H61 A Retrospective Study of Drowning Cases in Tarrant and Adjacent Counties From 2008 Through 2013

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After attending this presentation, attendees will gain an increased knowledge and awareness of the prevalence of drowning and the most common risk factors associated with its occurrence.

This presentation will impact the forensic science community by increasing awareness of the fact that drowning is an all-too-familiar event in society and in the majority of cases is preventable. As many as 8,000 cases are reported annually in the United States. Education and heightened awareness is crucial to stemming this deadly tide. As with most dangers, prevention and avoidance of risk factors are the most reliable strategies. This presentation attempts to identify the most glaring risk factors and thereby enhance education on drowning prevention.

Drowning as a cause of death is a substantial concern among many communities, coastal or otherwise. It ranks among the leading causes of mortality among all age groups, especially in the pediatric population. In the United States alone, drowning accounts for 6,000-8,000 deaths annually. Therefore, it is imperative to be aware of the most common risks and circumstances involved in drowning. In this study, data was collected from case files of drowning incidents that passed through a medical examiner's office over a six-year period in order to determine the following questions: What sub-populations are most at risk for drowning? Where do drowning incidents most commonly occur? What are the risk factors and circumstances that prevented the victims from being extricated from danger? The data (n=234) indicated a predominance of male victims. In addition, an analysis of victims by age interval revealed a bimodal distribution, with toddlers and collegiate-age individuals being the most susceptible. With regard to location, swimming pools and lakes were the most common scenes of drowning. Identification of the lakes was performed to determine the sites where drowning occurred most frequently. One lake, Lake Lewisville, accounted for just over 25% of all recorded lake drownings in the area. Similarly, swimming pools were categorized as being private or public, and in-ground or above-ground. An overwhelming majority of the pools were determined to be private (82%) and in-ground (68%). Swimming pools also accounted for two-thirds of all pediatric drowning events. In the same vein, sufficient adult supervision was lacking in 90% of all pediatric drowning cases and barriers to pool entry were inadequate in 72%. In adult drowning incidents, alcohol use was found to be the most frequent risk factor present. Lastly, the phenomenon of "dry" drowning, in which the airways and lungs remain essentially free of the drowning medium, was considered and a novel set of criteria was generated to classify such cases. Of drowning events, 8% were identified as "dry" drownings but this sampling of individuals did not exhibit any discernible pattern with regard to demographics or circumstances.

Overall, this study corroborates and expands upon present knowledge and understanding of the epidemiology of drowning. Recognition of the most susceptible victims as well as the most likely circumstances surrounding drowning is invaluable to the formulation of strategies and the distribution of education to prevent drowning in the future.

Drowning, Epidemiology, Forensic Pathology