



H9 Chillin' in Hotlanta: A Five-Year Retrospective Study of Hypothermia Deaths in Fulton County, Georgia

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Learning Overview: The goals of this presentation are to: (1) examine risk factors for hypothermia, and (2) assess anatomic findings of hypothermia.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by identifying risk factors for hypothermia that may help the population in preventing hypothermia.

Hypothermia-related deaths are prevalent during the winter in states that have cold climates; however, hypothermia-related deaths also occur in states with milder climates. Close to 800 hypothermia deaths occur each year in the United States. According to the Center for Disease Control and Prevention (CDC), hypothermia is clinically defined as lowering of the core body temperature to less than or equal to 95°F (less than or equal to 35°C). Exposure to cold is responsible for approximately twice the number of deaths annually as is exposure to heat in the United States.

All records of deaths occurring in Fulton County, GA, from 2013 to 2017 in which hypothermia was listed as the cause of death were reviewed. Review of the 47 cases showed that all hypothermia deaths were ruled accidents. There were 41 (87%) male decedents and 6 (13%) female decedents. At least 28 (60%) of the decedents were homeless. Thirty-eight cases (81%) occurred in the outside environment and 9 cases (19%) occurred inside a building. Of the cases that occurred inside ($n=9$), four (44%) occurred in vacant buildings and 5 (55%) occurred in the decedent's own residence. Ethanol was associated with 15 (32%) cases (with ethanol alone or in combination with other drugs), with an ethanol (vitreous or blood) concentration ranging from 74mg/dL to 488mg/dL (.074%–.488%). Of the autopsied cases ($n=43$), grossly, gastric mucosal petechial hemorrhages/hemorrhagic ulcers (Wischnewski spots) were identified in 20 cases (47%).

The year 2014 had the highest number of cases ($n=18$, 38%), although surprisingly, no specific correlation is seen with the winter storm that crippled Atlanta for nearly a week beginning January 28, 2014, known colloquially as "Snowmageddon 2014" (in the seven days from 1/28/14 to 2/4/14, there were four cases of hypothermia). It is not known why 2014 had almost 40% of the Fulton county cases over a 5-year period, although per CDC data, nationally in 2014, there were more hypothermia deaths than in the prior 13 years. Understanding risk factors of hypothermia in Fulton County and on a national level is essential for improving prevention efforts.

Hypothermia, Weather-Related Death, Drugs of Abuse