



---

### E65 Natural Causes of Death in Young Adults in an Urban Medical Examiner's Office

*Alaa Alsadi, MD\**, Rush University Medical Center, 1750 W Harrison, Rm 535 Jelke, Chicago, IL 60612; *Matthew F. Fox, MD\**, Rush University Medical Center, 1653 W Congress Parkway, Chicago, IL 60612; and *Steven M. White, MD, PhD*, County Cook OME, 2121 W Harrison Street, Unit D7, Chicago, IL 60612

---

After attending this presentation, attendees will better understand the incidence and causes of natural deaths in young adults (18-40 years old).

This presentation will impact the forensic science community by providing an overview of the causes of natural deaths in young adults (18-40 years old) in an urban medical examiner's office in Cook County, IL, providing insight into the causes of sudden, unexpected death in this population so risk factors and prevention strategies can be assessed.

In young adults (18-40 years old), natural deaths are less common than accidents, homicide, and suicide. Natural deaths follow a bimodal distribution across the lifespan, peaking in infancy and in the elderly. Sudden, unexpected death in young adults is a significant problem and determining the cause of death in such cases can be challenging. This study was conducted to identify causes of sudden, unexpected death in young adults.

A search of the database of the Cook County Medical Examiner's Office was performed to identify all deaths in people between the ages of 18 and 40 years of age during the years 2011-2013. Within this group, all cases in which the manner of death was listed as "natural" were identified. To focus on cases of sudden, unexpected death in young adults, this study excluded cases with known anatomic causes of death, such as cancer, infections, and asthma that were not due to cardiovascular disease.

Natural deaths accounted for 20% of the cases (775 out of a total of 3,957) in this age range. Of the 775 natural deaths in young adults, 453 (58%) were either cardiovascular-related or had no anatomic cause of death. In the group of 453 decedents, the average age was 31 years, with approximately twice as many males as females. Causes of death were divided into general categories. The most common causes of death were cardiovascular (64.7%), neurological (9.7%), chronic complications of drug or alcohol use (8.2%), metabolic (2.7%), autoimmune (1.1%), genetic (0.4%), and psychiatric (0.2%). Suspected cardiac arrhythmia or unknown natural causes accounted for 13.0% of the cases. Among cardiovascular diseases (n=308), the most common causes of death were hypertensive cardiovascular disease (30%), cardiomyopathy (28%), and atherosclerotic heart disease (17%). Obesity was listed as a contributing cause of death in 24% of the cardiovascular-related deaths. Among neurological diseases (n=48), the most common cause of death was seizure disorder (83%).

Combined cardiovascular and neurological causes of death accounted for 74% of the total natural deaths in young adults. Aside from seizure disorders, cardiovascular-related deaths constituted the majority of cases of sudden death in young adults (18-40 years). This study illustrates that chronic conditions, such as hypertension, coronary artery disease, and obesity, are significant causes of sudden, unexpected deaths in young adults and should serve as targets of prevention and risk reduction strategies in this population.

---

#### **Sudden Death, Unexpected Death, Young Adults**