G97 Suicide Among 10 to 20 Year Olds in Cook County, Illinois: A Retrospective Review

Adrienne E. Segovia, MD, Clare H. Cunliffe, MD, Mitra B. Kalelkar, MD, and Michelle Jorden, MD, Office of the Medical Examiner, County of Cook, 2121 West Harrison Street, Chicago, IL 60612*

After attending this presentation, attendees will learn the risk factors and most common methods of suicide in this age group.

This presentation will impact the forensic community and/or humanity by identifying the following: the methods used to commit suicide among 10to 20-year-olds in a large urban population, the frequency of drugs and alcohol in the study group, and the relationship of suicide to other factors studied. This information will further assist in the formation and implementation of prevention strategies.

The goal of this presentation is to present a review of the findings of a retrospective study of suicide deaths among 10to 20-year-olds in Cook County, Illinois between 1994 and 2004. After attending this presentation the attendee will be able to recognize the risk factors and most common methods of suicide in this age group.

This presentation will impact the forensic community/and or humanity by identifying the following: the methods used to commit suicideamong 10to 20-year-olds in a large urban population, the frequency of drugs and alcohol in the study group, and the relationship of suicide to other factors studied. This information will further assist in the formation and implementation of prevention strategies.

After steadily increasing during the late 1970s through the early 1990s, the Centers for Disease Control and Prevention reported that between 1992 and 2001 the overall suicide rate for 10 to 19-year-olds in the United States decreased from 6.2 to 4.6 per 100,000 population. In 2001, suicide was the third leading manner of death behind accidents and homicides among 10 to 19-year-olds. In the United States, approximately 2000 adolescents commit suicide annually. Nationwide, 8.5% of students in grades nine through twelve report that they have attempted suicide. Of those attempts, 2.9% required medical attention for their injury or overdose. Several major risk factors for adolescent suicide have been identified. Although a history of a previous suicide attempt is a known risk factor, according to the American Psychiatric Association, many teen suicide completers have never made a prior attempt. Other identified risk factors include a history of a psychiatric disorder (most commonly a mood disorder either alone or in combination with a conduct disorder or substance abuse), a history of sexual abuse, and a history of parental psychiatric disorder. A family history of psychiatric disorder probably increases the risk of suicide in two ways: by bestowing genetic vulnerability and creating home and living conditions with decreased social support, which increases stress at home. Girls are three times more likely to attempt suicide when a psychiatric condition is present in association with alcohol use or a conduct disorder. Peer related violence also appears to increase the level of suicide risk for boys and girls. A recent study found that several of the known risk factors for completed suicide are constant across cultures and countries. The precipitating event, according to one study, occurred from within 24 hours of death up to one year prior to death. The most frequent precipitants within the week prior to death were difficulties in, or the end of, a relationship, and arguments with relatives and friends.

The most common method, identified in numerous studies, is firearms. This is followed by asphyxial deaths - most commonly caused by hanging. Beginning in 1997, however, among 10 to 14-year-olds, asphyxia became the most common method, exceeding deaths caused by firearms. The explanation for this change is unclear. It may in part be due to youth focused firearm laws which are intended to keep firearms away from teenagers - such as gun safe storage laws known as child access prevention laws. Many states have adopted laws, which establish a minimum age for legal possession and purchase of a firearm in response to studies that have consistently found that the presence of firearms in the home increases the risk of adolescent suicide. In 1994, a federal law established 18 years as the minimum legal age for purchasing and possessing handguns. Illinois has a minimum age of 21 years for the purchase and possession of a firearm. Interestingly, a study examining the association of these laws and suicides found that among 14 to 17-year-olds there was no statistically significant association between suicide rates and laws setting minimum ages for firearm purchase or possession. This study did find a modest reduction in suicide rates among the same age group associated with child access prevention laws. Their model estimates that in the absence of the law the expected suicide rate in this age group would be 6.51 per 100,000 rather than the observed 5.97 per 100,000.

This study examines suicides in children and adolescents who live in Cook County, Illinois, a large culturally and racially diverse, primarily urban setting. Cook County, which includes the city of Chicago, has a population of 5,376,741 according to the 2000 census. Caucasians comprise 56.3% of the population, including 19.9% that are of Hispanic ethnicity, African-Americans comprise 26.1 %, Asians 4.8%, and other racial backgrounds 12.8 %. The same census indicates that the city of Chicago has a population of 2,896,016, and a slightly higher African American population— 36.7% — than the county. In the city, Caucasians comprise 42% of the population, Asians 4.3% and other racial backgrounds 17%.

This study explores the demographics, seasons, methods, situational factors, presence of drugs, presence of notes, history of previous suicide attempts and the identification of known risk factors/stressors when possible. With cases involving gunshot wounds, the location of the injury, the caliber, and ownership of the weapon,

 ** Presenting Author*

(when available), was noted.

In the time period examined there were 254 cases of suicides: 205 male (81%) and 49 females (19%). The majority involved Caucasians, 120 (47%), followed by African-Americans, 87 (34%). Hispanics accounted for 42 (17%) of the cases. Among Asians, there were 5 (2%) suicide deaths.

The majority of the cases occurred in the 16to 19-year-old age range, accounting for 74%. Overall, the leading cause of death was from a firearm injury, 48%, followed by hanging, 38%. Among 10to 14-year-olds, however, the leading cause of death was asphyxia (hanging), which accounted for 65.8%. This is similar to a national trend in this age group, reported by the Centers for Disease Control and Prevention in June 2004, in which asphyxial deaths surpassed firearm deaths. Three methods tied for third, each accounting for 3%. The three were pedestrians who stepped in front of vehicles, carbon monoxide deaths, and falls from heights. Drug overdoses accounted for 2%. Self-immolation, drowning, and incised/stab wounds, each accounted for 1%.

The number of suicides was fairly uniform throughout the year. There were slightly more deaths during the spring (29%), compared to autumn (27%), summer (24%), or winter (20%). A history of previous suicide attempts was identified in 11%. Depression and/or another psychiatric disorder were found in 23%. Suicide notes were left by 28%.

Toxicology studies revealed the presence of alcohol, and/or drugs (cocaine, benzoylecgonine, opiates, methadone and phencyclidine) in 19.3%. Blood alcohol levels ranged from 12 mg/dl to 350 mg/dl (mean: 109.6 mg/dl).

Although the data from retrospective studies cannot predict who will commit suicide, by identifying risk factors, strategies and intervention, and assistance programs can be implemented for those who may be at risk. Families, friends, school personnel and healthcare providers need to continue their vigilance because the complexity of childhood and adolescent suicide requires multiple strategies to identify and assist those at risk. Childhood and adolescent depression is more common than many adults believe. In this study, 23% had a psychiatric history, and/or a history of depression. It is estimated that for every completed suicide there are between 100 to 200 suicide attempts.

Depression in children and adolescents can be misinterpreted as anger or sullen behavior. The years between ages 10 to 20 can be a difficult time. Warning signs or behaviors can be subtle and may be mistaken as typical growing pains. Some signs of depression include: unhappiness, isolated behavior, drop in school performance, loss of interest in activities that were formally sources of enjoyment, increase in physical complaints, fatigue, lack of energy or motivation, changes in sleeping and eating habits, increase in drug and alcohol use, outbursts of temper, irritability, restlessness and reckless or dangerous behavior. It is important to remember that the traumatic events, which are the triggers or catalysts for suicide in this age group, may seem minor from an adult's perspective (such as failing a test/class, getting into an accident, breaking up or being rejected). There is no single theory, which explains why children and teenagers take their lives in great numbers. Strategies in the home may include restricting access to medications and firearms. Child firearm access prevention laws can only go so far because, ultimately, laws cannot protect those intent on harming themselves.

Suicide, Methods, Children & Adolescents

 ** Presenting Author*