

**DROWNING...THE SILENT KILLER OF CHILDREN:
SHOULD THE FORT LAUDERDALE FIRE-RESCUE DEPARTMENT TAKE A
PROACTIVE APPROACH IN THE DEVELOPMENT OF A PREVENTION PROGRAM?**

LEADING COMMUNITY RISK REDUCTION

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ABSTRACT

The problem is that children, ages five and under are drowning or are experiencing near-drowning in Fort Lauderdale, due to the high accessibility of water.

The purpose of this applied research project (ARP) was to determine what strategies may be employed to reduce or prevent pediatric drowning or near-drowning.

In conducting this research, the author utilized the descriptive methodology that identified the following questions:

1. What have other fire-rescue agencies done to reduce or prevent the possibility of children drowning in their community?
2. What actions or programs may be employed to reduce the number of child drowning or near-drowning incidents in the City of Fort Lauderdale?
3. How can the Fort Lauderdale Fire-Rescue Department (FTLFR) partner with key politicians and community leaders in the development of a workable drowning prevention program?
4. What resources would be needed to implement a drowning prevention program?

The procedures used to complete this ARP consisted of a comprehensive literature review utilizing books, magazines, newspaper articles, and journal articles. In addition, a survey was sent to the Florida Fire Chiefs' Association via the internet to post to members on their website. Lastly, interviews were conducted via telephone with individuals holding key positions within the Peoria, Arizona Fire Department and the Drowning Prevention Coalition of Palm Beach County. The results of this analysis established that there are many actions or programs out there to prevent drowning or near-drowning incidents in children, but it is best to partner with a drowning prevention coalition to assist in funding, materials, and marketing.

Recommendations made were to obtain internal support from the city manager, fire chief, senior staff chief officers, and rank and file department members to "buy in" to an effective development of a drowning prevention program. Other recommendations included: fostering coalitions and networks and promoting community education.

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INTRODUCTION

Water holds a universal fascination for individuals of all ages, especially children. Children love to splash, spray, and wade in water. The attraction water holds is easily satisfied since water is always available albeit in a glass or tub, sink, garden hose, or in one of the numerous waterways and pools located throughout Fort Lauderdale, Florida. Unfortunately, the water that fascinates and encumbers our children can lead to an increased risk of drowning or near-drowning tragedies.

The City of Fort Lauderdale is known as the "Venice of America" (Nova Southeastern University, 1999), due to its 100 miles of navigable waterways that intertwine within the city limits. Additionally, the City encompasses seven miles of beachfront, 4,200 residential swimming pools, hot tubs and Jacuzzis. The problem is that children, ages five and under are drowning or are experiencing near-drowning in Fort Lauderdale due to the high accessibility of water.

The purpose of this applied research paper (ARP) is to determine what strategies may be employed to reduce or prevent pediatric drowning or near drowning.

Research methodology used for this applied research project was the descriptive method that identified the following questions:

1. What have other fire-rescue agencies done to reduce or prevent the possibility of children drowning in their community?
2. What actions or programs may be employed to reduce the number of child drowning or near-drowning incidents in the City of Fort Lauderdale?
3. How can the Fort Lauderdale Fire-Rescue Department (FTLFR) partner with key politicians and community leaders in the development of a workable drowning prevention program?
4. What resources would be needed to implement a drowning prevention program?

BACKGROUND AND SIGNIFICANCE

The City of Fort Lauderdale, Florida, is a cosmopolitan modest sized oceanfront coastal community located on South Florida's eastern coastline midway between Miami and West Palm Beach. It is densely populated with over 189,000 year-round residents making it the sixth largest city in the state. The City is just over 43 square miles encompassing seven miles of beachfront and 100 miles of inland navigable waterways. The City of Fort Lauderdale is affectionately known as "The Venice of America" (Nova Southeastern University, 1999). The City was established in 1911 and is the largest municipality within Broward County. It is characterized by a wide variety of lifestyles and a socioeconomic diverse population. Its boundaries stretch from

the affluent oceanfront neighborhoods to the low-income areas adjacent to the Interstate 95 corridor.

In addition, the City of Fort Lauderdale houses the center of governmental, judicial, and financial activity in Broward County. Fort Lauderdale is structured into a manager/council form of government and operates on a fiscal budget of \$372 million dollars. The fiscal budget provides a complement of municipal services such as fire & EMS/transport, police, and regional water and wastewater systems. Of the overall fiscal budget, the Fire-Rescue Department is allotted \$42.3 million dollars or 12 percent of the city's annual operating budget. The Fire Department's organizational structure is the traditional and commonly accepted paramilitary rank and order style. It was established in 1912, a year after the incorporation of the City, and has been the only provider of fire suppression for the community (Nova Southeastern University, 1999).

According to the Broward County Medical Examiners Office statistics from 1999 through May 17, 2004, 10 children, 3 teenagers, and 50 adults have drowned in swimming pools, the ocean or a canal. In 2003, the City of Fort Lauderdale experienced the greatest amount of pediatric drownings with a total of six. Statistical reporting of near drowning has proven to be unreliable for this research paper, but an "educated guess" may show that there might be 100 near-drowning incidents for every reported drowning. A reason why near-drowning is difficult to count is that it is a term that is not easily defined. A standard medical definition of near-drowning is survival, at least for a time, after a submersion. But what if the patient dies a few days later in a hospital? Is it still called a near-drowning? Some medical experts say "yes," and others say "no." That is the dilemma that this researcher has encountered in her data gathering.

Drowning represents the third-leading cause of accidental death in America and the second leading cause of accidental death in Americans ages 5 to 44 (Fletemeyer & Freas, 1999). Drowning has been the cause of at least 8,000 deaths in the United States annually and about 150,000 worldwide (Chandy, 2000).

There are two times in your life when you are at the greatest risk of drowning. The first such risk is the age of five years old or younger. In this classic age group scenario, the child is either left unattended, or inadequately supervised near a swimming pool, spa, or bathtub. The second peak is the age group between the years 15 to 25. Potential victims in this category tend to be males who tend to drown while swimming in rivers, lakes, and the ocean. Alcohol or illegal drug uses are oftentimes the leading contributors that cause male drownings in this age group.

Additionally, six risk factors contributing to drowning or near-drowning are identified and numbered by importance as follows:

1. Inability to swim or overestimation of swimming capabilities.
2. Risk-taking behavior, including the use of alcohol or illicit drugs.
3. Inadequate adult supervision of children.

4. Trauma or medical condition (seizure, stroke, heart attack).
5. "Shallow water blackout"--swimmers hyperventilate in order to swim longer under water.
6. Hypothermia or lowered body temperature (Chandy, 2000).

This applied research project (ARP) will determine what other fire-rescue agencies have accomplished to reduce or prevent the possibilities of children drowning in their respective communities. Additionally, this research will identify what actions or programs are in existence and may be employed to reduce the number of child drowning or near-drownings in the City of Fort Lauderdale. Moreover, this applied research project will reveal how the Fort Lauderdale Fire-Rescue Department (FTLFR) can partner with key politicians, humanitarian organizations, and community leaders in developing a workable drowning prevention program. Finally, a discussion of what resources would be needed to implement a drowning prevention program.

This applied research project on pediatric drowning is relevant to the course work included in the curriculum of the National Fire Academy's Executive Fire Officer Program (EFOP), *Leading Community Risk Reduction* (LCRR), R280 course (National Fire Academy [NFA], 2003). This researcher noted the four following distinct links:

First, *Unit 1: Getting Ready* summarized the following: (a) a clear understanding of the community risk reduction philosophy and process; its benefits and challenges to the community; (b) the executive fire officer recognizes and accepts personal responsibility for leadership of community risk reduction; (c) developing a clear vision of a safer and healthier community as a result of a risk reduction initiative; (d) understanding the political environment concerning risk reduction--both internally and in the community; and (e) developing an initial plan to build a core team from the organization and community to apply to community risk reduction.

Secondly, *Unit 2: Assessing Community Risk* related to the following: (a) analyzing the community; (b) identifying hazards and causal factors; (c) assessing vulnerability; (d) establishing risk reduction priorities based on rated risks; (e) defining acceptable risks; and (f) creating risk reduction objectives.

Third, *Unit 3: Building Support*, which is an ongoing process for the executive fire officer in the course of community, risk reduction. The following areas were noted: (a) building organizational equity; (b) creating organizational culture; (c) identifying community stakeholders; (d) engaging the community; and (e) building community equity.

Finally, *Unit 4: Identifying Intervention Strategies* which the executive fire officer will do the following: (a) consider acceptable solutions; (b) establish objectives using cost versus benefit analysis; and (c) explaining how to create an effective evaluation process.

This ARP relates to the United States Fire Administration (USFA) operational objectives: (a) to reduce by 25 percent the loss of life of the young; and (b) 2,500 communities will have an all-hazard risk-reduction plan and/or a comprehensive emergency operations plan providing for an intra- and intercommunity response appropriate to identical risks (Federal Emergency Management Agency [FEMA], 2004). This paper is dedicated towards meeting the USFA objectives by describing how the FTLFR, non-profit organizations, and political and community leaders can work together to develop a drowning prevention program for the children of our community.

LITERATURE REVIEW

The literature review was organized around the four specific research questions that were being investigated: (1) What have other fire-rescue agencies done to reduce or prevent the possibility of children drowning in their community? (2) What actions or programs may be employed to reduce the number of child drowning or near-drowning incidents in the City of Fort Lauderdale? (3) How can the Fort Lauderdale Fire-Rescue Department (FTLFR) partner with key politicians and community leaders in the development of a workable drowning prevention program? (4) What resources would be needed to implement a drowning prevention program?

First, what have other fire-rescue agencies done to reduce or prevent the possibility of children drowning in their community? A few authors agreed that across the country, fire departments are becoming increasingly aware of the need for community-wide injury prevention projects. Involvement in these programs is both beneficial to the fire service and the community. The fire department can provide a community organization with resources, such as staffing, that the organization may have a degree of difficulty obtaining. The community in return, provides the fire service the opportunity to become recognized as a viable resource in areas other than the traditional proactive/reactive type programs such as fire suppression, fire prevention (Moreno & Ogden, 1990; Smith, 1986; Larson, 1987).

In Arizona, childhood drowning is the leading cause of accidental death to children under the age of 5. The loss of productive years to permanent brain dysfunction is equally staggering. These statistics prompted the formation of the Tucson Drowning Prevention Committee in 1982. In an effort to reduce the needless tragedy of childhood drowning, the Tucson (Arizona) Fire Department, a municipally funded city agency, teamed up with a non-profit, community-based Tucson Drowning Prevention Committee. The committee's founding members include fire department paramedics, nurses, physicians and rehabilitation specialists (Moreno & Ogden, 1990).

According to Moreno & Ogden (1990), in order to provide accurate statistics that reflected the prevention strategies developed by the committee, the fire department incorporated drowning/near-drowning surveillance information into its pre-hospital computer reporting system. The information that was available through this database included the following: (a) age; (b) sex; (c) initiation of citizen cardiopulmonary resuscitation (CPR); (d) barrier status and type; (e) initial electrocardiogram (ECG) rhythm; (f) supervision of the child; and (g) type of water in

which the child was found in. Those statistics have proven valuable in evaluating the program's effectiveness.

Drowning is the number one cause of injury death for children ages 5 years and under in California, Arizona, and Florida, where year-round warm weather provides a natural environment for many aquatic activities. Toddlers, ages 1 to 3 years of age, have the highest drowning death rate. The presence of thousands of pools poses the greatest danger for unsupervised children (Nieves, Fuller, Buttacavoli, Clarke, & Schimpf, 1996).

According to a survey performed by the Hillsborough County, Florida Fire Department in 1991 to approximately 700 households, deficits were found in parental knowledge of pool safety. Most parents that were interviewed stated that they did not know how to perform infant or child CPR, and lacked knowledge in the importance of adult supervision in preventing drowning and near drowning in children (Liller, Kent, Arcari, & McDermott, 1993).

In an attempt to better understand the epidemiology of drowning in children, the Maricopa County, Arizona Fire Department collected data on 243 drowning and near-drowning episodes over a 2-year period in children less than 4 years of age (Flood, Aicken, & Englander, 1990). Eighty-five percent (85 percent) of the cases reported occurred in swimming pools. The Maricopa Fire Department noted the data from pool incidents in children less than 5 years of age cited apparent causal factors for these incidents in warm months (May to September), chiefly supervision problems (54 percent), and no pool barrier (27 percent). In the colder months (October to April), the data on pool incidents in children less than 5 years of age cited no pool barrier (58 percent) as the leading attributable cause of the incident, followed by failure of a pool gate or door (20 percent), and finally supervision problems (9 percent) (Water-related incidents, 1994).

The National Fire Protection Association's (NFPA) *Risk Watch* was developed by the NFPA and Lowe's Home Safety Council in collaboration with a distinguished coalition of national experts, the private sector, and safety advocates providing children/students (preschool through grade eight) with an unprecedented opportunity to learn about injury prevention. Teachers and members of fire departments, apply the knowledge learned in the *Risk Watch Program*, to teach children how to develop the attitude and motivation to make the right choices in risky situations. NFPA *Risk Watch* (1998) believed in the following statement:

Changing the social or physical environment is a critical part of the overall childhood injury prevention formula. However, most environmental changes require human action. Many times, this includes action on the part of the child, i.e. wearing a bike helmet or a personal flotation device. Learning to make the right choices is the result of educational efforts. While the process of preventing childhood injuries has many parts, the effective use of education is the fabric that brings it all together. Because of that, it deserves special attention from injury prevention coalitions, schools teachers, medical professionals, fire department personnel, and other community members (p. 3).

According to *Risk Watch* (National Fire Protection Association [NFPA], 1998), "Traffic injuries, drownings, fires, scald burn, choking's, poisonings, and falls are **not** random 'accidents'--they are predictable and preventable" (p. 7). With education, motivation, and the

support of caring adults, children can learn to be much safer. *Risk Watch's* goal is crucial, because every time a child is injured or killed by something that could easily have been prevented, everyone suffers: the child, his or her family, classmates and friends, and the entire community.

Smith (1986) stated:

Every firefighter considers water a friend. Understanding and utilizing this normally life-sustaining fluid, which covers four-fifths of our planet and makes up three-quarters of our bodies, is a basic part of the firefighting trade. Even the youngest and least-experienced rookie quickly appreciates the effect on fire of high-pressure water streams or of lower velocity fogs and sprays (p. 34).

However, a number of fire protection agencies in various parts of the country are beginning to realize that knowledge of water's anti-combustion properties is only part of an increasingly complex safety awareness picture.

The science of fire protection has advanced to the state where emphasis and education aimed at anticipating or avoiding accidents with combustibles is truly paying off. As a consequence, most fire-rescue departments albeit municipal, rural, full-time and volunteer--are spending an increasing amount of their time responding to emergency medical calls rather than fire calls. Many of the emergency medical calls that they are responding to are water related emergencies dealing with children or adults that have fallen victim to drowning or near drowning.

Authors agreed that many fire-rescue agencies or first responders want to assist children and adults that are drowning, but are either not properly trained or have the appropriate equipment to assist in a rescue. According to a story by a City of Indianapolis firefighter, his crew witnessed a man drowning and his assigned company did not have the proper water rescue equipment to save him. Instead, his "ill equipped" crew jumped into the water in a vain attempt to save him. Unfortunately the victim died possibly due to a poorly trained and equipped rescue crew who were nearly drowned in their attempt to rescue the victim (Smith, 1986; Fletemeyer & Freas, 1999).

The Ohio Department of Natural Resources' Watercraft Division is recognized as a national leader in teaching emergency service personnel about the hazards of water rescue, particularly flood-induced swift water situations and ones involving dams. The Ohio programs were developed after it was found that large numbers of firefighters were dying needlessly in poorly planned and attempted water rescues of children and adults. Smith Aquatic Safety Services conducted another such program to members of the Ballwin, Missouri Fire Protection District to facilitate lifesaving techniques to rescue personnel (Smith, 1986).

With the assistance of both of these programs fire-rescue personnel learned the following: (a) causes of drowning; (b) behaviors commonly associated with a drowning or near-drowning victim; (c) how to perform a land-based rescue (reach rescue); (d) how to perform an active in-

water rescue; and finally (e) what equipment is recommended to perform rescues (Fletemeyer & Freas, 1999, chap. 6).

Smith (1986) stated, "Lack of knowledge about water hazards and water rescue procedures not only can let you down in an emergency; it can let you drown. Firefighters who respond to water related accidents need training" (p. 36). How can fire-rescue personnel reduce or prevent the possibility of children drowning in their communities if they are not properly trained to do rescues or do not have the proper equipment? We need training to prevent our own from dying!

Second, what actions or programs may be employed to reduce the number of drowning or near-drowning incidents in the City of Fort Lauderdale? According to a few authors, there is no one action or program that can prevent all childhood drownings or near-drownings. Instead, a multifaceted strategy, including (a) active supervision by a designated adult; (b) safe water environments; (c) proper gear--personal flotation devices (PFDs); and (d) education, are required to ensure that every child in and around water remains safe (Soltis, 1990; Cruzan, 1991; Critchell, 2004; Nieves, Fuller, Buttacavoli, Clarke, & Schimpf, 1996; National SAFE KIDS, 2004). Cruzan (1991) stated, "Drowning prevention starts with the realization that children are not pool-or water-safe" (p. 3).

Authors and many non-profit organizations, such as: National SAFE KIDS, Broward's Swim Central, Target Zero, etc., agreed that lack of supervision is the main reason why children ages 5 and younger drown. According to the *National SAFE KIDS Campaign* (2004), eighty-eight percent (88 percent) of children ages 5 and younger were under some form of supervision when they drowned. A few authors acknowledged that the reason why children drowned while being supervised was that the parent or parents were distracted by mundane interruptions such as: (a) preparing food; (b) doing laundry; (c) watching other children; (d) doing yard work; (e) answering the telephone; (f) socializing; and finally (g) taking a nap (Soltis, 1990; Critchell, 2004; National SAFE KIDS, 2004).

The SAFE KIDS *Campaign* (2004), suggested the following strategies in regards to supervision programs: (a) designate a responsible adult to serve as a "water watcher"--a supervisor whose sole responsibility is to constantly observe children in or near the water; (b) supervisors should maintain continuous visual and auditory contact with children in or near the water; (c) supervisors should stay in close proximity (waterside) so that they can intervene should an emergency situation arise; (d) supervisors should keep children who cannot swim within arm's reach at all times; and (e) the number of supervisors should increase when many children are swimming, younger or inexperienced swimmers are present, or the swimming area is large.

The second action or program that authors concurred on was that of safe water environments. Safe water environments are described by authors as: (a) pool fences or barriers that have latches on gates that are self-closing and self-latching; (b) installation of door and window alarms; and (c) safety pool covers (Soltis, 1990; Critchell, 2004; National SAFE KIDS, 2004; Nieves et al., 1996).

Authors stated that the use of isolation pool fencing, as defined by the safety standards in the Uniform Building Code, has been shown to be effective in preventing drowning or near-drowning in children ages 5 and under. Isolation pool fences separate the home from the pool and should completely surround the swimming pool or spa. These devices are built at least five-feet high with openings between bars less than four inches wide. This is so children cannot climb them, and have self-closing and self-latching gates that open away from the pool. The gates and latches should be checked often to ensure good working order. Their purpose is to stop children from passing unnoticed from the home to the pool (Soltis, 1990; Nieves et al., 1996; Ellis & Trent, 1997; National SAFE KIDS, 2004; U.S. Consumer Product Safety Commission [CPSC], 1993).

Consistent with the recommendations of the American Medical Association, the American Academy of Pediatrics, and many other national organizations to fence residential pools, many U.S. jurisdictions have adopted regulations requiring fencing. According to Maricopa County, Arizona, 51 percent of their 137 drownings and near-drownings in 1988-1989 could have been prevented by pool fencing (Ellis & Trent, 1997).

Ellis & Trent (1997), stated that in 1996, California adopted a statewide barrier code based on Appendix Chapter 12, Division 111, of the Uniform Building Code. This new code stipulates that, effective January 1, 1998; a new or refurbished pool cannot receive an approved building permit without an isolation fence or other device to protect children. This new law should reduce child-drowning rates in the long run, but its effect will be muted because existing and unrenovated pools are not covered. The State of Florida has adopted the Residential Swimming Pool Safety Act, which took effect January 1, 2002. This Act requires that new residential swimming pools must have a minimum of one safety device in place to pass final inspection and receive a certificate of completion (Residential Swimming Pool Act of 2003).

If the home is considered part of the pool barrier, all doors and windows providing direct access from the home to the pool must be equipped with an exit alarm that has a minimum sound pressure rating of 85 dBa for a distance of 10 feet (Residential Swimming Pool Safety Act of 2003). According to Critchell (2004), home-repair stores sell alarms for \$20 or less, and if a homeowner has an existing home alarm, they can activate the "chime" feature, which emits an alert each time the door is opened.

Power or manual covers that completely cover a pool or spa and block access to water are considered safety pool barriers. Owners of pools or spas must be sure to drain any standing water from the surface of the pool or spa cover as a child can drown in very small amounts of water (National Safety Council, 2001). Authors agree that pool safety covers should be rigid in design and should be able to hold a minimum of 30 pounds (Cruzan, 1991; Brenner, 2003).

Conversely, authors stated that the use of pool alarms and pool covers are not advocated as a source of primary prevention in childhood immersions due to inconsistent research findings such as: (a) personnel not hearing the pool alarms; (b) pool alarms not performing adequately during testing; and (c) extra supervision of children playing near pools or spas that have covers over them (Cruzan, 1991; Nieves et al., 1996; Brenner, 2003). Additionally, the Consumer Products Safety Council conducted a study in 1986, of 142 drownings or near-drownings in

swimming pools, in which eight had pool covers. The scenarios generally involved children discovered under non-rigid pool covers (solar or plastic covers) after apparently trying to walk on the covered pool. Ergo, these types of pool covers may actually increase the risk of a poor outcome, because the submerged child under the pool cover would be hidden from view, delaying rescue attempts (Brenner, 2003).

The third action or program that authors agreed upon was that of proper gear--personal flotation devices (PFDs). Whether you refer to them as life jackets, life vests, or personal flotation devices (PFDs) they are designed to (1) keep your head above water and in a position which permits proper breathing; (2) provides buoyancy to keep you afloat; and (3) saves your life (Fletemeyer & Freas, 1999, chap. 11). The Coast Guard considers wearing a life jacket at all times to be the primary factor in ensuring survival after a boating accident.

There are five types of PFDs that the Coast Guard recommends and are as follows:

1. Type I--Offshore life jacket; designed to keep people afloat for an extended period of time in rough, open water.
2. Type II--Near-shore buoyant vest; used in calm inland water where the likelihood of rapid rescue is great.
3. Type III--Marine Buoyant Device; designed for use in calm water where rescue is likely to be quick.
4. Type IV--Thrown to victims; boat cushions, ring buoys and horseshoe buoys.
5. Type V--"Special Use Device"; designed and approved for only the special uses or conditions indicated on their labels (Fletemeyer & Freas, 1999).

According to the National SAFE KIDS Campaign (2004), nearly all children (97 percent) in reviewed cases who drowned in pools or open bodies of water were not wearing a personal flotation device at the time of drowning. Children should wear PFDs whenever they are in or around open water or participating in water sports, and PFD use is mandated for children on boats in at least 38 states. However, according to the United States Coast Guard, in 2002, nearly 45 percent of the children ages 14 and under who drowned in reported boating-related incidents were not wearing PFDs (National SAFE KIDS, 2004).

Parents of children who do not always wear PFDs while on boats commonly uttered reasons for non-use including: (a) their own proximity to the child; (b) proximity to the PFD and (c) the child's swimming ability. While children stated they did not wear PFDs for the following reasons: (a) they could swim; (b) they could grab the PFD quickly if they needed it; and (c) there was no PFD available (National SAFE KIDS, 2004).

According to a few authors, parents mistakenly believe that toys and swimming aids can protect their child from drowning: 19 percent believed that air-filled water wings can protect children, and 14 percent believed that air-filled inner tubes protect them (Brenner, 2003;

National SAFE KIDS, 2004; Critchell, 2004). These items are not approved as safety devices to protect against drowning and should never be used as such.

Lastly, the fourth action or program that authors agreed upon was that of education. Community education with regards to minimizing drowning incidents is necessary. The first step should be a statewide media campaign to elevate public awareness regarding the hazards associated with drownings and the particular vulnerability to specific populations, and age groups (Nieves et al., 1996). Even in the winter months, when pool supervision may be decreased, education should emphasize the need for year-round vigilance if pools are not drained completely, are unfenced or have pool covers over them.

The second step is educating parents of children ages 5 and under, so that they can raise their awareness levels on the dangers and safety measures of drowning. Parents and guardians need to be informed that children can never be unsupervised when open water is available, as the attraction is often grossly underrated with fatal consequences. Authors suggest removing toys from the pool area when not in use and removing chairs, ladders or other objects that are around pool fences and spas (National SAFE KIDS, 2004; Nieves et al., 1996; Brenner, 2003). Young children rarely fear water, are too young to consistently follow preventative instruction, and may be attracted by the water and toys.

The third step is teaching cardiopulmonary resuscitation (CPR) to the community, especially homeowners with pools, spas and children. CPR can be taught to children as young as eight years of age in addition to adults. Prompt resuscitation attempts are vital in submersion incidents. Emergency numbers should be readily visible in homes and strategic community locations. Parents and communities are encouraged to keep telephones with emergency numbers at poolside, prompting ability to constantly monitor children even when answering a phone call. If required, resuscitation efforts can begin as a child is being removed from the water and the call to emergency responders can be placed immediately (Nieves et al., 1996; National SAFE KIDS, 2004; Brenner, 2003).

The fourth step in education is enrolling children in swimming lessons by age eight. Parents should look for classes that include emergency water survival techniques training. According to the National SAFE KIDS Campaign (2004), nearly three-quarters of drowning victims did not know how to swim. Seventy-three percent of victims' ages 5 to 9 did not know how to swim, while only 30 percent of victims ages 10 to 14 did not know how to swim. None of the victims ages 4 and under knew how to swim (National SAFE KIDS, 2004; Brenner, 2003).

While there is conclusive evidence that drowning rates are higher for non-swimmers, swimming lessons often include survival skills training that may be useful in an emergency situation.

According to Fletemeyer & Freas (1999), YMCAs have been involved in drowning prevention for well over 100 years. Through swimming classes, lifeguard training programs, and camps that offer waterfront and boating activities, YMCAs promote water safety. The YMCA has developed four programs that have a strong impact on teaching people how to be safe in and around water.

The first program that the YMCA has developed is called the YMCA *Lifeguard*. This program teaches the knowledge and skills needed to perform the duties of a lifeguard. Through sound decision making, proper use of rescue equipment, knowledge of water safety, and proficiency in rescue skills, lifeguard candidates will not only know a lot but also care about life guarding and those they are trained to serve.

The second program is called *Community Learn to Swim*. This program has been established to teach people of all ages, especially children and families, how to have fun and be safe in and around water. The program includes (a) basic swimming skills; (b) information and safety tips for pools, boating, beaches, backyard pools, and water parks; (c) character development activities; (d) environmental awareness; (e) family activities; and (f) parent education (Fletemeyer & Freas, 1999).

The third program is referred to as *Progressive Swimming*. This program is a seven-level swim instruction program for children and adults. Each level builds on the skills taught in the previous one. The program also addresses five components through skills and activities: (a) personal safety; (b) stroke development; (c) water sports and games; (d) personal development and (e) rescue (Fletemeyer & Freas, 1999).

Finally, the fourth program developed by the YMCA is referred to as *Skippers*. This program is a water orientation and instructional swim program designed for children under the age of 5. The objectives are (a) fun; (b) exercise; (c) parent education; (d) water adjustment; (e) boating safety; (f) use of personal flotation devices; and (g) safety education. According to Fletemeyer & Freas (1999), for parents with children under 3 years of age, a water orientation class is offered that teaches parents how to help their children adjust to the water environment. The parents learn about accident prevention, basic rescue techniques, how to respond to an emergency, and activities that help children feel comfortable in the water. The program for children ages 3 to 5 is designed to teach children the fundamentals of swimming and water safety.

Conversely, Brenner (2003) stated, "Swimming lessons are not recommended as a means of drowning prevention" (p. 5). Additionally, the American Academy of Pediatrics (2000) stated, "Children are generally not developmentally ready for formal swimming lessons until after their fourth birthday" (p. 869). Importantly, even among older children, knowing how to swim well in one body of water does not always make a child safe in another, and even the best swimmers are not "drown-proof."

Since its formation, the Tucson Drowning Prevention Committee in conjunction with the Tucson Fire Department, have been involved in a variety of well-respected and widely adopted programs. In the beginning, committee members knew that information dissemination was vital to the success of their drowning prevention program. The committee developed easy-to-read colorful brochures that outlined safety tips to follow in and around swimming pools. These brochures were so well received, that the National Spa and Pool Association, a national group representing spa and pool builders, now prints and distributes the brochures. The Tucson Fire Department distributes copies of the brochures, as well as information on local CPR classes, during the home fire safety survey program that they do every spring (Moreno & Ogden, 1990).

According to Moreno & Ogden (1990), the Tucson Drowning Prevention Committee became the recipient of the Tucson Advertising Council's free advertising assistance program in 1986. The advertising campaign created a poster dramatizing the tragedy suffered by all involved in the care of a child lost to a water-related incident. The Tucson Fire Department provided for the photo shoot the following: equipment, personnel and a paramedic/rescue unit. The poster states, "What do you say to a parent who leaves a child alone by the pool? I'm sorry...we did all we could" (Moreno & Ogden, 1990; p. 52). The poster showed a paramedic at the side of a pool feeling sorrow for the loss. The message was carefully chosen to drive home the need for parental supervision around the water. In Arizona, the posters were prominently displayed in pediatrician's offices, convenience stores and pool supply stores.

In 1987, the committee realized that brochures and posters were excellent resources for adults and older children, but did nothing to educate the target population of children under the age of 5. In response to this need, the committee engaged the help of a local playwright to develop a 10-minute video aimed at young children (Moreno & Ogden, 1990). The video was created using information provided by the drowning committee. The video teaches children about safe and unsafe swimming pools using two "ducks." Momma Duck and her daughter Dunky, carefully explained to both parents and children the need to keep toys away from the pool, how to use 911, the need to learn CPR and other water-related safety tips (Moreno & Ogden, 1990).

The aim of the program was to increase the interaction between caretakers and children, so both will learn safe habits around the water. The videotapes were made available locally to schools, libraries and through most video stores at no charge to the community (Moreno & Ogden, 1990).

According to The Arizona Republic (2004), absent or inadequate barriers, rather than lack of supervision, were the most common cause of water incidents in Maricopa County in which children die or are severely impaired. The United Phoenix Firefighters Association planned to give away about 80 pool fences this summer to families with children under age 6. Application letters had to include the ages of children, contact phone number and address, and a paragraph why the family needed a free pool fence. Additionally, Fulton Homes planned to give away 26 pool fences through various media programs this summer (The Arizona Republic, 2004). Fire service involvement, with community programs are increasing as their respective communities look upon the fire service organization as a credible resource and key leadership in reducing pediatric drowning.

The third research question asked how the Fort Lauderdale Fire-Rescue Department (FTLFR) could partner with key politicians and community leaders in the development of a workable drowning prevention program. The only way to effectively reduce preventable childhood injuries in your community is by working together as a community. This means organizing individuals and organizations with an interest in solving the childhood injury problem. This group of individuals and organizations then in turn forms a community coalition. Coalitions are useful for accomplishing a broad range of goals that reach beyond the capacity of any individual member or organization. These goals range from information sharing to

coordination services, from community education to advocacy for environmental or policy (regulatory) changes (Cohen, Baer, & Satterwhite, n.d.).

According to a few authors, there are many common elements of successful community coalitions:

1. They are formalized and well organized.
2. They have clear mission statements.
3. They have members who can offer specific skills.
4. They have members who cooperate for the common goal, even if their individual missions may not be completely compatible.
5. They are well recognized by the community.
6. They are not planning groups--they are action groups (NFPA, 1998; Littlejohn, 2004; Moler, 1993).

Successful coalitions require a lot of work and sacrifice, but the pay-offs are tremendous. The benefits of forming and maintaining an effective coalition include: (a) pooling of resources; (b) forming a "synergy"; (c) creating credibility for your coalition's mission; (d) greater achievements; and (e) the reduction of individual workloads (NFPA, 1998).

Equally, working in a coalition can also create some limitations and challenges. Coalitions require a formal investment of time and resources on the part of members and their own individual organizations. It is not possible to simply attend a few meetings and then create community changes. Because of this commitment, many individuals may be hesitant to get involved (NFPA, 1998; Cohen, Baer, & Satterwhite, n.d.).

According to *Risk Watch* (NFPA, 1998), there are six steps in forming a coalition that communities, fire departments, local law enforcement agencies and local politicians can follow to reduce or prevent childhood injuries.

Step 1: Collect local and regional data on childhood injuries. It is essential that the facilitator have a thorough understanding of the injury problem in the local area. He or she will be asked many questions regarding the seriousness of the problem. The facilitator will also have to present specific data and the consequences of the injuries in terms of human suffering and financial loss.

Step 2: Recruit the right people for your coalition's "core action group." One's coalition needs to start small. A few representatives from each of the following organizations: fire department, local law agency, health organizations, and local school districts, can make decisions and take action more effectively in the beginning. Perhaps one might want to consider contacting community agencies that have a specific mission to prevent childhood injuries. These

groups will be critical in the life of the coalition at the later stages. When recruiting, seek members with personal and professional credibility.

Step 3: Create a formal structure for your coalition. The coalition should create a vision statement, a mission statement, a structure, and operating rules.

1. Vision statement--communicates the future results of one's coalition.
2. Mission statement--outlines the reason one's coalition exists.
3. Structure--basic framework. Clearly defined leader, secretary, treasurer and expectations outlined for each member.
4. Operating rules--may be called the coalition's bylaws or policies and procedures. These rules identify how meetings are managed, the roles and responsibilities of members, and the requirements for membership.

NFPA *Risk Watch* (1998) stated:

Your coalition's structure operating rules do not have to be refined from the beginning. However, their development must be a priority. Community leaders and politicians with a potential interest in supporting or joining your coalition will scrutinize how it is organized. If they see a well-organized group of community members who have a clear vision for the future, an outlined mission, and a structured coalition, they will give serious consideration to supporting or joining your coalition (p. 17).

During this third step, one's coalition had to establish initial goals and objectives. The objectives should be small so that one's initial efforts shall be successful. Upon developing the initial objectives, include evaluation methods to determine if they have been achieved. These methods may include pre- and post-test scores given to children in schools or parents attending community meetings. This information will be useful later when the facilitator markets the program to other communities, educational leaders, and potential resource providers. The facilitator must be able to prove success. Simply saying that the coalition is making a difference is not enough--you need proof.

To support the objectives, the coalition needed to establish an implementation plan. This was where members from the local school districts were invaluable. They provided the guidance needed to gain support of teachers and other decision-makers to assist one's coalition to achieve successful implementation. The facilitator's plan must identify the specific site(s) of the implementation effort, the resources needed, the evaluation methods that will be used, and a timeline. The plan must be specific. This is the only opportunity to have a successful beginning.

Additionally, it is important to establish one's coalition "identity." Much of this shall be accomplished with the vision statement, mission statement, and structure. Participants must create name recognition. When one hears about organizations such as the American Red Cross or American Academy of Pediatrics, one is cognizant as to what they stand for and what they do.

Lastly in step three, set up interviews with local media. Conduct a community-event to kick-off the coalition's activities, and invite the media so that they can assist in telling the project leaders story to the local news areas.

Step 4: Recruit the members necessary to achieve your initial objectives. Once the facilitator has established the initial objectives, it is time to search for support and additional coalition members. One should seek members who have wisdom, wealth, work or influence.

Once the facilitator has identified potential members, assure that they are suitable for the coalition. The facilitator must ask himself or herself the following questions: (1) Do they have a history of supporting injury prevention or health-related issues? (2) Do they have time, credibility, and skills needed? (3) Will their association with the coalition create a positive or negative public perception?

When discussing membership with a potential member, do not act as though the survival of one's coalition depends on that person joining. Focus on the strength and the positive future of one's coalition. The potential member should feel they are joining a solid team with a clear vision. People want to join a winning team, not one that is circling the drain.

Step 5: Implement your plan. During the implementation, seek constant feedback from everyone involved: teachers, fire department members, local law enforcement members, nurses, doctors, community leaders and local politicians. When an issue arises, resolve it as soon as possible. Make note of these issues for future reference. The facilitator may have to change the structure of the coalition, modify the operating rules, or obtain more resources. Learn from one's mistakes.

Additionally, do not forget to say "thank you" to those who are doing the work. If the project leader gives them recognition, they will feel a part of as a valued member of the team. If the members feel as though no one cares about their contributions to the coalition, they will lose interest and the work of the coalition will be doomed.

Step 6: Evaluate and modify the process, the program, and your coalition. Once the implementation effort has been completed, impact evaluation can be used to determine how well the program met its immediate goals of changing people's knowledge, attitudes, and beliefs about drowning prevention in children under the age of 5. Additionally, outcome evaluation can be used to determine how well the program succeeded in achieving its ultimate objective of reducing morbidity and mortality. Outcome evaluation should be used after the program has been in existence for a few years.

More importantly, the coalition will have grown and new members might be able to provide valuable advice. Listen to them! Use what you have learned to prepare for the future (pp.16-20).

An additional note from *Risk Watch* (NFPA, 1998) stated:

It is not necessary to have an organization formally join your coalition in order to gain access to its resources. In some cases, a particular organization can be a coalition "partner" rather than a member. While coalition members participate in decision-making, partners are involved in program planning and delivery. ...The coalition gets the benefit of the partner's resources, the partner is able to participate in a valuable community effort without long-term obligation. This turns into a win-win situation for both (p. 20).

According to Moler (1993), most coalitions link up with a children's hospital, which provides credibility, financial support, medical research and a host of committee members who have a vested interest in reducing the number of childhood injuries.

Drowning prevention is a difficult concept to sell, because most individuals and family members may not think about drowning prevention unless they have just purchased a pool for their home, a new boat, or have enrolled their children in swimming lessons (Moler, 1993). That is why coalitions must be formed by (a) fire-rescue agencies; (b) local law enforcement agencies; (c) local school districts; (d) pediatricians and nurses; (e) local hospital districts; (f) local and national pool/spa suppliers; and (g) local political leaders, so that the community and surrounding areas become aware of drowning prevention. Children are not the only ones drowning.

The South Florida Water Injury Prevention Coalition, led by the North Broward Hospital District, Division of Emergency Medical Services for Children, is an alliance of injury prevention advocates representing all sectors of the community. The Coalition's primary mission is reducing the number of water submersion injuries and deaths for all ages (with a focus on children), in the tri-county region of Dade, Broward and Palm Beach counties. The EMS Water Submersion Registry is a pilot program with the support for statewide application from the Florida Department of Health, Bureau of Emergency Medical Services (Broward County Regional Emergency Medical Services Council [EMS], n.d.).

The Coalition initiated a water-submersion registry to monitor water-related injuries in Broward County (Appendix A). Additionally, the Drowning Coalition of Central Arizona has established a similar registry (Appendix B). Submersion injuries include drowning and near drowning in all bodies of water, be it residential pools, canals, or boats and jet skis. It has been easy for fire-rescue agencies that utilize the Broward County dispatch system to participate.

A captain with the Broward County Sheriff's and Fire Rescue Department has been issued a pager that activates automatically when the County dispatches a water-related incident. Following the page, the captain contacts the city where the water-related incident occurred to complete the data collection process. Subsequent to the incident, the captain will contact crewmembers to obtain specifics pertaining to the incident. The information collected is only for preventing future water related tragedies (Broward County Regional EMS Council, n.d.).

For fire-rescue agencies that utilize their own dispatch system they are able to participate by collecting data themselves. After a water-related incident, any member of a Fire-Rescue

Department may complete the *Immersion Incident Report* and mail or fax it back to the South Florida Water Injury Prevention Coalition.

The final question asked what resources would be needed to implement a drowning prevention program. According to a few authors, there are three types of resources one's coalition needs: money, materials, and people. Money is a direct financial contribution. Materials are in-kind resources such as brochures, videos, safety equipment, and handouts--those things needed to run the program day-to-day. People are one's coalition members, community leaders, local politicians, and volunteers to help with evaluation and grant writing, etc. All are human resources. It is important to think of one's human resources as "gifts of time"--gifts that the facilitator must solicit like any other resource (NFPA, 1998; Harrawood, Gunderson, Fravel, Cartwright, & Ryan, 1994).

According to *Risk Watch* (NFPA, 1998), the facilitator needs to develop a resource strategy--a game plan for getting the resources he or she needs. The strategy should identify the types of resources needed, potential sources, approaches needed to obtain resources and the methods for saying "thank you." One must first identify the resources needed to get the job done. The resources should be based upon the objectives that were developed by the coalition. Second, the facilitator should identify the resources needed to achieve the objectives the coalition has developed in terms of materials and people. When listing people as resources, be specific. Detail what these people would be doing and how many people are needed for each task.

Working as a coalition, one must constantly review the list of "Resources We Must Get" and ask the following questions: (a) Who in the community has this resource? (b) Does any coalition member have a connection with this person/business? (c) If not, whom do we know that could influence this person/business? (d) Would that person be willing to help the coalition? (e) What is the best way to ask for the resource? (f) Who is qualified to pursue this resource (NFPA, 1998)? Authors agree that coalitions must fill out grant applications, make phone calls, and visit clubs and agencies to obtain additional monetary resources (NFPA, 1998; Harrawood et al., 1994).

Additionally, *Risk Watch* (NFPA, 1998), lists a few tips that would enhance one's efforts for attaining resources to fund children's drowning prevention program:

Tip 1: When a coalition member's organization makes a commitment for support, get it in writing. This formalizes the support within the organization and can be used to demonstrate support to other groups, individuals, and businesses.

Tip 2: Use OPMR (Other People's Money and Resources). For some organizations, this is the only way the coalition will get resources. When the coalition demonstrates that they can get resources externally, some CEO's may be more willing to help.

Tip 3: Find someone who is skilled at grant writing and solicitation. The world of grants is competitive. Many times, it is not the most worthy cause that gets the money--it is the best-prepared cause. Recruit a coalition member who has proven fundraising or solicitation

skills. If no one is available, select someone from the coalition that has potential and get him or her training needed. If not, seek professional help.

Tip 4: Keep detailed records of all contributions and support. This will ensure that the coalition knows who has received what resources, and who deserves credit. It is also the law.

Tips 5: Don't count on any source of support as a long-term commitment. Priorities of individuals, businesses, and organizations change over time. If someone supports the coalition this year, it does not necessarily mean the support be available next year.

Tip 6: Let the communities know that the coalition needs resources. Use the local media and speaking opportunities to tell the community what resources are needed. (pp. 38-39)

While obtaining external resources is necessary, authors concur that many coalitions fail due to lack of support from their internal resources (NFA, 2003; NFPA, 1998). It is essential that coalition members gain the support of their individual organizations before attempting to gain support of the community.

Authors state, that gaining support for your coalition is all about change. It is about organizational priorities. It is about advocating a change from the old to new (NFA, 2003; NFPA, 1998). Every organization is different in the way they approach change. Each organization has different personalities, missions, histories and cultures, and political situations. When attempting to gain support for a new coalition or program, the facilitator must work within the organization's framework (NFPA, 1998).

Two authors agreed that change in the community must begin with change inside the organization. The organization is a role model for community risk reduction. The people, policies and programs must reflect an honest commitment to community risk reduction (NFA, 2003; NFPA, 1998).

In order for the leader of the coalition to gain internal support from his or her organization, he or she must do the following: (a) establish a sense of urgency about the program or cause; (b) form a powerful guiding coalition to gain support; (c) create a vision for the support; (d) communicate the vision; (e) plan for and create short-term wins; and (f) institutionalize the support (NFPA, 1998). After support has been gained internally, the coalition leader may use the same steps to gain support and resources from the community (external).

While authors agree that gaining support and resources internally and externally are important for one's coalition, marketing is a key task that is necessary to promote *Risk Watch*, or one's community risk reduction program (NFPA, 1998; Harrawood et al., 1994; NFA, 2003). One must market the risk reduction program within his or her own organization first before taking it to the community.

The coalition leader must consider the best approach to reach their target audiences. The "best approach" message should be heard in different formats. Some people like written messages, others like a more visual approach, and some prefer face-to-face meetings. A face-to-

face discussion gives the leader the opportunity to express his or her enthusiasm about the program, answer specific questions, and demonstrates his or her commitment to the project (NFPA, 1998).

When marketing a community risk reduction plan such as *Risk Watch* or a child drowning prevention program to a community, the facilitator of the coalition may want to recruit qualified personnel with a marketing background to help create effective messages and distribution methods (NFPA, 1998). Authors agreed that the message should focus on the scope of the childhood injury problem and why one's prevention program is the viable solution. The message must be based on data from one's community and should include the coalition's vision statement (NFPA, 1998; Harrawood et al., 1994).

The coalition's message may change depending upon the audience that needs to be reached. For example, the message to potential funders should be different than the message to parents and caregivers. If possible, the coalition leader may recruit assistance from members of each target audience to assist in developing appropriate messages (NFPA, 1998). All authors agree that one's coalition must get their message out by using all of the following methods: (a) newsletters; (b) the media; (c) flyers; (d) church bulletins; (e) public meetings; (f) service clubs; (g) civic organizations; (h) neighborhood meetings; and (i) county/city utility bills (NFPA, 1998; Harrawood et al., 1994; CPSC, 1993).

In summary, drowning remains the second leading cause of unintentional injury-related death to children and adults. It is the leading cause of unintentional injury-related death among children under the age of 5. Drowning usually occurs quickly and silently. The majority of drownings and near-drownings occur in residential swimming pools and in open bodies of water. However, children can drown in as little as one inch of water and are therefore at risk of drowning in wading pools, bathtubs, buckets, diaper pails, toilets, spas and hot tubs.

Many fire-rescue agencies have incorporated the National Fire Protection Agency's *Risk Watch Program* into their public education departments. *Risk Watch* effectively teaches kids and their families the skills and knowledge they need to be safe from the areas they're at greatest risk to unintentional injuries (motor vehicle safety, water safety, fire and burn prevention, etc). Additionally, fire-rescue personnel are being taught (a) the causes of drowning; (b) behaviors commonly associated with a drowning or near-drowning victim; (c) how to perform a land-based rescue; (d) how to perform an active in-water rescue; and (e) what equipment is recommended to perform rescues.

There are several actions or programs that may be employed to reduce the number of drownings or near-drownings in local communities. These actions or programs are as follows: (a) supervision programs; (b) safe water environments [pool fences or barriers, door and window alarms and pool safety covers]; (c) proper gear--personal flotation devices (PFDs); (d) education [community education, parental awareness, cardiopulmonary resuscitation (CPR), and swimming lessons]. In addition to these programs, many fire-rescue agencies have teamed up with drowning prevention coalitions to hand out brochures that outline safety tips around swimming pools, produced videotapes to educate young children about safe and unsafe swimming pools and even have provided pool fences to families that could not afford them.

In order for a fire-rescue agency to develop a drowning prevention program, they must partner with key politicians, community leaders, non-profit organizations such as hospitals, National SAFE KIDS, Swim Central, etc. The only way to effectively reduce preventable childhood injuries in your community is by working together as a community. This means organizing individuals and organizations with an interest in solving the childhood injury problem. Those groups of individuals then in turn form a community coalition. There were six steps mentioned on how to form a coalition.

Lastly, there are three types of resources a coalition needs: money, materials, and people. Every coalition needs funds from external sources. These funds can be obtained through grant writing, donations, and fundraisers. Materials are needed to run the program day-to-day. People are one's coalition members, community leaders, local politicians, and volunteers.

While obtaining external resources are necessary, many coalitions fail due to lack of support from their internal sources. Gaining support for your coalition is all about change. Many organizations resist change. The facilitator of the coalition must work within their organizations' framework to make the change.

The most important resource after gaining internal support is marketing the injury prevention program. In order to accomplish this task one must use the following methods: (a) newsletters; (b) the media; (c) flyers; (d) church bulletins; (e) public meetings; (f) service clubs; (g) civic organizations; (h) neighborhood meetings; and (i) city/county utility bills.

In order for a fire-rescue agency to develop a prevention program such as drowning, they must collect data on the number of incidents that have occurred in their community over the past several years and develop a plan of action.

PROCEDURES

This applied research paper used the descriptive method in gathering information regarding the development of a drowning prevention program for children. The descriptive methodology focused on studying what the present situation is and attempting to predict future events or suggest a course of action to shape the future.

The literature review was promptly conducted at the National Fire Academy's Learning Resource Center (LRC) in Emmitsburg, Maryland during this author's attendance in the *Leading Community Risk Reduction* (LCRR)--R280 course, in March of 2004. The LRC was chosen because it has an enormous collection of indexed periodical resources related to emergency services. Moreover, the LRC provides an impressive archive containing previous works from former Executive Fire Officer Program (EFOP) students and practicum research papers conducted as requisite components of the EFOP.

Unfortunately because of the uniqueness of this ARP, the research from the LRC concluded with very few results. There were no resources available that were recommended on

the "Display Search" using the "LRC Starfinder" computer program. The author proceeded to type "drowning" into the LRC Starfinder program and found 50 journal articles, and four applied research papers. However, the information contained within the ARP's and trade journal articles revealed research findings that supported the knowledge claim being questioned.

Subsequently, an extensive search of the subject "drowning prevention" was conducted at the Broward County Main Library located in Fort Lauderdale, Florida. This revealed 29 possible pieces of research data, including: videos, documents and books associated with drowning prevention. Summarily, the books and "e-books" dealt with lifeguard training not the specific subject this author was researching. This author then used the "World Wide Web" to inquire if there were any textbooks on the subject of drowning prevention and found one book called *Drowning: New Perspectives on Intervention and Prevention*, edited by John R. Fletemeyer and Samuel J. Freas.

A comprehensive query on Broward County Library's World Wide Web search engine, "InfoTrac One File" (library's largest magazine database) revealed 376 articles. Many of these articles were beneficial in researching drowning prevention while others were just helpful tips on the "do's and don'ts" of swimming and pool safety.

This author also used newspaper articles from a local newspaper, *Sun-Sentinel* and from *The Arizona Republic* to help find current stories related to the subject. A study from the National SAFE KIDS Campaign provided information pertaining to childhood drowning and related attitudes and behaviors, which assisted in answering research question two.

Upon completion of research using journal articles, magazines, books and studies on drowning prevention, a survey was sent to the Florida Fire Chiefs' Association via the internet to post to 2,103 members on their website (www.ffca.org). This website was viewed by all members of the Florida Fire Chiefs' Association throughout the state and was assumed that a response would be given from all members from around the state. Samples of the survey questions are provided in Appendix C and the names of the departments and respondents are provided in Appendix D.

Interviews were another source of information and were conducted via telephone with individuals holding key positions within the City of Peoria, Arizona Fire Department and the Drowning Prevention Coalition of Palm Beach County, Florida. Mike Tellef, Public Information Officer (PIO), with the Peoria Fire Department was the selected respondent because of his knowledge of drowning prevention and forming coalitions within the "Valley" system in Arizona. The state of Arizona was chosen due to the fact that the state has many pediatric drownings and would be a good state to benchmark with. Anna Plotkin, Coordinator of the Drowning Prevention Coalition of Palm Beach County, was chosen due to her affiliation with the Drowning Prevention Coalition and knowledge of community based organizations and affiliation with the Palm Beach County Fire-Rescue Department (Community Education Division). The Drowning Prevention Coalition of Palm Beach County was chosen as a benchmark due to its close proximity to Fort Lauderdale, Florida.

The selected questions for the telephone interviews were the identical research questions, which were developed to measure specific aspects of the research objectives. Open-ended questions were chosen to enhance the qualitative and accurate nature of the information sought. This author also asked each candidate the survey questions that were provided via Internet to research the findings in their particular departments.

The telephone interviews were conducted during the week of July 26th, 2004. Refer to Appendix E for an example of the telephone interview form used. Confirmation to the authenticity and content of the interviews can be verified by calling the main number of Peoria Fire Department Administration at (623) 773-7276 or the Drowning Prevention Coalition of Palm Beach County at (561) 616-7068, and ask to speak with the listed respondents.

To summarize the research methodology, following the steps of David R. Krathwohl's *Model of the Chain of Reasoning* was the logic behind this author's approach. Krathwohl suggested following a model will aid in the replication of future study of the knowledge claim being investigated. He suggested first, study the conclusions from previous research, which includes explanations, rationale, theories or points of view. The second step, develop questions, hypotheses, predictions, or models. Third step involves the design and structure of the study. Fourth step is to gather the data, researching subjects, situations, observations, and basis of comparison and procedures. The fifth step is to summarize the data. The sixth step recommends determining the significance of the results. The seventh step is developing conclusions of the study. The final study is the beginning of the next study by the same or different researcher (Borg & Gall, 1998).

Assumptions and Limitations

The procedures employed during this research project were based on several fundamental assumptions. First, it is assumed that all authors referenced in the literature review performed objective and unbiased research, and that the information and data obtained was accurate.

Secondly, the information that was gathered on the Internet survey was in joint agreement with the objectives recognized by this applied research project. The respondents surveyed by Internet are assumed to be certified company or chief officers, public education officers or public information officers assigned in their respective organizations. The reliance of the information provided by the respondents was based on their knowledge of current drowning prevention programs for children or lack thereof within their particular jurisdictions.

The Internet survey conducted was limited to only 2,103 website members of the Florida Fire Chiefs' Association. The survey was not sent to every fire rescue agency in the State of Florida.

The results of the survey are not based on scientific sampling. The survey represents a convenience sample of specific sets of data in regards to developing a drowning prevention program for children within the participating organizations polled.

The third assumption regarding this author's research finding relates to the effectiveness and accuracy of data obtained when conducting telephone interviews. It was assumed that the respondents answered all questions fairly and accurately.

The final limitation is time. The six-month time limit imposed by the National Fire Academy as it relates to applied research did not allow for a more in depth and comprehensive literature review on the subject. The current career position held where this author is employed demands an inordinate amount of time and dedication as a company officer. This element of time was further compressed with continuing education requirements, pursuit of a Master's degree, and the time investment conducive for individual happiness and prosperity. One who strives for excellence and academic achievement must equally manage time. Ultimately success equates as sustained equilibrium between these.

Definition of Terms

Drowning--A submersion resulting in death while submerged or within 24 hours of the episode (Harrawood et al., 1994, p. 35).

Near-drowning--A submersion of sufficient gravity to result in the victim being transported to a hospital emergency department, but not severe enough to result in death within 24 hours (Harrawood et al., 1994, p. 35).

Submersion--A respiratory insult from immersion in water that results in 9-1-1 activation and transport to an emergency room (unless DOA) regardless of the patient's outcome (Harrawood et al., 1994, p. 35).

Coalition--A coalition in an organization of individuals representing diverse organizations, factions or constituencies who agree to work together in order to achieve a common goal (NFPA, 1998, p. 13).

Facilitator--Responsible for running the coalition's meetings; this person should be knowledgeable in group dynamics (Cohen, Baer, & Satterwhite, n.d., p. 3).

Mission Statement--Outlines and institutionalizes an organization's goals and values, and it is these that guide the organization's actions (Compton & Granito, 2002, p. 257).

Vision Statement--Is the direction of an organization (Compton & Granito, 2002, p. 256). *Risk Watch*--Is the first comprehensive injury prevention program available for use in schools that links teachers with community safety experts and parents (NFPA, 1998, p.1).

Personal Flotation Devices (PFDs)--Also know as life jackets or vests. They are designed to: Keep your head above water and in a position, which permits proper breathing. Provide buoyancy to keep you afloat. Save your life (Fletemeyer & Freas, 1999, p. 186).

Type I Offshore Life Jacket--Designed to keep people afloat for an extended period of time in rough, open water and provides more protection to wearers than any other type of jacket. This jacket will turn an unconscious person in the water face up. They are bulkier and less comfortable and only come in two sizes one for children and one for adults (Fletemeyer & Freas, 1999, p. 188).

Type II Near-Shore Buoyant Vest--Comes in several sizes for adults and children and is less bulky. This vest is used in calm inland water where the likelihood of rapid rescue is great. It will turn an unconscious person in the water from a facedown position to a vertical or slightly backward position (Fletemeyer & Freas, 1999, p. 188).

Type III Life Jacket or Marine Buoyant Device (also know as floatation aid)--Is considered the most comfortable type of life jacket and comes in several styles for different boating activities and sports. They are designed for use in calm water where rescue is likely to be quick. They will not generally turn an unconscious person face up (Fletemeyer & Freas, 1999, p. 188).

Type IV--Device is thrown to a person in the water. Examples of these devices are boat cushions, ring buoys, and horseshoe buoys. They are not designed to be worn and must be supplemented by a wearable life jacket. They are not to be used for small children, nonswimmers, or unconscious people (Fletemeyer & Freas, 1999, p. 188).

Type V Life Jacket--"Special use device" or hybrid. Special use devices include boardsailing vests, deck suits, and work vests. They are designed and approved for only the special uses or conditions indicated on their labels and do not meet legal requirements for general use on board recreational boats. Hybrid life jackets are inflatable devices with some built-in buoyancy provided by plastic foam or kapok. They can be inflated orally or by cylinders of compressed gas to give additional buoyancy (Fletemeyer & Freas, 1999, p. 188).

RESULTS

As part of the applied research project, an internet survey was sent to the 2,103 member Florida Fire Chiefs' Association. Out of the 2,103 members that belong to the Florida Fire Chiefs' Association's website, only 40 fire-rescue agencies responded to the Internet survey. In addition, two telephone interviews were conducted. One telephone interview conducted for this applied research project (ARP) was with the Coordinator of the Drowning Prevention Coalition of Palm Beach County, Florida, part of the Palm Beach County Fire Rescue Department, and the other telephone survey was conducted with the Public Information Officer (PIO) from Peoria, Arizona, who belongs to the Drowning Prevention Coalition of Central Arizona. The internet survey determined the number of fire-rescue agencies that had the following: (a) a drowning prevention program in place; (b) which organizations they partnered with; (c) what actions or programs their agencies started to prevent drowning in their community; (d) whom their key coalition partners were; and (e) what resources they used. The fire-rescue agencies and respondents are listed in Appendix D.

Feedback from the Internet survey is as follows:

1. Do you have a drowning prevention program?

Yes	13
No	27

Thirteen departments out of the 40 that replied to the survey stated that they had an active drowning prevention program and 27 fire-rescue agencies stated that they had no drowning prevention program(s) available at the present time.

2. If your answer was "no" to Question #1, do you plan on starting one?

Yes	11
No	16

Of the 27 fire-rescue agencies that stated they did not have a drowning prevention program, only 11 agencies stated that they were interested in starting a drowning prevention program, and 16 agencies stated that they had no interest in such a program at this time.

3. If your answer was "yes" to Question #1, which organization(s) did you partner with?

ORGANIZATION	RESPONSES
Water Safe Kids	0
Swim Central	0
SAFE KIDS (National or Florida)	3
Other	6

Of the 13 fire-rescue agencies that stated they had a drowning prevention program, three agencies surveyed partnered with the National SAFE KIDS Campaign to establish their program. The National SAFE KIDS Campaign is dedicated solely to the prevention of unintentional childhood injuries, the number one killer of children under the age of 14. Additionally, these fire-rescue agencies belong to the Florida SAFE KIDS Coalition, which is part of the National SAFE KIDS Campaign and coordinated by the Florida Department of Health, Bureau of Emergency Medical Services.

The Florida SAFE KIDS Coalition membership includes a cross-section of public health officials, health care providers, firefighters, emergency medical services (EMS), educators, and business professionals. There are currently 10 Local SAFE KIDS Coalitions that are located throughout Florida. The state and local coalitions work to reduce unintentional injuries through the following: (a) public education; (b) community programming; (c) safety product distribution; (d) legislation; (e) media outreach; (f) injury data collection; and (g) program evaluation.

Five fire-rescue agencies out of the 13 that stated "yes" to a drowning prevention program affirmed that they partnered with other organizations to start their prevention programs. The City of Marco Island Fire Rescue Department stated that they partnered with their local YMCA to reduce or prevent the possibility of children drowning in their community. While four fire-rescue agencies partnered with drowning prevention coalitions. Oldsmar Fire Rescue stated they partnered with the West Coast Drowning Prevention Coalition, whereas Hillsborough County and Palm Harbor Fire Rescue agencies partnered with the West Central Florida Drowning Prevention Coalition. The Palm Beach County Fire Rescue Department stated that they partnered with the Drowning Prevention Coalition of Palm Beach County in 1997. The Panama City Fire Department acknowledged that they embraced the National Fire Protection Agency's *Risk Watch* program in their community.

Survey question three is relevant to **research question one**, which asked: "***What have other fire-rescue agencies done to reduce or prevent the possibility of children drowning in their community?***" It was noted that out of the 2,103 Florida Fire Chiefs' Association members surveyed via the Internet, only 40 fire-rescue agencies responded, and out of those 40 only 13 agencies stated the fact that they had a drowning prevention program in existence. Three agencies had stated that they partnered with SAFE KIDS (National or Florida) to reduce or prevent the possibility of children drowning in their communities. Four agencies attested to joining Drowning Prevention Coalitions, while one agency partnered with the YMCA and another with NFPA *Risk Watch*. These nine agencies became aware of the need for community-wide injury prevention, especially when it came to children. Involvement in these programs was both beneficial to the fire service and the community.

In telephone interviews with Anna Plotkin, Coordinator of the Drowning Prevention Coalition of Palm Beach County, Florida, and Mike Tellef, PIO for the Peoria, Arizona Fire Department, both were asked research question one, which stated: "***What have other fire-rescue agencies done to reduce or prevent the possibility of children drowning in their community?***"

Anna Plotkin stated:

The Drowning Prevention Coalition of Palm Beach County, has lectured in elementary schools and County Fairs about the dangers of drowning and near-drowning and emphasized the needs to have parents watch their children when they are swimming or playing near any open body of water. With the lectures, the Coalition provides brochures detailing the "do's and don'ts" around swimming pools, barrier devices and covers for pools, hot tubs or Jacuzzis. The Coalition also provides swimming lessons to underprivileged children and summer camps for children that want to learn how to swim, or instruction on becoming junior lifeguards (A. Plotkin, telephone interview, July 28, 2004).

Mike Tellef stated:

The Peoria, Arizona Fire Department along with 14 fire-rescue agencies, one police agency and many non-profit agencies in the "Valley" formed the Drowning Prevention Coalition of Central Arizona, to combat drowning and near drowning

incidents in their communities. The Coalition has been in existence for seven years and the communities have seen greater than 25 percent decrease in pediatric drowning or near-drowning incidents (M. Tellef, telephone interview, July 27, 2004).

4. What actions or programs has your agency employed to reduce the number of child drowning or near-drowning incidents in your community?

ACTION OR PROGRAM	RESPONSES
Community Education	19
Community Training (swim lessons, CPR)	12
Other	9

Of the 13 fire-rescue agencies that affirmed they had a drowning prevention program, 13 agencies stated that they provided community education to the citizens of their communities. The community education consisted of teaching basic rules of pool safety, potential water hazards, and how to conduct self-inspections around their pools. The City of Marco Island Fire Rescue Department stated they used a program named "Waterwise" to educate all third graders in their elementary schools. This program consists of: (a) pool safety; (b) intro to CPR; (c) proper use and practice with lifejackets; and (d) swimming survival methods. The Palm Bay Fire Department stated that have been educating children ages 2 to 10 by using National Spa's "Gus and Goldie" costumes (Gus is a whale and Goldie is a goldfish) and the American Red Cross's program "Whales Tales" for children ages 6 to 13 to teach water safety. Six fire-rescue agencies that stated that they did not have a drowning prevention program declared that they provided community education about drowning and near-drowning.

Twelve fire-rescue agencies out of the 40 that replied to the survey stated that they provided community training to the residents of their communities. The community training consisted of teaching infant, child and adult cardiopulmonary resuscitation (CPR) to individuals, family members and guardians of children. Clay County, West Palm Beach and South Walton Fire-Rescue agencies stated that they did not have a drowning prevention program, but taught child and adult CPR classes to members of their communities.

Satellite Beach, Oldsmar and Spring Hill Fire Rescue agencies each participated in providing free pool safety inspections to their communities (Appendix F) in addition to community education and training, utilizing on-duty personnel to conduct the surveys.

Hillsborough County Fire Rescue provides public awareness campaigns while Deltona Fire & Rescue provides public service advertisements to their citizens and St. Cloud Fire Rescue sends out information on pool safety to all new pool owners annually. Both Hillsborough County and St. Cloud Fire Rescue have drowning prevention programs.

Panama City Fire Department stated that they have been successful in using the NFPA *Risk Watch* program in developing their drowning prevention program and teaching children in their community about the dangers of water, drowning and near-drowning and injury prevention.

Conversely, two agencies, which stated they did not have a drowning prevention program --the West Palm Beach Fire Rescue agency, affirmed that they taught children the proper use of PFDs and what to do in emergency water situations, while the Fort Walton Beach Fire Rescue developed a beach drowning prevention program, which was not dedicated to any specific age group.

Survey question four is relevant to **research question two**, which asked: "*What actions or programs may be employed to reduce the number of child drowning or near-drowning incidents in the City of Fort Lauderdale?*" There is no one action or program that can prevent all childhood drownings or near-drownings. Many of the fire-rescue agencies that responded to the Internet survey stated that they combined community education and training as their main action or program to educate the public and raise awareness about the drowning problem and give helpful tips and information to reduce drownings or near-drownings of children in their care. A few agencies have developed pool inspection forms that on-duty personnel perform annually. To reduce or prevent childhood drownings or near-drownings each fire-rescue agency and coalition must develop a multi-faceted approach to combat this problem.

Anna Plotkin and Mike Tellef were then asked research question two via telephone: "*What actions or programs may be employed to reduce the number of child drowning or near-drowning incidents in their communities?*"

Anna Plotkin replied:

The Drowning Prevention Coalition schedules interactive educational programs that are useful for individuals of all ages. The activities for children include life jacket relay races, water safety bingo, water safety family feud, stories, crafts and more. All the activities are available at no cost to the citizen and the Coalition members travel to the individual's location where they land based. Additionally, there are programs entitled S.W.I.M. (Safe Water Instruction Module), and W.E.T. (Water Education Training), which are sponsored by the Quantum Foundation, Inc., which provides free swim instruction to children participating in childcare and aftercare programs. The swim lessons take place at the YMCA facilities in Palm Beach County, Florida. The schools are asked to provide their own transportation to the classes. All other expenses are covered through a grant from the Quantum Foundation. Lastly, the Drowning Prevention Coalition has scholarships available for qualifying families to learn how to swim. Pools accepting these vouchers are located throughout the county (A. Plotkin, telephone interview, July 28, 2004).

Mike Tellef declared:

The Peoria Fire Department and the Drowning Prevention Coalition of Central Arizona, have a program where they use a Native Air helicopter that is painted with drowning prevention banners all over it to fly into the county fair, carnivals, school programs, news media blitzes. The Peoria Fire Department also uses the local newspapers to promote ads for drowning prevention. This years theme is

"Water Safety...it's your responsibility." Along with the newspaper ads there are messages stating to use barriers around your pool, learn how to swim, learn CPR and most importantly supervise your children (M. Tellef, telephone interview, July 27, 2004).

5. Who are or were your key coalition partners in the drowning prevention program?

KEY COALITION PARTNERS*	RESPONSES
Fire Rescue Agencies	4
American Red Cross	5
Local Pool Vendors	5
SAFE KIDS (National or Florida)	4
Local Hospitals	4
Department of Health	3

***Please see Appendix G for list of all key coalition partners in Florida.**

Of the 13 fire-rescue agencies that stated they had a drowning prevention program the key coalition partners are listed in the chart above. A detailed list can be found in Appendix G. The City of Marco Island, Hillsborough County, Palm Beach County and Spring Hill Fire-Rescue agencies stated that they utilized their department and other departments in the area to form drowning prevention coalition partnerships. Spring Hill Fire Rescue stated that their whole department has been involved with starting and implementing a drowning prevention program for children. Spring Hill Fire Rescue also stated that their International Association of Firefighters (IAFF) Local #2749 provided funding and support to establish the program and brochures (Appendix H).

The American Red Cross and local pool vendors were considered major coalition partners with the 13 agencies that have a drowning prevention program. Palm Bay Fire Department, Hillsborough County, Palm Beach County, Tampa Fire Rescue and Panama City all utilized the American Red Cross's "Whales Tales" as their community education program to teach children about drowning and near-drowning prevention. Additionally, St. Cloud Fire Rescue, Satellite Beach, St. Lucie County and Spring Hill Fire Rescue along with the previous named fire rescue agencies, have obtained partnerships with their local pool vendors.

The SAFE KIDS (National or Florida) organization is the key coalition partner in the following fire-rescue agencies: Oldsmar, Hillsborough County, Tampa and Palm Harbor. Interestingly, the Orlando Fire Department stated that they were the founding agency for the current Central Florida SAFE KIDS Coalition, but is currently not active in the coalition. The Orlando Fire Department does not have a drowning prevention program, but does participate in community education and training.

Local hospitals and local Department's of Health completed the list of top key coalition partners. Hillsborough County has established partnerships with their local hospitals and Department of Health along with Palm Harbor Fire Rescue and Tampa Fire Rescue. Coral

Gables Fire Department stated that their key coalition partners were the Miami Children's Hospital and the North Broward Hospital District.

Conversely, Sanford Fire Department and Plant City Fire Rescue stated that they partnered with SAFE KIDS even though they did not have a drowning prevention program. Both agencies avowed that they will be developing a drowning prevention program in the near future.

Survey question five is related to **research question three**, which asked: *"How can the Fort Lauderdale Fire-Rescue Department (FTLFR) partner with key politicians and community leaders in the development of a workable drowning prevention program?"* This survey question was directed toward discovering fire service organizations that had child drowning prevention programs utilizing certain non-profit organizations to establish their respective drowning prevention programs. The survey noted that many organizations geared their key coalition partners around the American Red Cross, SAFE KIDS (National or Florida), local pool vendors, hospitals, and other fire rescue agencies. Additionally, the survey noted that a few fire-rescue agencies partnered with their local County Commissioners, local newspapers, elementary schools and community colleges to assist in the development of a drowning prevention program for children.

Anna Plotkin and Mike Tellef were asked research question three: *"How can their department partner with key politicians and community leaders in developing a workable drowning prevention program?"*

Mike Tellef replied:

Getting coalition partners was the easy part in developing a drowning prevention program. Other PIO's and Public Educators from the "Valley" fire-rescue agencies got together and solicited non-profit organizations such as: the Phoenix Children's Hospital, the SRP Safety Connection and the Drowning Prevention Coalition of Central Arizona. After speaking to those agencies and getting them on board, the PIO's and Public Educators spoke to the local newspapers, local pool and spa companies, Home Depot, and Target to see if they would be interested in becoming coalition partners for a drowning prevention program for children. All the organizations that were mentioned have become the key partners in the Drowning Prevention Coalition of Central Arizona (M. Tellef, telephone interview, July 27, 2004).

Anna Plotkin replied:

In 1997, a close friend of County Commissioner Warren Newel's, child died due to drowning accident. Commissioner Newel stated that he was going to develop a county-wide drowning prevention program for children, so that another child would not fall victim of a drowning or near-drowning incident. Commissioner Newel iterated the importance of water safety to all members of the Commission, the Palm Beach County Fire Rescue Department and local pool companies. The Drowning Prevention Coalition of Palm Beach County was established after that incident (A. Plotkin, telephone interview, July 28, 2004).

6. What types of resources were utilized to initiate your drowning prevention program? And how much time was allocated?

TIME ALLOCATION
8 Hours Annually
2-3 Hours per Week
68 Hours
3-5 percent of Public Educators Job

The results of the survey revealed that the resource of time allocation varied from 8 hours annually to three to five percent of a public educator's job. St. Lucie County stated that in the year 2003 approximately 68 hours were spent teaching CPR, attending coalition meetings and appearing on radio and television locally.

St. Cloud Fire Rescue stated that they spent eight hours annually on their drowning prevention program. This time was spent in the spring, where the State of Florida participates in April Pool's Day. The event educates the public about drowning and near-drowning incidents stemming from swimming pools. Meanwhile, Satellite Beach Fire Rescue commits two to three hours per week utilizing on-duty fire personnel to conduct home pool safety inspections and speak about drowning prevention.

Panama City Fire Department stated that three to five percent of their Public Educator's job dealt with drowning prevention. The Public Educator uses the NFPA's *Risk Watch Program* to educate students in elementary schools.

In regards to the telephone interviews with Anna Plotkin and Mike Tellef, both confirmed that they were solely dedicated to their drowning prevention programs (A. Plotkin & M. Tellef, telephone interviews, July 27 & 28, 2004).

BUDGET ALLOCATION
1 Person's Salary
\$375.00 for Books
\$1,100.00 Annually
\$2,000.00 Annually
\$2,500.00 Annually

In regards to the resource of budget, the departments that replied affirmed that their budget allocation for drowning prevention varied from a Public Educator's salary, the expense of purchasing books, to an annual allocation.

Panama City Fire Department replied that their budget is allocated \$375.00 annually for the purchase of books to hand out to members of their community in order to teach CPR. According to St. Lucie County Fire District, \$600.00 was spent on the CPR outreach program and \$500.00 was given to their coalition in fiscal year 2003. Coral Gables Fire stated that \$2,000.00 was allocated in printing forms and doing mail outs on their drowning prevention

program. While the Spring Hill Fire Rescue Department acknowledged that \$2,500.00 is allocated each year in their Operational Budget for their Child Drowning Prevention Program.

In speaking to Anna Plotkin via the telephone, she stated, "The Drowning Prevention Coalition of Palm Beach County is allocated \$100,000.00 for its budget. Fifty percent of the allocation is given by the Palm Beach County Board of Commissioners and the other 50 percent is given by the Children's Services Council" (A. Plotkin, telephone interview, July 28, 2004).

When this author spoke with Mike Tellef, from Peoria, Arizona Fire Department, he stated, "The Peoria Fire Department is allocated \$1,000.00 each fiscal year for their drowning prevention program" (M. Tellef, telephone interview, July 27, 2004).

PERSONNEL ALLOCATION
1 Full-time Public Educator
2-3 Full-time Public Educators
4-5 Full-time Public Educators
Entire Fire Department

In reference to the resource of personnel, the survey revealed the personnel that were involved in the drowning prevention program or drowning prevention coalition were Public Educators and one response stated that their whole fire department was involved.

Spring Hill Fire Rescue Department, declared in their response to the survey that the entire department had taken the lead partnering with their IAFF Local #2749 to fund and deliver the child drowning prevention program in their community. The other fire rescue agencies stated that their public educators worked on drowning prevention programs in the spring time when community pools start preparing for the swimming season.

MARKETING
Media (Newspapers, Radio and Television)
Government Access Channel
Brochures
Home Pool Surveys

In considering marketing as a resource, all fire rescue agencies that replied "yes" to a drowning prevention program in the Internet survey, acknowledged that they used the media, government access channels, and brochures to promote child drowning and near-drowning prevention programs. Hillsborough County Fire Rescue stated that they had public awareness campaigns televised each night during the local news.

Spring Hill Fire Rescue, Oldsmar Fire Rescue and Satellite Beach Fire Rescue each stated that they performed home pool safety surveys or inspections as their marketing resource. The three agencies stated that on-duty personnel perform the inspections or surveys and answer any and all questions about drowning, near-drowning and prevention programs. Each agency

hands out brochures advising homeowners about learning CPR and where and when classes are being held.

When this author inquired what Palm Beach County, Florida Fire Rescue and Peoria, Arizona Fire Department did to market their drowning prevention programs

Anna Plotkin, from Palm Beach County Fire Rescue replied:

The Palm Beach Fire Rescue Department and the Drowning Prevention Coalition of Palm Beach County; provide flyers and brochures to citizens of their communities. The Drowning Prevention Coalition of Palm Beach County also holds press conferences yearly at the beginning of swim season to alert parents, guardians and children about the dangers of not supervising children while swimming in pools or any open body of water. Drowning prevention messages are also seen on the government access channel throughout the County (A. Plotkin, telephone interview, July 28, 2004).

Mike Tellef, PIO from Peoria, Arizona Fire Department replied:

I have a good working relationship with the local news anchors and reporters from the local newspapers. An anchor woman, Jeanne Herwerth, from KPHO CBS Channel 5, in Phoenix, Arizona did a report on canal dangers and child drowning dangers just recently where she jumped into a canal and was swept up in the current. News reporter Jeanne Herwerth needed the assistance from the Peoria Fire Department to get out of the canal. Ms. Herwerth does many stories on child drowning and near-drowning incidents (M. Tellef, email correspondence, August 13, 2004).

LOCATION(S)
Pool Companies
Doctor's Offices (Pediatrician's)
Residential Homes

The 13 fire rescue agencies that stated "yes" to a drowning prevention program confirmed that they placed child drowning prevention flyers, posters or brochures at local pool companies and vendors, and most importantly pediatrician's offices.

St. Cloud Fire Rescue vowed that they send drowning prevention information to all new pool owners annually. Within this information are tips on the "do's and don'ts" of swimming, phone numbers and locations where infant, child and adult CPR classes are being taught, and basic rules of pool safety.

Upon speaking to Anna Plotkin and Mike Tellef via the telephone, both stated that they place their drowning prevention material in the same locations as the other fire rescue agencies.

GRANT(S)
\$3,000.00

The results of the survey revealed only one fire rescue agency had received a grant for their drowning prevention program. Palm Bay Fire Department stated that they received a grant for \$3,000.00 to assist with funding of their child drowning prevention program. Joan Needelman, Community Service Coordinator, for the Palm Bay Fire Department did not state who wrote the grant or where the funds originated.

Both Anna Plotkin and Mike Tellef stated that have never received any grants, but will look into it for the future (A. Plotkin, M. Tellef, telephone interview, July 27 & 28, 2004).

Survey question six is relative to **research question four**, which asked: *"What resources would be needed to implement a drowning prevention program?"*

The survey reported that there are many resources needed to implement a drowning prevention program. The three main resources that any coalition needs are: money, materials, and people. Money is a direct financial contribution, whether it be allocated in the operating budget or attained by grants or donations. Materials are the things needed to run the program day-to-day. People are your coalition members, volunteers, local media personnel, vendors, etc. Getting the resources needed to achieve the coalition's objectives must be a priority. Being successful requires careful planning, hard work, persistence, and gratitude.

DISCUSSION

In reviewing the literature review, the results from the Internet survey and telephone interviews conducted for this applied research project, this author can establish that there is a need to develop a drowning prevention program for children in the City of Fort Lauderdale.

Drowning continues to be the leading cause of unintentional death to children under the age of five. The majority of drowning and near drowning incidents occurs in residential swimming pools thus, underscoring how deadly any body of water can be. Children can drown in as little as two inches of water and therefore are at risk of drowning not only in pools, but, children under the age of five may drown in bathtubs, buckets, diaper pails, toilets, Jacuzzis and hot tubs.

Drowning usually occurs quickly and silently. Childhood drownings can happen in a matter of seconds and oftentimes occur when a child is left unattended or during a brief lapse in supervision. The common assumption of pediatric drowning by hearing tell-tale signs of a child splashing or perhaps hearing their cries for help is just that; an assumption of tragic proportions. Monaco (1995) stated, "If drownings and near drownings teach us anything, it is that life is illusive, and in the wink of an eye a child can die and a family can be changed forever" (p. 6).

Authors agreed that there are several reasons why fire-rescue agencies should develop drowning prevention programs in their communities.

First and foremost, the most obvious reason is prevention of the loss of life. Second, such a program is good public relations. The program provides an opportunity to increase the department's visibility and credibility. This can be a big help when your agency needs public support for other issues. Through working on the drowning and near-drowning prevention program, the media will get to know your fire-rescue agency as a proactive organization in the efforts of expanding the saving of life by providing community education and involvement with key coalition members. Third, the fire-rescue agency is respected and held in esteem in most communities. The organization has the clout to harness resources for the program.

Finally, fire-rescue members know and meet many people in the community; people who have ideas, assets, time and skills to devote to such a program (Moreno & Ogden, 1990; Larson, 1987; Smith, 1986).

In reviewing the Internet survey results, it was noted that out of the 2,103 Florida Fire Chiefs' Association members surveyed, only 40 fire-rescue agencies responded, and out of those 40 only 13 agencies stated the fact that they had a drowning prevention program in existence. Three agencies had stated that they partnered with SAFE KIDS to reduce or prevent the possibility of children drowning in their communities. Four agencies attested to joining Drowning Prevention Coalitions, while one agency partnered with their local YMCA and another with NFPA *Risk Watch*.

With regards to the telephone interviews that were conducted for this applied research project (ARP), both Anna Plotkin, Coordinator of the Drowning Prevention Coalition of Palm Beach County, Florida, and Mike Tellef, PIO for the Peoria, Arizona Fire Department both acknowledged that being part of a coalition has assisted them in teaching parents, children and guardians of children how to be safe around water to prevent drowning and near drowning and to provide swim lessons to underprivileged children.

Most authors concurred that those fire-rescue agencies participating in proactive drowning prevention coalitions are able to effectively provide a great deal of informative brochures outlining safety tips for in and around swimming pool safety for pediatrics. In addition these brochures will provide effective information regarding local CPR classes being held in their community. Most CPR instructions provide effective training and information for pediatric drowning emergencies.

According to a few authors, there is no one action or program that can prevent all pediatric drowning emergencies. However, instituting a multifaceted strategy including (a) active supervision by a competent adult; (b) safe water environments; (c) proper personal flotation devices (PFDs); and (d) education, are required to ensure that every child in and around water remains in an environment that is as safe a manner possible (Solits, 1990; Cruzan, 1991; Critchell, 2004; Nieves et al., 1996; National SAFE KIDS, 2004).

The literature review heavily discussed the actions or programs suggested by the National SAFE KIDS Campaign (2004) and other authors, such as: (a) development of supervision programs; (b) installation of pool fences or barriers with self-closing and self-latching doors and locks; (c) installation of door and window alarms; and (d) safety pool covers. It was noted that

pool safety covers should be rigid in design and be able to hold a minimum of 30 pounds are better in preventing childhood drownings or near-drownings than plastic covers that can hide a child under them (Cruzan, 1992; Brenner, 2003).

Additionally, the literature review discussed the many types of personal flotation devices (PFDs) that the U.S. Coast Guard recommends to use at all times during while boating. It was interesting to note in reviewing the literature on drownings due to boating accidents, 45 percent of the children ages 14 and under were not wearing PFDs (National SAFE KIDS, 2004).

This author has noted on many occasions while relaxing on the beach or working at one of the beach fire stations. Many boaters, young and old, do not wear their PFDs while boating on the ocean or the Intracoastal Waterway. The City of Fort Lauderdale is known as the "Venice of America" (Nova Southeastern University, 1999), due to its 100 miles of navigable waterways that intertwine within the city limits. It makes this author wonder if these people enjoy risking their lives or perhaps are they just ignorant in the assumption that their child will not drown.

The last action or program that the literature review discussed was education. Community education should begin with a statewide media campaign to elevate public awareness regarding the hazards associated with drownings and the particular vulnerability to specific populations, and age groups (Nieves et al., 1996).

Education does not just mean teaching people about the dangers of swimming pools and other open bodies of water. It means raising the awareness levels of parents and guardians with children 5 and under about the dangers and safety measure of drowning, teaching the community cardiopulmonary resuscitation (CPR), and teaching children how to swim.

The survey results indicated that of the 13 fire-rescue agencies that affirmed they had a drowning prevention program, 13 agencies stated that they provided community education to the citizens of their communities. The community education consisted of teaching basic rules of pool safety, potential water hazards, and how to conduct self-inspections around their pools. The City of Marco Island Fire Rescue Department stated that they used a program named "Waterwise" to educate all third graders in their elementary schools, while the Palm Bay Fire Department uses National Spa's "Gus and Goldie" program to educate children ages 2 to 10 and the American Red Cross's program "Whales Tales" for children ages 6 to 13 on water safety.

Twelve fire-rescue agencies out of the 40 that replied to the survey affirmed that they provided community training to the residents of their communities. The community training consisted of teaching infant, child and adult CPR to individuals, family members and guardians of children.

It was interesting to note that the Cities of Satellite Beach, Oldsmar and Spring Hill Fire Rescue agencies each have participated in providing free pool safety inspections to their respective communities (Appendix F) in addition to providing proactive community education and training utilizing on-duty personnel to conduct such an inspection. This author agrees that this is a great way to get involved with the community, but due to the City of Fort Lauderdale's call volume (fire and EMS) it would be impossible to do.

The survey, telephone interviews and authors concur that the only way to effectively reduce preventable childhood injuries in the community is to work together as a community. This means organizing individuals and organizations with an interest in solving the childhood injury problem. This group of individuals and organizations then in turn forms a community coalition. Coalitions are useful for accomplishing a broad range of goals that reach beyond the capacity of any individual member or organization (Cohen, Baer & Satterwhite, n.d.).

Although coalition building has become a popular approach, the concept of coalition building is not new. In 1840, Alexis de Tocqueville, the first noted international researcher on American society, remarked that:

...Americans are peculiar people...If, in a local community, a citizen becomes aware of a human need that is not met; he thereupon discusses the situation with his neighbors. Suddenly a committee comes into existence. The committee thereupon begins to operate on behalf of the need, and a new community function is established (Cohen, Baer, & Satterwhite, n.d., p.2).

In the telephone interview with Anna Plotkin, from the Drowning Prevention Coalition of Palm Beach, she stated that a friend of a County Commissioner's child died from a drowning incident and the County Commissioner pledged that he would develop a drowning prevention program for children, so that another child would not fall victim to a drowning or near-drowning incident. This author noted that this was a sad story that turned into a beneficial program to all children of Palm Beach County, Florida. The question this author asks--Is it going to take a drowning or near-drowning accident of a child close to our City Manager, Commissioners or Mayor to develop a drowning prevention program? Some authors would call this a "design by disaster technique."

According to the survey results, the key coalition partners of any fire-rescue agencies drowning prevention program were: (a) the American Red Cross; (b) local pool vendors; (c) SAFE KIDS (National or Florida); (d) local hospitals; (e) the Department of Health; and (f) other fire rescue agencies. Spring Hill Fire Rescue stated that their entire department has been involved with starting and implementing a drowning prevention program for children. In addition, Spring Hill Fire Rescue stated that their International Association of Firefighters (IAFF) Local #2749 provided funding and support to establish the program and brochures (Appendix H).

Drowning prevention is a difficult concept to sell, because most individuals and family members may not think about drowning prevention unless they have just purchased a pool for their home, a new boat, or have enrolled their children in swimming lessons (Moler, 1993). That is why coalitions must be formed by (a) fire-rescue agencies; (b) local law enforcement agencies; (c) local school districts; (d) pediatricians and nurses; (e) local hospital districts; (f) local and national pool/spa suppliers; and (g) local political leaders, so that the community and surrounding areas become aware of drowning prevention. Children are not the only ones drowning.

The literature review mentioned the South Florida Water Injury Prevention Coalition, led by the North Broward Hospital District, Division of Emergency Medical Services for Children.

The Coalition's primary mission is reducing the number of water submersion injuries and deaths for all ages (with a focus on children), in the tri-county region of Dade, Broward and Palm Beach counties in Florida. The EMS Water Submersion Registry is a pilot program with the support for statewide application from the Florida Department of Health, Bureau of Emergency Medical Services (Appendix A) (Broward County Regional EMS Council, n.d.). This registry form is fairly easy to fill out and should be implemented in the Fort Lauderdale Fire-Rescue Department and faxed to the South Florida Water Injury Prevention Coalition. But again the question is why isn't the department utilizing this form now? The answer to the question ranges from Administration not knowing about the program or not implementing the program because it would create too much paper work and finally the personnel being too lazy to fill out the form.

The survey results and telephone interviews coincided with the authors in regards to the resources needed to implement a drowning prevention program. According to a few authors, there are three types of resources one's coalition will need, which are money, materials, and people.

While obtaining external resources are necessary, many coalitions fail due to lack of support from their internal sources. Gaining support for your coalition is all about change. Many organizations resist change. The facilitator of the coalition must work within their organizations' framework to make the change. This will be the biggest obstacle to conquer in the Fort Lauderdale Fire-Rescue Department due to skeleton bureaus from budgetary cutbacks.

When this author reviewed the results from the survey she found that time allocation varied from 8 hours annually, to 3 to 5 percent of a Public Educators job and that budget allocations varied from one person's salary to \$2,500.00 annually. In addition, the personnel allocation revealed that Public Educators in the fire rescue agencies were responsible for developing and promoting drowning prevention programs. The exception to this was Spring Hill Fire Rescue who stated that their entire department was dedicated to child drowning prevention programs. If the Fort Lauderdale Fire-Rescue Department were to implement such a program, the Public Educators position would need to be reinstated into the budget, since it was cut due to budgetary constraints in F/Y's 2003-2005. In speaking with the Assistant Fire Marshal from the Fort Lauderdale Fire-Rescue Department, this author was told that the Public Educator used to go to the local elementary schools and use the NFPA *Risk Watch Program* as part of a community childhood injury prevention program.

There were no disagreements as to what marketing techniques were used to promote drowning prevention programs. Survey results and authors agree that using the media was the best way to promote drowning prevention along with public service announcements on television or on government access channels. The second method of getting drowning prevention programs out to the public were with brochures giving pool safety tips, information on when and where CPR classes are being held, and important questions to ask yourself about your pool. Spring Hill Fire Rescue provided a copy of their brochure when they responded to the survey (Appendix H) which provided good information to their community.

In regards to location(s) of placing drowning prevention program information, the survey, telephone interviews and authors agree that placing drowning prevention information at local

pool companies, pediatrician's offices and sending information to citizen's homes were the best way to get the message out.

It was interesting to note that only one fire rescue agency received a grant for their drowning prevention program according to results of the survey. Palm Bay Fire Department stated that they received a grant for \$3,000.00 to assist with the funding of their child drowning prevention program. Both respondents to the telephone interviews stated that they would look into writing a grant to obtain more money for their programs or would hire someone to write a grant. The literature review stated that the world of grants is competitive. Many times, it is not the most worthy cause that gets the money--it is the best-prepared cause. This author has been lucky in receiving money from grants on two occasions and would be more than willing to venture into the world of grant writing for drowning prevention.

As an epilogue, it was disheartening to see that out of 2,103 Internet members of the Florida Fire Chiefs' Association only 40 departments responded back to the survey, and only 13 departments stated that they had a drowning prevention program. When this author asked if the answers were "no" to a drowning prevention program, do you plan on starting one, only 11 fire-rescue agencies stated they were interested in starting one.

Drowning represents the third-leading cause of accidental death in America and the second leading cause of accidental death in Americans ages 5 to 44 (Fletemeyer & Freas, 1999). Drowning has been the cause of at least 8,000 deaths in the United States annually and about 150,000 worldwide (Chandy, 2000). In Florida, drowning is the leading cause of death in children under five years of age. With that statement said, do you not think that every fire-rescue agency in the State of Florida would have a drowning prevention program? I guess it's not important to some departments, or maybe a drowning hasn't occurred to someone close? If one child dies or is on life-support for the rest of his or her life due to a near-drowning is it too late to start a drowning prevention program? The answer is "yes." It should be in place already!

RECOMMENDATIONS

The research presented in this study has demonstrated the need for the Fort Lauderdale Fire-Rescue Department to take a proactive approach in developing a drowning prevention program for children. In addition to the development of this program, the Fort Lauderdale Fire-Rescue Department shall be able to create equity within the communities it serves and the local political leaders.

Based on the literature review, Internet survey, telephone interviews, and the analysis of the results of this applied research project, the following recommendations have been designed to assist with the preparation and development of a pediatric drowning prevention program for the City of Fort Lauderdale Fire-Rescue Department (FTLFR):

1. Obtain internal support from the city manager, fire chief, senior staff chief officers, and rank and file department members to "buy in" to an effective development of a pediatric drowning prevention program for the citizens of Fort

Lauderdale. Create a vision and communicate this vision to the fire chief and other members of the department so that one may obtain a "buy in." Also by strengthening individual knowledge and skills means assisting individuals increase their knowledge and capacity to prevent injury.

2. Provide pertinent and sobering data that supports the need to develop this program and what preparations are needed to implement such a program such as: (a) money; (b) materials; (c) personnel; (d) outside funding sources; and (e) key coalition members outside the organization. Solicit support from the local politicians and community leaders. Advise these leaders that there is a problem with children drowning or experiencing near drowning within the City limits and provide specific data that proves this is actually happening. Inform the leaders that a solution to this problem is to develop a pediatric drowning prevention program. Advise leaders that grants may be obtained to fund this program or donations could be accepted since budgetary constraints are in order. Engage community leaders in the process of identifying, prioritizing, planning and making changes in their communities about drowning prevention.
3. Fostering coalitions and networks. By this we mean creating or strengthening the ability of people and organizations to join together to work on the specific problem. By strengthening the collaboration among diverse partners, coalitions and networks are useful for accomplishing a broad range of goals. These goals may range from information sharing to coordination of services or from community education to advocacy for major regulatory or legislative changes. One of the main coalition partners that the City of Fort Lauderdale Fire-Rescue may use is our Beach Lifeguards. In October 2003, the Beach Lifeguards were moved into the Fire-Rescue's budget. Using the lifeguards to assist in developing a drowning prevention program not only makes them feel important and brings the two departments closer; they can assist in teaching underprivileged children how to swim.
4. Training internal providers on drowning prevention programs (community risk reduction). It is critical to ensure that those who provide training, advice, or serve as role models have the information, skills, and motivation to effectively promote injury prevention with youth, parents, colleagues, and policy makers.
5. Promote the use of the *Immersion Incident Report* (Appendix A) to track drownings and near-drownings within the City limits.
6. Promote community education. Promoting community education means reaching groups of people with information and resources to build support for healthier behavior and community norms. Since the media is so predominant in our society, skillful attention to the media can advance community education efforts. To assist in community education the FTLFR needs to have the Public Educator's position put back into the budget. This position was eliminated due to budgetary restraints in F/Y's 2003-2005. With the Public Educator's position back in the budget he or

she could assist in teaching injury prevention to children in the local elementary schools using the NFPA's *Risk Watch Program*. If not, personnel shall be trained to provide community education to the citizens of their communities.

7. Additional research will be needed on specific drowning prevention programs that have been established by the National SAFE KIDS Organization.

A recommendation to the future readers of this applied research project (ARP) is to continue the research to reveal drowning prevention programs from other geographical locations such as: Arizona, California, Texas, Hawaii and Alaska. Also, it would be helpful to have specific names of coalitions that these fire-rescue agencies belong to and how they became partners.

The key point to developing a drowning prevention program in the City of Fort Lauderdale is not to reinvent the wheel. Drowning prevention programs have been developed and implemented throughout the country. The City of Fort Lauderdale can learn from others' mistakes and build on what has been successful elsewhere. We must select interventions that have demonstrating efficacy and are appropriate to our communities needs.

The City of Fort Lauderdale and the Fire-Rescue Department must not look for nor expect quick and easy long-term solutions. The situations that lead to child deaths are complex. These deaths will not be prevented overnight. Prevention programs take time and effort to design and implement, and often even more time to impact the lives of children. Moreover, the changes that occur most likely will require consistent attention at some level permanently.

Just remember that children do not splash and make a lot of noise when they are drowning. Hence is why it is oftentimes called the "silent killer!"

Format changes have been made to facilitate reproduction. While these research projects have been selected as outstanding, other NFA EFOP and APA format, style, and procedural issues may exist.

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Appendix A South Florida Water Injury Prevention Coalition Immersion Incident Report

South Florida Water Injury Prevention Coalition Immersion Incident Report

INCIDENT BACKGROUND
Date: _____ Time: _____ AM _____ PM City: _____ Zip Code: _____ Alarm #: _____

VICTIM INFORMATION
 DOB: _____ Age: _____ Yrs. _____ Mos.
 Gender: Male Female
 Race: White Black Hispanic Native American Asian Other: _____ Unknown
 Residency: Florida Resident Visitor
 Diagnosis: Drowning Near Drowning
 Swim Lessons: Yes No If yes, who gave the lessons? _____

LOCATION
 Pool (i.e., In-ground) Above Ground Ocean: Beach Name _____
 Canal/Cut River Off Shore/Boat
 Colvert/Ditch Spa/Hot Tub Rip Currents
 Bucket Lake/Pond Unprotected Beach
 Retention Bath tub Near Shore
 Inlets Toilet Rough Sea State: Flag Color _____
 Intracoastal Waterway Other: _____

SITE OF INCIDENT **TYPE OF DWELLING**
 Victim's Home Relative's Home Park Municipal Single Family Home Apt./Condo.
 Neighbor's Home School Other: _____ Hotel/Motel Other: _____

BEHAVIORAL DATA

<u>Attire of Victim</u>	<u>Crash Data</u>	<u>Cause of Immersion</u>
<input type="checkbox"/> Swim wear	<input type="checkbox"/> Motor Vehicle	<input type="checkbox"/> Swimming <input type="checkbox"/> Scuba
<input type="checkbox"/> Street Clothes		<input type="checkbox"/> Surfing <input type="checkbox"/> Snorkeling
<input type="checkbox"/> Scuba/Snorkeling gear	<input type="checkbox"/> Water Craft	<input type="checkbox"/> Injury <input type="checkbox"/> Boating
<input type="checkbox"/> Protective device (PFD, etc)		<input type="checkbox"/> Fishing <input type="checkbox"/> Other: _____

RESCUE DATA

Incident Specifics

What was the status of victim when found in water?	<input type="checkbox"/> Submerged	<input type="checkbox"/> Floating	<input type="checkbox"/> Struggling
Who pulled the victim from the water?	<input type="checkbox"/> Parent	<input type="checkbox"/> Responder	<input type="checkbox"/> Other: _____
Was the victim breathing when pulled from the water?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unknown
Was the victim conscious?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unknown
Supervisor at the time of the incident?	<input type="checkbox"/> Mother	<input type="checkbox"/> Father	<input type="checkbox"/> Baby-sitter
	<input type="checkbox"/> Older sibling	<input type="checkbox"/> Other Relative	<input type="checkbox"/> Lifeguard
Where was the supervisor at the time of the incident?	<input type="checkbox"/> In water with victim	<input type="checkbox"/> Out of water (in sight)	
	<input type="checkbox"/> Out of water (not in sight)	<input type="checkbox"/> Unknown	

Resuscitation Information
 Estimated down-time: _____
 Was CPR performed? Yes No
 If CPR was performed, who performed it? Emergency Personnel Bystander trained in CPR Bystander without CPR training

<u>Protective Barriers Around the Water.... (check all that apply)</u>	<u>Victim's Access to Water</u>
<input type="checkbox"/> Fence <input type="checkbox"/> Pool Cover	<input type="checkbox"/> Unsecured Gate
<input type="checkbox"/> Isolation <input type="checkbox"/> Door/Window Alarm	<input type="checkbox"/> Unlocked Door/window
<input type="checkbox"/> Perimeter <input type="checkbox"/> Screen	<input type="checkbox"/> Damaged or non-working gate/fence
<input type="checkbox"/> Removable <input type="checkbox"/> Other: _____	<input type="checkbox"/> Supervisor allowed access to water
	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Protective Devices: <input type="checkbox"/> PFD	<input type="checkbox"/> Misc. floatation device: _____

<u>The victim was...</u>	<u>The victim was last seen...</u>	<u>Time: _____</u>
<input type="checkbox"/> Dead at scene	<input type="checkbox"/> Swimming/wading	<input type="checkbox"/> Surfing
<input type="checkbox"/> Treated at scene and taken to ER	<input type="checkbox"/> Boating	<input type="checkbox"/> Driving a vehicle
<input type="checkbox"/> Treated at scene and released	<input type="checkbox"/> Scuba diving	<input type="checkbox"/> Fishing
<input type="checkbox"/> Refused (guardian refused) treatment	<input type="checkbox"/> Playing indoors	<input type="checkbox"/> Unknown
	<input type="checkbox"/> Playing outdoors	<input type="checkbox"/> Other: _____

Associated Medical Problems
 Seizures Alzheimer's Acute MI Macular degeneration Physical disability: _____

Victim Outcome
 Survived DOA Died within 24 hours Died days later, days lived _____
 D/C status: _____ Residual disabilities Functional status: _____ Outcome summary: _____

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Appendix B Report of Drowning or Near-Drowning In Arizona--2004

REPORT OF DROWNING OR NEAR-DROWNING IN ARIZONA -- 2004

DATE OF INCIDENT (MM/DD/YR) _____ HOUR (24:00) _____ AGE (yrs) _____ SEX _____ INCIDENT # _____ PLAT # or ZIP CODE _____

(Reporting agency) _____ Fire Dept. _____

CITY OF INCIDENT:
 Chandler Mesa Rural area
 Gilbert Peoria Scottsdale
 Glendale Phoenix Tempe
 Other: _____

HISPANIC: Yes No Unk.

RACE: White Amer. Indian
 Black Unknown
 Other: _____

WATER TYPE:
 Pool--in ground Spa
 Pool--above ground Bath tub
 Canal or Irrig. Ditch Toilet
 Other: _____

SITE OF INCIDENT: (at whose home?)
 Victim's Home Neighbor's "
 Relative's " Friend's "
 Other: _____

TYPE OF DWELLING OR FACILITY:
 Single Home Apt/Condo
 Hotel/Motel Other: _____

ATTIRE OF VICTIM: Swimwear
 None Other Clothes

ACTIVITY AND LOCATION OF VICTIM IMMEDIATELY PRIOR TO INCIDENT: _____

STATUS OF VICTIM WHEN FOUND IN WATER:
 Submerged Floating
 Struggling Unknown
 Other: _____

RESPIRATORY EFFORT WHEN PULLED FROM WATER:
 Present Absent

ESTIM. DURATION OF ANOXIA: _____

DID RESCUER/ BYSTANDER(S) PERFORM CPR?
 Yes No Unknown
 Done right? Comment: _____

ACTIVITY AND LOCATION OF SUPERVISOR IMMEDIATELY PRIOR TO INCIDENT: _____

SUPERVISOR(S) AT TIME OF INCIDENT:
 Mother Father N/A
 Other (Specify) _____
 Age of this person _____

ACTIVITY AND LOCATION OF SUPERVISOR IMMEDIATELY PRIOR TO INCIDENT: _____

STATUS OF VICTIM WHEN FOUND IN WATER:
 Submerged Floating
 Struggling Unknown
 Other: _____

RESPIRATORY EFFORT WHEN PULLED FROM WATER:
 Present Absent

ESTIM. DURATION OF ANOXIA: _____

DID RESCUER/ BYSTANDER(S) PERFORM CPR?
 Yes No Unknown
 Done right? Comment: _____

DISPOSITION:
 DOA Died in E.R.
 Treated As Outpatient
 Admit to: _____

FOLLOW-UP: (Date pt was last seen)
 Died _____ / _____ / _____
 No Impairment _____ / _____ / _____
 Impairment _____ / _____ / _____

LENGTH OF RESIDENCE AT THIS HOUSE (if applicable)? _____

IS THERE A FENCE OR BARRIER?
 Yes No Unknown
 Describe: _____

METHOD OF ACCESS TO POOL OR SPA:
 Supervisor allowed child into pool or deck area
 No barrier -- child wandered in
 Climbed (specify): _____
 Child entered unsecured gate
 Child entered secured gate
 Other: _____

WOULD AN INNER FENCE AROUND THE POOL HAVE PREVENTED THIS INCIDENT?
 Yes No
 Unknown N/A

DESCRIBE THE APPARENT CIRCUMSTANCES (how/why it happened; how child was found & revived): _____ (Initials)

 _____ (Today's Date)

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Appendix C Pediatric Drowning Prevention Survey

My name is Lieutenant Jo-Ann Lorber, with the Fort Lauderdale Fire-Rescue Department, and I am currently in the National Fire Academy's, *Executive Fire Officer Program* (EFOP). I have just finished my second course in the EFOP, *Leading Community Risk Reduction* and will be writing an applied research paper on the following topic: *Drowning...The Silent Killer of Children: Should the Fort Lauderdale Fire-Rescue Department Take a Proactive Approach in the Development of a Prevention Program?*

Would you please take some time out of your busy day(s) and answer the following survey questions.

Please send the responses back by **June 16, 2004**, to the following email addresses: Jlorber@fortlauderdale.gov or IcyFTO@aol.com. You may also send the response(s) via mail to the following address:

Lieutenant Jo-Ann Lorber
528 N.W. 2nd Street
Fort Lauderdale, Florida 33311

Thank you for your time and assistance.

1. Do you have a drowning prevention program?

Yes No

2. If yes, how many years has it been in existence?

1 to 5 years
 5 to 10 years
 Greater than 10 years

3. If no, do you plan on starting one?

Yes No

4. If yes to question 1, do you belong or participate in a drowning prevention coalition?

Yes No

Survey continued...

5. If yes to question 4, which organization do you partner with?

- Water Safe Kids**
- Swim Central**
- Safe Kids**
- Other - Please fill in organization: _____**

6. If you have a drowning prevention program in place for greater than 5 years, have you seen a decrease in pediatric drownings or near-drownings?

- Yes** **No**

7. If yes to the above question, what is the percentage of decreases?

- 1 – 5 percent**
- 5 – 10 percent**
- 10 – 25 percent**
- Greater than 25 percent**

8. What actions or programs has your agency employed to reduce the number of child drowning or near-drowning incidents in your community?

- Community Education**
- Community Training (swim lessons, infant and child CPR)**
- Other – please specify: _____**

9. Who are your key partners in the drowning prevention program?

Survey Continued...

- 10.** What resources did you use to start your drowning prevention program? And how much was spent?

	<u>Allocation</u>
_____ Time	_____
_____ Budget	_____
_____ Personnel	_____
_____ Marketing	_____
_____ Location(s)	_____
_____ Grants	_____

Please fill in the following information:

Department: _____

Name and Rank: _____

E-mail address: _____

Phone Number: _____

Thank you again for participating in this survey!

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Appendix D Florida Fire-Rescue Departments, Respondents, Rank and Email Addresses

DEPARTMENT	NAME	RANK	EMAIL
Tampa Fire Rescue	Patricia Dempsey	Public Education Coordinator	Fd88@tampagov.net
County of Monroe	Alvin Bentley	Battalion Chief	BentleyAlvin@monroecounty.fl.gov
Palm Harbor Fire Rescue	Kris Schulz	Public Education Officer	Kschulz@palmharborfd.com
Jacksonville Fire and Rescue	Anthony Roseberry	Division Chief	Arose@coj.net
So. Walton Beach Fire District	Michael Kane	Deputy Chief	MKane@swfd.org
City of Panama City	Gary Swearingen	Division Chief	Gary.swearingen@cityofpanamacity.com
St. Lucie County Fire District	L. Puddin Race	Public Educator	Prace@slcfd.org
Spring Hill Fire Rescue	William Eagle	Lieutenant	Weagle@sringhillfire.com
Estero Fire Rescue	Dennis Merrifield	Fire Chief	firechief@esterofire.org
Tamarac Fire Rescue	Patrick Kendrick	Battalion Chief	Patk@tamarac.org
Hallandale Beach Fire Rescue	Alex Baird	EMS Division Chief	Abaird@hallandalebeachfl.gov
Town of Palm Beach	John DeIorio	Acting Fire Rescue Chief	Jdeiorio@townofpalmbeach.com

DEPARTMENT	NAME	RANK	EMAIL
City of Marco Island	Chris Byrne	Division Chief	Byrnec@cityofmarcoisland.com
Tallahassee Fire Department	Nancy Herndon	EMS Division Chief	Herndonn@talgov.com
City of Miami Beach	William Howard	Captain	Whoward@miamibeachfl.gov
Palm Bay Fire Department	Joan Needelman	Community Service Coordinator	Needej@palmbayflorida.org
Pensacola Fire Department	Jim Dixon	Fire Chief	fireman@ci.pensacola.fl.us
Ponce Inlet Fire Rescue	Christopher Phelps	Fire Chief	Cphelps@ponce-inlet.org
St. Cloud Fire Rescue	Bill Johnston	Assistant Chief	Bjohnston@stcloud.org
Melbourne Fire Department	Greg Anglin	Assistant Chief	Ganglin@melbourneflorida.org
Charlotte County Fire & EMS	Marianne Taylor	Deputy Chief	Marianne.taylor@charlottefl.com
Boca Raton Fire Rescue	John Eddinger	Assistant Chief	Jeddinger@ci.boca-raton.fl.us
Fort Walton Beach Fire Department	Bob Alden	Deputy Chief	Balden@fwb.org
Satellite Beach Fire Rescue	Daniel Rocque	Fire Chief	Drocque@satellitebeach.org
Orlando Fire Department	Kathy Miller	Deputy Chief	Kathy.miller@cityoforlando.net
Jasper Fire Rescue Department	W.J. Trinder, Sr.	Fire Chief	Jasperfireres@alltel.net

DEPARTMENT	NAME	RANK	EMAIL
Villages Public Safety Department	Michael Tucker	Fire Chief	Michael.tucker@vccdd.org
Ocala Fire Rescue	Cathy Fender	EMS Battalion Chief	CFender@ocalafl.org
Oldsmar Fire Rescue	Ann Reishus	Fire Prevention Specialist	Areishus@ci.oldsmar.fl.us
Deltona Fire & Rescue	David Faer	Operations Division Chief	Dfaer@ci.deltona.fl.us
Hillsborough County Fire Rescue	Victoria Yeakley	Public Education Officer	Yeakleyv@hillsboroughcounty.org
Coral Gables Fire Rescue	Marc Stolzenberg	Division Chief	Mstolzenberg@coralgables.com
Clay County Fire Rescue	Bernita A. Bush	Lieutenant / PIO	Bernita.bush@co.clay.fl.us
Kissimmee Fire Department	Robert King	Fire Chief	Rking@kissimmee.org
West Palm Beach Fire Rescue	Cassandra Weith	Fire & Injury Prevention Specialist	Cweith@wpb.org
Sanford Fire Department	Tim Robles	Sr. Fire Inspector	Roblest@ci.sanford.fl.us
Plant City Fire Rescue	Delmar Jackson	Chief of Prevention	Djackson@plantcitygov.com
City of Miami	William "Shorty" Bryson	Fire Chief	Wbryson@ci.miami.fl.us
St. Johns County	Frank McElroy	Prevention Chief	Fmcelroy@co.st-johns.fl.us

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DEPARTMENT	NAME	RANK	EMAIL
Palm Beach County Fire Rescue	Anna Plotkin	Community Educator	Aplotkin@co.palm-beach.fl.us

Appendix E Telephone Interview Form

CONDUCTED BY: _____ DATE: _____

INTERVIEW BY: _____ TIME: _____

REASON SELECTED: _____ PLACE: _____

INTRODUCTION: My name is Lieutenant Jo-Ann Lorber, with the Fort Lauderdale Fire-Rescue Department, and I am currently in the National Fire Academy's, *Executive Fire Officer Program* (EFOP). I have just finished my second course in the EFOP, *Leading Community Risk Reduction* (R280), and will be writing an applied research paper on the following topic: *Drowning...The Silent Killer of Children: Should the Fort Lauderdale Fire-Rescue Department Take a Proactive Approach in the Development of a Prevention Program?* Thank you for agreeing to this interview.

1. What have other fire-rescue agencies done to reduce or prevent the possibility of children drowning in their community?
2. What actions or programs may be employed to reduce the number of child drowning or near-drowning incidents in the City of Fort Lauderdale?
3. How can the Fort Lauderdale Fire-Rescue Department (FTLFR) partner with key politicians and community leaders in the development of a workable drowning prevention program?
4. What resources would be needed to implement a drowning prevention program?

This concludes this interview. You are also welcome to a copy of the completed research paper.

____ YES ____ NO

I sincerely appreciate you taking time from your business schedule to assist me with this important research.

Before we close this interview, do you have any questions or requests of me?

Thank you.

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Appendix F Spring Hill Fire Rescue Department Pool Safety Evaluation Form

SPRING HILL FIRE RESCUE "Ready To Assist" POOL SAFETY EVALUATION

Name: _____ Phone _____

Address: _____ City _____ Zip _____ Zone _____

Single Residential Multi-Family Commercial

Information Line: (352) 688-5030

Potential Hazards: Pool Bathtub/Toilet Canal/Creek
 Spa Bucket Pond/Lake

INTERVIEW

	Yes	No
Have you or a family member experienced a drowning incident?	<input type="checkbox"/>	<input type="checkbox"/>
Have you or a family member experienced a water accident?	<input type="checkbox"/>	<input type="checkbox"/>
Do children have access to your pool?	<input type="checkbox"/>	<input type="checkbox"/>
Are you aware that the primary cause of child drowning is lack of adult supervision?	<input type="checkbox"/>	<input type="checkbox"/>
Do all family members know how to swim?	<input type="checkbox"/>	<input type="checkbox"/>
Is the parent or care-giver able to get a child out of the pool in an emergency?	<input type="checkbox"/>	<input type="checkbox"/>
Do all family members, including children, know how to dial 9-1-1 in an emergency?	<input type="checkbox"/>	<input type="checkbox"/>
Do parent(s) and/or care-giver know CPR?	<input type="checkbox"/>	<input type="checkbox"/>
Do you know how to shut off pool/spa pump in case of an emergency?	<input type="checkbox"/>	<input type="checkbox"/>

INSPECTION

Are there child-proof locks and alarms on inside/outside access pool doors?	<input type="checkbox"/>	<input type="checkbox"/>
Are the above-ground pool stairs/ladder/furniture removed when the pool is not in use?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a clear view of pool or spa from the house?	<input type="checkbox"/>	<input type="checkbox"/>
Is the pool and pool area clear of toys when not in use?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a permanent pool-side telephone?	<input type="checkbox"/>	<input type="checkbox"/>
Are electrical outlets covered?	<input type="checkbox"/>	<input type="checkbox"/>
Are pool chemicals and supplies locked up in a secured area?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a pool alarm in use?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a pool/spa cover (barrier type) in use?	<input type="checkbox"/>	<input type="checkbox"/>
Does pool have <input type="checkbox"/> property fencing <input type="checkbox"/> screened cage <input type="checkbox"/> 4-sided fencing (barrier between pool and house).		
Does parent/care-giver understand that 1) constant supervision 2) multiple barrier restricting and 3) being prepared for an emergency may help to prevent a water accident or drowning?		

Comments:

Crew ID# _____

I understand this evaluation is provided as a Public Service only. I further understand that completion of this evaluation does not ensure that a pool accident cannot occur.

Resident's Signature _____ Date _____

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Appendix G Key Coalition Partners and Responses from Florida

KEY COALITION PARTNERS	RESPONSES
Local Elementary School(s)	1
YMCA	2
United States Coast Guard (USCG)	1
RN from Healthcare Center	1
Fire Rescue Agencies	4
National Spa	2
American Red Cross	5
Local Pool Vendors	5
Emergency Safety Educators Assoc. of Tampa Bay	1
SAFE KIDS (National or Florida)	4
EMS Agencies	1
Local Hospitals	4
Department of Health	3
Children's Services Council	2
Palm Beach County Board of County Commissioners	1
Quantum Foundation, Inc.	1
Palm Beach County Parks and Recreation	1
Palm Beach County Municipal Pools	1
Pinellas County School Board	1
Pinellas County Medical Directors	1
National Fire Protection Agency	1
American Heart Association	1
Boys & Girls Club	1
United Way	1
21st Century Kids	1
Port St. Lucie News/News Tribune	1
Indian River Community College	1
Mr. & Mrs. Kryak*	1


* Mr. and Mrs. Kryak are the founders of "Never Leave a Child Unattended."

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Appendix H Spring Hill Fire Rescue Department Child Drowning Prevention Program Brochure

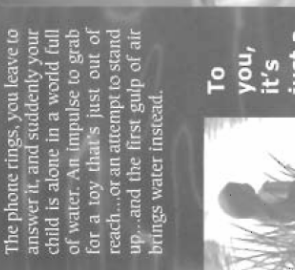
To your child, it's a new adventure

The phone rings, you leave to answer it, and suddenly your child is alone in a world full of water. An impulse to grab for a toy that's just out of reach...or an attempt to stand up...and the first gulp of air brings water instead.



To you, it's just a pond...

The small pond out back is never a real concern, but to your small child it is like a magnet. So when your attention is diverted, he runs to explore this great mystery. When you notice his absence, the pond is the first place that you look, but it is already too late.




To you, it's just a pool...

The moment you leave to answer the phone is all he needs. He runs to the pool and leans over the edge to touch the sparkling water...You never even hear the splash.

Every day, young children die in familiar settings we don't recognize as dangerous, such as the tub, toilet, sink, a fountain, pool, pond or even a cleaning bucket. For every child drowning, there are a hundred near drownings. Many result in permanent brain damage and respiratory complications. All needless. Florida has more drownings than most other states and leads the nation in the number of toddlers who drown every year. Many of them die while at the home of a friend or relative.

Brought to you by the:
Spring Hill Fire Department
Drowning Prevention Program
3445 Bob Hartung Court
Spring Hill, FL 34606


Sponsored by:
Professional Firefighters
of Spring Hill
Local 2794



Brochure design by:
Karen Kleiar

Spring Hill Fire Rescue

Child Drowning Prevention Program



You can help prevent it!

Take an active role in drowning prevention.

Learn these basic rules of pool safety.

- Supervise children while in and around the pool constantly.
- Take children with you when you leave the pool area for *any* reason, *every* time.
- Learn CPR and First Aid. It can save lives.
- Take a phone to the pool with you in case of emergency.
- Don't answer the phone or the front door and leave children unattended. *Accidents take only a second.*
- Keep doors leading from the house to the pool area secured at all times. (These locks should be placed out of the reach of *all* children.)
- Mount lifesaving floatation devices near the pool. (A plastic jug tied to a rope can be used.)
- Keep the gates on the pool perimeter locked when it is not in use.
- Place appropriate fencing and self-closing latches around the pool.
- Keep toys away from the pool. Don't allow children to play around the pool area.
- Keep items that can be used to climb on, such as, chairs, ladders, and tables, away from pool fences.
- Post 911 stickers on your phone.

Save a life tomorrow. Learn CPR and First Aid today.

Call our information line for classes: (352) 688-5030

Potential Hazards:

- Pool
- Pond/Lake/River
- Bathhtub/Toilet
- Spa
- Bucket
- Canal/Creek

Important Questions to ask Yourself:

Do any children have access to my pool?

Do all family members know how to swim?

Do all caregivers know CPR?

Does everyone know how to shut off the pool or spa pump in case of an emergency?

What barrier is between the pool and the house? Between the pool and the outside world?

- Property fencing
- Screened cage
- 4-sided fencing

Do I need a pool or spa cover (barrier type)?

Does everyone at our home and pool understand:

- ✓ *constant* supervision
- ✓ multiple barrier restriction
- ✓ emergency preparation may help prevent a water accident or drowning

Self Inspection:

- ✓ Install child-proof locks and alarms on inside/outside access pool doors.
- ✓ Keep above-ground pool stairs/ladder and furniture removed when the pool is not in use.
- ✓ Have a clear view of pool or spa from the house.
- ✓ Keep the pool and surrounding area clear of toys when not in use.
- ✓ Get a permanent pool-site telephone.
- ✓ Make sure electrical outlets are covered.
- ✓ Lock pool chemicals and supplies in a secure place.
- ✓ Install a pool alarm.

The primary cause of child drowning is lack of adult supervision.