

## Medical Engineering

# For the silent horror of drowning comes a poolside audible alarm of warning

By Mark Sunderland

It's the eerie silence of suffocating that defines the horror of drowning. No screams – no cries for help – no breath – only a momentary ripple of water, and for a child – death within five minutes.

So it's about time we reached a consensus on adult supervision. A toddler with access to water is only safe during actual moments of eye contact with a caregiver.

That's why the US Consumer Products Safety Association says: "Supervision can and does fail." and "Layers of protection work."

At the end of this summer season there will, again, be a tragic statistic for "death by drowning." Drowning is of course not limited to summer but its tragedy is especially poignant in contrast to the joys of pool and beach. Each year, according to the Red Cross, an average of 600 Canadians drown. More than half the number of drownings occur during the months of June, July and August.

The accidental death toll for children by drowning is capped only by car accidents.

The easy-to-assemble backyard pool has done nothing to lower the statistics of drowning. For a child, the entry can be easy but the escape can be impossible – even the wading pool is a danger because toddlers can fall face first over the edge.

Pool covers/blankets can also represent a source of danger – especially so for pets that can sink between the blanket and the perimeter of the pool, and then surface below the cover. The family cat for example sees a bird on the cover and then

leaps in and sinks.

Bob Lyons, an electrical engineer and President of Terrapin Communications has been studying water safety for about 10 years. He concedes that constant supervision of children in the presence of water is vitally important, but repetition of the message has had little impact on drowning

an audible alarm.

The patented electronic water sensor requires very low battery power to operate and is designed to only actuate the signal when more than a half of it is immersed in water. This means that a child can play in the rain or lawn sprinklers without sounding the alarm.

Beyond the Turtle's important contribution to safety, its success is enhanced by its appearance.

Scott Gibson of Gibson Product Design (gibsonproduct.com), the Ottawa industrial design and product development company that was responsible for its design, recognizes that the physical appearance is an important component to the drowning prevention equation. Not only does it sound the alarm but it is attractive for children to wear and the act of wearing it is a tangible reminder to be cautious. It's colorful and children like turtles.

The Safety Turtle has won numerous awards for the inventor and the company. Success has generated the development of other devices that incorporate the same technology – a sensor, for example, that's incorporated in a sun visor for senior citizens who participate in aquatic therapy. A Turtle for pets too – up to 50,000 domestic pets drown in backyard pools every year. There is also, in the Turtle family of devices, a pool gate alarm.

So, let this column join with Safety Turtle in reminding its readers that although backyard pools can be lots of fun, they also pose a horrible danger. In response, Safety Turtle can greatly enhance your effective supervision.

Mark Sunderland is President, BioMedical Industry Group, Ottawa (mark@biomedgroup.com).



The Safety Turtle alarm kit from Terrapin Communications.

related deaths and injuries. Constant eye tracking of the child would be more to the point – but that's not realistic.

Officially, there are five "layers or protection" strategy. Supervision, CPR training, first aid, water rescue and pool fencing but for all this, tragedies continue to occur and people continue to drown.

Lyons and Terrapin have developed and brought a product to market that counters the risk of a drowning accident in a novel way. The "Safety Turtle" (safetyturtle.com) is a simple wristband device that incorporates a water sensing element and a small transmitter. It is fastened to a child's wrist in a manner that prevents it from being easily removed. The significance is that when contact is made with water it wirelessly transmits a signal to a monitor that then produces

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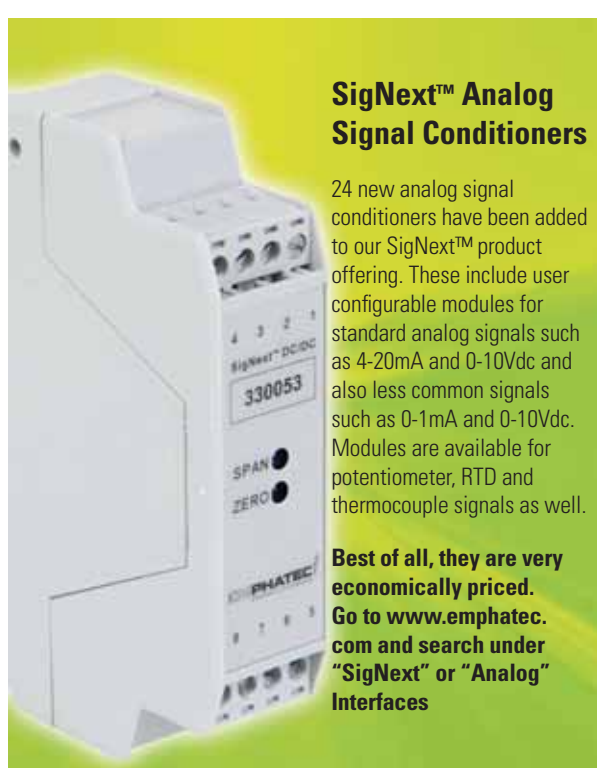
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