## G100 Drownings in a Desert State: Who? Why? How?

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After attending this presentation, attendees will understand the demographics, circumstances, risk factors, and common autopsy findings in deaths due to drowning in a desert state (New Mexico).

This presentation will impact the forensic science community by highlighting the risk factors for drowning deaths and suggesting possible public health avenues for mitigation of these deaths.

Despite having less than 1% surface area of water and fewer than 100 public swimming pools, New Mexico consistently ranks as having one of the highest per capita rates of drowning deaths. Better understanding of the populations most at risk and appreciation of the most common autopsy findings not only may improve diagnosis of a notoriously difficult cause of death (drowning) but also may help to develop public health strategies specifically geared toward preventing drownings in desert states.

A retrospective review of drownings via query of the statewide New Mexico Office of the Medical Investigator electronic database yielded over 400 deaths during 2000-2010. Across all ages and races, males were vastly over-represented in drowning deaths (74%). This is similar to that reported nationally.[1] Median age of both male and female decedents was 39 years (range 0-94 years). When compared to the New Mexico population, White non-Hispanics and American Indian decedents are over-represented among drowning deaths. Drowning deaths most commonly occurred in lakes, followed by bathtubs, and then rivers and ditches, though this varied by age group. For example, the majority of toddler (18 months-3 years) deaths occurred in swimming pools. May through August captured the majority of incidents. Nearly half of the decedents had drugs or alcohol present at the time of death. In terms of manner of death, most (90%) were ruled to be accidental; 2% homicide, 4% suicide, and 5% undetermined. Most common findings at autopsy were pulmonary edema, skin maceration, hyperinflated lungs, and water in sinuses; only pulmonary edema was present in the majority of cases (80%).

In conclusion, having less water present does not decrease the risk of drowning deaths. Similar to national trends, males are over-represented in drowning deaths. Irrigation ditches (arroyos) as significant potential drowning sites may be a feature unique to desert states. Public health strategies aimed toward increasing awareness of drowning potential, importance of sobriety while in/around water, and expanding availability and popularity of swimming lessons may help to decrease the disturbingly high rates of drowning deaths in New Mexico.

**Reference:**

1. http://www.cdc.gov/

**Drowning, Desert, Public Health**

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