

## Pediatric Drownings and Near-Drownings: Automated Tracking and Notification of User-Defined Sentinel Events, Pinellas County (Florida)

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**BACKGROUND** Sunstar EMS, in Pinellas County, Florida, installed the FirstWatch™ Early Warning System in part as a crucial step in monitoring pediatric drowning, which is the leading cause of death for children under the age of 4 in Florida. According to the Centers for Disease Control and Prevention, 943 children from infancy to 14 years died from drowning in the United States in 2000. Of those victims, the majority drowned in residential swimming pools, or in their backyard pools while in the care of one or both parents. In Pinellas County, the majority of submersion events occur in residential pools and involve white males under the age of 4. Although the number of drownings and near-drownings has declined since the mid 1990s, the problem is still prevalent: With 65,000 residential pools and 588 miles of coastline, the County and its public health officials face tough challenges in preventing water-related emergencies.

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**SUMMARY** For years, officials manually tracked occurrences, says Chuck Kearns, director of Pinellas County Emergency Medical Services. “We tried to develop a model that would indicate what the problem was — was it a canal, a lake, or a residential pool?” Kearns says. “Now, with FirstWatch, we can track in real time, instantaneously, for faster recognition and a better understanding of each event.”

**DROWNING CAUSES** Pinellas County sees 361 days of sunshine a year. Because of this, many people decide to relocate to the area, making it a popular place for living, working and retiring. “We get a lot of people who move down here from New England and northern states who are not aware of the dangers of pools,” says Kearns. “Retired folks move here, and when their grandkids come to visit, it’s a recipe for disaster.”

**USER-DEFINED EVENTS** Although FirstWatch was originally designed to monitor for bioterrorism, the system’s ability to track specific user-defined events led Sunstar EMS personnel to use FirstWatch to specifically track for 9-1-1 calls related to pediatric drowning or near-drowning emergencies, as well as for cardiac arrest and bioterrorism. The system treats submersion emergencies as a sentinel event, triggering an alert on each occurrence. Other types of events require geographic clustering or statistically defined increases for an alert to be triggered.

**ALERT MODES** FirstWatch automatically issues alerts to

predesignated recipients via e-mail, pagers and cellular-phone SMS text messaging in pediatric drowning or near-drowning emergencies.

**GEOGRAPHIC TRENDS** FirstWatch has shown that the majority of drownings and near-drownings in Pinellas County happen in residential pools. The incidents occur randomly, and are dispersed among different residential areas in the county; there is no concentration of incidents in any one city.

**CHRONOLOGICAL TRENDS** Sunstar EMS receives the most drowning-related calls during summer swimming season, from May until September.

**EMS SYSTEM PROFILE** Sunstar EMS is an all-paramedic (one-tier) ambulance and emergency response service. It responds to over 150,000 calls annually and transports over 106,000 patients.

**POPULATION** Pinellas County, which includes 24 municipalities, has a population of more than 1 million people during the height of its winter tourist season. The county spans 280 square miles, with 3,291 people per square mile, making it the most densely populated county in Florida.

**FIRSTWATCH SYSTEM INSTALLED** September 10, 2003

**FUNDING** Funded by the State of Florida Health Department.

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