



H149 Autopsy Rates for Injury Deaths by Manner, Cause, and State in the United States From 2015 to 2017

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Learning Overview: After attending this presentation, attendees will better understand current trends in autopsy rates and characteristics of deaths in which an autopsy was performed.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by highlighting the characteristics of injury deaths that are most likely to prompt an autopsy examination as well as the variation in autopsy performance practice by state.

The accuracy of cause- and manner-of-death information is dependent on several factors, including whether the decedent had an autopsy examination.^{1,2} This study describes variation in autopsy rates for injury deaths by manner of death, cause of death, and state in which the medicolegal death investigation was conducted and a death certificate was completed.

The National Vital Statistics System Detailed Mortality data for the years 2015 to 2017 were analyzed to determine the characteristics of decedents and circumstances of death when autopsies were performed.³ The query was based on the death certificate item: "Was an autopsy performed?" Response categories on a standard death certificate are "yes," "no," and "unknown".⁴ The percent of injury deaths with autopsy status known and reported as "yes" was calculated by age of the decedent, manner and cause of injury-related death, and state. Manner-of-death and cause-of-death categories were defined using the *International Classification of Disease, 10th edition (ICD-10) External Cause of Injury Matrix*.

In 2015–2017, 54.5% of injury deaths were autopsied; 43.7% were not autopsied; and 1.8% had an unknown autopsy status. Injury deaths represented 8.3% of all deaths. Of non-injury deaths, less than 4% were autopsied and 5.0% had an unknown autopsy status. For all deaths, 8.0% were autopsied and 4.8% had an unknown autopsy status.

Autopsy rates varied by manner of death with a range of rates between the states. Almost all homicides were autopsied (98.6%, range by state from 90.2% to 100%). In contrast, 54.4% of suicides were autopsied (range by state from 5.7% to 97.2%); 49.6% of unintentional (accidental) injury deaths were autopsied (13.9% to 72.1%); and 83.0% of injury deaths of undetermined manner were autopsied (46.2% to 100%).

Autopsy rates also varied by cause of death. For drug toxicity deaths (all manners), 76.8% were autopsied (23.1% to 97.3%). For motor vehicle deaths, including bicyclists and pedestrians (all manners), 49.5% were autopsied (4.2% to 93.8%).

Among all injury deaths, the percent autopsied was highest for those less than 1 year of age (95.3%) and lowest for those over 65 (22.0%).

Autopsy rates vary by cause and manner of death, age of decedent, and the state in which medicolegal death investigation was conducted and death certified. Variation by state likely reflects differences in state statutes, budgets, and office customs.

Reference(s):

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2. Dye D.W., McGwin G., Atherton D.S., McCleskey B., Davis G.G. Correctly Identifying Deaths Due to Drug Toxicity Without a Forensic Autopsy. *Am J Forensic Med Pathol.* 2019. <https://www.ncbi.nlm.nih.gov/pubmed/30789365>.
3. *National Center for Health Statistics*, National Vital Statistics System, Multiple Cause of Death files, Restricted-Use Micro-data Files. Available from: <https://www.cdc.gov/nchs/nvss/deaths.htm>.
4. *National Center for Health Statistics*. Medical examiners' and coroners' handbook on death registration and fetal death reporting. 2003 revision. Available from: https://www.cdc.gov/nchs/data/misc/hb_me.pdf.

Autopsy, Death, Injury