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H89 The Epidemiology of Suicides in Allegheny County, Pennsylvania: A 10-Year Retrospective Review (2000-2009) and Comparison to a Previous Review (1990-1999)

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The goal of this presentation is to summarize the observed epidemiological trends of suicide deaths in Allegheny County, PA, from 2000-2009, with a subsequent comparison to a similar review from 1990-1999.¹

This presentation will impact the forensic science community by identifying trends in suicide methodology, as well as populations at risk, in order to benefit future investigative and preventative efforts.

Introduction: Suicides comprise approximately 12% of the caseload at the Allegheny County Medical Examiner's Office in Pittsburgh, PA. A better understanding of the methodologies utilized and the demographics of those involved, in addition to a comparison with previously published data from the preceding decade, may provide valuable information and guide recommendations regarding suicide prevention.

Materials and Methods: All cases identified on death certificates as suicide, defined as death due to self-inflicted harm or injury, from January 1, 2000, through December 31, 2009, at the Allegheny County Medical Examiner's Office in Pittsburgh, PA were reviewed, including the associated incident reports, autopsy narratives, anatomical diagnoses, death certificates, toxicology reports, death investigation reports, and other supplemental documents. Epidemiological characteristics, including age, sex, race, and marital status, as well as the mechanism of suicide, the month of the incident, the time of death, and the presence or absence of a suicide note, were analyzed.

Results: A total of 1,475 suicides were identified, comprised of 1,182 males (80.1%) and 291 females (19.7%). Two individuals were identified as transgender. By racial composition, 89.5% were White, 8.5% were Black, and 2% were from other races. The ages ranged from 8 to 93 years old, with the greatest percentage of suicides (24.2%) occurring between the ages of 41 and 50. Overall, 40.6% were single. The number of suicides was highest in August (9.4%) and lowest in February (7.1%), with the highest numbers occurring between 3:01 p.m. and 9:00 p.m. (35.7%). Firearm injuries (46.8%), hanging (25.1%), and drug overdose (10.5%) were the leading methods of suicide. Combinations of drugs were most commonly used in overdoses (65%), with opiates/opioids, antidepressants, and benzodiazepines the most frequently utilized.

Compared to the previous review (1990-1999), the rate of suicides averaged across ten years increased from 11.1 to 11.9 per 100,000, with the highest numbers in the 41-50 year age range, as opposed to the 31-40 year age range in the preceding decade. Among females, suicide by firearms injury (28.5%) surpassed both drug overdose (27.1%) and hanging (18.2%) as the leading method of suicide. There were fewer instances of lethal drug overdose involving the tricyclic antidepressants amitriptyline and doxepin than previously, while drugs such as alprazolam and propoxyphene (now discontinued) remained toward the top of the list.

Conclusions: In comparison to the previous study (1990-1999) in Allegheny County, there is an apparent shift in the most common age range for suicides, from ages 31-40 years to ages 41-50 years. Additionally, firearms



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surpassed drug overdoses and hangings to become the most prevalent methodology of suicide in the female population.

Based on these trends, recommendations include: (1) careful assessment of patients prescribed opiates/opioids and benzodiazepines; (2) enhanced suicide screening, including middle-aged individuals, by health care professionals; and, (3) the prevention of firearm access to those with suicidal intent.

Reference(s):

1. Omalu B.I., Macurdy K.M., Koehler S.A., Nnebe-Agumadu U.H., Shakir A.M., Rozin L., Wecht C.H. Forensic pathology and forensic epidemiology of suicides in Allegheny County, Pennsylvania: a 10-year retrospective review (1990-1999). *Forensic Sci Med Pathol*. 2005;1(2):105-12.

Suicide, Overdose, Firearms