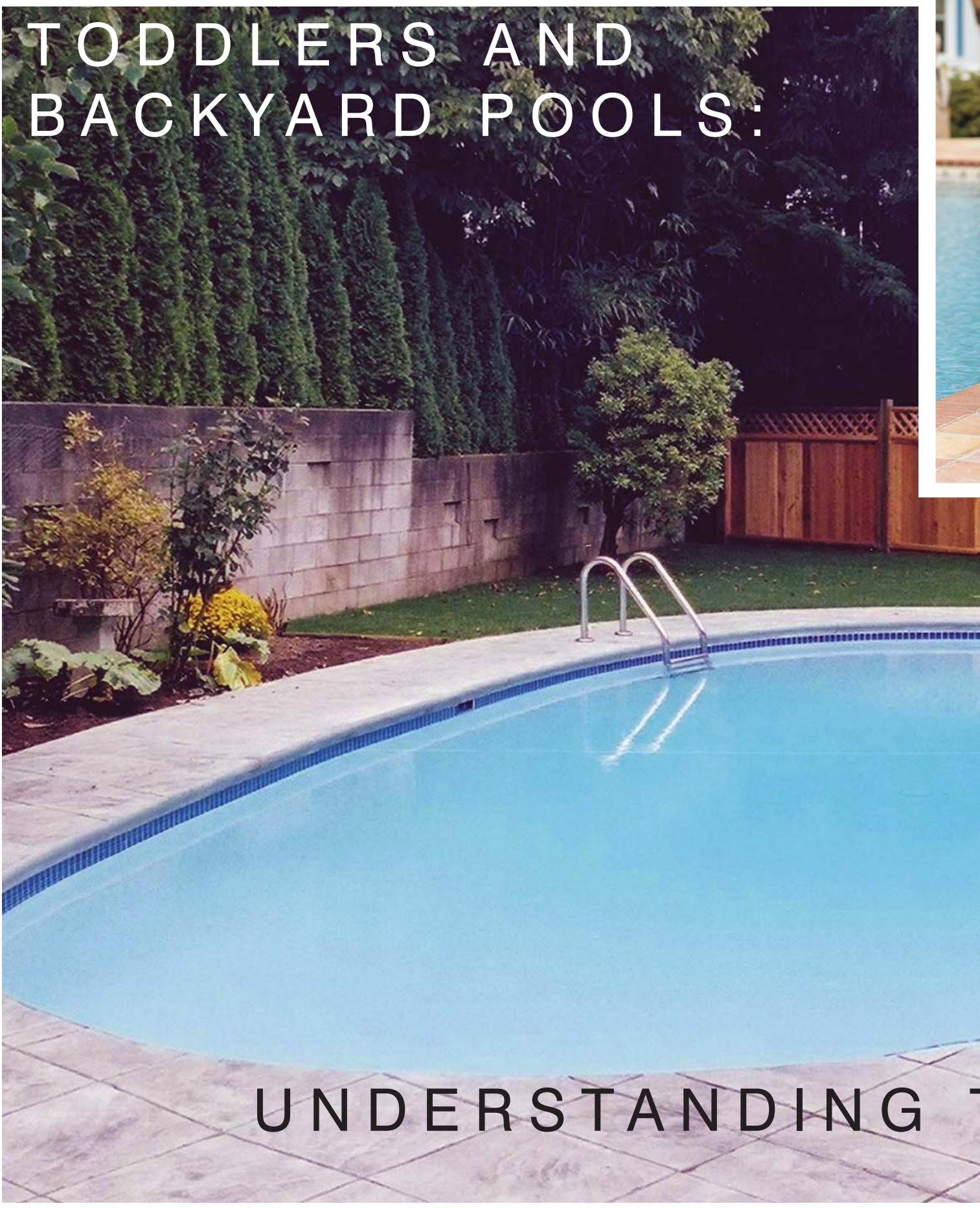
TODDLERS AND BACKYARD POOLS:



UNDERSTANDING T

THE THREAT

...by Bob Lyons

Among children ages 4 and under, there are approximately 400 residential swimming pool drownings and 3,000 near-drownings per year in Canada and the United States. More than one-third of the accidents occur at the homes of friends, neighbours or relatives. Drowning is the second leading cause of accidental death among children ages 14 and under, and the leading cause of accidental death of children 4 and under. Toddlers whose parents have recently purchased a pool are at the greatest risk.

Factors surrounding immersion accidents experienced by young children are related. Three major categories of factors are signi?cant: characteristics of the victim, the environment and supervisory factors. Lapse of supervision is always a contributing factor to an immersion accident of a young child.

Sources of data are: death and hospital admission statistics; coroners' reports; and water related incident reports by proactive local governments, e.g., Maricopa County, Arizona. This data has been analyzed by National SAFE KIDS Campaign (US), Injury Prevention and Child Safety Program (Canada), The Lifesaving Society, etc.; but unfortunately, results are not at hand to those who need it most: parents with backyard pools.

Accident rates in Phoenix/Scottsdale, Orange County and other areas with very high pool concentrations and usage have dropped dramatically as a result of serious education campaigns directed at pool owners and pool builders. This article identi?es and quali?es the sources of risk which all pool owners with young children or grandchildren should be aware of.

VICTIM CHARACTERISTICS AND BEHAVIOUR

Each immersion incident is linked to behavioural and developmental factors. Teenagers (15-19 years of age) and preschoolers (1-4 years of age) are most at risk, for different reasons. Toddlers are exploring and testing their environment, imitating adult behaviour but unaware of the dangers of water and usually without the swimming skills to stay a?oat. In Canada and the US, male victims outnumber female victims after the ?rst birthday, with the gap widening with increasing age. This suggests that behavioural differences between the two sexes may play a role.

But what about individual differences with the same age and gender group? Are some toddlers more immersion accident prone than others, and is this indicated in their behaviour? Unfortunately, the data provides no "heightened risk" symptoms for the 1-4 age category. Nonetheless, the following can reasonably be stated:

- Toddlers as a group seize only a small percentage of their unintended pool entry opportunities.
- A toddler is capable of setting short term goals: venturing into the back yard pool is a "reasonable" short term goal.

Some toddlers may be particularly vulnerable. Parents and judges should be mindful of this.

SUPERVISORY FACTORS

A breakdown in caregiver supervision contributes to each child immersion accident. Three distinct scenarios can be identi?ed and analysed:

- child enters the pool area unobserved
- child is near the pool with caregiver permission but without caregiver intention that he/she enter the water
- child has caregiver permission to be in the water

The first two are most relevant to the supervision of toddlers.

More than half the reported accidents (though

less than half the fatal ones) occur when the toddler is near the pool with caregiver permission. Fencing and intrusion alarms, even when secured 100% of the time, are incapable of preventing these accidents. Uninterrupted supervision (not just caregiver presence) is critical when a toddler is near water. Individual alarms worn by the child are now available as a last line of defence.

THE ENVIRONMENT

Unfamiliar surrounding is a major risk factor. Less than one third of all toddler immersion accidents occur in "familiar" pools; the rest occur at friends', relatives' or neighbours' houses or in home pools purchased or installed less than six months before. Lack of adequate security and failure to detect problems, such as broken gate latches, contribute to accidents. Caregivers are often distracted by unfamiliar surrounding, just when they should be on heightened alert.

An in-ground pool without 4-sided fencing is twice as likely to be involved in a toddler drowning as an in ground pool with 4-sided fencing or an above ground pool. This ratio may overstate the bene?t, as 4-sided fencing also differentiates more and less safety conscious pool owners generally. Nonetheless, it is an important environmental factor.

Accident rates vary with time of year and day of week. Rates increase with pool usage - 40% of accidents are on Saturday or Sunday. Rates are also higher at the beginning of the pool season. There is no evidence that air or water temperature affects a toddler's inclination to enter a pool.

Inevitable, unpredictable and dif?cult to control, caregiver distraction is the most insidious of environmental factors. Backup and support to the primary caregiver is critical. Parents need to be on the same page with respect to their regimen, and prudent in delegating responsibility to supervise their child around water. Uninformed parents typically exhibit different levels of concern; unfortunately, a chain is only as strong as its weakest link. Over 90% of families that lose a child end in a divorce.

TECHNOLOGY TO THE RESCUE?

Pool security products are becoming available in increasing numbers, but it is too soon to assess their effectiveness in reducing accidents. Human nature being what it is, other measures might be relaxed in the presence of a security product.

An intrusion alarm, like a physical barrier, does not (in most practical cases) protect the toddler near the water with caregiver permission. Nor does it follow a child from pool to pool, i.e., to unfamiliar surrounding. Intrusion alarms are usually disarmed by swimmers and pool cleaners. Due to false alarms, they are also sometimes disarmed at night and during absences from the house. The effectiveness of intrusion alarms therefore depends on everyone with unrestricted access to the pool. Alarming, self-closing gates are less prone to human error, providing the alarm is not disabled during pool occupancy.

Personal alarms such as Safety Turtle provide an additional layer of protection to intrusion barriers and alarms. Effectiveness depends on caregiver(s) reattaching the locking wristband to the child after each bath or supervised swim.

But no alarm has proven to be an effective substitute for a supervision regimen adhered to by both parents. And no electronic or mechanical device is effective 100% of the time even when used correctly.