

**What measure, by when?** There is currently no consensus advice on safer bathing for people with epilepsy. Publication of an updated NICE guideline should be carried out in accordance with NICE's internal timetable for review of CG137.

**Is this doable and sensible?** Panel discussion highlighted inconsistencies in the advice given to people with epilepsy about safer bathing; this variation is inappropriate. Research on epilepsy and bathing risk is available and although not reviewed for this report, assessment of existing evidence is feasible. Development of clear advice and its reinforcement on a regular basis should enable it to become routine care for people with epilepsy.

**What evidence was considered?** This recommendation derives from database information, awareness of relevant literature and panel discussion.

Consistent advice, consistently given



## Consider whom to tell and when

### 6.2 What did our information tell us?

- A small number of deaths involved individuals with a confirmed diagnosis of epilepsy, some of whom may have had a seizure while bathing.

### 6.3 What did the literature tell us?

#### Risk factors

- Epilepsy is given as a risk factor for drowning in several reports for the World Health Organization.
- Bell and colleagues (2008) report that people with epilepsy are 15 to 19 times more likely to drown compared with the general population, however this excess risk covers a wide age range. The increased risk for children with epilepsy may be smaller than adults, because children with epilepsy are more likely to be supervised.

#### Effective interventions

- Bell and colleagues (2008) concluded that people with epilepsy and their families should receive appropriate guidance about their increased risk of drowning.
- Our literature search was not designed to cover counselling or education interventions to reduce drowning risk for people with epilepsy.

### 6.4 What did panel discussions add?

- Some people with epilepsy (and their families) are provided with some information, some of the time.

- Age-appropriate information about all water settings should be developed, provided routinely and reinforced regularly.
- At home, information should cover bathing risks, supervision and access to the bathroom.
- At swimming pools or on trips to the seaside, it should cover the value of making lifeguards aware of the condition.
- Information could be provided at outpatient visits or alongside prescriptions for medication to treat epilepsy.

### 6.5 Commentary

- There was no evidence within our review on safer bathing guidance to prevent drowning among children and young people with epilepsy.
- The panel believe that guidance would help to reduce drowning risk and is likely to be more effective than either no consensus guidance (the current position) or multiple competing or potentially contradictory messages. The risk of drowning is unlikely to increase through providing such guidance.
- Current differences in practice may place some children and young people at greater risk than others.

### References

Bell GS *et al.* (2008). Drowning in people with epilepsy: How great is the risk? *Neurology* 71 (8): 578–82.

National Institute for Health and Care Excellence. (2014). *Epilepsies: Diagnosis and management*. CG137. London; NICE. Available at: <https://www.nice.org.uk/guidance/cg137> [Accessed 28 Dec 2015]



# 7. Theme: Alcohol

## 7.1 Key message 1

**Alcohol appears to be a contributory factor in some drownings.**

## 7.2 What did our information tell us?

- Almost one third of deaths (31%, eight of the 26) were linked to possible alcohol consumption.
- Not all of the deaths were substantiated as alcohol related by the cause of death information or *post mortem* blood alcohol level tests.
- Alcohol involvement was usually suggested by the information we had, such as a group of friends out drinking, visiting a nightclub, or at a party.

## 7.3 What did the literature tell us?

### Risk factors

- Research suggests that up to 70% of adult drowning deaths involve alcohol and the risk of drowning increases with consumption (Driscoll and colleagues, 2004).
- Males report that they consume more alcohol in conjunction with water-based activities than females (Purnell and McNoe, 2008).
- Alcohol is regularly highlighted by expert reports as a drowning risk factor for adults.

## Effective interventions

- Our literature search did not find evidence on effective interventions to reduce alcohol consumption in relation to drowning risk. However, this does not mean such evidence does not exist.

## 7.4 What did panel discussions add?

- Alcohol was likely to have been involved in a number of deaths among older children and young adults, but is difficult to prove from the information available to us.
- Adolescents are less supervised than younger children and risky behaviours in or around water fits with patterns seen in other settings.
- Some deaths involved individuals who were on their own at night and entered the water under the influence of alcohol. This raises issues around effective reminders about looking after peers.
- Although not a known factor in the deaths we reviewed, the issue of alcohol consumption by supervisors of young children was also raised.

Alcohol and water don't mix



## 7.5 Commentary

- Many of the comments could also apply to substance misuse, although there was no evidence of this in the deaths we reviewed.
- Evidence for the involvement of alcohol in the deaths we reviewed was often anecdotal.
- Drowning is one of many possible outcomes of alcohol consumption. Reducing alcohol-related harm is a much broader public health issue than just drowning risk.
- Efforts to reduce alcohol-related harm should be mindful of the risk of drowning.
- Interventions to reduce drownings on a night out could include training staff working in night-time environments to observe the law around not serving alcohol to intoxicated persons and raising awareness of the dangers of nearby bodies of water.
- Community water safety risk assessments and mitigation plans (*Key message 5*) need to consider the risks to people under the influence of alcohol. These could also become part of the licensing objectives, namely the public safety objective.
- Campaigns encouraging teenagers and young adults to look after their mates could cover the dangers of mixing alcohol and water. For example, the 'Don't drink and drown' campaign in Bristol and Bath could be adopted (*Recommendation 2*).

- It is also suggested that parenting education emphasises that every child needs a sober caregiver and that there may be added risks from lapses in supervision under the influence of alcohol.

Don't drink and drown

## References

- Driscoll TR *et al.* (2004). Review of the role of alcohol in drowning associated with recreational aquatic activity. *Inj Prev*; 10: 107–113. Available at: <http://injuryprevention.bmj.com/content/10/2/107.full.pdf+html> [Accessed 28 Dec 2015]
- Purnell M and McNoe B. (2008). *Systematic review of drowning interventions and risk factors and an international comparison of water safety policies and programs*. Otago: University of Otago. Available at: [http://www.acc.co.nz/PRD\\_EXT\\_CSMP/idcplg?IdcService=GET\\_FILE&dID=3794](http://www.acc.co.nz/PRD_EXT_CSMP/idcplg?IdcService=GET_FILE&dID=3794) [Accessed 4 Jan 2016]

# 8. Theme: Supervision

## 8.1 Key message 2

**More active and appropriate adult supervision may have prevented some drownings.**

## 8.2 What did our information tell us?

- Seven (27%) of the 26 individuals included in this review were reported to have been alone at the time of their death and in one further instance it is unknown whether the individual was alone or accompanied.
- Of the 14 drownings of under 18 year olds, five (36%) were alone when they drowned and six (43%) were with friends of unrecorded ages.
- Alone in this context means a lack of *active* supervision, so someone else being out-of-sight but in the same location, for example, would not qualify as active supervision.
- Of these 14 under 18 year olds, 11 were definitely not on the child protection register. No information was available on the remaining three.

Be within arms reach of younger children

## 8.3 What did the literature tell us?

### Risk factors

- Lack of supervision has been found to be a contributory factor in drowning deaths of 0–18 year olds in non-United Kingdom (UK) research studies (Purnell and McNoe, 2008).
- Expert body reports, including the *Global report on drowning* (2014) and *European report on child injury prevention* (2008), identify the lack of adequate supervision of children as a drowning risk factor. Younger children who are fully dependent on caregivers are at the most risk, but older (more mobile) children may be unable to recognise danger or get out of the water without assistance.
- In 2015 Public Health England (PHE) and the Royal Society for the Prevention of Accidents (RoSPA) concluded that inadequate supervision of young children in the bath was a drowning risk.

### Effective interventions

- There is some research evidence to suggest that multi-component home safety education is ineffective in preventing children from being left alone in the bath (Kendrick and colleagues, 2012).
- One study of tailored versus generic computer-generated safety advice found that tailored advice was no more effective in preventing children from being left alone in the area of a paddling or swimming pool (Kendrick and colleagues, 2012).



All of your attention,  
all of the time

- Poor quality evidence from low and middle-income countries has suggested that supervision is important to child drowning prevention in all countries (Leavy and colleagues, 2015).
- *The Global report on drowning (2014)* advises provision of capable childcare for pre-school children away from water.
- A review of bath seats based on two studies (one in the UK) concluded that there was a link with supervision and drowning risk (Purnell and McNoe, 2008). However, a 2015 report from PHE and RoSPA concluded that inadequate supervision of young children in the bath posed a risk for drowning but that the role of bath seats in drowning was unclear.

#### 8.4 What did panel discussions add?

- Supervision and alcohol (*Key message 1*) were the strongest themes running through the discussions.
- Adolescents tend to be less well supervised while engaging in high-risk behaviours, such as consuming alcohol.
- In some public swimming pools children as young as eight years are permitted to enter the pool unaccompanied, however, there is no consideration around swimming ability.

#### 8.5 Commentary

- Supervision is an important parenting skill beyond reducing drowning risk. It needs to be balanced in terms of age, stage of development (e.g. accounting for any learning difficulties or conditions such as autism), risk taking and need for independence.
- Wales could consider adopting the Australian active supervision campaign for water safety of 'Be prepared, be within arms reach. All of your attention, all of the time' (*Recommendation 2*).
- The supervisor needs to be able to actively supervise in terms of age, environment, fitness and health of the child and/ or supervisor. There also needs to be a clear handover of responsibility between supervisors.
- Parents may over-estimate a child's ability to stay safe in water and underestimate the dangers of the water itself.
- Risks in the home may be over-looked because people feel secure in familiar surroundings. Parents need to be reminded of the dangers and need for supervision in all water-related settings, including from starting to run the bath until it is drained, paddling pools containing any water, uncovered water butts, unlocked hot tubs and the risks in neighbour's gardens.
- There is sometimes confusion over the role of the lifeguard in swimming pools; some parents believe that they provide supervision.
- Supervision may involve older children, teenagers and young adults looking out for each other. While looking out for peers is generally encouraged, it may not always be an appropriate substitute for adult supervision.
- Supervision is much broader than water safety and drowning risk in terms of preventing unintentional injuries or deaths.



## References

Kendrick D *et al.* (2012). Home safety education and provision of safety equipment for injury prevention. *Cochrane Database Syst Rev* Issue 9. Art. No. CD005014. DOI: 10.1002/14651858.CD005014.pub3. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005014.pub3/abstract> [Accessed 29 Dec 2015]

Leavy JE *et al.* (2015). Recreational drowning prevention interventions for adults: A review. *J Commun Health* 40 (4): 725–35.

Public Health England and Royal Society for the Prevention of Accidents. (2015). *Child safety update - child drowning and use of bath seats: Advice for Children and Young People (CYP) stakeholders*. London: Public Health England, Royal Society for the Prevention of Accidents. Available at: <http://www.mossfordgreen.redbridge.sch.uk/wp-content/uploads/2015/02/Child-drowning-and-bath-seats-factsheet-30-Jan-15.pdf> [Accessed 29 Dec 2015]

Purnell M and McNoe B. (2008). *Systematic review of drowning interventions and risk factors and an international comparison of water safety policies and programs*. Otago: University of Otago. Available at: [http://www.acc.co.nz/PRD\\_EXT\\_CSMP/idcplg?IdcService=GET\\_FILE&dID=3794](http://www.acc.co.nz/PRD_EXT_CSMP/idcplg?IdcService=GET_FILE&dID=3794) [Accessed 4 Jan 2016]

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Know who is responsible, don't assume





# 9. Theme: Safe access

## 9.1 Key message 3

**There are interventions that may encourage safer swimming or prevent unintended contact with water.**

## 9.2 What did our information tell us?

- In some cases children and young people were able to gain inappropriate access to settings such as neighbour's garden ponds and quarries.

## 9.3 What did the literature tell us?

### Risk factors

- *The Global report on drowning* (2014) comments on the risks of a lack of physical barriers between people and water, the presence of uncovered or unprotected water supplies and the lack of safe water crossings. A lack of personal floatation devices (PFDs) or immediate rescue and resuscitation are also risk factors.

### Effective interventions

- One study of tailored versus generic computer-generated safety advice showed that tailored advice was no more effective than generic advice in preventing a paddling pool being left full of water after use (Kendrick and colleagues, 2012).

- There is limited evidence on pool fencing; four-sided (isolation) fencing with self-latching gates is more effective than three-sided (perimeter) fencing (Thomson and Rivara, 1998). However, the evidence is inconsistent on the effectiveness of education/information to promote pool fencing (Kendrick and colleagues, 2012). Legislation and its enforcement allowing for three-sided fencing may be ineffective in improving compliance (Garside and Moxham, 2009).
- National Institute for Health and Care Excellence (NICE) guidance on preventing unintentional injuries [PH29] (2010) makes no recommendations about pool fencing or pool fencing legislation.
- There is inconclusive evidence on the use of PFDs (Leavy and colleagues, 2015).
- *The Child safety report card* (2012) includes legislation for pool barriers, mandatory use of PFDs, recertification and minimum numbers of lifeguards in its assessment criteria.
- *The Global report on drowning* (2014) advises on barriers to control access to water, providing safe places away from water for pre-school children, improving the use of PFDs and improving access to immediate rescue and resuscitation.

Safe access by design



## 9.4 What did panel discussions add?

The panel identified a number of environmental features that may have influenced incidents, including:

- lack of barrier fencing
- steeper than recommended swimming pool gradients
- presence of personal rescue equipment where swimming or bathing is prohibited (with the potential for conflicting messages that may encourage swimming)
- lack of mobile phone signal to be able to summon help.

## 9.5 Commentary

- It is unlikely that it will be possible to develop a robust evidence base to support or refute interventions linked to safe access.
- Managed swimming pools are some of the safest environments for swimming, but it is suggested that bathers are guided to enter the water at the shallowest point. This will help reduce the risk of small children running out of changing rooms and straight into the water.
- In privately managed pools self-latching gates are suggested to prevent children entering the pool without adult knowledge. For domestic pools, four-sided fences with self-latching gates should be encouraged.
- In all pools adherence to guidance on maximum gradients is suggested.
- Lifeguards encourage safer swimming and can prevent unintended contact with water. They have contributed to improving water safety in the United Kingdom and efforts to increase lifeguard provision are suggested. Some beach car park fees contribute to lifeguard funding; it is suggested that where this is the case it is made clear.

- Some people deliberately choose to visit beaches that are not managed; increasing the number of managed beaches may encourage people to seek more isolated locations.
- Warning sirens are used at some non-managed places when tides are particularly dangerous, but these may be ignored.
- Signs can deliver safety information and discourage swimming in inappropriate areas. To maximise their value signs should be consistent, easy to understand and remember. Emergency numbers should be included, perhaps with the message 'Stay safe, stay shallow' (*Recommendation 2*).
- An All Wales forum for water safety (*Recommendation 1*) could help to standardise signs.
- In homes where small children live or visit regularly (for example, grandparents) it is suggested that ponds be filled in or fenced off. Rental properties may need discussions with landlords. Parents or other child-minders should be aware of neighbour's pools or ponds.

Stay safe, stay shallow

- It is suggested that quarry owners ensure that their properties are secure. Anecdotal evidence suggests that dark dyes in the water can help to discourage swimming.
- None of the deaths reviewed here were linked to hot tubs, paddling pools or water butts, although all are relevant hazards. Safe management may include ensuring hot tubs have lids that can be locked, pools are emptied after use and water butts have lids that cannot be readily opened.



- It is neither feasible nor possible to physically prevent all access to open waters where swimming and bathing is not encouraged or permitted. Restricting access to swimming pools is also difficult.
- Lack of a mobile phone signal has been raised as an issue for motorists needing help on isolated roads (RAC Foundation, 2015). Those involved in coastal activities may have similar difficulties in an emergency. Improved network coverage or the use of warning signs notifying people of the lack of signal and nearest emergency contact point may help. Given emergency calls can be made as long as *any* service provider is in the area, areas with no coverage by any provider should be identified.
- The use of PFDs was not discussed by the panel.

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Wherever there is water there is risk





# 10. Theme: Learning to swim

## 10.1 Key message 4

**We commend the Welsh Government vision to ensure every child in Wales is able to swim by 2020. We suggest including water safety education on how pool-based lessons relate to open water.**

## 10.2 What did our information tell us?

- We had very little information about swimming ability of those who drowned.
- Of the 26 children and young people reviewed, eight (31%) were said to be able to swim, four (15%) were said to be unable to swim and the ability of the rest was unknown.

## 10.3 What did the literature tell us?

### Risk factors

- Risky behaviours included swimming alone and swimming in unsafe locations.
- The *Global report on drowning* (2014) identifies the lack of swimming skills and of water safety awareness as drowning risks.

### Effective interventions

- A single study suggests formal swimming lessons may reduce drowning risk for younger children; for older children there is no evidence of either reduced drowning risk or harm (Wallis and colleagues, 2014).

- Both the *Child safety report card* (2012) and National Institute for Health and Care Excellence (NICE) guidance on preventing unintentional injuries [PH29] (2010) encourage swimming competency and water safety education, including as part of school curricula.
- The *Global report on drowning* (2014) advises that school aged children should be taught basic swimming, water safety and rescue skills.
- *A future without drowning* (2015) recommends universal swimming and water safety lessons for primary school children (7–11 years) and to consider this for those aged 12–14 years.
- Direct links to the evidence informing the policy advice are unclear.

Respect the water

## 10.4 What did panel discussions add?

- Swimming ability (or lack of it) was discussed in relation to a number of deaths.
- In some cases, friends or family of the deceased had made specific comments about perceived swimming ability.



## 10.5 Commentary

- The Welsh Government vision is relevant to reducing drowning risk and increasing physical activity. Welsh Government suggest that the ability to swim is linked to improved life chances (Welsh Government, 2015).
- Under the Free Swimming Initiative, being a swimmer means a child can swim 25 metres 'in an efficient manner'; tread water or float for at least 30 seconds, including full rotation to a vertical or horizontal (face up) position; and submerge the body competently underwater and surface to face the assessor. Using these criteria, figures provided by Swim Wales indicate 73% of Year 6 pupils *assessed* during 2013–14 achieved this standard, with a range across Wales of 61–84%.
- Swimming lessons in swimming pools may not provide the skills and knowledge needed for swimming in rivers and seas. It is suggested that broader water safety education is also delivered, covering the risks and effects of cold water shock.
- Children over the age of eight years do not have to be accompanied by an adult to enter some swimming pools, but free swimming lessons are not provided until 11 years.

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Teach water safety



# 11. Theme: Risks and plans

## 11.1 Key message 5

**Planning is needed in Wales to take forward the UK national drowning prevention strategy (2016–2026) goal of producing publicly available community-level risk assessment and water safety plans.**

### 11.2 What did our information tell us?

- We do not know how many of the locations in which drownings occurred had a pre-existing community-level risk assessment and water safety plan.
- Our information identified environmental issues in some cases, suggesting that if assessments had been carried out previously, these may not have led to effective interventions to prevent drowning. For example, our information identified issues around poor lighting and lack of barriers where alcohol was being served to young people near to water.

### 11.3 What did the literature tell us?

#### Risk factors

- Our search of the literature was unable to comment on whether the presence or absence of a community-level risk assessment or implementation of a water safety plan directly affected drowning risk.

#### Effective interventions

- The *Child safety report card* (2012) graded Wales as poor in terms of policies for community-level risk assessments of designated public water recreational areas.
- Public health guidance issued by the National Institute for Health and Care Excellence (NICE) on preventing unintentional injuries [PH29] (2010) advocates the use of risk analysis and management procedures.

Understand the risks

- The *Global report on drowning* (2014) recommended management of flood risks and other water safety hazards on a local and national scale.
- *A future without drowning* (2015) recommends that each community with water risks carries out a community-level risk assessment and devises a water safety plan. The strategy notes a large proportion of drownings result from unplanned entry into the water.
- These documents do not provide clear links to evidence of the effectiveness of community-level risk assessment in reducing drowning.



### 11.4 What did panel discussions add?

- Community-level water safety risk assessments are not routine practice in Wales.
- Community-level risk assessment may have identified modifiable risks that could have prevented some of the deaths included in this review.

### 11.5 Commentary

- There is no formal evidence base to support the implementation of community-level risk assessments. However, these are unlikely to increase the risk of drowning.
- Including a community-level risk assessment in the alcohol licensing process could be considered (*Key message 1*).
- The content, use and implementation of risk assessment findings could be guided by an All Wales forum for water safety (*Recommendation 1*). The forum could also collate results, compare areas, disseminate findings and advise on time frames for review.
- Issues around the legal status, governance and accountability of such assessments and plans, and determining who is responsible for taking identified action within what time frame, need to be considered.

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Local knowledge  
linked to local  
planning



# 12. Theme: Safer holidays

## 12.1 Key message 6

**Holidaymakers at home and abroad could be encouraged to be more aware of water safety. This could be supported by the tourist industry routinely providing advice and guidance on water safety.**

Stay informed to stay safe

## 12.2 What did our information tell us?

- Nine (35%) of the 26 children and young people included in this review died while on holiday; most were under 18 years of age.
- Few drownings occurred outside of the United Kingdom.
- Six holiday drownings occurred in the sea.

## 12.3 What did the literature tell us?

### Risk factors

The *Global report on drowning* (2014) notes risks when travelling on water due to overcrowding, poorly maintained vessels, and non-availability or non-use of personal floatation devices.

## Effective interventions

- Public health guidance issued by the National Institute for Health and Care Excellence (NICE) on preventing unintentional injuries [PH29] (2010) includes advice for leisure facility providers (e.g. leisure centre and pool operators, boat hire companies, hoteliers, holiday companies and tour operators). The advice suggests using risk analysis and management procedures and providing useful water safety information, although the evidence underpinning this is not clear.
- *A future without drowning* (2015) recommends that recreational water activity organisations have a risk assessment and water safety plan in place. The evidence underpinning this is not clear.

## 12.4 What did panel discussions add?

- Families may overlook drowning risks while on holiday.
- Some people will take risks on holiday that they may not take at home.
- The level of protection from these risks may vary by location or country.
- Information about water safety, local legislation and practice, local tidal and bathing conditions and the safest places to swim or bathe could reduce the risks. Such information could be provided on booking or at departure points and combined with other public health messages.



## 12.5 Commentary

- There is no formal evidence to show that providing information about water safety to holidaymakers will reduce the risk of drowning. However, such information is unlikely to increase the risk of drowning.
- Millions of people holiday in many places every year without incident.

Know what to do if trouble finds you

- An All Wales forum for water safety (*Recommendation 1*) may be able to guide standard advice and support local operators to develop or improve water safety information.
- For toddlers and young children on holiday, this key message is closely linked to that on active and appropriate supervision (*Key message 2*).

Fun doesn't have to be fatal

## References

- National Institute for Health and Care Excellence. (2010). *Strategies to prevent unintentional injuries among the under-15s*. PH29. London: NICE. Available at: <https://www.nice.org.uk/guidance/ph29> [Accessed 28 Dec 2015]
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# 13. Theme: Data issues

## 13.1 Key message 7

**There are opportunities to improve sharing of data. It is also important to look at how information is communicated to support prevention, including reports by coroners.**

## 13.2 What did our information tell us?

- This review collated and cross-checked information from various sources—a lengthy process because the information was often incomplete.
- Information from coroners is important but can be difficult to obtain and has varying amounts of detail. Coroners verdicts could not be located for four of the deaths reviewed.
- A *Report to prevent future deaths* ('Rule 28' report) was identified for one of the drownings reviewed. These reports are issued when action to prevent future deaths is identified by the coroner.<sup>1</sup>

Sharing learning leads to wider action

## 13.3 What did the literature tell us?

- Our literature search did not cover issues about sharing or quality of information about drowning deaths.
- *A future without drowning* (2015) notes the lack of a consistent national approach to data collection and identifies the need to improve on what is collected.

## 13.4 What did panel discussions add?

- The amount and quality of data available to the panel was very variable.
- It was suggested that coroners reports be made routinely and readily available to reviews such as this.

## 13.5 Commentary

- The panel can only make robust recommendations and identify key messages if they have robust, detailed information on the event (this is true of all child death reviews).
- When the research evidence is limited as in this review, robust information on the event itself assumes even greater importance.
- There is no formal evidence base to indicate that improved information sharing will reduce drowning. However, drowning risk is unlikely to increase as a result of information sharing.
- Other areas of public health (e.g. violence prevention) have been shown to benefit from improved information sharing.

<sup>1</sup> Reports to prevent future deaths are described in the Coroners and Justice Act 2009 and Regulations 28 and 29 of the Coroners (Investigations) Regulations 2013. Coroners are duty-bound to make reports to a person, organisation, local authority or government department or agency where the coroner believes that action should be taken to prevent future deaths. For more information, see <https://www.judiciary.gov.uk/subject/child-death/>.



- Coroners are encouraged to routinely inform the Child Death Review (CDR) Programme of all child deaths for which they are planning to hold an inquest.

Good decisions need good data

- It is suggested that coroners are supported in the development and dissemination of verdicts on water-related deaths, particularly when a Rule 28 report is issued. An All Wales forum for water safety (*Recommendation 1*) could facilitate this.
- It is suggested that all Rule 28 reports made by coroners in Wales, and subsequent responses to these, be automatically shared with the CDR Programme so that this advice is incorporated into national recommendations or messages where appropriate.
- While sharing information is essential for effective partnership working, it is not without its difficulties. Both public sector and non-statutory organisations need to develop the trust to share information appropriately. Robust information governance frameworks are available and should be adopted to manage information sharing; early discussions are needed to address any concerns quickly and clearly.

### Reference

National Water Safety Forum. (2015). *A future without drowning: The UK national drowning prevention strategy*. National Water Safety Forum.

Prevention is an opportunity made for sharing



# 14. Theme: Support

## 14.1 Key message 8

**Appropriate support for those involved in drowning events in Wales is important.**

## 14.2 What did our information tell us?

- The information we collected did not cover the support available to bereaved parents, carers, families, rescuers or onlookers affected by a child drowning.

Right person, right message, right time

## 14.3 What did the literature tell us?

- Our literature search was not designed to look at the effectiveness of support available following drownings.

## 14.4 What did panel discussions add?

- The discussion on bereavement support was general, rather than specific to the deaths reviewed.
- Families and others do receive support through routes such as Procedural Response to Unexpected Deaths in Childhood (PRUDiC) for deaths involving those aged under 18 years. There is also a need to make support available

to everyone affected by deaths involving those aged over 18 years.

- Panel members were aware of a number of support options, although questioned whether these were widely signposted following a drowning event.
- Bereaved families do not contribute to panel discussions; had they done so the issue of support may have been raised.

## 14.5 Commentary

- A clear offer of appropriate support is important for everyone involved in a drowning incident, whether they are family, friends, rescuers or emergency services personnel. The drowning of a child or young person is a community-level event.
- Available and accessible support is more important than who provides it and where it is provided.
- An All Wales forum for water safety (*Recommendation 1*) could have a role in helping to signpost those affected by drowning to appropriate support.

Signposting can route people to better health



# Appendix: Stakeholders in relation to recommendations

The following table includes stakeholders identified as having a potential remit to take action in relation to the recommendation(s) shown. Each recommendation has been given a timeframe in which the recommended action should take place. The Child Death Review (CDR) Programme intends to determine what progress has been made towards implementing these recommendations. This table may not be fully inclusive; please contact the CDR Programme if your organisation has been omitted.

Stakeholder	Recommendation		
	1. Working together	2. Shared messages	3. Epilepsy & water
Adventure Activities Licensing Service	Y	Y	
British Sub-Aqua Club (Wales Region)	Y		
Carmarthenshire Water Safety Partnership	Y	Y	
Chairs of Safeguarding Children Boards	Y		
Canal and River Trust in Wales	Y		
Chief Fire Officers Association	Y	Y	
Child Accident Prevention Trust	Y	Y	
Children in Wales	Y		
Directors of Public Health at Health Boards	Y		
Local authorities in Wales	Y		
Maritime and Coastguard Agency	Y	Y	
National Coasteering Charter (Welsh regions)	Y		
National Institute for Health and Care Excellence			Y
National Parks Wales	Y		
National Water Safety Forum	Y	Y	
Natural Resources Wales	Y		
Police forces in Wales	Y	Y	
Public Health Wales	Y	Y	
River and Sea Sense	Y	Y	
Royal Life Saving Society UK	Y	Y	
Royal National Lifeboat Institution	Y	Y	
Royal Society for the Prevention of Accidents	Y	Y	
Surf Life Saving Association of Wales	Y	Y	
Swim Wales	Y		
Swimming Teachers Association (STA Wales)	Y		
Welsh Ambulance Services NHS Trust	Y		
Welsh Government (Injury Prevention)	Y		