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## Background

- Drowning remains a leading cause of injury death for toddlers
- Inconsistent and incomplete data on childhood drowning hamper
  - Monitoring of trends
  - Ascertainment of risk factors
  - Design and evaluation of prevention strategies
- Systematic collection of drowning data (surveillance) is needed
- Coroner/Medical Examiner records are an accessible source for identifying cases of children who drown

## Purpose

This study was part of a larger study designed to examine the quality and consistency of existing coroner data for use in drowning surveillance for children under 5 years. The purpose of this analysis was to determine if there are differences in circumstances of drowning between the younger and older children that should be considered in prevention messaging.

## Methods

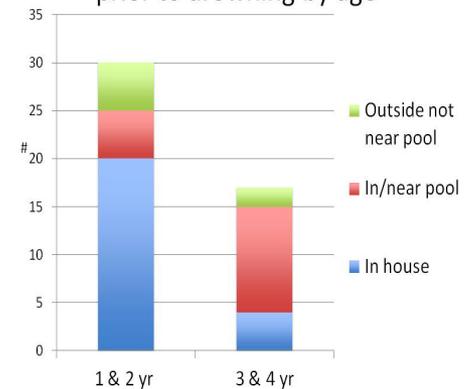
An analysis of Orange County CA coroner data for pool/spa drownings among children ages 1-4 years (2000-07) was conducted (n=46). Variables abstracted included information related to victim; incident site; barriers/access; water source; supervision; emergency preparedness/response; and family/social history. Significant differences by individual year of age were found for several variables. Because of similar patterns, we grouped and analyzed 1 and 2 year olds (n=30) separate from 3 and 4 year olds (n=16).

## Results

Location of child prior to the drowning event differed by age. More of the younger children (67%) were last seen in the house while older children (69%) were more often last seen in or near the water.

Three patterns emerged. 1) The more frequent pattern was 1 and 2 year old children who were last seen in the house (n=20). For all but one the supervisor was also in the house, often distracted with routine household or childcare activities or had a change in routine and the child accessed the pool/spa through a door or gate. 2) The second most frequent pattern (n=11) was 3 and 4 year old children who were in or near the water. In 9 of these cases, the supervisor either went into the house or did not have the child in sight. 3) The third pattern involved 1 and 2 year olds who were last seen outside (n=10). Many of these involved more neglectful supervision and environments -- 6 with supervisor inside, 5 pools in poor condition.

Last known location of child prior to drowning by age



## Conclusions

Although supervision around water is clearly important, patterns of drowning among young children were identified requiring different messages/interventions for 1-2 year and 3-4 year olds. The 1-2 year olds who were last seen in the house are in general better supervised, but escape to the pool area, due to inevitable lapses in supervision and breaches of barriers. These children are clearly compromised when there is a pool in their environment. A pool in the environment of the 1 and 2 year olds who were known to be outside without adequate supervision placed these children at even greater risk. Stronger messages of no pool in the home would certainly decrease exposure. Older children were more often in/near the pool without supervision indicating that they may be perceived to be safer around water. For the older children, swim safety lessons may decrease incidence. Directed developmentally based messaging is warranted.

Primary access of child to water by age group

