



## Pathology & Biology Section – 2008

### G23 Alcohol Related Accidental Drowning in Virginia: An Epidemiological Review

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The goal of this presentation is to give viewers an understanding of the epidemiology of alcohol related accidental drowning in the Commonwealth of Virginia over a ten year period. Viewers should understand the cohorts at increased risk, which may benefit from targeted prevention strategies.

The impact of this poster on the forensic community and humanity is to identify those groups at most risk of alcohol associated accidental drowning. Targeted preventative measures may reduce from three hundred and sixty-three, the number of Virginians to die potentially preventable deaths over the next ten years. This data may also be used to develop studies and/or preventative strategies in other jurisdictions.

Certain racial, gender, and/or age groups are at higher risk of alcohol-related accidental drowning.

The Office of the Chief Medical Examiner of Virginia database was queried for cases in which the fatal agency was drowning, resulting in 1129 cases from January 1997 to December 2006. Of these, 972 were accidental in manner. Data was collected from the database on the sex, race, age, alcohol presence, and blood alcohol level of those drowning accidentally. Rates were calculated only for Virginia residents and based on population data obtained from the Virginia Department of Health Office of Vital Statistics. The 2006 population data was estimated based on changes in the population groups for the previous nine years.

Accidental drownings comprised 86.2% of the total cases studied. Of those, 37.3% were associated with alcohol. Males accounted for 92.3% of these cases. The highest number of alcohol associated accidental drownings occurred in whites (63.3%), followed by blacks (29.8%), and Hispanics (5.5%). Those aged 35 to 45 years represented 25.6% of alcohol associated accidental drownings, those 45 to 54 years 19.8%, those 25-34 years 17.4%, and 20 to 24 years 10.7%. Of those aged 18 to 64 years, 61.3% had a blood alcohol concentration at or above the Virginia legal limit of 0.08%w/v (for driving a motor vehicle).

Of all alcohol associated accidental drowning, the great majority occurred in males. Those aged 35 to 44 years comprised 25.6%, while 61% occurred in those aged 20 to 54 years. This group may over-estimate their ability to function safely around water while under the influence of alcohol. Although the majority of these individuals had blood alcohol concentrations at or above 0.08% w/v, 38.7% did not. Preventative measures should target this potentially over looked cohort, and emphasize abstaining from alcohol while engaging in water-related activities.

#### **Drowning, Accidental, Alcohol**