

Suicide in St. Clair County, Illinois - 2006-16: Recommendations and Strategies towards Improved Awareness, Prevention, and Intervention Measures

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Abstract

Suicide is a significant public health concern affecting virtually every demographic. Case files from the St. Clair County, Illinois, Coroner's Office classified as suicide between 2006-16 were examined. The data will assist in developing future prevention measures specific for at-risk populations within St. Clair County. Despite countless efforts towards suicide awareness on both state and national levels, suicide rates have failed to decline. More attention must be placed on prevention efforts and more state and federal monies must be allocated to address this serious and growing health concern. Community involvement is essential on numerous levels to confront the multifaceted nature of suicide.

Keywords: Illinois, mental health, St. Clair County, suicide, suicide prevention

During the late 1990s, the World Health Organization (WHO) identified suicide as a growing global health concern in *Prevention of Suicide: Guidelines for the Formulation and Implementation of National Strategies* and urged a collaborative effort to address this serious issue (1996, para. 2). Additional prevention measures were outlined in the *United States Surgeon General's 1999 Call to Action* (U.S. Public Health Service [PHS], 1999); *Mental Health: Culture, Race and Ethnicity – A Supplemental to Mental Health: A Report of the Surgeon General, 2001* (United States Department of Health and Human Services [HHS], 2001); and *2012 National Strategy for Suicide Prevention: Goals and Objectives for Action*. One of the most influential moves occurred in 2001, when then U.S. Surgeon General David Satcher explained: "The nation must address suicide as a significant public health problem and put into place national strategies to prevent the loss of life and the suffering suicide causes. We must act now." Prevention measures have no doubt saved lives. However, suicide rates have failed to decline at the rate seen in chronic health issues like heart disease and stroke (Jemal, Ward, Hao, & Thun, 2005; Remington & Brownson, 2011).

Suicide rates have fluctuated between 1970 and 2002 (see Table 1), but have remained fairly consistent until the late 1990s, when rates showed larger declines (McKeown, Cuffe, & Schultz, 2006). Efforts made in accurately predicting suicide or those at greatest risk for suicide have largely failed. Only a small margin of increased predictability is seen in the use of suicide risk assessments (Large et al., 2016). This lack of predictability is due in part, to shortfalls in training and education for practioners and clinicians (Bernert, Hom, & Weiss Roberts, 2014; Tait & Michail, 2014). More specifically, the signs and symptoms of psychiatric illnesses like depression are being overlooked by primary care physicians, which contribute to a lack of proper diagnosis and timely treatment (Mann et al., 2005).

Numerous barriers exist surrounding suicide awareness, prediction, and prevention. One barrier remains the lack of a universally accepted definition of suicide. The WHO defines suicide as '*a suicidal act with a fatal outcome*' (as cited in Redfield Jamison, 1999, p. 27). The suicidal act is defined as: '*self-injury with varying degrees of lethal intent*' (as cited in Redfield Jamison, p. 27). Suicide has been defined as: "*intentional self-inflicted death*" (Schneidman, 2004, p. 14), and as "*Death caused by self-directed injurious behavior with an intent to die as a result of the behavior*" (Center for Disease Control and Prevention [CDC], 2016). However, for the purpose of this paper, suicide is defined as resulting '*from an injury or poisoning as a result of an intentional, self-inflicted act committed to do self-harm or cause the death of one's self*' (HHS, 2003, p. 21). Other barriers include: a lack of access to appropriate and timely mental health services, substance use and abuse issues, financial burdens faced by mental health treatment and financial burdens in other areas after seeking treatment (Brown, Ojeda, Wyn, & Levan, 2000; Sturm & Sherbourne, 2001), a lack of knowledge regarding suicide risk assessments by mental health professionals (Bernert et al., 2014; Mann et al., 2005; Tait & Michail, 2014), patient failure to follow-up with healthcare providers (i.e., out-patient services) and a patient's inability to either begin or continue prescribed medication(s), stigma attached to issues surrounding mental health and mental illness (Brockington, Hall, Levings, & Murphy, 1993; Clement et al., 2015; Corrigan & Penn, 1998; Hernandez, Bedrick, & Parshall, 2014), and the lack of appropriate and well-timed training and education for at-risk populations, caregivers, and other responsible parties.

Declines in diseases correlated to increased mortality risk (i.e., heart disease and stroke) or unintentional injury deaths (i.e., accidents) have occurred for several reasons (Jemal et al., 2005). **First**, a shift in focus by public health researchers have contributed to a better understanding of the complexities and correlated causes of death and illness in the U.S. (Remington & Brownson, 2011). **Second**, programs were implemented specifically targeted to chronic diseases with increased rates of mortality through participation and social involvement (Remington & Brownson, 2011). **Third**, epidemiological research in the past half century has proven invaluable, in-part due to the implementation of early detection procedures, continued prevention measures, and the maintenance of chronic disease, as well as the integration of research into practical and applied means (Remington, Brownson, & Wegner, 2010).

Suicide rates declined at a regular rate in the 14 years from 1986-99 (Hu, Wilcox, Wissow, & Baker, 2009). However, in the 15 years from 1999-2014, data from the CDC National Center for Health Statistics (NCHS) showed "...the age-adjusted suicide rate in the United States increased 24 percent, from 10.5 to 13.0 per 100,000 population, with the pace of increase greater after 2006" (Curtin, Warner, & Hedegaard, 2016, para. 1). In addition, rates of suicide in both males and females increased each of these years (1999-2004) with the only exception being males and females aged 75 or older (Curtin et al., 2016). Several areas of concern were noted in the CDC study. **First**, a dramatic increase was noted in suicide rates among females aged 10-14 years. Suicide rates among this population were relatively low from 1999-2014, but increased 200 percent from .05 to 1.5 per 100,000 (NCHS, as cited in Curtin et al., 2016, p. 3). **Second**, the largest suicide rate increase was seen in middle-aged males 45-64. Rates in 1999 were 20.8 (per 100,000) and in 2014, rates rose a staggering 24 percent to 29.7 (per 100,000) among this population (NCHS, as cited in Curtin et al., 2016, p. 3). Firearms were the leading cause of death within this population (CDC, 2013). **Third**, middle-aged females (45-64) saw a 63 percent increase in suicides from 1999-2014 (NCHS, as cited in Curtin et al., 2016, p. 2). Suicide rates for this group in 1999 were 6.0 (per 100,000) and in 2014 were 9.8 (per 100,000) (NCHS, as cited in Curtin et al., 2016, p. 2). Poisoning and firearms were the leading causes of death within this demographic (CDC, 2013).

A 2014 CDC study showed American Indians and Alaska Natives had the largest number of noted suicides. According to the CDC, rates of suicide from 2012-13 (among both males and females) within this population aged 18-24 were 22.8 per 100,000 (as cited in Santhanam & Crigger, 2015). However, rates were highest (34.3 per 100,000) among males within this age group (CDC NCHS, as cited in Sifferlin, 2015). American Indians and Alaska Native females saw an 89 percent increase and males a 38 percent increase in deaths by suicide (Storrs, 2016). Speculation exists that deaths by suicide are underreported nearly 30 percent in the American Indian and Alaskan Native populations, due to the inaccurate reporting of race and ethnicity (Kochanek, Murphy, and Xu, 2015).

Suicide is a serious public health concern claiming nearly 43,000 lives annually in the U.S. (CDC, 2014), and approximately 800,000 globally (WHO, 2012). Suicide affects nearly every demographic (e.g., age, race, gender, occupation, socioeconomic status, marital status, education level). In fact, suicide is the fifth leading cause of death for those under 45 (HHS, 2012). In an 11-year study (1999-2010) conducted by the CDC, showed more American's died as a result of suicide than in traffic-related crashes (as cited in Abad-Santos, 2013; HHS, 2012).

Many lives are touched by the untimely death of suicide. Yet, the effectiveness of current prevention measures in reducing the number of yearly suicide deaths remains unclear. In fact, some argue that many awareness and prevention campaigns do very little in actually preventing deaths by suicide (Jaffee, 2014). Suicide awareness, prevention, and intervention efforts are often multifaceted due to the complexity of suicide. However, *three key components seem to hold a significant amount of promise in future life-saving efforts and interventions: (1) increasing physician knowledge regarding psychiatric illnesses and suicide; (2) reducing or eliminating lethal means; and (3) involvement on numerous levels by those deemed gatekeepers (e.g., "... clergy, first responders, pharmacists, geriatric caregivers, personnel staff, and those employed in institutional settings, such as schools, prisons, and the military")* (Mann et al., 2005, p. 2067).

Training and education programs should be readily available to other diverse populations (i.e., teachers, clinical professionals, hairdressers and barbers, doctors, school counselors, coroners/medical examiners, funeral home attendants, insurance agents, coaches, etc.) in order to reach at-risk individuals possibly overlooked by clinicians and those deemed gatekeepers. Training and education should also include firearm safety and storage measures (<http://www.projectchildsafe.org/safety/safe-storage>). This should include the use of proper storage procedures and gunlocks at a minimum (<http://www.projectchildsafe.org/safety/get-a-safety-kit>), to securing weapons and ammunition separately to help reduce the risk of suicide (Grossman et al., 2005; Shenassa, Rogers, Spalding, & Roberts, 2004). According to Madeline Drexler, Editor of Harvard Public Health (n.d.):

Perhaps the biggest fallacy is that suicides are typically long-planned deeds. While this can be true – people who attempt suicide often face a cascade of problems – empirical evidence suggests that they act in a moment of brief but heightened vulnerability. (para 9).

When addressing the often-impulsive nature of suicide, firearms are used in many instances because of their accessibility. In fact, firearms are the leading method used in completed suicide nationwide and account for more deaths than hanging, overdose, cutting, jumping, and poisoning deaths combined, though firearms are not the most common method by which people attempt suicide (Drexler, n.d.). The results in a majority (i.e., 85 percent) of suicides involving a firearm are lethal (Drexler, n.d., para. 1). The accessibility and lethality of firearms makes the ability for one to think through the time of crisis or vulnerability or to change one's mind nearly impossible. Understanding the role of impulsivity in completed suicide is half of the equation, while the other half remains limiting exposure and accessibility to lethal means during times of crisis and vulnerability. This can be accomplished through the use of a gun safe with an access code, but remembering adults can access even secured weapons, so removing weapon(s) from the residence entirely may be the safest option. Awareness is extremely important, but prevention actions are directly correlated to reducing deaths by suicide (Johnson, Frank, Ciocca, & Barber, 2011; Yip, Caine, Yousuf, & Chang, 2012). Removing access to lethal means (i.e., firearms, ropes, pesticides, knives, pills, etc.) is highly recommended (Diagle, 2005; Hawton, 2007; Johnson et al., 2011; Yip et al., 2012) in order to significantly reduce mortality rates by intentional self-harm (ISH). The

removal of one method (i.e., desired method) does not suggest that an alternative method will not be chosen. However, all possible means should be removed, but specifically the desired method for a specified duration of time to exceed the crisis. Doing so may be sufficient enough to delay self-harm at that time (Diagle, 2005). The gap between awareness efforts and prevention is the area, which requires more focus. In addition, it is imperative to identify *warning signs* and *risk factors* (i.e., red flags) of suicide and suicidal behavior.

Warning signs, according to Rudd et al., (2006) are defined as the first obvious indications of increased suicide risk in the immediate short-term (days, hours, minutes). Warning signs stress the immediate risk of ISH and may include the verbalization (i.e., directly or indirectly) to self-harm or threats of self-harm, talk of death and dying that are not part of normal conversations and/or someone actively seeking out lethal means (e.g., firearms, pills, etc.), increased use or abuse of drugs and/or alcohol, and feelings of hopelessness, etc. (American Association of Suicidology, n.d.; Suicide Prevention Resource Center [SPRC], 2014). **Risk factors** (i.e., red flags) are more wide-ranging and often include: "... [s]ituations, behaviors and characteristics that are concerning and may increase risk for a negative outcome. And although suicide risk *may* be present, red flags alone do not suggest imminent risk" (Rudd et al., 2006, as cited in Campus Suicide Prevention Center for Virginia, 2011, para. 3). Red flags include: a loss in some way (e.g., relationship, financial, employment, etc.), a diagnosis of a terminal illness, changes in behavior and performance, self-injury, untreated or undiagnosed mental health issue, and abuse that may be physical, sexual, or emotional in nature, prior attempts, etc., (Campus Suicide Prevention Center for Virginia, 2011, para. 4; SPRC, 2014, p. 2, Table 1). The idea is to understand the difference between warning signs and risk factors (i.e., red flags) of suicide and suicidal behavior, in order to develop effective protective factors, which can mitigate deaths by suicide (SPRC, 2014, p. 4).

Scope

Suicide is a serious, preventable public health concern, yet numbers fail to consistently decline. The data collected from the St. Clair County (SCC) Coroner's Office provides a "snapshot" of suicide deaths in SCC from 2006-16. The data will assist in establishing recommendations and strategies to further assist in reducing deaths by suicides in SCC and surrounding areas within the State of Illinois.

The CDC noted several factors to consider in reducing suicide numbers: "1) improving methods for collecting data about suicides, suicide attempts, and related behaviors; 2) expanding evaluation of prevention efforts aimed at reducing suicidal behaviors; and 3) examining how effective interventions can be modified for diverse and culturally specific populations" (2004, para. 1). Recommendations and prevention strategies were constructed through collected data and literature that highlights those deemed high risk for suicide and suicidal-related behaviors.

Suicide is a multifaceted phenomenon. In order to reduce deaths by suicide, community involvement on numerous levels is imperative to support and sustain such lifesaving endeavors. Community involvement would include involvement by mental health clinicians, physicians, law enforcement, school boards, trade unions, members of the clergy, attorneys and judges, support organizations, community members (directly or

indirectly) affected by suicide, insurance agencies, emergency department personnel, those with previous attempts and ideations, and even those currently seeking mental health assistance, dealing with mental illness or mental health issues, or dealing with issues that have placed certain individuals at risk for suicide (e.g., financial strain, relationship issues, illness, injury, personal loss, termination of employment, etc.).

Data Collection

Data was collected and analyzed from 273 deaths classified as suicide within SCC between 2006-16. Some cases files were not included if at the time of collection they were pending, under investigation, or incomplete. However, no case files were purposefully excluded. Paper case files prior to 2006 in the SCC Coroner's Office were destroyed. All new case files are now recorded electronically for the sake of time and space. All paper case files available at the time of collection were included in the data. Pertinent data (i.e., United States Standard Certificate of Death [USSCD], field notes, coroner's reports and notes, police reports, witness statements, photographs (photos on DVD), suicide notes, autopsy reports, etc.) were noted from each individual case file. A form was developed (see Figure 1) to systematically collect and analyze data from each case file. Case files were labeled with the corresponding file number and name of the decedent located on the individual USSCD (Example: 2011-149-I Doe, John E.). Each case file was labeled by year of death and numerically to represent the order the death (suicide deaths only) occurred in that given year. This was done to limit confusion. This labeling system kept information easily accessible should further information need to be clarified or added.

All collected data (excluding name of decedent) was then entered into a Google Sheets spreadsheet. Names were collected in order to input into the SCC Circuit Clerks database (see Figure 2) to identify any prior contact with local law enforcement (to include the Illinois State Police Sex Offender Registry). Media reports and social media websites were accessed to gather additional information or insight into the mind frame or circumstances surrounding the death. The data collected from all case files included: gender, race/racial demographics, ethnicity, chronological age, relationship status, prior law enforcement contact, sex offender status, occupation/occupational status, city of death, day of week, month of death, year of death, season/seasonality, time of death (AM or PM), place of death, type of death, method and means, previous attempts, notes and social media contact, known mental health issues, veteran status, education level, tobacco use if known, toxicology reports, and addition information that may prove useful in better understanding why someone might have chosen to end his or her life. The USSCD collects information to include: basic demographics (gender, race, ethnicity, age, etc.), cause of death, manner of death, time, place, pregnancy status at the time of death, tobacco use, occupation, veteran status, etc. Certain categories on the USSCD collect information strictly for research purposes or to develop programs specifically tailored to certain demographic groups or populations (e.g., race, ethnicity, age). Information was directly ascertained from the USSCD and other information in the individual case file (i.e., police reports, autopsy documents, photos, suicide notes, etc.). Different versions of the USSCD were used in the case files between 2006 and 2016, however specific versions or revisions were not noted as significant in the research.

Gender

Global suicide rates are over 800,000 per year with many more attempts (WHO, 2016b). According to the WHO (2012b) males complete suicide more often, with females making more attempts. Males tend to use more lethal means (e.g., firearms and hanging), which reduce survivability, compared to females who often use less lethal means (e.g., drug overdose and poisoning by carbon monoxide) (Denning Conwell, King, & Cox, 2000). The universal age-standardized rate for males is 15 per 100,000 and 8 for females per 100,000 (WHO, 2012). Males account for approximately 49 percent and females 51 percent of the total U.S. population (Kaiser Family Foundation, 2015). These percentages were fairly representative of the male and female populations in the State of Illinois from 2006-16 (Kaiser Family Foundation, 2015). Of the 273 completed suicides from 2006-16, in SCC, 229 cases (83.88 percent) were male and 44 cases (16.12 percent) were female.

Prior Attempts

One of the most common risk factors for completed suicide is a prior attempt (American Foundation for Suicide Prevention [AFSP], n.d.; 2017). From 2006-16, there were 30 noted prior suicide attempts in the 273 case files. Only cases in which an actual attempt was documented in the case file were noted. Some of the 30 prior attempts were noted in the same case file, as were the use of numerous means or methods. Of the 30 prior attempts directly noted, males accounted for 21 (70 percent) prior attempts and females 9 (30 percent) prior attempts. The demographics of these 30 cases included: 28 White (93.33 percent), 1 Black (3.33 percent), and 1 Iranian (3.33 percent). White males accounted for 19 cases (63.33 percent), Black males 1 case (3.33 percent), Iranian males 1 case (3.33 percent), and White females 9 cases (30 percent). All females with noted previous attempts were White. Of all 30 prior noted attempts, 10 (33.33 percent) were single/never married, 11 (36.67 percent) were married, 6 (20 percent) were divorced, and 2 (6.67 percent) were widowed. The ethnicity in 29 cases (96.67 percent) indicated of Non-Hispanic/Mexican American descent and 1 case (3.33 percent) indicated Hispanic/Mexican American descent. Of the 273 total case files, only 2 cases (.73 percent) indicated ethnicity as Hispanic/Mexican American descent and both subjects were male.

Race and Racial Demographics

Population demographics in SCC as of 2015 identified 67.5 percent of the population as White (non-Hispanic or Latino descent), 31.5 percent as Black (non-Hispanic or Latino descent), and 3.7 percent as Hispanic/Mexican American (U.S. Census Bureau, 2015). Demographics represented in the 273 case files indicated 236 cases were White (86.45 percent), 35 cases (12.82 percent) were Black, 1 case (.37 percent) White/Thai, and 1 case (.37 percent) Iranian. Two cases (.73 percent) were White and were of Hispanic/Mexican American descent. The misclassification of certain racial and ethnic groups can result in underreporting or underestimation of suicide deaths and rates within certain populations (Curtin et al., 2016; Kochanek, Murphy, and Xu, 2015). In addition, the misclassification of certain racial and ethnic groups can skew data,

limiting resources and programs available to certain at-risk populations. There is no indication in the data collected that rates of suicide were underreported or underestimated for any racial or ethnic group.

Ethnicity

The ethnicity represented in the 273 case files indicated 271 cases (99.27 percent) were of Non-Hispanic/Mexican American descent and 2 cases (.73 percent) were of Hispanic/Mexican American descent. According to Item number 52 on the revised USSCD, “Hispanic refers to people whose origins are from Spain, Mexico, or the Spanish-speaking Caribbean Islands or countries of Central or South America. Origin includes ancestry, nationality, and lineage” (p. 4). However, no fixed guidelines exist in establishing “... how many generations are to be taken into account in determining Hispanic origin” (see <https://www.cdc.gov/nchs/data/dvs/death11-03final-acc.pdf>, p. 4). According to the CDC (2010) rates of suicide among all Hispanic or Mexican American populations were approximately half (i.e., 6 percent) the total reported suicides nationwide (12 percent). Suicide ranks 12th among all Hispanic populations and 3rd among Hispanics aged 15-34 (CDC, 2004; 2010). Young Hispanic and Latino females have relatively low rates of completed suicide, but have recently shown dramatic increases in rates of *attempted suicide*. Several reasons have been suggested as to the increased risk within this population: undiagnosed or misdiagnosed depression and mental health issues, cultural disparities in gender roles, and decreased protective factors (e.g., family and social support, connectedness, stress management, and coping and problem-solving skills) (SPRC and Rodgers, 2011; HHS, 2012). One study indicated increased attempt rates within this population when birth parents were born in the U.S., compared to birth parents born in their native countries (Peña et al., 2008).

Census records and death certificates are used in determining mortality rates and trends in death among specific races or ethnicities (Arias, Heron, & Hakes, 2016). Discrepancies among what is reported in Census Bureau data and death certificates could likely lead to inconsistencies in data reporting. This is often due to the fact that Census data is collected through self-reporting and death certificate information is often collected second-hand from the next of kin via a funeral director or might be completed visually by the funeral director, both which could be problematic in accurate reporting (Arias et al., 2016).

Chronological Age

Chronological age was recorded and a designation was made to one of the following categories/groups [under 20], [20-34], [35-44], [45-64], [65-84], [85 or older]. Using only chronological age would not have provided a broader view of the data. However, using both chronological age and age categories helped to better understand the data independently and in conjunction to state and national statistics. According to the National Institute of Mental Health (NIMH), age plays a significant role in completed suicide. In fact, suicide is the second leading cause of death for those aged 15-34, and is on the rise in both middle-aged (i.e., 45-64) males and females (NIMH, 2015; Sanger-

Katz, 2015). The increase in the young and middle-aged is a change from past decades, when those over 65 had the highest suicide rates (NIMH, 2015).

All suicides that occurred in SCC from 2006-16, regardless of chronological age were noted. Four suicides were noted as “under 15” years of age. Two cases involved 14 year olds and two cases involved 13 year olds (see Table 2). Three cases were male (75 percent) and 1 case (25 percent) was female. Two cases (50 percent) were White youth and 2 cases (50 percent) were Black youth. Firearms were the leading cause of death (50 percent) for those “under 15” years of age. Blunt force trauma and asphyxia/hanging were each noted in 25 percent of the cases. Three cases (75 percent) noted place of death as being the decedent’s bedroom. The following days were noted (in alphabetical order) as the day death occurred The middle and end of the week were noted in the four cases (e.g., Wednesday, Friday, Saturday, and Sunday). The most common reason noted was “punishment” in some form, followed by relationship issues, and being under investigation by law enforcement.

National data regarding those under 15 is limited and often included in the “under 20” category. Those cases categorized as “under 15” for this research were addressed for data purposes, but were ultimately combined into the category under 20. The age, number of cases per year, age range, and mean, median, and mode of the four cases noted as “under 15” were figured for each calendar year (2006-16) of data collected (see Table 3).

Age range

The following age ranges were designated: [under 20] (for 0-19 years of age); [20-34]; [35-44]; [45-64]; [65-84]; and [85 or older]. The largest number of suicides were noted in the 45-64 age range with 100 deaths (36.63 percent), followed by 20-34 with 72 deaths (26.37 percent), 35-44 with 44 deaths (16.12 percent), 65-84 with 33 deaths (12.09 percent), the under 20 group with 17 deaths (6.23 percent), and 85 or older with 7 deaths (2.56 percent). Those identified in the data collected from SCC as “middle-aged” (i.e., 45-64) were representative of national statistics within this same demographic. The relationship between age and suicide has long been studied. Better understanding the risk factors for each age group (i.e., middle-aged, college-age and young persons, and the aging and elderly) is essential. Doing so will assist in developing more sustaining protective factors against suicide within each of these unique and diverse populations.

Middle-Aged

Suicide risks among the middle-aged (i.e., those aged 45-64), especially males have been noted for several reasons: mental illness, workplace issues, midlife stressors, financial strain due to the economic downturn, the inability to ask for assistance, and the use of more lethal means (Esposito, 2016). In fact, suicide deaths in men of middle age have increased 43 percent from 1997-2014 (Esposito, 2016). Sadly, middle-aged females also saw an increase in suicide-related deaths. In addition to the issues seen in their male counterparts, additional risk factors for middle-aged females included: addiction to alcohol and drugs like opioids, which have reached epidemic levels nationwide and the increased use of social media (Keating & Bernstein, 2016).

From 2013-14, approximately half of deaths due to opioids were middle-aged Americans (i.e., those aged 45-64) (CDC, as cited in Landro, 2017). In recent decades, the devastation of opioid addiction has grown considerably in those 50 years and older (CDC, as cited in Landro, 2017). Part of the problem, according to Dr. Christine Moutier, chief medical officer the American Foundation for Suicide Prevention is that "Our nation has not made the level of investment on a federal level that can have the positive effect on suicide that has happened for the other leading causes of death" (as cited in Storrs, 2016). In 2011, the middle-aged accounted for the highest number of suicide deaths (CDC, 2015), and some speculate this trend will only increase as this demographic group continues to age.

College Age and Young Persons

A leading cause of death for young persons of college and university-age in the U.S. is suicide (Schwartz, 2006; SPRC, 2004). Many factors exist for the high number of suicides within this population (e.g., substance abuse, mental health issues, relationship issues, financial strain, injury and disability, problems at work or school, physical and emotional abuse, sleeplessness, the inability to problem solve, etc.) (SPRC, 2014). In addition to the stress that comes with entering adulthood, pressure may be placed on keeping grades up, securing financial aid, and general financial strain (American Psychological Association, 2012). Some college and university-age students leave home for the first time, are making new friends, seeking employment, dating, dealing with issues of sexuality, and possibly experimenting with drugs and/or alcohol.

According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA) alcohol and drug use in college and university settings are almost considered a rite of passage (2015). Excessive consumption of alcohol, especially in the under-aged has resulted in physical assault, sexual assault, and even death. Dealing with the aftermath of such a devastating event (like a sexual assault) could contribute to one contemplating suicide. Research shows a correlation between sexual assault and an increased risk of attempted suicide over one's lifetime, compared to those not experiencing such an event (Davidson, Hughes, George, & Blazer, 1996). In addition, an increased risk of future suicide attempts exists if the sexual assault occurred prior to age 16 (Davidson et al., 1996).

Nearly 700,000 assaults occur each year on college students (18-24 years of age) by other students under the influence of alcohol (Hingson, Heeren, Winter, & Wechsler, 2005, as cited in NIAAA). Within the same age demographic, rates of sexual assault or date rape due to intoxication total around 97,000 (Hingson et al., 2005). Death rates due to alcohol and intoxication are close to 2,000 per year within this demographic, often due to vehicular crashes and unintentional injuries related to alcohol consumption (Hingson et al., 2005). Drugs and alcohol not only by themselves could increase the risk of attempted or completed suicide, but when addressing circumstances like sexual assault, being charged with possession of a controlled substance or driving under the influence, these behaviors may stimulate suicidal behaviors. In addition to drug and alcohol use, mental health issues are more prominent within the college and university-aged populations.

Some indications have been made that secondary education acts as a protective factor against suicide. A study conducted on the suicide rate of college students attending

Big Ten Universities (1980-90) actually showed rates of suicide half (7.5/100,000) that of the national rate of suicide in non-college attending individuals (15/100,000) (Silverman et al., 1997). College and university campuses may also provide several additional protective factors. These institutions are considered gun free zones and many provide numerous outlets for mental health counseling, social support, and other forms of clinical care (Illinois Department of Public Health [IDPH], n.d.). Much of what is provided by secondary educational institutions can be found online via search engines and social media forums and is available for immediate access.

Social media is a large part of the college and university-age experience. Mounting support actually leans towards the idea that suicidal-related behavior may be influenced by the use of social media and the Internet (Luxton, June, & Fairall, 2012). Not only is the Internet being used to research suicide and suicide methods, but also as a platform to chat with others about suicide and to disseminate harmful information used to urge vulnerable individuals to take their lives (i.e., Blue Whale Challenge). More recently and more disturbingly, the Internet has been used to live stream suicides in real time (Luxton et al., 2012). It is difficult to predict what influence these types of videos will have on viewers. However, the challenge remains balancing the advantages and disadvantages of social media among a population so dependent upon it.

Aging and Elderly

Suicide among the aging is alarming. Suicide rates among those 65 and older in 2015 was 14.9 per 100,000 and 19.7 per 100,000 in those 85 and older in the U.S. (CDC, 2015, as cited in the American Foundation for Suicide Prevention, n.d.). Even more alarming, the CDC (2012) estimated that "... about 51 of every 100,000 white men age 85 and older committed suicide...." (as cited in Levingston, 2014). According to the American Association for Marriage and Family Therapy [AAMFT], 2002), suicide in the elderly could be an overdose of medication saved up and taken all at once, dehydration and malnourishment, and falls and accidents not initially identified as a suicide or suicide attempt. For this reason, some believe suicide rates among the elderly may be underreported by as much as 40 percent (AAMFT, 2002).

Numerous reasons have been noted to explain the increased risk for suicide among the aging and elderly population. This includes: poor and declining health, living with pain, substance abuse, cognitive deficits, loneliness and lack of social support, loss of independence and mobility, bereavement, depression, feeling burdensome, psychiatric illness, cultural beliefs and even personality traits) (Baumeister & Leary, 1995; Conwell, Orden, & Caine, 2011; Dombrovski et al., 2008). In addition, rates of double suicide occur more often among this population (AAMFT, 2002).

Those most at-risk for completed suicide in the aging and elderly population according to the AAMFT (2002) include aging, divorced White males. Risk factors seem to come in the form of psychiatric illnesses and even the abuse of drugs and/or alcohol, which may further exacerbate underlying illnesses (AAMFT, 2002). Often, additional issues become more common in later life that may require the use of opioid and pain medications (i.e., arthritis pain, cancer, and neurological illnesses (Tribune News Service, 2017). According to the Tribune News Service, a study of seniors prescribed opioids (15 percent) in 2011, indicated that over 40 percent were still using opioids three months

post-hospitalization (2017, para. 5). Opiate management among the elderly can be difficult due to changes with the natural aging process and the side effects and interactions with other drugs (Chau, Walker, Pai, & Cho, 2008).

Birth Month and Suicide Risk

Seasonality and month of birth have been discussed in terms of exposure to environmental hazards in utero and during childhood, to include risks faced in adulthood (Salib & Cortina-Borja, 2006) in relation to diseases and disorders like cancer, childhood leukemia, coronary heart disease, and alcohol dependency. However, little has been done to examine the influence of birth month on suicide rates (Salib & Cortina-Borja, 2006). *The data collected and shared in the subsequent paragraphs include month and corresponding astrological sign to limit confusion.*

The majority of completed suicides in SCC from 2006-16 occurred in September with 33 cases (12.09 percent), followed by June with 29 cases (10.63 percent), August and December each with 28 cases (10.26 percent), October with 25 cases (9.16 percent), July with 24 cases (8.79 percent), March with 22 cases (8.06 percent), February and May each with 21 cases (7.69 percent), January with 16 cases (5.86 percent), November with 15 cases (5.49 percent), and April with 11 cases (4.03 percent). Of the 33 cases from September, the following is a breakdown in means or method of death: 13 cases (39.39 percent) were gunshot wounds to the head, 9 cases (27.27 percent) were hanging/asphyxiation, 7 cases (21.21 percent) were poly-pharmacy overdose (Poly OD), 2 cases (6.06 percent) were carbon monoxide (CO) asphyxiation, 1 case (3.03 percent) each of gunshot to the abdomen and exsanguination.

All 273 cases were classified by exact cause of death. Based on the CDC's National Vital Statistics System mortality data, death by suicide is broken into four basic categories: *firearm, suffocation, poisoning, and other mechanisms*. Each of the causes of death classifications is then coded using the International Classification of Diseases [ICD-10] (see Figure 3) "firearm (X72–X74), suffocation (X70), poisoning (X60–X69), and other mechanisms (U03, X71, X75–X84, Y87.0)" (Sheu, 2015; WHO, 2016).

Astrological Sign and Suicide Risk

The birthdate provided in each case file was used to identify the corresponding astrological sign (see Figure 4). Astrology is not acknowledged by many as a valid science, but has been looked at in relation to the increase risk to completed suicide (Norris & Chowning, 1962; Salib, 2003). Astrological signs were only addressed to see if the time of year one was born indicated an increased risk of death by suicide. Some research proposed that suicide is higher in certain months of birth; certain astrological signs were more apt to use certain means and/or methods; or probable predictors existed for certain astrological signs regarding suicidal ideations (Salib, 2003). The 273 noted cases indicated the following distribution: Libra and Virgo each with 33 cases (12.09 percent), Gemini accounted for 28 cases (10.26 percent), Sagittarius 25 cases (9.16 percent), Aquarius, Cancer, and Leo each had 24 cases (8.79 percent), Pisces 23 cases (8.42 percent), Taurus 22 cases (8.06 percent), Capricorn 15 cases (5.49 percent), Scorpio 14 cases (5.13 percent), and Aries 8 cases (2.93 percent).

Of the 33 cases identified as “*Libra*,” the largest number of deaths was attributed to gunshot to the head with 15 cases (45.45 percent). If looking at total firearm deaths within this group, 2 cases were gunshot to the chest, totaling 17 cases (51.52 percent). The second leading cause of death for this group was Poly OD with 5 cases (15.15 percent).

The “*Virgo*” group also had 33 cases. The leading cause of death was also gunshot to the head with 12 cases (36.36 percent). The second leading cause of death was hanging with 9 cases (27.27 percent), and Poly OD with 5 cases (15.15 percent).

The third largest group was identified as “*Gemini*” with 28 cases (10.26 percent). The leading cause of death for this group was also gunshot to the head with 11 cases (39.29 percent), followed by hanging with 7 cases (25 percent), and gunshot to the chest with 4 cases (14.29 percent). All firearms related deaths in this group totaled 15 cases (53.57 percent).

The fourth leading group was “*Sagittarius*” with 25 cases (9.16 percent). The leading cause of death was gunshot to the head with 10 cases (40 percent) followed by hanging with 6 cases (24 percent) and gunshot to the chest and Poly OD each with 3 cases (12 percent). All firearms related deaths combined totaled 13 cases (52 percent). The fifth group included “*Aquarius*,” “*Cancer*,” and “*Leo*.”

The group “*Aquarius*” had 24 cases (8.79 percent) with two leading causes of death: gunshot to the head and hanging each with 10 cases (41.67 percent). The “*Leo*” group had 24 cases (8.79 percent) with the largest causes of death being gunshot to the head and hanging both with 10 cases (41.67 percent). The group identified as “*Cancer*” had 24 cases (8.79 percent) with the largest cause of death gunshot to the head accounting for 11 cases (45.83 percent), followed by hanging with 4 cases (16.67 percent). All firearms related deaths combined totaled 13 cases (54.17 percent).

The sixth group was identified as “*Pisces*” with 23 cases (8.42 percent). The leading cause of death was gunshot to the head with 10 cases (43.48 percent) followed by hanging with 9 cases (39.13 percent). These top two leading causes of death accounted for 19 cases (82.61 percent).

The seventh group was identified as “*Taurus*” with 22 cases (8.06 percent). The leading cause of death for this group was gunshot to the head with 13 cases (59.09 percent) followed by hanging with 6 cases (27.27 percent). All firearms related deaths combined totaled 14 cases (63.64 percent).

The eighth group identified as “*Capricorn*” included 15 cases (5.49 percent). The leading cause of death was hanging with 8 cases (53.33 percent) followed by gunshot to the head with 5 cases (33.33 percent). *This was the only group in which firearms was not the leading cause of death.*

The ninth group was identified as “*Scorpio*.” This group accounted for 14 cases (5.13 percent). Gunshot to the head and hanging each had 4 cases (28.57 percent). If all firearms related deaths were combined, firearms would be the leading cause of death with 5 cases (35.71 percent).

The tenth and final group was identified as “*Aries*,” which accounted for 8 cases (2.93 percent). The leading cause of death was gunshot to the head with 3 cases (37.5 percent), followed by hanging with 2 cases (25 percent). The leading means or method of death resulting in suicide for all groups (except Capricorn) was firearms. The leading cause of death for the group “*Capricorn*” was hanging.

Relationship Status

Durkheim (1951) addressed the lack of social integration as having a significant impact on whether someone was at increased risk for suicide. One aspect of social integration included marital status, in which Durkheim explained if only looking at "... absolute figures, unmarried persons seem to commit suicide less than married ones" (p. 171). The idea being that marriage though it provided companionship, also brought with it additional burdens and obligations. Marital status has previously been linked to suicide, in that marriage acts as a protective factor against suicide (Durkheim, 1951; Luoma & Pearson, 2002; Smith, Mercy, & Conn, 1988). Justifications given explain that marriage, when compared to those who are single, divorced, separated, or widowed is unique in the type of stability it provides through companionships and emotional and social types of support (Kposowa, 1999). Relationships are extremely important, which can help elucidate the correlation between marital discord and increased suicide risk (Bagge, Glenn, & Lee, 2013; Funk & Rogge, 2007). Durkheim pointed out that marriage was more of a protective factor for men versus women. In fact, children were a greater protective factor for women, whereas marriage in this same group actually exacerbated the risk for suicide (as cited in Johnson, 1965). *Note: theoretical and methodological criticisms have been made regarding Durkheim's study of suicide.* The following designations were available on the USSCD for cases 2006-16: single/never married, married, divorced, and widowed. Two additional determinations were added to a revised edition of the USSCD: married, but separated and unknown.

Single/Never Married

The "single/never married" group was the largest in terms of completed suicide in SCC. This group consisted of 110 cases (40.29 percent) of the total 273 cases. Age group 20-34 accounted for the largest number of completed suicides, totaling 54 cases (49.09 percent), followed by those aged 45-64 with 18 cases (16.36 percent), the under 20 group with 17 cases (15.45 percent), age group 35-44 with 15 cases (13.64 percent), age group 65-84 with 4 cases (3.64 percent), and lastly, those 85 or older with 2 cases (1.82 percent). The 110 cases were broken down by gender and race: 78 White male (70.91 percent), 18 Black male (16.36 percent), 10 White female (9.09 percent), 3 Black female (2.73 percent), and 1 Thai male (.90 percent). Only 2 cases involved individuals of Hispanic/Mexican American descent.

The majority of this group was identified as Students or those in Construction and Extraction related fields. The Bureau of Labor Statistics (BLS) uses Standard Occupational Codes (SOC) to classify all occupations (see Table 4). Students are not given an SOC, as it is not an occupation. However, previous research (see *McIntosh, et al., 2016*) used the code 69 to represent this population, so this code was also used to represent those classified as students in the collected data. Within the single/never married group, students accounted for 22 cases (20 percent) followed by Construction and Extraction Occupations with 20 cases (18.18 percent).

Forty-two cases (38.18 percent) had a high school diploma or General Education Development (GED), 22 cases (20 percent) had a 9-12th grade education, 21 cases (19.09 percent) had some college but no degree, 11 cases (10 percent) had a bachelor's degree, 6

cases (5.45 percent) had 8th grade or less or an associate degree, and 2 cases (1.82 percent) had a master's degree.

Of the 110 cases, 80 (72.73 percent) had some prior contact with local law enforcement and 30 (27.27 percent) had no contact with local law enforcement. Law enforcement contact was only noted in SCC through the use of the Circuit Clerk's database (see Figure 2) and the Illinois State Police (ISP) Sex Offender Registry. Additional information noted in police reports, case notes, or media reports (i.e., TV reports or newspapers) were collected if available and had significance to the death.

The most prominent day of the week for suicide deaths for this group was Wednesday with 18 cases (16.36 percent). Tuesday was the second leading day with 17 cases (15.45 percent) and Thursday with 16 cases (14.55 percent). Wednesday is the most prominent day for suicides in all relationship categories in SCC.

Suicide deaths were noted in many areas of SCC (see Figure 5) to include towns, townships, rural, and unincorporated areas of SCC. However, based on crude numbers alone, the most prominent area for suicides in SCC for the single/never married group was Belleville with 32 cases (29.09 percent). East St. Louis had 12 cases (10.91 percent), but an additional 3 cases came from Centreville and 1 case from Alorton. If these were grouped together, East St. Louis would have 16 cases (14.55 percent) total. The third highest noted area was Fairview Heights with 11 cases (10 percent).

Numerous methods of suicide were noted in the case files, however the following four main classifications are primarily used in the data: *firearm*, *poisoning*, *suffocation*, and *other*. The group single/never married accounted for 110 cases. The most prominent cause of death for this group was firearms with 48 cases (43.64 percent), followed by suffocation with 47 cases (42.73 percent), poisoning with 8 cases (7.27 percent), and other with 7 cases (6.36 percent). There were 13 cases with at least one noted prior suicide attempt.

Married

Those designated as "married" were the second largest group in terms of completed suicides. This group consisted of 76 cases (27.84 percent). Those aged 45-64 had the highest rate of suicide with 39 cases (51.32 percent), followed by those 35-44 with 15 cases (19.74 percent), 20-34 with 12 cases (15.79 percent), 65-84 with 9 cases (11.84 percent), those 85 or older had 1 case (1.32 percent), and those under 20 had no cases. Of the 76 total cases, 61 (80.26 percent) were White male, 11 (14.47 percent) White female, 3 (3.95 percent) Black male, and 1 (1.32 percent) Iranian male. All 76 cases were of Non-Hispanic/Mexican American descent. The majority of this group, 15 cases (19.74 percent) were noted in [SOC 47 - Construction and Extraction Related Occupations], followed by [SOC 41 - Sales and Related Occupations] [53 - Transportation and Material Moving Occupations]; and [SOC 49 - Installation, Maintenance, and Repair Occupations] with 5 cases (6.58 percent) each, and [SOC 43 - Office and Administrative Support Occupations], [SOC 11 - Management Occupations], and [SOC 15 - Computer and Mathematical Occupations] each with 4 cases (5.26 percent).

Thirty-three cases (43.42 percent) graduated high school or received a GED, followed by 9 cases (11.84 percent) with some college but no degree, 8 cases 10.53 percent) with a bachelor's degree, 4 cases (5.26 percent) with a master's degree, 3 cases

(3.95 percent) with a 9-12th grade education, 2 cases 2.63 percent) with a doctoral degree, and 1 case each (1.32 percent) with either an 8th grade education or less, or the education level was unknown.

Fifty-four cases (71.05 percent) had some type of prior contact with local law enforcement. Twenty-two cases (28.95 percent) had no prior law enforcement contact in SCC. This included those registered with the ISP Sex Offender Registry. Of the 273 cases, 2 cases met the criteria for registration on the ISP Sex Offender Registry. However, only 1 case involved an individual who was registered as a sex offender in the State of Illinois (see section Sex Offender Statistics) and only 1 case was classified as married [White male].

The three most prominent areas for suicide deaths of those identified as married included: Belleville with 27 cases (35.53 percent), Fairview Heights and unincorporated SCC each with 6 cases (7.89 percent), and Swansea with 4 cases (5.26 percent). Belleville, Fairview Heights, unincorporated SCC, and Swansea accounted for over half (56.57 percent) of all the suicides within the married group. The three most prominent areas for all suicides in SCC from 2006-16, by crude numbers alone included Belleville, Fairview Heights, and East St. Louis.

The most prominent method of death for the married group was firearms. Firearm deaths accounted for 37 cases (48.68 percent). This was followed by suffocation with 27 cases (35.53 percent), poisoning with 9 cases (11.84 percent), and other with 3 cases (3.95 percent).

Divorced

The “divorced” group was the third largest group, which accounted for 64 (23.44 percent) completed suicides. Those aged 45-64 accounted for the largest number of completed suicides with 39 cases (60.94 percent), followed by those in the 35-44 with 15 cases (23.44 percent), the 20-34 group with 11 cases (17.19 percent), the 65-84 group with 9 cases (14.06 percent), and those 85 or older with 1 case (1.56 percent). The group under 20 had no cases. Racial demographics of this group included 59 White (92.19 percent) and 5 Black (7.81 percent). Forty-nine cases (76.56 percent) were male and 15 cases (23.44 percent) were female. All 64 cases were of Non-Hispanic/Mexican American descent. White males accounted for 44 cases (68.75 percent), White females accounted for 15 cases (23.44 percent), and Black males accounted for 5 cases (7.81 percent).

Seventeen cases (26.56 percent) were noted in [SOC 47 – Construction and Extraction related occupations]. The second leading occupational group was [SOC 41 – Sales and Related] with 5 cases (7.81 percent) followed by [SOC 53 – Transportation and Material Moving] and [Code 59] identified by authors (see *McIntosh, et al., 2016*) as [Homemaker] each with 4 cases (6.25 percent). Standard Occupation Codes are not given for the role of Homemaker, so the same code used in previous research was also used.

Of the total 64 cases labeled “divorced,” the majority (i.e., 30 cases) (46.88 percent) either graduated high school or received a GED. The second leading group was some college with 13 cases (20.31 percent), and associate degree with 6 cases (9.38 percent), 9-12th grade with no diploma and bachelor’s degree each had 5 cases (7.81 percent), master’s degree had 3 cases (4.69 percent), and those with 8th grade or less had 1 case

(1.56 percent). Forty-five cases (70.31 percent) had some prior law enforcement contact in SCC. Nineteen cases (29.69 percent) had no prior local law enforcement contact.

Belleville had the largest number of suicide deaths within this group with 26 cases (40.63 percent) by crude numbers alone. The second leading city was O'Fallon with 6 cases (9.38 percent), followed by Cahokia and Fairview Heights each with 5 cases (7.81 percent).

The largest method used for this group was firearms with 41 cases (64.06 percent). The second leading method was suffocation with 12 cases (18.75 percent), other with 6 cases (9.38 percent), and poisoning with 5 cases (7.81 percent). Firearms were the leading means or method of death for the divorced group and representative of national data.

Widowed

The group "widowed" had the fewest number of completed suicides with 23 cases (8.42 percent). The age range most prominent for completed suicide within this group was 65-84 with 9 cases (39.13 percent). The second leading age range was 45-64 with 5 cases (21.74 percent), followed by 85 or older with 4 cases (17.39 percent), 20-34 with 3 cases (13.04 percent), and 35-44 with 2 cases (8.70 percent), and under 20 with no cases.

Research has shown that widows and widowers are at increased risk of suicide, especially "... in the first half of life" (Buda & Tsuang, 1990; Kreitman, 1988, as cited in Luoma & Pearson, 2002, p. 9). Males represented 18 cases (78.26 percent) and females accounted for 5 cases (21.74 percent). Further broken down, 18 cases (78.26 percent) were White and 5 cases (21.74 percent) were Black. In addition, White males accounted for 13 cases (56.52 percent), White females 5 cases (21.74 percent), Black males 5 cases (21.74 percent), and Black females were not represented in this group. All cases were of Non-Hispanic/Mexican American descent.

Based on occupational rates the top two categories were [SOC 35 – Food Preparation and Serving Occupations] and [SOC 53 – Transportation and Material Moving Occupations] each with 3 cases (13.04 percent). The second leading groups included [SOC 11 – Management], [SOC 27 – Art, Design, Entertainment, Sports, and Media], [SOC 43 – Office and Administrative Support], [SOC 49 – Installation, Maintenance, and Repair], and [SOC 59 – Homemaker] each with 2 cases. There is no indication of retirement in any of the case files, but based on age alone, some of the individuals would have been at or entering retirement age. Occupational classifications were noted and used to classify all case files.

Of the 23 completed suicides, (the majority) 9 cases (39.13 percent) completed high school or received a GED. The second leading group was some college with 4 cases (17.39 percent), followed by 8th grade or less and bachelor's degree each with 3 cases (13.04 percent). Nine through 12th with no diploma and associate degrees accounted for 2 cases (8.70 percent) each, and no cases were noted for master's degree, doctoral degree, or the unknown group.

Over half of this group (i.e., 13 cases) (56.52 percent) had prior contact with local law enforcement. Ten cases (43.48 percent) had no known prior contact with local law enforcement. Only prior law enforcement contact was noted within SCC and not how many times contact was made per individual case file. The number of law enforcement

contacts was noted in the collection of data regarding the number of crimes and criminal activity (per Illinois Compiled Statutes (ILCS) specifically noted as “risky” or “risk-taking” behavior.

The largest representation (by crude numbers only) of this group was noted in O’Fallon with 6 cases (26.09 percent). The second largest representation was seen in Fairview Heights with 5 cases (21.74 percent), followed by East St. Louis (including Washington Park) with 4 cases (17.39 percent). This is not representative of all areas of the data, as Belleville, Fairview Heights, and East St. Louis were noted with the largest concentrations of overall completed suicides (by crude numbers alone).

The most common method of suicide for this group was firearm with 13 cases (56.52 percent). The second leading method was suffocation with 6 cases (26.09 percent). The third leading cause of death was poisoning with 3 cases (13.04 percent) and other with 1 case (4.35 percent).

Law Enforcement Contact

Information collected from the SCC case files included: full name (i.e., first, middle, and last) and date of birth (month, day, and year). This information was collected for several reasons. First, the information collected was entered into the SCC Circuit Clerk’s database (see Figure 2) to see if the decedent had any prior law enforcement contact in SCC. This would also include risk-taking behaviors (e.g., excessing speeding, driving under the influence of drugs and/or alcohol, disobeying railroad crossing signals, assault, assault with a deadly weapon, etc.). The information was then entered into the ISP Sex Offender Registry and the search engine Google to locate any media coverage on the death, information surrounding the death, or events that may have contributed to the death.

Acts of deliberate self-harm (DSH) (i.e., prior suicide attempts, risky behavior, or risk-taking) have been noted as a strong indicator of completed suicide (Hawton, Zahl, & Weatherall, 2003). Other areas such as “withdrawn behavior, death ideation, suicidal ideation, and bizarre behavior” have been noted as added risk factors for completed suicide (Castle, Duberstein, Meldrum, Conner, & Conwell, 2004, p. 454). Additionally, Castle et al. (2004) looked specifically at differences between race and suicide risk (i.e., DSH or risky behavior) specifically in the areas of anti-social behaviors, destruction of property, community complaints, and substance use and abuse issues. However, these behaviors were not consistently noted in the SCC data.

In order to better understand the risk potential or risk factors of the 273 cases of completed suicide in SCC, all names and dates of birth were entered into the SCC Circuit Clerk’s court records search database (see Figure 2). Search results provided both criminal and civil cases, but only criminal cases were noted. If a record check produced results, (regardless of case disposition) it was noted. Even cases that were dismissed or reduced to a lesser charge were only noted as a contact with law enforcement. The following information was also collected for analysis: *(1) prior law enforcement contact, and (2) certain crimes/criminal activity per ILCS, specifically noted as “risky” or “risk-taking behavior.”* Some offenses have been listed or grouped together due to placement or similarity within the same compiled statute. The following criteria was collected for classification as DSH or risky/risk-taking behavior(s):

625 ILCS 5/12 – 603.1 Driver and passenger required to use safety belts (*driver only noted*)

625 ILCS 5/11 – 601: General speed restrictions

- Speeding 15-25 over posted speed limit
- Speeding 26-29 over posted speed limit
- Speeding 30+ over posted speed limit

625 ILCS 5/11 – 501: Driving while under the influence of alcohol, other drugs or drugs, intoxicating compound or compounds or any combination thereof

- Aggravated driving while under the influence

625 ILCS 5/11 305: Obedience to and required traffic-control device

625 ILCS 5/11 306: Traffic-control signal legend

625 ILCS 5/11 1204: Stop and yield signs

625 ILCS 5/11-1201: Disobeyed signal indicating approach of train

625 ILCS 5/11 503: Reckless driving; aggravated reckless driving

(720 ILCS 5/31-1(a)): Resisting or obstructing a peace officer, firefighter, or correctional institution employee

720 ILCS 5/12-1: Assault

720 ILCS 5/12-2: Aggravated assault

720 ILCS 5/12-3: Battery

720 ILCS 5/12-3.05: Aggravated battery

720 ILCS 5/12-3.2: Domestic battery

720 ILCS 5/12-3.3: Aggravated domestic battery

720 ILCS 5/11-1.20: Criminal sexual assault

720 ILCS 5/11-1.30: Aggravated criminal sexual assault

720 ILCS 5/24-3.1: Unlawful possession of a firearms of firearms ammunition

720 ILCS 5/24-1.6: Aggravated unlawful use of a weapon

Of the 273 cases, 194 cases (71.06 percent) had some type of prior contact with local law enforcement preceding death. Seventy-nine cases (28.94 percent) had no prior contact with local law enforcement. All names and dates of birth in the case file were entered into the SCC Circuit Clerk's database (see Figure 2). Only the charges listed above were noted in this research as risk-taking or risky behavior. *The author made the designation of which compiled statutes were included in the data.* The following compiled statutes were noted and the number of charges noted for all cases that had prior contact with local law enforcement.

625 ILCS 5/12 – 603.1: Driver and passenger required to use safety belts. One hundred citations/tickets were noted in which the driver was not wearing a safety belt. Passenger seatbelt use was not noted.

625 ILCS 5/11 – 601: General speed restrictions. Two categories were noted: 15-29 miles per hour over posted speed limit and 30+ over the speed limit. “National surveys found that on freeways and interstates 48 percent of free-flow traffic in 2007 and 72 percent in 2009 exceeded posted speed limits” (Huey, De Leonardis, & Freeman, 2012, para. 6, as cited in the Insurance Institute for Highway Safety, 2017). Many people exceed the posted speed limit, but speeding within these ranges was deemed “risk-taking” or “risky” behavior by the author. There were 122 citations given out for 15-29 over the posted speed limit and 7 citations noted for those going 30+ over the posted speed limit.

625 ILCS 5/11 – 501: Driving while under the influence (DUI) of alcohol, other drugs or drugs, intoxicating compound or compounds or any combination thereof. There were 66 noted cases of DUI and three cases of aggravated DUI with 1 case noting the loss of life. There have been some indications of increased rates of suicide among those charged particularly with DUI (Perry, 2017).

625 ILCS 5/11 305: Obedience to and required traffic-control device.

625 ILCS 5/11 306: Traffic-control signal legend. No noted citations were given for either of these statutes.

625 ILCS 5/11 1204: Stop and yield signs. There were 104 noted citations or tickets given for a failure to stop or yield.

625 ILCS 5/11-1201: Disobeyed signal-indicating approach of train. Eight citations or tickets were noted in the failure to obey a railroad-crossing signal.

625 ILCS 5/11 503: Reckless driving; aggravated reckless driving. Five cases of reckless driving were noted.

(720 ILCS 5/31-1(a)): Resisting or obstructing a peace officer, firefighter, or correctional institution employee. There were 29 noted citations or tickets given.

720 ILCS 5/12-1: Assault;

720 ILCS 5/12-2: Aggravated assault;

720 ILCS 5/12-3: Battery; and

720 ILCS 5/12-3.05: Aggravated battery. These four statute classifications were grouped together with 74 noted citations or tickets.

720 ILCS 5/12-3.2: Domestic battery;

720 ILCS 5/12-3.3: Aggravated domestic battery. These classifications were noted separately from (assault, battery, aggravated assault, aggravated battery), as these are noted in more intimate relationships. Thirty-five cases of domestic battery were noted. No cases of aggravated domestic battery were noted.

720 ILCS 5/11-1.20: Criminal sexual assault;

720 ILCS 5/11-1.30: Aggravated criminal sexual assault. Two cases of criminal sexual assault and one case of aggravated sexual assault were noted.

720 ILCS 5/24-3.1: Unlawful possession of a firearm of firearms ammunition and;
720 ILCS 5/24-1.6: Aggravated unlawful use of a weapon. One noted case of unlawful possession of a firearm or ammunition was noted and 3 cases of aggravated unlawful use of a weapon were noted. The unlawful possession or aggravated unlawful possession of a firearm preceding death (based on SCC records) indicated this was not a serious issue based on the numbers noted in the SCC case files. It remains unclear in the collected data how many firearms were possessed legally by the decedent in each case. Two FOIA requests were submitted to verify if the decedent's possessed a valid Firearms Owner Identification (FOID) card. Both FOIA requests were denied. Seven case files involved those identified as under 20. Five cases involved the use of a handgun, which cannot be legally possessed by anyone under 21. So 5 cases involved firearms possessed illegally by the decedents. Two cases involved the use of long guns, which could have been legally possessed by the decedents. However, this could not be verified.

Sex Offender Status

Sex offender status was addressed to better understand what risk this population has for completed suicide. According to Pritchard and King, 2005, as cited in Walter and Pridmore (2012):

Sex offender status was examined as some research indicates sex offenders are at increased risk for suicide (Walter & Pridmore, 2012). The suicide rate (after apprehension) of male child sex offenders who engaged exclusively in sex (as distinct from those who performed multiple types of crimes and those who were violent to children), is reported to be 183 times higher than that of members of the general population. (p. 50)

Each name in all 273 case files was used to verify sex offender status through the online ISP Sex Offender Registry (<https://www.isp.state.il.us/sor/>). All counties in the State of Illinois were checked because an offense(s) might have occurred outside SCC. Any registry records that appeared to match were also checked against date of birth and physical description and/or photo of each individual located in the individual case file. The ISP Sex Offender Registry was used to assist in better understanding the personal backgrounds of each individual case file. No names or personally identifying information were entered into a national sex offender registry. According to the ISP – Illinois Sex Offender Information Disclaimer: “Persons required to register as Sex Offenders are persons who have been charged of an offense listed in Illinois Compiled Statutes **730 ILCS 150/2(B) and 730 ILCS 150/2(C)** when such charge results in one of the following:

- (a) A conviction for the commission of the offense or attempt to commit the offense,
- (b) A finding of not guilty by reason of insanity of committing the offense or attempting to commit the offense, or
- (c) A finding not resulting in an acquittal at a hearing for the alleged commission or attempted commission of the offense” (Source: <https://www.isp.state.il.us/sor/>).

Of the 273 case files, only 2 cases met the requirements to register as sex offenders in the State of Illinois. However, only one was registered in the database at the time of death. Each case is further explained in detail in the subsequent paragraphs. These cases are labeled Individual 1 and Individual 2.

Individual 1. This individual was charged with two counts of *battery* [720 ILCS 5/12-3], one count of *aggravated battery* [720 ILCS 5/12-3.05], and one count of *criminal sexual assault* [720 ILCS 5/11-1.20]. These four charges were the only noted law enforcement contact in SCC. Individual 1 pleaded guilty to criminal sexual assault and was sentenced to 10 years in prison. Individual 1 was due to be transferred from a county correctional facility to a state correctional facility. The charges and conviction would have ultimately required Individual 1 to register as a sex offender in the State of Illinois per 730 ILCS 150/2(B) and 730 ILCS 150/2(C). Media reports indicated Individual 1 had a court hearing the day prior, in which a 10-year sentence was handed down. Individual 1 died while in custody in the county correctional facility. Death was recorded as the result of ISH due to hanging/asphyxiation. Individual 1 would have been required to register as a sex offender in the State of Illinois. However, due to the suicide death almost immediately following sentencing, no record was entered into the ISP Sex Offender Registry.

Individual 2. At the time of death due to hanging/suffocation, Individual 2 was homeless and transient. Individual 2 did odd jobs as a means of securing temporary residence and/or monies. Individual 2 was registered as a sex offender with the ISP Sex Offender Registry. Contact with law enforcement in SCC, Illinois dated back to 1988. Individual 2 had nearly 80 prior contacts with local law enforcement dating back to 1988.

Standard Occupational Classification Codes

According to the Bureau of Labor Statistics (BLS) the Standard Occupational Classification (SOC) Codes for 2010 consisted of 461 comprehensive occupational groups with 23 principle groups and 97 secondary groups. Federal statistical agencies use SOC Codes to “...classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data” (BLS, 2010, para. 1). There were 840 comprehensive occupational classifications in which all employees were categorized (BLS, 2010). Occupations may be grouped together if comparable job duties are noted, or in certain circumstances where similar proficiencies or educational backgrounds are noted (BLS, 2010).

All occupations noted in the SCC data were coded using BLS SOC Codes (see Table 4). Several special codes were given to classifications not provided by the BLS or classifications not deemed “occupations” per the BLS such as students (69), unemployed (89), or never employed (99). The following non-SOC codes [59, 69, 79, 89, 97, and 99] were used in other research (see *McIntosh, et al., 2016*) and deemed appropriate for use with this data. The data collected required the use of 22 SOC codes and 7 non-SOC codes. Of the SOC and non-SOC codes used, the five with the largest number of noted suicide deaths were addressed in-depth in the subsequent paragraphs. The leading occupation for suicide in SCC was [SOC 47 – Construction and Extraction] with 55 cases

(20.15 percent), followed by [Code 69 Students] with 22 cases (8.06 percent), followed by [SOC 53 – Transportation and Material Moving] with 16 cases (5.86 percent), next was [SOC 41 – Sales and Related] with 15 cases (5.49 percent), and lastly, [SOC 35 – Food Preparation and Serving Related] with 13 cases (4.76 percent).

Occupation/Occupational Status

The method of suicide within certain occupations can often be linked to occupational access to lethal means (Roberts, Jaremin, & Lloyd, 2013). The use of firearms as a method of suicide is noted in the farming industry, law enforcement (Aamodt & Stalnaker, 2001; Violanti et al. 2008; 2008b) and military professions. Farming occupations have also been known to use pesticides (London, Flisher, Wesseling, Mergler, & Kromhout, 2005; Pickett et al., 1998) and hanging (Bhosle, Batra, & Kuchewar, 2014; Stallones, 1990) as a primary method of suicide. Pharmaceuticals as a means for suicide have been documented in veterinarians (Platt, Hawton, Simkin, & Mellanby, 2010), physicians (Gold, Sen, & Schwenk, 2013) and dentists (Petersen & Burnett, 2007; Roberts, Jaremin, & Lloyd, 2013). The difficulty remains in understanding the role “occupation” has on completed suicide. Some literature suggests additional factors like stress, trauma, socioeconomic factors, demographics, mental illness, maladaptive coping strategies, and even personality traits actually play a significant role in completed suicides with known occupational ties.

The CDC’s National Violent Death Reporting System conducted a study on various occupational categories with the highest and lowest risk for suicide. The study was further addressed by outside authors from the American Psychological Association and several key findings were noted regarding occupations with increased rates of suicide. First, many occupations with increased rates of suicide “are socially isolating, have lower incomes, have lower education requirements, are considered unsteady, are high stress occupations, involve exposure to violent or traumatic events” (Kuhl, 2016, para. 7). Many of these occupations (e.g., farming, maintenance, installation, and repair occupations) were correlated to increased chemical exposure. Exposure to certain chemicals contributes to neurological damage to the brain and may even cause depression, which increases suicide risk (Kuhl, 2016).

The leading five [SOC and/or non-SOC codes] occupations addressed in the section above were: [47, 69, 53, 41, and 35]. Each is explained in detail in the subsequent paragraphs. The following information was also collected and analyzed: gender, race, ethnicity, age range, marital status, prior law enforcement contact, most common means/method of death, and day of the week most deaths occurred. No deaths within these SOC and non-SOC codes were noted as occurring in the workplace. One death was noted in the SCC data as occurring in the workplace during working hours [SOC 33 – Protective Service]. The method noted in this case file was due to firearms.

Construction and Extraction [SOC 47]. Those in the construction and extraction-related trades [SOC 47] accounted for 55 cases. All 55 cases were male. This included 50 White males and all but one was of Non-Hispanic/Mexican American descent and 5 Black males all of Non-Hispanic/Mexican American descent. The age range 20-34 accounted for 18 cases (32.73 percent), 45-64 had 17 cases (30.91 percent), 35-44 had 12

cases (21.82 percent), 65-84 had 5 cases (9.09 percent), 2 cases (3.64 percent) were 85 or older, and 1 case (1.82 percent) was under 20. It was assumed that those in the 85 or older group were retired and not actively working in the profession. However, this was not verified. Twenty-one cases (38.18 percent) were single/never married, 17 cases (30.91 percent) were divorced, 15 cases (27.27 percent) were married, and only 2 cases (3.64 percent) were widowed.

Forty-six cases (83.64 percent) had some prior law enforcement contact within SCC. Nine cases had no prior law enforcement contact. The most common means or method of death was firearms with 21 cases (38.18 percent) followed by hanging with 20 cases (36.36 percent). The following each had 4 cases (7.27 percent): asphyxiation with CO, incised wound or exsanguination, and poisoning. There were 2 cases (3.64 percent) of blunt force trauma. The most common day of the week in order of greatest to least: Friday 11 cases (20 percent), Monday and Thursday each with 8 cases (14.55 percent), Tuesday and Wednesday each with 7 cases (12.73 percent), and Saturday and Sunday each with 6 cases (10.91 percent).

According to the CDC, construction and extraction trades were the second leading industry nationwide in deaths by suicide, with the leading industries being fishing and farming (as cited in New Hampshire Business Review, 2016). Construction and extraction trades were the leading industry noted in the data collected from SCC for completed suicides. Construction-related trades (when compared to non-construction-related trades) showed increased rates of work-related injuries including serious and long-lasting musculoskeletal pain, mental distress, and injury (Dong, Wang, Daw, & Ringen, 2011; Jacobsen et al. 2013; Schwatka, Butler, & Rosecrance, 2012). Findings indicated that mental distress in many working-type populations (to include construction) is largely correlated to injuries sustained on the job and acute and chronic musculoskeletal pain (Demyttenaere et al. 2008; Kessler, Greenberg, Mickelson, Meneades, & Wang, 2001). According to Boschman, van der Molen, Sluiter, and Frings-Dresen (2012) “[w]ork-related musculoskeletal disorders are an important cause of functional impairments and disability among construction workers” (para. 1). Those in construction-related trades are also exposed to chemical (e.g., fumes, dust, gas), physical (temperatures, noises, radiation), and biological exposures (mold, bacteria, blood borne pathogens) (Construction Safety Council, 2012, p. 2).

Exposure to certain chemicals can contribute to adverse effects on all systems of the body (i.e., respiratory, renal, nervous, immune, hepatic, cardiovascular, and the skin) (Agency for Toxic Substances and Disease Registry, n.d.) and can lead to neurodegenerative diseases like Parkinson’s, which adversely affects numerous areas of the brain and body (Bell, 2003). Depressive symptomology is fairly common in those with neurodegenerative diseases. Depression and suicide are closely related. Dr. Charles Nemeroff, Chairman of the Department of Psychiatry and Behavioral Sciences at the University of Miami (2008) explained those who ultimately take their own lives are predominantly diagnosed with a mood disorder or depression (ABC News, 2008, para. 1).

Students [Code 69]. Those classified as students accounted for 22 cases (8.06 percent). Males accounted for 19 cases (86.36 percent) and females accounted for 3 cases (13.64 percent). The race and ethnicity of this category was broken down: 17 (77.27

percent) were White, 5 (22.73 percent) were Black. All 22 were of Non-Hispanic/Mexican American descent. Age range included 15 cases (68.18 percent) under 20 years old and 7 cases (31.82 percent) were 20-34. Those in the under 20 category were in middle school or high school and those 20-34 were in college. The marital status of all 22 was single/never married. Ten cases (45.45 percent) had some prior contact with local law enforcement. Twelve had no prior contact with local law enforcement.

Eleven of the cases (50 percent) used a firearm, 7 cases (31.82 percent) were classified as hanging, 3 cases (13.64 percent) were the result of blunt force trauma [from a freight train or Metrolink train], and 1 case (4.55 percent) was classified as asphyxiation due to poisoning. Of the 11 deaths by firearms, 7 decedents were under 20 years of age. Illinois law states: possessing any firearm or ammunition without a valid Firearms Owner Identification (FOID) card is prohibited (430 ILCS 65/0.01) (from Ch. 38, par. 83-0.1). Parental permission is required for individuals under 21 and only applies to the possession of a long gun (Volokh, 2014). Additional restrictions exist for individuals requesting parental permission (see <http://smartgunlaws.org/licensing-of-gun-owners-or-purchasers-in-illinois/>). The handguns used by decedents under 21 were not possessed legally. Decedents who possessed a long gun may have possessed them legally with parental permission, but this is unknown due to the denial of FOIA requests regarding the SCC data.

The day of the week most prominent for this category was Wednesday with 7 cases (31.82 percent), Thursday with 4 cases (18.18 percent), Saturday with 3 cases (13.64 percent), and Sunday, Monday, Tuesday, and Friday with 2 cases each (9.09 percent). This group was second in the number of completed suicides in SCC. According to the CDC “Suicide is the third leading cause of death among persons aged 10-14, the second among persons aged 15-34 years....” (p. 2) and suicide rates doubled for adolescents aged 10-14 from 2007-14 (2016c). Reasons noted for the dramatic increase in suicide deaths among adolescents 10-14 included: mental health issues, anxiety, bullying, cyber-bullying, abuse, shame, sexuality, sexual orientation, major breakup, personal loss, pressures, grades, hopelessness/helplessness, etc.

Those identified as “students” in regards to this research included those in Kindergarten through College. Those in Kindergarten through Grade 5 were identified as Grade School or Elementary levels, those in Grades 6-8 were identified as Middle School (see Table 2), and High School included Grades 9-12 (see Table 9). College students were those actively attending a college or university level academic institution at the time of death (see Table 9). Subjects identified in the entire student group (i.e., K-College) ranged in age from 13-34 years of age. No subjects under 13 years of age were noted in the data collected from SCC.

Often, young children are not considered to be a suicide risk, but children as young as five have taken their lives (Nadworny, 2016). The problem with youth suicide is much is still unknown about the epidemiology, as younger children are often overlooked in the data. Those included are frequently grouped into larger age representations that may skew trends and age-related distinctions (Bridge et al., 2015). Suicide deaths for children under 15 years of age are extremely rare, but do occur. “In 2012, suicide was the second leading cause of death in adolescents aged 12 to 19 years....” (Bridge et al., 2015), and is a primary cause of death for children under 12 (Tishler, Staats Reiss, & Rhodes, 2007, p. 810). Many believe that very young children are unable to imagine or complete suicide

(Tishler et al., 2007). However, research indicates this is not true. In fact, young children formulate plans, they make attempts, and some even complete suicide (Matter & Matter, 1984; Tishler et al., 2007). Often, very young children are unable to fully comprehend the consequences of their actions. They lack the ability to think in the abstract, which decreases problem-solving abilities and contributes to rigid-type thinking. This results in concepts of causality not being completely established and young people ‘not able to estimate degrees of lethality or outcomes of their self-destructive acts’ (Pfeffer, 1997, as cited in Tishler et al., 2007, p. 811). In the 20-year study conducted by Bridge et al. (2015) rates of youth suicide remained relatively stable. However, significant increases were noted in Black children, especially males and substantial declines were noted in White male youth. The rise in suicides among Black youth has not been noted in previous research and is significant.

Transportation and Material Moving [SOC 53]. Those classified under this category accounted for 16 cases (5.86 percent). All 16 cases were male of Non-Hispanic/Mexican American descent. Fourteen cases (87.5 percent) were White male and 2 cases (12.5 percent) were Black male. Four cases (25 percent) were 20-34, 2 cases (12.5 percent) were 35-44, 5 cases (31.25 percent) were 45-64, 4 cases (25 percent) were noted in the range of 65-84, and 1 case (6.25 percent) was 85 or older. It is assumed that those 85 or older were no longer actively working. However, this was not verified. The marital status of the 16 cases included: 5 (31.25 percent) married, 4 (25percent) each were single/never married and divorced, and 3 (18.75 percent) were widowed.

Eleven cases (68.75 percent) had prior contact with local law enforcement. Five cases had no prior law enforcement contact in SCC. The main means or method of death was firearms with 11 cases (68.75 percent), followed by 2 cases (12.5 percent) each identified as hanging and Poly OD, and 1 case (6.25 percent) identified as asphyxia by CO. The day of the week most prominent for this group was Friday with 5 cases (31.25 percent), Wednesday with 4 cases (25 percent), Saturday with 3 cases (18.75 percent), Tuesday with 2 cases (12.5 percent), and Thursday and Sunday each with 1 case (6.25 percent).

Nationally, workplace suicide deaths within this occupational group increased 54 percent from 2007-08 (BLS, 2009). Data collected from the Census of Fatal Occupational Injuries program on workplace suicides indicates suicide in the workplace is a growing phenomenon. Between 2006 and 2013, approximately 2,000 people took their lives in the

Several occupations have consistently been identified to be at high risk for suicide: law enforcement officers, farmers, medical doctors, and soldiers. The researchers noted that one hypothesis that may explain the increased suicide risk among specific occupations is the availability and access to lethal means, such as drugs for medical doctors and firearms for law enforcement officers. Workplace stressors and economic factors have also been found to be linked with suicide in these occupations. (Arbor, 2015, para. 5)

workplace (BLS, 2009; Harris, 2016; Tiesman et al., 2015). According to Arbor (2015), “... researchers found that workplace suicides were 15 times higher for men than for women and almost four times higher for workers aged 65-74 than for workers 16-24” (para. 4).

In the three years from 2011-13, total workplace suicides for all occupations totaled 781 deaths, with 90 (11.52 percent) being noted in the transportation and material moving occupations (BLS, 2016). None of the 16 noted suicides in the transportation and moving occupations in SCC were noted as occurring in the workplace. Many occupations fall under the umbrella of transportation and moving (e.g., airline and commercial pilots, air traffic controllers, flight attendants, ambulance, bus, and taxi drivers, railroad conductors, crane operators, etc.). In addition, with numerous occupations come unique stressors. For example, airline pilots may suffer from a lack of sleep, depression, addiction issues, high levels of stress, and time away from family. Ambulance drivers (Emergency Medical Technicians and Paramedics are not included in SOC 53) experience fatigue, rotating shifts, sleep disturbances, and are often exposed to death. According to Occupational Safety and Health Administration (2010) the chances of being murdered on the job are 20 times higher for taxi drivers than for other occupations, which in-turn contributes to increased levels of stress. Railroad conductors witness death by accident and suicide, which could contribute to psychological trauma and post-traumatic stress disorder, and many work irregular schedules, affecting the ability to get adequate sleep. Crane operators experience high levels of stress due to the dangerousness of the job. The risk of injury or death is relatively high. These workers are also exposed to numerous weather-related conditions, which could place additional stress on the body and mind.

Sales and Related [SOC 41]. Twelve cases (85.71 percent) were male and 2 cases (14.29 percent) were female. Of the 14 cases, 11 (78.57 percent) were White and 3 (21.43 percent) were Black. All 14 cases were of Non-Hispanic/Mexican American descent. Age ranges 45-64 and 65-84 each had 4 cases (28.57 percent). Ages 20-34 had 3 cases (21.43 percent), 85 and older had 2 cases (14.29 percent), and 35-44 had 1 case (7.14 percent). Those aged 85 or older were assumed to no longer be actively working. However, this was not verified. Marital status included 5 cases (35.71 percent) identified as married, 4 cases (28.57 percent) were divorced, 3 cases (21.43 percent) were single/never married, and 2 cases (14.29 percent) were widowed. Eight (57.14 percent) of the 14 cases had some type of prior contact with local law enforcement. Six cases had no prior law enforcement contact in SCC. The main means or method of death for this group was firearms with 8 cases (57.14 percent), hanging with 3 cases (21.43 percent), 2 cases of asphyxiation by CO, and 1 case of (7.14 percent) Poly OD. The day of the week most prominent for deaths in this group was Tuesday and Wednesday each with 3 cases (21.43 percent), Thursday, Friday, and Saturday each with 2 cases (14.29 percent), and Monday and Sunday each with 1 case (7.14 percent).

Higher rates of depression have been noted in sales and sales-related occupations. Those in sales and sales-related occupations include (but is not limited to): sales workers, cashiers, insurance sales agents, travel agents, telemarketers, real estate brokers, door-to-door sales workers, and news and street vendors. Unique stressors exist for each individual occupation within SOC 41, but several reasons indicated for increased risk of suicide include: pressure to sell, fluctuations in pay due to working on commission, required travel limiting time at home with family, long hours, and high stress (Worth, 2017).

Food Preparation and Serving Related [SOC 35]. Thirteen cases (4.76 percent) were noted in this category. Of the 13 cases, 11 (84.62 percent) were male and 2 (16.67 percent) were female. Nine cases (69.23 percent) were White and 4 cases (30.77 percent) were Black. All 13 cases were of Non-Hispanic/Mexican American descent. Age ranges within this group showed those 20-34 consisted of 7 cases (53.85 percent), 4 cases (30.77 percent) were noted in the 35-44 year age group, and 2 cases (15.38 percent) were noted as 65-84 (15.38 percent). Nine cases (69.23 percent) were identified as single/never married, 3 cases (23.08 percent) were identified as widowed, and 1 case (7.69 percent) was noted as divorced. Ten cases (76.92 percent) had some prior contact with local law enforcement. Three cases had no prior law enforcement contact in SCC. The main means or method of death was firearms with 6 cases (46.15 percent), 3 cases (23.08 percent) were noted as hanging, 1 case (7.69 percent) each of self-immolation, blunt force trauma, asphyxia by helium, and Poly OD. The most prominent day of the week for death within this group was Sunday with 5 cases (38.46 percent), followed by 3 cases (23.08 percent) each noted as Monday and Wednesday, and 1 case (7.69 percent) each was noted as Thursday and Friday.

Many stressors are noted within food service occupations. Workers are often required to be on their feet for hours with limited downtime, pay is low, clientele and management can be demanding, hours are long, turnover is high, etc. In addition, the majority of food service workers employed between 2007-14 were aged 16-34. The largest stand-alone age group being those aged 20-24 (BLS, 2007-14, as cited in National Restaurant Association, 2015). According to the National Restaurant Association (2015):

“... in the late 1970s, roughly 58 percent of 16-to-19-year-olds were in the labor force. This participation rate remained above 50 percent until 2001, when it started trending downward. The Great Recession exacerbated this decline, with the teen labor force participation rate plunging from 41.3 percent in 2007 to just 34.0 percent in 2014 – a record low. The net effect was a decline of 1.4 million teenagers in the labor force between 2007 and 2014, a development that was reflected in the restaurant workforce. In 2007, 16-to-19-year-olds represented 20.9 percent of the restaurant workforce. By 2014, these teens made up only 16.6 percent of restaurant employees. (para. 4-5)

The second foremost cause of death in the U.S. for those aged 10-24 is currently suicide (CDC, 2012). However, according to the American Academy of Pediatrics (2016), suicide was actually the third leading cause of death for those aged 15-19 just several years earlier in 2007. Those between 16 and 24 are still widely noted within food service type occupations. Food service jobs are often secured by a younger demographic who often lack work experience, higher levels of education (Johnson, Shin, Feinstein, & Mayer, 2003), and general life experience. Many within these groups may lack appropriate coping skills to deal with stress, anger, and frustration and may act out in inappropriate ways. Many young people are securing employment for the first time, witnessing personal independence, and may be facing additional stress due to juggling work, school, and extracurricular activities. Another thing to consider, “[f]ifty percent of cases of mental illness begin by age 14, and three-quarters begin by age 24” (American Psychiatric Association, 2015, para. 2).

National Suicide Data

Suicide deaths nationwide in 2015 were just over 44,000 (CDC, as cited in NIMH, 2015), with almost half resulting from firearms and a quarter resulting from suffocation. Firearms were the leading means or method used by males and females (CDC, as cited in NIMH, 2015). In 2015, approximately 10 million adults in the U.S. thought seriously about taking their lives. Nearly 3 million made a suicide plan and approximately 1.5 million more made an attempt (Substance Abuse and Mental Health Services Administration, as cited in NIMH, 2015).

In the 13 years from 1986-99, suicide deaths in the U.S. were steadily declining (Curtin et al., 2016). However, from 1999-2014, rates of death by suicide had risen consistently. This increase was seen in juveniles, young adults, and middle-aged adults. A 24 percent increase in suicide deaths was seen in the age-adjusted rates of death from 1999 to 2014 (NCHS, 2014 as cited in Curtin et al., 2016). Males had a rate of death in 1999 of 17.8 per 100,000 and 20.7 per 100,000 in 2014. Females had a rate of 4 per 100,000 in 1999 and 5.8 per 100,000 in 2014. The 2014 age-adjusted rate of suicide for males and females was 13 per 100,000 (NCHS, 2014, as cited in Curtin et al., 2016).

State of Illinois

Illinois is the 5th largest state in population with 12.88 million residents (U.S. Census Bureau, 2016). Illinois has 102 counties (U.S. Census Bureau, 2016). St. Clair County is the oldest county and the 9th largest in population with 264,052 residents per U.S. Census Bureau reporting from 2010-15 (U.S. Census Bureau, 2016). “Between 2009 and 2012, Illinois cut \$113.7 million in funding from mental health services” (Kadner, 2015, para. 3). During the same timeframe, emergency room visits increased 19 percent for those experiencing some type of psychiatric crisis (Kadner, 2015, para. 4) and numerous mental health facilities throughout the State closed. Monies once allocated to treat mental health issues were diverted to emergency departments, prisons, and jails (Kadner, 2015). However, correctional facilities were ill equipped to handle the influx of those with mental health issues, and many more lacked necessary funding and clinical expertise needed to adequately treat those who suffer.

Illinois Suicide Rates

Illinois suicide rates were collected from 2006-14 (as data for 2016 were not yet available) from National Vital Statistics Reports titled: *Deaths: Final Report for (2006-14)*. These yearly reports provided copious data, but only specific state-related data, suicide rates, and age-adjusted rates of suicide were used (see Table 5). Suicide deaths from all 50 states in 2006 totaled 33,300 (see Table 6), with 1,010 from Illinois (Heron et al., 2009). Just nine years later, deaths nationwide were over 44,000 (CDC, as cited in NIMH, 2015). In 1999, suicide was the 13th leading cause of death in Illinois with 1,012 deaths (Illinois Department of Public Health [IDPH], 1999-2014). Suicide deaths in Illinois fluctuate between the 11th and 12th leading cause of death. Based on the number of suicide deaths alone (*not rates or age-adjusted rates*), Illinois ranked 8th in 2006. By 2009, suicide was the 11th leading cause of death in Illinois with 1,166 deaths. Numbers

in 2015 showed suicide was still the 11th leading cause of death with deaths totaling 1,362 (IDPH, 2015). According to the *American Health Foundation 2015 Annual Report*, Illinois was 6th in actual number of suicide deaths nationwide with rates of 10.3 per 100,000 (United Health Foundation, 2016).

City of Death. City of death was noted in order to identify where the crude majority of suicide deaths occurred in SCC between 2006-16. City of death for the purpose of this paper indicates where the individual was located at the time of death (TOD). This is not where the decedent was transported (i.e., hospital, coroner's office, funeral home, etc.) after death. Thirty cities, townships, villages, and/or unincorporated parts of SCC were noted in the collected data. The top six (see Table 7) in order of the highest to lowest number of suicide-related deaths were: **Belleville** (88); **Fairview Heights** (25); **East St. Louis** (19); **O'Fallon** (18); **Cahokia** (15) and **St. Clair County (SCC) Township** (14), and **Swansea** (12) (see Table 4). *East St. Louis accounted for 19 total suicides. However, the cities of Centreville (3), Alorton (2), and Washington Park (2) were listed separately in Table 7, but if added to the numbers for East St. Louis, would rank second on the list with a total of 26 suicides.* Table 7 listed all cities, townships, villages, and/or unincorporated parts of SCC by the indication made on the United States Standard Certificate of Death (USSCD). For the purposes of awareness and prevention measures, smaller cities, villages, townships, and unincorporated areas of SCC were grouped into five zones (see Figure 3). This was done to reach a larger audience in awareness and prevention efforts and to provide a clearer look at the areas of increased suicide risk in SCC.

Zone I included the following cities (in alphabetical order): Alorton, Brooklyn, Caseyville, Collinsville, East St. Louis, Fairmont City, Fairview Heights, Lebanon, O'Fallon, Sauget, Summerfield, and Washington Park. **Zone II** included: Belleville, Cahokia, Centreville, Dupo, East Carondelet, Mascoutah, New Baden, Shiloh, and Swansea. **Zone III** included: Columbia, Freeburg, and Millstadt. **Zone IV** included: Fayetteville, Smithton, New Athens, and St. Libory. **Zone V** included: Lenzburg and Marissa.

The largest numbers of completed suicides (noted by crude numbers only) were noted in Zone I and Zone II (see Table 7 and Figure 5). The cities with the largest number of suicides in Zone I were (in order from highest to lowest) Fairview Heights (25 cases), East St. Louis (19 cases), and O'Fallon (18 cases). Zone II cities included: Belleville (88 cases), Cahokia (15 cases), and Swansea (12 cases). The top three cities in Zone I accounted for 62 suicide deaths (22.71 percent). The top three cities in Zone 2 accounted for 115 suicide deaths (42.12 percent). Together, Zone I and II had 177 completed suicide deaths accounting for approximately 65 percent of all the suicide deaths in SCC.

Population-adjusted rates of suicide per 1,000 were also noted (see Table 7B). The top six cities (see Table 7B) from highest to lowest included: **Floraville** (18.77); **Lenzburg** (9.60); **New Memphis** (2.99); **East Carondelet** (2.11); **Belleville** (2.09); and **Millstadt** (2.05). Based on population-adjusted rates of suicide in SCC, Zone II, IV, and V noted the highest rates of suicide. The following cities were noted in Zone II: Belleville, East Carondelet, and New Memphis. The suicide noted in New Memphis was part of unincorporated SCC. Zone III included the City of Floraville and Zone V included the City of Lenzburg.

Season/Seasonality of Death

Oftentimes, the holidays (e.g., the time from Thanksgiving Day to New Years Day in the U.S. and Canada) are thought to account for the largest number of suicide deaths. Many believing that loneliness, time away from family and loved ones, or even being cooped up inside are to blame. However, December actually has the lowest suicide rates nationwide and has for many years (Annenberg Public Policy Center, 2010). In fact, spring and summer actually account for the highest number of suicides (Maes, 1993; Palmer, 2017; Woo, Okusaga, Postolache, 2012). Numerous reasons (e.g., allergens, environmental factors, geographical location, amount of sunshine, etc.) have been given for the increase in suicide deaths during these two seasons (see Table 8). However, some research indicates suicide rates during the spring and summer are actually declining.

Day of Death

National suicide statistics and similar research vary on which day of the week most suicides occur. Durkheim (1951) noted more suicides occurred at the beginning of the week rather than the end. Center for Disease Control and Prevention statistics from 1999 indicated that most suicides occurred on Monday. Another five-year study by the Social Psychiatry and Psychiatric Epidemiology from 2000-04 collected data from all 50 states. The data concluded that fewer suicides occurred in the first part or last part of the week, with most completed suicides occurring on Wednesday (Carroll, 2009). The most prominent day for suicide in SCC from 2006-16 was Wednesday with 49 completed suicides (17.95 percent), followed by Monday and Friday each with 42 (15.38 percent), Thursday with 40 (14.65 percent), Tuesday with 38 (13.92 percent), Sunday with 36 (13.19 percent) and Saturday with 26 (10 percent).

Month of Death

The two months with the highest crude number representation of suicide deaths in SCC were May – (in the following years with the number of cases in parenthesis) 2008 (8); 2014 (5); and 2015 (4) and October – (in the following years with the number of cases in parenthesis) 2016 (5); 2010 (6); and 2011 (6) (see Table 8). The two months with the largest overall number of suicide deaths from 2006-16 were May with 35 and April with 31 (see Table 8). These findings were consistent with national data in regards to the number of suicide deaths in spring months, but not for the summer months. National data indicates spring and summer months have the largest number of deaths by suicides (Maes, 1993; Woo et al., 2012), however some research notes drops in these months with surges at other times of the year.

Year of Death

Data from 2006-16 was further assessed based on the National Vital Statistics Report for each year. Additional information collected included: total suicides per year, percentage of suicide deaths in relation to overall death, life expectancy age, and the ranking of suicide as a leading cause of death (see Table 5 and Table 6). The deadliest

year in the data collected from SCC was 2011 with 36 cases followed by 2007 with 32 cases (see Table 8). Two years noted with the lowest number of total suicide deaths were 2015 with 15 cases and 2012 with 19 cases (see Table 8). Inconsistencies were noted in the total number of suicide deaths in the SCC data and the numbers recorded with the Illinois Department of Public Health. These inconsistencies were more than likely due to cases that were pending, under investigation, or incomplete at the time of data collection.

Time of Death

Time of death (TOD) is noted on the USSCD and is crucial in determining when death occurred. For the purpose of this research, TOD indicated the time noted by the medical examiner, coroner, or deputy coroner on the USSCD. Time of death is noted by the hour, minute, and whether it is Ante Meridiem (AM) [Midnight to Noon] or Post Meridiem (PM) [Noon to Midnight]. Time of death has been noted in suicide research as significant to the increased risk of death by suicide.

Ante Meridiem

Ninety-six cases (35.16 percent) were identified as occurring in the Ante Meridiem (AM). Ante Meridiem is noted as the time from Midnight until Noon. Specific timeframes have been noted as more common in suicide deaths especially among those suffering from “circadian factors” and insomnia (American Academy of Sleep Medicine [AASM], 2014), which are often noted between Midnight and 4 AM (AASM, 2014). These results suggest that not only are nightmares and insomnia significant risk factors for suicidal ideation and behavior, but just being awake at night may in and of itself be a risk factor for suicide’ (Michael Perlis, PhD., Department of Psychiatry associate professor and Director of the Penn Behavioral Sleep Medicine Program at the University of Pennsylvania at Philadelphia, as cited in AASM, 2014). Millions of Americans struggle with insomnia, which has been correlated to increased risk of depression, suicidal ideation, suicide attempts, and completed suicide. The risk for suicidal ideations and completed suicide are increased in those with depression (Bernert & Joiner, 2007; Bernert, Kim, Iwata, & Perlis, 2015; Krakow et al 2011; Mahgoub, 2009).

Of the 273 cases collected from SCC, only 10 cases (3.66 percent) occurred between Midnight and 4 AM Central Standard Time. Current research indicates the timeframe from Midnight to 4 AM is the time in which most suicide deaths are most likely to occur (AASM, 2014). The study suggested that peak times indicated a dramatic increase in suicide deaths after Midnight, but especially during the hours of 0200-0259 AM (AASM, 2014). Only 2 cases (.73 percent) from the SCC data occurred between 0200 and 0259 AM and was not representative of previous study findings. In fact, nearly 65 percent of all suicide deaths noted in the SCC data occurred between [1201 PM and Midnight]. Seventy-three cases (26.74 percent) occurred between [601 AM and Noon] and 23 cases (8.42 percent) between [1201 AM and 6 AM], so 96 cases (35.16 percent) occurred in the first half of the day [AM].

Post Meridiem

Of the 273 cases, 177 (64.84 percent) were labeled as occurring in the last half of the day or the Post Meridiem (PM). Post Meridiem is noted as Noon until Midnight. The largest number of suicide deaths occurred between [1201 PM and 6 PM] with 90 cases (32.97 percent) followed by 87 cases (31.87 percent) between [601 PM and Midnight]. These numbers were not representative of national statistics that showed a majority of suicide deaths occurring between Midnight and 4 AM.

Additional risk factors were seen in those working shiftwork, rotating shifts, or night shifts (Price, 2011). According to the BLS, the number of Americans represented in these types of schedules is over 15 million (as cited in Price, 2011). According to the Institute of Medicine (2006), some 50-70 million adults in the U.S. suffer from disorders of sleep and wakefulness. In addition, the CDC (2016b) estimates over 30 percent of adults in the U.S. are not getting adequate amounts of sleep on a continual basis. Sleep is vital to overall health and wellness. However, the lack of sleep and issues of insomnia often gain more attention in the form of vehicular and work-related accidents and injuries. Research has shown that sleep deprivation produces similar or even worse outcomes to being under the influence of alcohol (Williamson & Feyer, 2000). In fact, the continual lack of sleep has been linked to diabetes, hypertension, obesity, and depression (Institute of Medicine, 2006). Many things disrupt sleep (i.e., alcohol, medications, caffeine, nicotine, medical issues, pain, circadian rhythm abnormalities, light from electronics, etc.). Even elements inside the sleeping environment such as too much light, too much or not enough white noise, and being too warm or cold can disrupt the body's ability to relax and fall asleep. Sleep is vital, but understanding the role it plays in overall mental health, as it relates to increased suicide risk is still being discovered.

Place of Death

The place of death (POD) for many circumstances is where the "...decedent was pronounced dead" (HHS, 2003, p. 53). The POD for this research indicates where the victim was discovered at the TOD. There are circumstances in which the decedent may be transported to a hospital or morgue. This may ultimately be noted as the POD. The POD could be noted as inside the residence, indicated by a specific room or area. It could be noted outside the primary residence, indicated by an attached or detached garage, shed, backyard, or in vehicle on the property, etc., or a non-residential location (e.g., hotel, motel, roadway, cemetery, business, waterway, alternative residence, etc.), and may or may not be noted inside a vehicle.

Two hundred and seven cases (75.82 percent) were located either inside or outside (on property) the decedent's primary residence. The majority of cases were located inside the primary residence. Forty-five cases (21.74 percent) were located in a bedroom (often noted as the main or master bedroom or a bedroom belonging to the decedent), 22 cases (10.63 percent) were located in the living room, 15 cases (7.25 percent) in the bathroom, 12 cases (5.80 percent) in the basement, and 14 cases (6.76 percent) in the front room area. Those noted outside the primary residence were predominantly located in a shed/garage/barn or yard area. Forty-two cases (19.81 percent) were located in an exterior

shed/garage/or barn on the property and 22 cases (10.63 percent) were located in the yard of the primary residence. Sixty-six cases (24.18 percent) were located somewhere other than inside or outside the decedent's primary residence. The majority of these cases were located in hotels or motels, businesses, wooded areas, and cornfields. The remaining cases were noted as being incarcerated, found in or near public parking garages, cemeteries, or public parks. One case was noted as occurring in the workplace during working hours.

Suicide Means, Method, or Classification

Manner of death falls into one of the following categories: *natural, homicide, accidental, suicide, pending investigation, or could not be determined* (per Rev. 11/2003). Data was only collected on deaths in SCC classified by the medical examiner/coroner's office as *suicide* from 2006-16. The CDC classifies suicide in four broad categories: *firearm, suffocation, poisoning, and other mechanisms*. Each case was given a classification from the International Statistical Classification of Disease and Related Health Problems (ICD-10) 10th edition. Classification codes per ICD-10 for external causes of morbidity and mortality are labeled V01-Y98. Codes for Intentional Self-Harm (ISH) are classified within these codes as X60-X84 (Xu, Kochanek, & Tejada-Vera, 2009; Xu, Murphy, Kochanek, & Bastian, 2016). Each case was given an ICD-10 code, however some causes of death required dual codes. For example, this could be the combination of drugs and hanging or the ingestion of alcohol and jumping from a high place. Data was coded using ICD-10 codes for ISH per the WHO version 2016 (see Figure 3).

Firearm related deaths include the discharge of [X72-X74] handguns, rifles, shotguns, larger firearms, and unspecified firearms. Of those deaths by firearms, X72 accounted for 91 deaths (66.91 percent), X73 for 33 deaths (24.26 percent), and X74 had 12 deaths (8.82 percent). Firearms were noted as the leading means or method of death in the SCC data.

Of the 273 cases, firearm-related suicide deaths classified as X72-X74 totaled 136 (49.82 percent). Ninety-one cases (66.91 percent) were noted in the category X72. Nineteen (20.88 percent) of the 91 cases occurred in a bedroom in the main residence, 11 cases (12.09 percent) in the living room, 8 cases each in the yard and garage/shed (8.79 percent), bathroom of the primary residence and or a roadway (not near the primary residence) each with 5 cases (5.49 percent), kitchen and driveway of residence each with 4 cases (4.40 percent), the remainder were noted in the basement of the residence, hotel/motel, business, wooded area, parks, front room or front porch of primary residence.

Thirty-three cases (24.64 percent) were noted in category X73. The bedroom was also noted as the most prevalent place in the residence with 10 cases (30.30 percent), followed by wooded areas or cornfields (not indicated as the primary residence) with 5 cases (15.15 percent), and yard, living room, and bathroom of the primary residence each with 3 cases (9.09 percent). The remaining deaths were noted in the basement area or garage of the primary residence. The final 12 cases (8.82 percent) were noted in category X74. Three cases (25 percent) were located in the front room or front porch areas of the primary residence. The second noted location followed by the bedroom of the primary

residence or hotel/motel (not noted as the primary residence, but it is unknown if the victim was residing there at the TOD) each with 2 cases (16.67 percent), included the yard, a parking lot (not at the main residence), driveway and living room (both noted as the main residence).

Suffocation deaths include [X70-X71]: *hanging, strangulation, suffocation, drowning, and submersion*. The deaths in these two groups showed X70 with 75 deaths and X71 accounted for 2 deaths, totaling 77 deaths (28.21 percent). Eight cases labeled X70 noted dual ICD-10 codes. The most common means or method included: rope or extension-type cords, belts, and dog collars or leashes. The use of certain means and/or methods in completed suicide (i.e., dog collars, leashes, and belts) seems to indicate a certain level of impulsivity. Of the five cases noted as incarcerated at TOD, three cases used bed sheets, one case used a towel, and one case was noted as combined acute toxicity (i.e., Tramadol and ethanol).

Some argue the act of suicide often involves much planning (Smith et al., 2008), while others argue the act is often impulsive during times of heightened crisis and vulnerability. “Recent research has begun to clarify the role of impulsivity in suicidal behavior. Though people who attempt suicide tend to have higher levels of trait impulsivity, the majority of these people do not attempt suicide “impulsively,” and in fact have prior plans regarding their attempts” (Smith et al., 2008, p. 14). Though planning may go into the completed act (e.g., choosing a means or method, writing a note, putting personal affairs in order), possibly occurring month or even years preceding the event, there may be impulsivity in the moment of heightened distress or crisis leading to one choosing to follow through. Planning (i.e., long-term) and impulsivity (short-term) should be addressed, to better understand that planning on one hand does not and should not discount an act done on impulse, even when planning was noted.

Poisoning deaths include [X60-X69] *the intentional self-poisoning and exposure to: nonopioid analgesics, antipyretics, antiinflammatories, antiepileptic, sedative-hypnotic, antiparkinsonism, psychotropic drugs, narcotics, psychodysleptics, other drugs acting on the autonomic nervous system, unspecified drugs, medicaments, biological substances, alcohol, other gases and vapours, pesticides, and other unspecified chemicals and noxious substances*. This group has 10 subcategories, but only three were noted: X61 [intentional self-poisoning by exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified] with 2 cases (3.92 percent), X65 [intentional self-poisoning by exposure to alcohol] with 4 cases (7.84 percent), and X67 [intentional self-poisoning by exposure to other gases and vapours] with 22 cases (43.14 percent) as the main cause of death. Nine cases noted a secondary ICD-10 code classification. Twenty-two cases were given a unique code identifier (i.e., XOD). This unique code identifier represented a portion of those deaths labeled Poly OD, but those labeled XOD were additionally noted as one of the following: combined acute toxicity, acute ethylene glycol intoxication, or a combination of ethanol and drugs. One death was noted by ICD-10 code T59 as death by sulfide gas. Deaths by poisoning totaled 51 (18.68 percent). Of the 273 cases, 166 (60.81 percent) had some type of drug and/or alcohol in the system at the time of death.

Other mechanisms include ISH by: *explosive material, smoke, fire, flames, steam, hot vapours, hot objects, sharp or blunt objects, jumping from a high place, jumping or lying before a moving object, crashing a motor vehicle, other specified means [caustic*

substances, except poisoning, crashing of aircraft, electrocution, and unspecified means (ICD-10, as cited in WHO, 2016). Other mechanisms include X76-X84. There were 18 cases (6.59 percent) noted as the main means or method of death: X76 [Intentional self-harm by smoke, fire and flames] had 1 case (5.56 percent), X78 [Intentional self-harm by sharp object] had 6 main cases (33.33 percent) (1 as a secondary means), X80 [Intentional self-harm by jumping from a tall place; including intentional fall from one level to another had 2 cases (11.11 percent), and X81 [Intentional self-harm by jumping or lying before a moving object] had 9 cases (50 percent).

The data collected showed firearms were the leading method used, accounting for 136 cases (49.82 percent). Second leading method used was suffocation with 77 cases (28.21 percent), followed by poisoning with 51 cases (18.68 percent), and other mechanisms with 18 cases (6.59 percent). *Nine cases noted dual ICD-10 classifications.* Regardless of the method used, reducing access to any lethal means is imperative. This is particularly true during a time of crisis (Sarchiapone et al., 2011). The restriction of lethal means (i.e., firearms, pesticides, certain pharmaceuticals, barriers to bridges and overpasses, etc.) has been shown to reduce overall rates of suicide (Mann et al., 2005). Even reducing the accessibility of alcohol in certain geographic areas has been shown to reduce overall suicide rates in some instances (Mann et al., 2005). Rates of alcohol use and suicide are prevalent worldwide, especially in disorders associated with alcohol consumption. Even though suicide and alcohol use are associated, both occur from a host of influences and remain multifaceted occurrences (Flensburg-Madsen et al., 2009; Pompili et al., 2010).

According to researchers at the University of California, Los Angeles, (UCLA) approximately 30 percent of completed suicides indicated high concentrations of alcohol in the system prior to death (Pedersen, 2015, para. 1). Dr. Mark Kaplan, study leader and UCLA professor of social welfare explained that data regarding alcohol use and suicide showed that suicidal individuals often abuse and misuse alcohol (as cited in Pedersen, 2015). Suppression of the central nervous system due to alcohol consumption may make completion of the act easier. In addition, alcohol impairs judgment and leads to impulsive behavior (Pompili et al. 2010; Redfield Jamison, 1999). “Alcohol abuse is a means of easing one’s psychological stress but, at the same time, impacts on all other factors, rendering suicide more likely” (Pompili et al. 2010, p. 1414).

Freedom of Information Request

A Freedom of Information Act (FOIA) request was made inquiring about legal firearms ownership for the 136 cases of suicide by firearms in SCC. The initial request was denied via 5ILCS 140/7.5(v), stating:

Name and information of people who have applied for or received Firearm Owner's Identification Cards under the Firearm Owners Identification Card Act or applied for or received a concealed carry license under the Firearm Concealed Carry Act, unless otherwise authorized by the Firearm Concealed Carry Act; and databases under the Firearm Concealed Carry Act, records of the Concealed Carry Licensing Review Board under the Firearm Concealed Carry Act, and law enforcement agency objections under the Firearm Concealed Carry Act.

So, even if you provided the name of each individual, our office could not provide the information you are seeking about whether or not they possessed a valid FOID card or not. (E. Davis, personal communication, May 8, 2017)

A second FOIA request was made inquiring only about the number of valid Firearms Owner Identification (FOID) cards possessed prior to death. Specific personal information was not requested, just the percentage of the 136 cases in which firearms were the leading cause of death. The following information was provided to the FOIA Officer in a spreadsheet: first name, middle initial, last name, date of birth, and date of death of the 136 firearm-related suicide deaths in SCC. However, a second request was also denied citing:

You have the right to have the denial of your request reviewed by the Public Access Counselor (PAC) at the Office of the Attorney General (5 ILCS 140/9.5(a)).... You also have the right to seek judicial review of your denial by filing a lawsuit in the State circuit court (5ILCS 140/11).

5 ILCS 140/ 7(1)(a) ? Information specifically prohibited from disclosure by State law, in that an Agreed Order Entering a Permanent Injunction entered in Illinois State Rifle Association et al. vs. The Department of State Police, Peoria County Circuit Court No. 11-CH-151, prohibits the release of the requested information.

5 ILCS 140/ 7.5(v) ? Names and information of people who have applied for or received Firearm Owner's Identification Cards under the Firearm Owners Identification Card Act or applied for or received a concealed carry license under the Firearm Concealed Carry Act, unless otherwise authorized by the Firearm Concealed Carry Act; and databases under the Firearm Concealed Carry Act, records of the Concealed Carry Licensing Review Board under the Firearm Concealed Carry Act, and law enforcement agency objections under the Firearm Concealed Carry Act.140/9.5(a)). (E. Davis, personal communication, May 25, 2017)

The FOIA request was made to determine if the decedent legally possessed the firearm noted in the case file as the method of death. Suicide deaths identified as “under 20” that used a handgun could not have been legally possessed by the decedent. Seven cases involved individuals under 20. Five of these cases involved the use of a handgun. A handgun cannot be legally possessed by anyone under 21 in the State of Illinois. Two cases noted as under 20 involved the use of a “long gun” (i.e., shotgun or rifle). A long gun can be legally possessed with written parental consent for those under 21, however, it is unknown if either of the “long guns” were legally possessed by the decedents.

In addition, a causal relationship has been noted between firearms in the home and an increased risk for both homicide and suicide (Anglemyer, Horvath, & Rutherford, 2014; Brent & Bridge, 2003; Hepburn & Hemenway, 2004). However, the relationship was stronger when addressing suicide risk. Anglemyer et al. (2014) further explained that the use of a firearm to complete suicide and in cases of homicide might provide insight

into the impulsive nature of both events. An increased risk of completed suicide within adolescent populations was noted in homes where firearms were present, unsecured and loaded (Anglemyer et al., 2014).

Hospitalization and Transitional Facilities

Eight of the 273 cases were noted as having been hospitalized and were released shortly preceding death. Six of the eight cases noted hospitalization due to mental health-related issues. Two cases noted medical issues most likely age-related due to injury or illness, however this was not verified. The demographics of those hospitalized for mental health-related issues included: 4 male and 2 female, all White and of Non-Hispanic/Mexican American descent. Five of the six cases were noted as single/never married and one was married. The youngest was 18 and the eldest was 55.

Four of the six completed suicides with known mental health issues occurred just days after release from hospitalization. Two cases did not note the timeframe between post-discharge and completed suicide. One case was noted as on a temporary pass from a transitional facility (i.e., halfway house). “One-third of all suicides among patients with mental disorders occur within three months of discharge from an inpatient psychiatric unit” (Watts, 2016, para. 1). This is especially true with limited or no professional follow-up care. One study showed that those at greatest risk for suicide post-discharge were those suffering from “depressive disorders and bipolar disorder” (as cited in Watts, 2016, para. 2).

Missing/Missing and Suicidal/Wanted Persons

Only cases identified as *missing*, *missing and suicidal*, or *wanted by law enforcement* prior to death were noted in this section. Cases reported to law enforcement as missing or missing and suicidal by family and friends after death were not included. Ten cases were reported as missing subjects or missing and suicidal prior to death. One case was noted as wanted by law enforcement in which an Illinois State Police Emergency Radio Network broadcast was dispatched. The timeframe between the report of a missing or missing and suicidal individual and discovery of the decedent ranged from the same day to approximately one month.

A retrospective cohort study out of Australia compared suicide deaths of individuals reported as missing and other cases of suicide in which individuals were not reported missing prior to completed suicide (Sveticic, Too, & De Leo, 2012). Study results indicated that individuals missing prior to taking their own lives were more likely to die by “... motor vehicle exhaust toxicity, jumping from height, or drowning” (Sveticic et al., 2012, p. 3). The study showed the majority of those who went missing had not lived alone at the time of death, but were “... more likely to be institutionalized” (Sveticic et al., 2012). In addition, those who went missing, according to the study were not physically sick, nor did they suffer from problematic alcohol consumption compared to those not reported as missing or missing and suicidal prior to death. Those who went missing were however, more likely to have verbalized intentions prior to completion of the act (Sveticic et al., 2012).

In-Custody Suicide Deaths

Of the 273 cases, 5 cases (1.83 percent) were noted as suicide while incarcerated. All 5 cases were male. Three (60 percent) were White males and 2 (40 percent) were Black males. Three cases (60 percent) were noted as death due to suffocation as a result of hanging. One case (20 percent) was noted as asphyxiation due to hanging. One case (20 percent) was noted as combined acute toxicity. The case of combined acute toxicity involved an individual arrested for disorderly conduct. An unknown individual (identified in the case file) advised police that the subject consumed a large number of pills (later identified as Tramadol) and ingested ethanol in an attempt to take his life. The subject denied ingesting any pills and/or alcohol and was ultimately taken into custody. No medical care was noted in the case file and the subject subsequently died in custody.

The timeframe between incarceration and death by suicide in the five cases ranged from 2 days to 40 days. The case identified as 40 days from incarceration to completed suicide involved an individual that received notification the day prior that he would be serving a 10-year prison sentence for aggravated criminal sexual assault and would subsequently be transferred to a state facility. The individual died as a result of asphyxiation due to hanging. Three cases involved the use bed sheets and 1 case involved a bath towel used in hanging. One case involved the ingestion of ethanol and tramadol (prior to incarceration) and was identified as death by combined acute toxicity.

According to Thigpen, Beauclair, Hutchinson, & Zandi, (2010), the majority of completed suicides while incarcerated were found hanging with bedding or clothing. Two fundamental sources for suicide while incarcerated have been noted by subject matter experts and include: (1) settings favorable to conduct associated with suicide and suicidal ideation and; (2) the incarcerated individual is suffering from some type of crisis situation (Bonner, 1992, 2000; Thigpen et al., 2010; Winkler, 1992).

From the inmate's perspective, certain features of the jail environment enhance suicidal behavior: fear of the unknown, distrust of an authoritarian environment, perceived lack of control over the future, isolation from family and significant others, shame of incarceration, and perceived dehumanizing aspects of incarceration.... certain factors are prevalent among inmates facing a crisis situation that could predispose them to suicide: recent excessive drinking and/or drug use, recent loss of stabilizing resources, severe guilt or shame over the alleged offense, current mental illness, prior history of suicidal behavior, and approaching court date. In addition, some inmates simply are (or become) ill equipped to handle the common stresses of confinement. (Thigpen et al., 2010, p. 1)

Four suicides occurred while incarcerated the St. Clair County Jail and one case while incarcerated in the East St. Louis Jail. The data in this section were combined, as both facilities are located in SCC. Three cases were noted as occurring in the PM with times between [6 PM and Midnight] and two cases were noted between [6 AM and Noon]. The most prominent day of the week in SCC for suicide while incarcerated was Thursday with 2 cases, and Wednesday, Friday and Sunday each with 1 case.

Rates of inmate suicide nationwide while incarcerated in local jails increased 9 percent from 2012-13, and suicide was the principal cause of death in local jails from 2000-13 (Noonan, Rohloff, & Ginder, 2015). However, in-custody suicide deaths are on the decline nationwide. Many jail administrators believe this decline is due in part to enhanced policies and procedures used to monitor suicidal individual and things like close-circuit television.

The five cases noted in the SCC data ranged in age from 19-58. Approximately 60 percent of inmate suicides in local jails nationwide from 2000-13 were between the ages of 25 and 44 (Noonan et al., 2015). St. Clair County Sheriff Richard Watson explained training on preventing in-custody suicide deaths is provided to all correctional officers in the SCC facility. However, Watson says one of the main reasons in-custody suicide deaths in the SCC facility are relatively low, is the high level of respect given to all inmates. Watson explained that respect pays dividends. In fact, several weeks prior, Watson explained an inmate notified officers that another inmate was suicidal. This prompted officers to get the inmate immediate mental health assistance. In addition to staff training, numerous policies and procedures are in place regarding inmate placement in quiet rooms and suicide watch while incarcerated in the SCC facility (see Figure 6).

According to the National Alliance on Mental Illness [NAMI], n.d.), individuals experiencing a mental health crisis are more likely to encounter law enforcement than to receive much-needed mental health care. This results in over 2 million individuals suffering with mental illness being incarcerated every year (NAMI, n.d., para. 1). Some individuals become involved in the legal system due to mental health issues. Sadly, incarceration often exacerbates these issues and may place these individuals at risk for further victimization. Prevention measures are extremely important. However, adequate mental health services are desperately needed for those currently incarcerated. In addition, services are also needed for the mentally ill who face possible incarceration and would be better served by a mental health clinician through professional treatment.

Suicide Notes, Verbal Threats, and Social Media Communication

Of the 273 cases, 117 cases (42.86 percent) made some type of verbal or written threat of self-harm prior to completion of the act. Some cases involved both verbal and written threats. Sixty of the 117 cases (51.28 percent) made verbal threats, either by phone (i.e., phone call) or in person to family members, friends, or significant others. Numerous reasons or explanations were noted in the verbal threats (e.g., to stop the pain, chronic pain, anniversary dates, dissolution of a relationship, addiction issues, job loss, divorces/relationship issues, financial strain, terminal illness, fights/arguments, feeling like a burden, and mental health issues). Fifty-seven cases (48.72 percent) left some type of handwritten note, text message, social media post, last will and testament, or last wishes.

One case involved the use of spray paint to leave a message on a wall inside the primary residence. The primary residence was a shed that had been converted into a loft apartment. Another case involved the use of a piece of paper and a highlighter and yet another the back of a prescription receipt. These cases bring to light some indication of impulsivity in the act. In addition, the term “impulsive” is described differently in terms of the correlations to suicide. “Some researchers defined impulsivity of suicide attempt

using duration from first ideation to their attempt... other researchers defined as absence of proximal planning and preparations” (Brown, Overholser, Spirito, 1991; Simon, Swann, Powell, Potter, Kresnow, & O’Carroll, 2001, as cited in Lim, Lee, & Park, 2016, p. 390). The items used (e.g., spray paint, highlighter, prescription receipt) were in close proximity to the victim at the time of crisis.

Research indicates somewhere between 3 and 42 percent of suicide victims leave some type of note (Paraschakis, Douzenis, Michopoulos, & Lykouras, 2012). Those who leave a note often provide some insight into their psychological mindset near the time of death or circumstances surrounding why death by suicide may have seemed like a viable option (Perry, 2017). Notes may provide solace for loved one’s by providing additional insight regarding reasons and motives behind the act (Ho, Yip, Chiu, & Halliday, 1998). Additionally, notes may also place blame or name individuals who might have contributed or were perceived to have contributed to the circumstances surrounding the death. Characteristics such as age, gender, and marital status may also indicate differences in content, writing style, note length, emotion, and information contained in suicide notes (Ho et al., 1998). Some notes are more matter-of-fact. These notes often lack more intense emotion and leave specific instructions for personal matters like funeral arrangements, financial concerns, and personal contact information to those who will be handling final affairs (Sanger & McCarthy Veach, 2008). These notes may also share more everyday information like bank account passwords and personal computer login information, to a list of things that need to be done (i.e., new tires on the car, furnace needing cleaned, kids school physicals, etc.). Notes containing more emotion often contain words verbalizing guilt, shame, anger, hurt, depression, etc. (Coster & Lester, 2013).

Several academics collected over 1,200 suicide notes from across Southwestern Ohio between 2000-09. The collected notes indicated strong correlations between motivating factors (i.e., substance use and abuse, physical pain, interpersonal violence, sorrow and grief, and feeling like a failure) and completed suicide. Correlations were also noted between lost love and failed relationships, medical diagnosis, financial issues, and cases where criminal charges and arrest occurred. There was a high indication of completed suicide among individuals charged specifically with driving under the influence (Perry, 2017).

Minimal information was noted in this paper regarding the detailed content of suicide notes in the data collected from SCC. If notes were left in the SCC case files, they were photocopied, collected, and labeled with year, name, and case file number. Some notes were illegible and no copies were made. Some notes in the case file were too deteriorated making the content unknown. These were also not photocopied. In some cases notes were mentioned but not located in the case file. Basic information obtained from the notes collected in the SCC case files was collected for basic information, but more in-depth information will be analyzed in detail and used for future research.

Known Mental Health Issues

According to research, approximately 90 percent of those who ultimately die by suicide often suffer from mental illness (NAMI, n.d.-b, para. 6). Sadly, a percentage of mental illness cases are misdiagnosed or under diagnosed leading to a lack of appropriate

and timely care (Insel, 2015). The psychiatric condition most frequently correlated with suicide is depression (American Association of Suicidology, 2014). The WHO estimates some "... 350 million people worldwide suffer from depression," which is also noted as "... a leading cause of disability (as cited in Pietrangelo, 2015).

Depression was the largest noted mental disorder found in the SCC data with 45 cases (16.48 percent) noting a clinical diagnosis. Another 30 cases (10.99 percent) stated in the case file that the subject was "depressed" at the time of death, but lacked mention of a clinical diagnosis. Reasons given for the depressed state included: relationship issues, divorce or pending divorce, loss of custody of minor children, job loss, terminal illness, emotional and physical pain, etc. Fourteen cases (5.13 percent) noted some type of mental health issues, but made no direct mention of a specific mental health issue or clinical diagnosis. Six cases (2.20 percent) noted a clinical diagnosis of Bi-Polar, 4 cases (1.47 percent) noted anxiety and panic issues, and 1 case (.37 percent) each was noted with a personality disorder, Attention Deficit Disorder, Obsessive-Compulsive Disorder, and Post Traumatic Stress Disorder.

Veteran Status

Veteran status is noted on the USSCD. Of the 273 cases, 202 cases (73.99 percent) did not indicate military veteran status and 71 (26.01 percent) were veterans of some branch of the U.S. military. The specific branch of service was not noted. The youngest individual noted within this population was 25 and the eldest 90. The breakdown by age group includes no cases in the under 20 group; 21 cases aged 20-34; 8 cases aged 35-44; 24 cases each aged 45-64 and 65-84; and 3 cases aged 85 or older. The majority (68.57 percent) of veteran suicide deaths in SCC were noted between 45-84 years of age.

Veteran status was collected to compare suicide deaths among the SCC population to national statistics. With Scott Air Force Base located in SCC (see Figure 3 - noted in Zone II) there is a large population of active-duty, reserve, veteran, and retirees residing in SCC. Veteran status on the USSCD (Rev 11/2003) Asks: "Ever in the armed forces?" needs to include active-duty status. Being able to determine a veteran versus an active-duty member would require first-hand knowledge of the individual or the ability to compare each individual case file against Department of Defense records.

Rates of suicide among veterans range from 20-22 per day nationwide (Shane & Kime, 2016; Thompson, 2016). However, the 22 a day claim is not an accurate assessment, according to an article in the Military Times. Data extrapolated from a 2012 report included information collected from 1999-2011, but data was only collected from 21 states. Several states (i.e., California, Texas, Arizona and North Carolina) with large veteran populations were not included in the data and deaths most likely deemed suicide were not noted as such on the death certificate (Kime, 2016). According to a report by the Military Suicide Research Consortium (2017) the 2012 report conducted by the Department of Veterans Affairs was extremely misleading, since Texas and California (states with the largest populations) were not included. The majority of veteran suicides nationwide between 2000-10 were male, but female veteran suicides increased 40 percent during the same timeframe (Kime, 2016b, para. 7). Many believe U.S. service member suicides are the direct result of deployment, specifically to hostile combat zones. However, a study of nearly 4 million U.S. service members who served during Operation

Enduring Freedom and Operation Iraqi Freedom (noting deployments from October 7, 2001 to December 31, 2007) actually discount this belief (Reger et al., 2015). In fact, the majority of veteran suicides during these two deployments were specifically noted in those separating early or receiving dishonorable discharges (Reger et al., 2015).

Of the 71 completed suicides of veterans noted in SCC, 69 (97.18 percent) were male and 2 (2.82 percent) were female. There were two known decedents on active-duty and one in the military reserves at the TOD. This was discovered based on information discovered in the individual case file. In 2015, over 1.6 million veterans received care from the Veterans Administration for mental health issues (McLaughlin, 2017). In addition to veteran suicides, there were 349 active duty suicides nationwide in 2012 (Haiken, 2013), equating to almost one suicide per day. Several reasons noted for veteran suicides included: physical and mental health issues, financial problems, PTSD, military sexual assault, substance abuse, depression, etc. (Haiken, 2013; Johnson, 2012; United States Department of Veterans Affairs, 2016), however, continued efforts have failed to reduce the number of military suicides (Bryan, Jennings, Jobes, & Bradley, 2012). A study conducted by the Veterans Administration showed a five percent misclassification rate in veteran reporting status per state death certificates (Kemp & Bossarte, 2012, p. 14) when compared to VA and Department of Defense records. There was no indication of veteran status misclassification in the SCC data. However, no case files from SCC were crosschecked with Department of Defense records.

Education Level

Education level was collected for all 273 cases. Eleven cases (4.03 percent) were identified as 8th grade or less. Those in the 9-12th grade with no diploma totaled 32 cases (11.71 percent). Those possessing a high school diploma or GED were the largest group with 114 cases (41.76 percent). The group some college in which no degree was earned totaled 47 cases (17.22 percent). Those possessing degrees included: 29 cases (10.62 percent) with an associate degree, 28 cases (10.26 percent) with a bachelor's degree, 9 cases (3.30 percent) with a master's degree, and 2 cases (.73 percent) with a doctoral degree. One case indicated unknown educational level.

Tobacco Use

Tobacco use was noted on the USSCD for all 273 cases. However, tobacco use was only positively indicated (i.e., marked yes) if it was a direct contributor to death. Tobacco use is noted by: *Yes*, *No*, *Probably*, or *Unknown* on the USSCD Rev. 11/2003. This does not portray an accurate representation of tobacco use.

Of the 273 cases of completed suicide, no cases indicated a direct correlation to or that tobacco use was a direct contributor to death. Thirteen cases (4.76 percent) noted some type of tobacco use. This determination was based on photos in which cigarettes or other tobacco products were present in the photos of the scene (i.e., near the victim) or if noted in police reports as evidence collected from the decedent.

The lack of accurate reporting of tobacco use on the USSCD provides minimal information in future research and suicide prevention measures. Smoking and suicide have been associated in numerous studies (Hughes, 2008; Leistikow & Shipley, 1999).

Several conceivable, yet unproven explanations between the tobacco-suicide correlation according to Hughes (2008) might be that "... smokers have pre-existing conditions that increase their risk for suicide, smoking causes painful and debilitating conditions that might lead to suicide, and smoking decreases serotonin and monoamine oxidase levels" (p. 169). In addition to smoking, products and medications used in cessation efforts have been associated with increased suicide risk (Hughes, 2008). Numerous studies have linked current smokers to increased rates of suicide (Leistikow & Shipley, 1999). However, additional research is needed to better understand what link, if any smoking has on increased risk of suicide. It would be beneficial for tobacco use to be accurately and consistently noted on the USSCD, even if not noted as a leading contributor to death. This would assist with future prevention efforts tailored to populations that use or may consider using tobacco products.

Toxicology Results

In 25 cases (9.16 percent) no toxicology screening was either completed or paperwork was not in the case file at the time of data collection. The lack of a toxicology screening could be due to a heightened state of decomposition and the inability to collect blood and/or urine. Seventy-four cases (27.11 percent) were clear and showed no presence of drugs, alcohol, or CO in the blood and/or urine samples. One hundred seventy-four cases (63.74 percent) indicated some type of substance in the body at the time of death (e.g., alcohol, CO, other prescribed or illicit drugs, ethylene glycol, etc.).

Ethanol

For the purposes of this research, ethanol (i.e., alcohol) content was noted in the toxicology report either by blood and/or urine. Blood alcohol concentration (BAC) levels were noted if ethanol was present in the system at the TOD. Of the 273 cases, 85 cases (31.14 percent) noted detectable amounts of ethanol in the system at the TOD. However, this may not be completely representative, as some case files did not include a toxicology screening.

The use of alcohol and suicide are multifaceted phenomena and could result from a host of influences. The abuse of alcohol can contribute to recklessness, reduced judgment, and diminished restraint (Pompili et al., 2010). Heavy alcohol consumption has been associated with suicide attempts and completed suicides. Additionally, alcohol reduces inhibitions and may make the act or attempt easier to complete. Alcohol abuse can lead to health concerns, which may increase the risk for suicide. Suicide rates on a national and global level have been correlated to alcohol consumption (Institute of Medicine of the National Academies, 2002, as cited in Pompili et al., 2010).

Under the Legal Limit in Illinois. Of the 85 cases with ethanol noted in the system at the TOD, 29 cases (34.12 percent) had a BAC below the legal limit for the State of Illinois. According to the Illinois Secretary of State being legally considered "under the influence" requires having a BAC of .08 or greater (2017). The lowest BAC (noted as under the legal limit) within the SCC data was .01 and the highest was .072.

At or Above the Legal Limit in Illinois. Fifty-six cases (65.88 percent) were noted as being at or above the legal limit of .08 for the State of Illinois. Only 1 case (1.79 percent) was noted as .08. Seventeen cases (30.36 percent) had BAC readings over two times the legal limit [.16]. Eleven cases (19.64 percent) had BAC readings over three times the legal limit [.24], and four cases (7.14 percent) had BAC readings over four times the legal limit [.32].

Death can occur with a BAC of .37 and higher. Having a BAC of .45 or higher is virtually fatal to all (Education Specialty Publishing, LLC, 2011). The highest BAC recorded for those considered over the legal limit in the SCC data was .363. In addition to alcohol consumption, death can occur when alcohol and other compounds are combined (i.e., stimulants, narcotic painkillers, sedatives, sleeping pills, anti-depressants, etc.). Mixing alcohol and drugs (e.g., pharmaceuticals, illegal, or over-the-counter [OTC]) is dangerous, but some combinations are truly lethal (Elements Behavioral Health, 2017).

Carbon Monoxide

Levels of carbon monoxide (CO) were recorded in cases where detectable levels were noted in the system at TOD or noted as the leading cause of death. In addition, several cases noted CO poisoning as a secondary cause of death or present at less than lethal amounts in the system at the TOD. According to Canadian Safety Equipment, Inc. (n.d.) death resulting from CO exposure is possible between 60-70 percent saturation. At 70-80 percent saturation, death is possible within hours, at 80-90 percent saturation death occurs in under an hour, and at 90-100 percent saturation death occurs in several minutes.

Eighteen cases (6.59 percent) indicated CO in the system at the TOD, but only 11 cases had noted saturation levels. Of the 11 cases with known saturation levels, the highest concentration noted was 70 percent and the lowest <10 percent. Fifteen cases (83.33 percent) involved the use of a vehicle, 1 case (5.56 percent) each involved a clothes dryer, sleeping pills and CO, and a charcoal barbecue grill inside of a closed up vehicle. The case involving the barbecue grill also noted drugs in the system at the TOD, however the CO saturation level was unknown.

Charcoal burning as a means of suicide is gaining popularity in Asia (Lee, Chan, & Lee, 2002), but not in the U.S. However, it is suggested that those using this method (at least in Asia) had fewer implications of psychiatric illness or histories and were less likely to abuse drugs or alcohol (Chan, Yip, Au, & Lee, 2005). Of the 18 cases with CO noted in the system, 15 cases (83.33 percent) indicated CO poisoning was the leading cause of death. Three cases (16.67 percent) noted CO in the system and possibly used as a secondary method, however saturation levels were noted as <10 percent, which alone would most likely not have resulted in death. The main cause of death noted in cases identified as <10 percent CO saturation included self-immolation and firearms.

Drugs and Classifications

Title 21: Code of Federal Regulations

Title 21 of the United States Code oversees the Food and Drug Administration (FDA) and "... contains the codified Federal laws and regulations that are in effect as of

the date of the publication pertaining to food and drugs, both legal pharmaceuticals and illegal drugs” (United States Government Publishing Office, 2016, para. 1). The FDA has managed drugs in this country since the early 1900s. However, it was not until 1970 when the FDA revealed the Controlled Substance Act (CSA), which was developed to categorize an assortment of drugs by the hazard posed when used or abused. The CSA contains five distinct drug schedules. The Drug Enforcement Administration (n.d.) drug classifications are as follows:

- **Schedule 1:** “...substances, or chemicals are defined as drugs with no currently accepted medical use and a high potential for abuse” (*e.g., heroin, marijuana, etc.*)
- **Schedule 2:** “... substances, or chemicals are defined as drugs with a high potential for abuse, with use potentially leading to severe psychological or physical dependence. These drugs are also considered dangerous” (*e.g., cocaine, methadone, oxycodone, fentanyl, etc.*)
- **Schedule 3:** “... substances, or chemicals are defined as drugs with a moderate to low potential for physical and psychological dependence. Schedule III drugs abuse potential is less than Schedule I and Schedule II drugs but more than Schedule IV” (*e.g., Tylenol with codeine, anabolic steroids, etc.*)
- **Schedule 4:** “... substances, or chemicals are defined as drugs with a low potential for abuse and low risk of dependence” (*e.g., Tramadol, Valium, Ambien, Xanax, etc.*)
- **Schedule 5:** “...substances, or chemicals are defined as drugs with lower potential for abuse than Schedule IV and consist of preparations containing limited quantities of certain narcotics. Schedule V drugs are generally used for antidiarrheal, antitussive, and analgesic purposes” (*e.g., Lyrical, Lomotil, etc.*) (para. 3-7).

Of the 273 cases, 126 (46.15 percent) noted drugs (i.e., illicit, prescription, or OTC) in the system at the TOD. The majority of cases in the SCC data noted either Schedule 2 or Schedule 4 drugs in the system at the TOD. Schedule 2 drugs noted in the system included (in alphabetical order): Codeine, Fentanyl, Hydrocodone, Hydromorphone, Oxycodone, Oxymorphone, and Morphine. Only Schedule 2 drugs (and not Schedule 4) were noted because of the high potential for abuse and dependency.

Due to the high potential for abuse, a large number of overdose deaths are often seen with Schedule 1 and Schedule 2 drugs. Because of this, those in the Medical Examiners/Coroner’s Office are left making the determination of accidental overdose, suicide, or undetermined cause of death. A lack of standardization nationwide among medical examiners may lead alleged suicide deaths to be categorized incorrectly as accidental or undetermined (Gray et al. 2014). St. Clair County Coroner Calvin Dye Sr. explained overdose deaths can be tricky and are not an exact science. Dye further

explained that regardless of the type of death, each is determined based on evidence on a case-by-case basis (personal communication, July 21, 2017).

A suicide determination versus an accidental drug overdose would begin by collecting evidence on scene (e.g., a note, pill bottles, statements from the family members, noted prior suicide attempts, history of mental health issues, etc.). The determination would also include the type of drug (i.e., prescription, illicit, or OTC) and amount ingested (per toxicology findings), the manner of death would indicate a self-inflicted injury, as well as any mitigating circumstances surrounding the death, such as the recent loss of a loved one, loss of employment, medical diagnosis, etc. According to the National Institute on Drug Abuse, a determination is made to whether a death was intentionally inflicted versus unintentional/accidental in nature. Several key factors are noted if drugs were found in the system: “was the ingestion accidental, was too much of the drug ingested accidentally, was the incorrect drug provided or ingested, or was the death a result of an accident, which occurred during a medical or surgical procedure” (2017, p. 1). A Poly OD death not ruled suicide could either be ruled accidental or undetermined. Suicide deaths by overdose may cause reluctance for the medical examiner or coroner to rule the death a suicide. This is often due to a combination of stigmas surrounding deaths by suicide and the lack of solid supporting evidence of a death by suicide (Timmerman, 2005, as cited in Gray et al. 2014). However, what is known, is “[p]eople who abuse alcohol and/or drugs or are dependent on them, attempting suicide nearly six times more often than people who do not abuse these substances” (Dragisic, Dickov, Dickov, and Mijatovic, 2015, p. 188). In addition, those who abuse drugs are far more apt to accidentally overdose making a definitive determination much more difficult.

Several common issues noted in suicide research were also noted in the SCC data (i.e., anxiety, depression, insomnia, and pain). Many drugs noted in the system at the TOD have multiple uses. It is unknown if the drugs noted in the systems of the decedents at the TOD were prescribed for a particular purpose or even prescribed to the decedent. Of the drugs noted in the system at TOD, those used primarily to treat anxiety were noted in 34 cases those primarily used to treat depression were noted in 50 cases, drugs primarily used to treat insomnia were noted 14 cases, and pain medications were noted in 47 cases. Thirteen cases noted more than one pain medication (i.e., prescribed and OTC) in the system at the TOD. Those being treated for pain indicated levels ranging from mild to severe.

Recommendations

Remington, Brownson, and Wegner (2010) made several recommendations, which will assist in reducing death by suicide. First, varied focus by researchers regarding certain types of death and illness reflect a better understanding of suicide in its multidimensional nature. Second, death and illness with increased mortality rates are more readily identified; in-turn, enhanced protocol is developed in the following areas: emergency department visits, physician knowledge of mental illness and mental health, patient admittance and follow-up, and data collection regarding suicide attempts and ideations. In addition, programs and resources for those identified as at-risk, high risk, or in crisis (for completed suicide, attempts, and ideations) are developed. Lastly, a serious need exists to develop a risk assessment tool that more accurately reflects issues

surrounding suicidal behaviors and ideations, in order to recognize sooner those at risk or in crisis (Jacobs et al., 2003; Remington et al., 2010; Smith, 2014).

Mann et al., (2005) also identified several fundamental recommendations to decrease death by suicide: reduced access to lethal means, specialized training and education for primary care physicians and other healthcare professionals to aid in identifying mental illness and mental health issues (specifically depression). Lastly, provide community members, caregivers, gatekeepers, and others (e.g., those with prior attempts, mental health issues, those facing loss or grief, etc.) with resources, information, workshops, and educational opportunities in which to build a solid knowledge base of risk factors, health care and mental health care providers, social support systems, and outreach programs that facilitate bridging the gap between awareness and prevention efforts, in-turn, reducing the number of yearly deaths by suicide.

The data collected from SCC indicated: White males of Non-Hispanic/Mexican American descent being married or single/never married, with the majority possessing a high school diploma or GED accounted for the largest demographic to die by suicide in SCC. Construction and extraction related fields and students were the two leading occupations/categories noted with the highest rates of completed suicide in the SCC data. The highest number of completed suicides for all cases occurred in the middle-aged (45-64), with the majority either being married or divorced. The majority of cases had some type of former contact with local law enforcement. The leading cause of death was due to firearms. Wednesday was the deadliest day for suicides in SCC. Most suicides occurred between 1201 PM and 6 AM and the majority occurred inside or outside (on the property) the primary residence of the decedent.

One group actively working to reduce suicide deaths in SCC is the St. Clair County Suicide Prevention Alliance. The Alliance organized in 2011 to address the issue of suicide, a public health issue identified as one of the County's top four health risks. Deborah Humphrey, RN, BSN, MBA, Assistant Director, St. Clair County Mental Health Board Chair, St. Clair County Suicide Prevention Alliance explained:

The Alliance has actively completed national research and local data collection to gain a greater understanding of suicides in our geographical area. The proceeding collection of data and analysis provides valuable information of the demographics and characteristics of the lives lost through suicide. The research will be utilized for further planning and implementation of awareness, education, and other suicide prevention activities with hope of saving lives of individuals with feelings of hopelessness, aloneness, despair or contemplating suicide to end their pain. (personal communication, May 19, 2017)

Licensed Clinical Social Worker, Dr. Beverley Watkins, National Alliance on Mental Illness (NAMI) President of Southwest Illinois stated:

As a mental health professional and advocate for mental health issues and awareness through my work with NAMI, I have many facets of the issue of suicide. I have worked with individuals experiencing suicidal thoughts and/or behaviors.

I have also seen the aftermath of suicide and the effects in families and other loved ones. The effect is devastating. My hope is that St. Clair County will become a role model for other communities to coordinate resources of behavioral health, law enforcement and crisis intervention trained (CIT) police officers in particular, first responders, educators and other helpers and intervened. Education, coordination, and cooperation are key in preventing suicide. (personal communication, July 7, 2017)

The following recommendations were made based on the data and information collected and in part by members of the St. Clair County Suicide Prevention Alliance:

1. Develop improved protocol for collecting statistics on the number of individuals visiting emergency departments (ED) in SCC for issues related to mental health, suicidal ideations, suicide attempts, and overdoses that could be classified as possible attempts.
2. Develop follow-up protocol with those visiting ED's in the days and weeks following a visit related to mental health, mental illness, and suicide attempts (drug overdose, verbal threats, etc.).
3. Provide additional resources (i.e., handouts, support group information, support line phone numbers) to law enforcement, emergency medical technicians, fire personnel, ED staff, and clinicians, to provide to individuals struggling with mental health issues and to the Coroner's Office for those on scene after a suicide death.
4. Require continued educating and training for family care providers and clinicians on recognizing the signs of a mental illness, mental health issues, and those in crisis.
5. Offer additional assistance to individuals suffering with mental health issues to include family members, close friends, co-workers, etc. This may include the education by healthcare providers, mental health counselors, and school counselors. This should include a list of available local resources with dates, times, and points of contact. These resources should provide social support and help provide "protective factors" for individuals who may be at-risk for suicide or in crisis. Provide assistance to address and report problematic (e.g., verbal or written threats, social media posts, text messages, etc.) and self-harming types of behaviors to the appropriate agencies, organizations, and/or authorities.
6. Address prevention efforts for those deemed "high risk" (i.e., White males, high school or GED, unmarried, in specific occupations) or those in "crisis." This can be based on specific characteristics or can be a combination of individual characteristics (e.g., gender, race, ethnicity, occupation, education, marital status, etc.).

7. Educate vulnerable populations (i.e., at-risk, high risk, or in crisis) on available resources (e.g., national, state, and local) and prevention efforts (e.g., social media outlets, workplace and educational online capabilities, career services and job counseling, divorce and criminal attorneys, hospital and mental health resources, insurance agencies, etc.).
8. Explore online resources and assessment tools to assist physicians and mental health professionals in being able to better recognize, diagnose, and treat mental health issues.
9. Explore local area hangouts and establishments where vulnerable populations frequent (i.e., veterans may frequent the Veterans of Foreign Wars or local bars and taverns). Also look for places that serve alcohol and may involve activities that could become problematic (e.g., horse track, casino, strip clubs, etc.). These establishments could lead to additional issues (i.e., financial loss, addiction, relationship issues, and criminal offenses like driving under the influence).
10. Share data and recommendations with those in the legal system. Many individuals who died by suicide in SCC had previous contact with local law enforcement. This information may prove useful in getting some individuals into mental health facilities and rehabilitation centers, as an alternative to incarceration.
11. Data and recommendations should be presented to judicial advocates, lawyers, and judges. Being a first line of defense for some at-risk individuals may prove helpful if more leniencies are displayed resulting in assistance with issues rather than more punitive alternatives. This may include the implementation of “mental health” courts to deal specifically with this at-risk population.
12. Wednesday is the deadliest day for suicide deaths in SCC. This knowledge spurred the idea of “Talk” or “Text” Tuesday. This involves reaching out to at-risk individuals who may have mental health issues, (to include prior attempts), reaching out to those with limited social contacts, those living alone with minimal support systems, the aging and elderly who may be home bound, someone recently divorced, separated, or having relationship issues, those who have experienced a loss (i.e., family member, friend, pet, house, job, etc.), and those with physical ailments, injuries, and suffering from chronic pain, etc.
13. Contact local trade unions in an attempt to educate and train those working in the construction trades, those close to someone working in the trades, or those involved in occupation physicals and health care of this population about the increased risk for substance abuse, workplace injuries, and suicide.
14. Notify local schools (i.e., elementary, middle, high school, colleges, universities, and trade school) and local regional offices of education in SCC to share current findings, risk factors, and warning signs within these demographics.

15. Provide information about reducing suicide risk through elimination of lethal means, especially the access to firearms. Provide community-based education programs on the dangers of unsecured firearms and the use of such means in completed suicides within SCC. Involve local law enforcement in either providing gunlocks to those in need or suggesting resources and other places to obtain gunlocks. Discuss in-depth firearm safety and proper storage plans. Those at-risk, high risk, or in crisis often act impulsively. Understanding that safe storage may not be enough to stop someone from accessing a weapon. Additional measures such as gun safes and the removal of weapons entirely from the residence may be necessary.
16. Offering insight to local community members to better understand suicide, potential warning signs, and red flags (via: written letter, phone call, text, verbal threats, or social media post). Knowing that verbalizing and writing down suicidal thoughts may be a call for help and to not ignore any communications. Take all threats seriously and to proceed to the nearest ED.
17. Urge caregivers and practioners to educate on the importance of living a healthy lifestyle – addressing: overall health and mental health: sleep, exercise and proper nutrition, the effects of drugs and alcohol, adequate social support, following healthcare treatment plans, timely follow-up with appointments. Provide mental health resources (i.e., names and phone numbers) of clinicians and practioners to those in need. Emphasize that feeling depressed or suicidal is often momentary, but always encourage anyone feeling this way to seek professional assistance.

National Suicide Prevention Lifeline: 800-273-8255 [TALK]

This paper is dedicated to the lives lost by suicide, those left behind, and to those dedicated to reducing the loss of life by suicide.

About the author: Dr. Olivia Johnson holds a master's in Criminology and Criminal Justice from the University of Missouri, St. Louis, and a doctorate in Organizational Leadership Management from the University of Phoenix, School of Advanced Studies. Dr. Johnson is a veteran of the United States Air Force, a former police officer, and published author. She belongs to numerous professional organizations and currently holds a three-year term with the St. Clair County Suicide Prevention Alliance as a Suicidology Researcher. Dr. Johnson speaks on wellness and resilience for the Bureau of Justice VALOR Program and is on the Advisory Board regarding curriculum review for de-escalation training and techniques. Dr. Johnson is an Adjunct Professor for Lindenwood University in Belleville, Illinois, and currently works as a Senior Research Associate with the Institute for Intergovernmental Research. Email correspondence: johnsonolivia@sbcglobal.net

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Table 1

Annual suicide rate (per 100,000) of all age groups, 1970-2002

<u>Year</u>	<u>Rate</u>	<u>Year</u>	<u>Rate</u>
1970	65.6	1987	66
1971	66.1	1988	64.4
1972	67	1989	63.2
1973	66.4	1990	64.2
1974	66	1991	63.2
1975	67.8	1992	61.6
1976	67.2	1993	62.1
1977	70.3	1994	61.2
1978	66.2	1995	60.8
1979	64.8	1996	58.7
1980	61.7	1997	57.2
1981	61.8	1998	56.7
1982	62.9	1999	53.5
1983	62.8	2000	53
1984	64.2	2001	63.4
1985	64.3	2002	54.4
1986	76.8		

Note. This chart was recreated based on information from the U.S. suicide rates from 1970-2002 covering age groups [15-24], [25-44], [45-64], and [65 or older]. The original table broke down each age group with the number of suicides per 100,000. This table shows all suicide rates per age group collectively.

Table 2

Suicides of adolescents and youth under 15 years of age

<u>Age</u>	<u>Gender</u>	<u>Race</u>	<u>Type of Death</u>	<u>Place</u>	<u>Tox</u>	<u>Day</u>	<u>Reason</u>
13	Male	White	Blunt force trauma	RR track	(-)	Sunday	Rel. Issues
13	Male	White	Asphyxia/Hanging	Bedroom	(+)	Friday	Under Investigation
14	Female	Black	Gunshot/Abdomen	Bedroom	(+)	Saturday	Punishment
14	Male	Black	Gunshot/Head	Bedroom	(-)	Wednesday	Punishment

Note. Also noted: gender, ethnicity, type of death, place of death, toxicology (+) indicates something in the system and (-) indicates nothing was noted in the system, day of week and any issues or known reasons that may have contributed or played a part in the death. These deaths are recorded in national numbers as “Under 20”. All subjects were of Non-Hispanic descent.

Table 3

Mean, Median, Mode table – 2006-16

Year	# Cases	Age Range	Mean	Median	Mode
2006	21	22-74	44	40	33, 40, 58
2007	21	14-83	44	34	34
2008	32	13-92	48	47	29, 42, 50, 53, 66
2009	24	13-83	48	47	45, 54, 57
2010	29	15-90	50	45	18, 42, 50
2011	36	19-84	39	41	21, 42
2012	19	22-84	47	43	28, 31, 43, 53
2013	27	14-86	47	44	44, 59, 86
2014	29	16-78	42	36	33, 35, 50, 57
2015	15	19-79	47	48	53, 56
2016	20	21-81	47	52	25, 52

Table 4

Bureau of Labor Statistics: 2010 Standard Occupational Classification Codes

11	Management Occupations
13	Business and Financial Operations
15	Computer and Mathematical
17	Architecture and Engineering
19	Life, Physical, and Social Science
21	Community and Social Service
25	Education, Training, and Library
27	Arts, Design, Entertainment, Sports, and Media
29	Healthcare Practitioners and Technical
31	Healthcare Support
33	Protective Service
35	Food Preparation and Serving Related
37	Building and Grounds Cleaning and Maintenance
39	Personal Care and Service
41	Sales and Related
43	Office and Administrative Support
45	Farming, Fishing, and Forestry
47	Construction and Extraction
49	Installation, Maintenance, and Repair
51	Production
53	Transportation and Material Moving
55	Military Specific
59	Homemaker
69	Student
79	Disabled
89	Unemployed
97	Self-Employed (Specified)
98	Self-Employed (Specified)
99	Unknown/None

Table 5

Rate and age-adjusted rate of suicide deaths by state [2006]

State	Rate	State	Age-Adjusted
Wyoming	22.5	Wyoming	21.7
Alaska	20.1	Alaska	20
Montana	20	Montana	19.7
Nevada	19.5	Nevada	19.5
New Mexico	18	New Mexico	18
South Dakota	16	South Dakota	16
Arizona	15.9	Arizona	16
Oregon	15.6	Utah	15.8
Colorado	15.4	Idaho	15.6
Idaho	15.1	Oregon	15.2
Oklahoma	15	Colorado	15.2
Kentucky	14.8	Oklahoma	15
West Virginia	14.8	Kentucky	14.6
Tennessee	14.5	Tennessee	14.2
Utah	14.2	West Virginia	14.1
North Dakota	14.2	Kansas	13.8
Missouri	13.7	North Dakota	13.6
Kansas	13.7	Missouri	13.5
Florida	13.5	Arkansas	13.3
Arkansas	13.4	Indiana	13
Indiana	13.1	Florida	12.6
Vermont	13	Alabama	12.4
Alabama	12.6	Washington	12.3
Washington	12.6	North Carolina	12.2
North Carolina	12.5	Vermont	12
South Carolina	12.1	South Carolina	11.9
Wisconsin	12.1	Wisconsin	11.9
Maine	12	Louisiana	11.6
Louisiana	11.5	Mississippi	11.4
New Hampshire	11.5	Ohio	11.2
Ohio	11.5	Nebraska	11.2
Virginia	11.5	Virginia	11.1
Nebraska	11.4	Michigan	11.1
Michigan	11.3	Iowa	11.1
Mississippi	11.2	Maine	11
Pennsylvania	11.2	New Hampshire	11
Iowa	11.2	Pennsylvania	10.8

Delaware	10.7	Minnesota	10.6
Minnesota	10.7	Delaware	10.4
Texas	10	Texas	10.3
Georgia	9.9	Georgia	10
Hawaii	9.3	Hawaii	9.2
California	9.1	California	9.2
Maryland	8.8	Maryland	8.6
Rhode Island	8.4	Rhode Island	8.1
Connecticut	8.3	Connecticut	8
Illinois	7.9	Illinois	7.8
Massachusetts	7	Massachusetts	6.7
New York	6.9	Puerto Rico	6.6
New Jersey	6.7	New York	6.6
Puerto Rico	6.6	New Jersey	6.5
District of Columbia	5.2	District of Columbia	5.1

Note. The age-adjusted rates were taken from the National Vital Statistics Report numbers of “Intentional Self-Harm” (i.e., suicide). The original table was done in alphabetical order. In order to find the correct ranking of the State of Illinois, rates and age-adjusted rates of suicide were listed in order from highest to lowest.

Table 6

Compiled information from the National Vital Statistics Reports 2006-16

Year	Total Suicides	% Total Deaths	# Leading Causes	Life Expectancy
2006	33,300	1.4	11	77.7
2007	33,185	1.4	11	77.9
2008	36,035	1.5	10	78.1
2009	36,909	1.5	10	78.5
2010	38,364	1.6	10	78.7
2011	38,285	1.5	10	78.7
2012	40,600	1.6	10	78.8
2013	41,149	1.6	10	78.8
2014	42,773	1.6	10	78.8
2015	NDA	NDA	NDA	NDA
2016	NDA	NDA	NDA	NDA

Note. Data collected from the National Vital Statistics Systems – National Vital Statistics Reports from 2006-16 to include the number of yearly suicide deaths, percentage of suicide deaths compared to all deaths, the ranking of suicide as a leading cause of death and the life expectancy in years. NDA indicates no data available.

Table 7

Number of suicides within St. Clair County SCC (IL) from 2006-16 based on population per 2010-15 U.S. Census Bureau

City	# Suicides	%	City Population
Belleville	88	32.23	42,034
Fairview Heights	25	9.16	16,827
East St. Louis	19	6.96	26,790
O'Fallon	18	6.59	29,002
Cahokia	15	5.49	14,402
SCC Township	14	5.13	Unknown
Swansea	12	4.4	13,543
Caseyville	11	4.03	4,045
Millstadt	8	2.93	3,896
Freeburg	7	2.56	4,354
Lebanon	7	2.56	4,467
Collinsville	6	2.2	24,754
Dupo	6	2.2	3,921
Mascoutah	6	2.2	7,975
Lenzburg	5	1.83	521
Shiloh	5	1.83	12,961
Centreville	3	1.1	5,141
Smithton	3	1.1	3,719
Alorton	2	0.73	1,933
New Athens	2	0.73	1,951
Washington Park	2	0.73	3,990
Columbia	1	0.37	10,191
East Carondelet	1	0.37	473
Floraville	1	0.37	53
Marissa	1	0.37	1,856
New Baden	1	0.37	3,313
Scott Air Force Base	1	0.37	2,982
St. Libory	1	0.37	596
New Memphis	1	0.37	334
*Waterloo	1	0.37	10,140

Note. This is based solely on the number of suicide deaths, highest to lowest. *Waterloo (IL) is in Monroe County, but the death was classified as unincorporated SCC.

Table 7B

Population-adjusted suicide rate within St. Clair County SCC (IL) from 2006-16 based on populations per 2010-15 U.S. Census Bureau statistics (per 100,000)

City	# Suicides	Population	Adjusted-rate
Floraville	1	53	1,887
Lenzberg	5	521	960
New Memphis	1	334	299
Caseyville	11	4,045	272
East Carondelet	1	473	211
Belleville	88	42,034	209
Millstadt	8	3,896	205
St. Libory	1	596	168
Freeburg	7	4,354	161
Lebanon	7	4,467	157
Dupo	6	3,921	153
Fairview Heights	25	16,827	149
Cahokia	15	14,402	104
Alorton	2	1,933	103
New Athens	2	1,951	103
Swansea	12	13,543	89
Smithton	3	3,719	81
Mascoutah	6	7,975	75
East St. Louis	19	26,790	71
O'Fallon	18	29,002	62
Centreville	3	5,141	58
Marissa	1	1,856	54
Washington Park	2	3,990	50
Shiloh	5	12,961	39
Scott AFB	1	2,982	34
New Baden	1	3,313	30
Collinsville	6	24,754	24
Columbia	1	10,191	10
*Waterloo	1	10,140	10
SCC Township	14	Unknown	Unknown

Note. This table includes population-adjusted rates of suicide per 100,000. Any cities noting the same adjusted rate were listed in alphabetical order. Waterloo (IL) is in Monroe County, but the death was noted in unincorporated SCC.

Table 8

Suicide deaths from 2006-16 and the number of deaths per month

Month	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
JAN	0	2	1	1	2	3	1	2	3	1	3
FEB	1	2	2	1	1	0	1	1	1	1	4
MAR	1	2	2	3	2	2	3	2	3	0	3
APR	2	4	2	5	1	6	0	3	5	2	1
MAY	2	2	8	2	5	3	1	1	5	4	2
JUN	2	1	3	2	5	5	4	3	1	0	1
JUL	3	2	1	0	1	4	3	2	2	0	0
AUG	0	5	4	4	2	1	0	4	3	1	3
SEP	1	1	2	1	1	2	2	2	2	3	2
OCT	5	0	2	0	6	6	1	3	0	2	0
NOV	4	0	2	4	3	4	3	2	3	0	1
DEC	0	0	3	1	0	0	0	2	1	1	0
Total	21	21	32	24	29	36	19	27	29	15	20

Note. Months with the highest number of suicide deaths are bolded.

Figure 1. Data collection form**CONFIDENTIAL**

Name: Last, First, MI. _____

SUICIDE: YEAR: _____/Case No. _____/No. _____

Gender (circle one): MALE FEMALE

DOB/AGE: _____

Race/Ethnicity: _____

Date of Death: (Day of week) _____

Time of Death: _____

Place (CITY) of death: _____

Type of Death: _____

Place of Death: _____

Weapon(s)/Means used: _____

Military Veteran (circle one): YES NO

Relationship Status (circle one):
 Married
 Single/never married
 Divorced
 Widowed
 *Married but separated (new classification)
 *Unknown (new classification)

Occupation/SOC Code: _____

Known TOBACCO use (circle one): YES NO

EDUCATION (circle one):
 8th grade
 9-12 (no diploma)
 HS/GED
 Some College
 Associates
 Bachelors
 Masters
 Doctorate

*Figure 1. Data collection form cont'd.***CONFIDENTIAL**

Was this deemed "suicide by cop"? YES NO

Was there a Note? YES NO (attach copy if able)

Was a "specific" reason(s) given in the note? YES NO

If YES, what was the reason(s) (circle all that apply) or write in if not listed:

Pain (physical/emotional/psychological)

Depression/Mental Health Issue

Terminal Illness

Job Loss/termination

Relationship Issues

Illness/sickness

Loss of loved one (death)

Financial Issues

Criminal charges/investigation

Embarrassment/perceived embarrassment

Other: please note here _____

Was there more than one note? YES NO

Was a threat made? YES NO

If YES, please circle all that apply:

Written in a note

Verbalized in person

Verbalized on the phone

Via text message

Via social media

Noted recent hospital discharge: YES NO

TOX Screen (what was noted in the case file?):

Prior LE Contact: YES NO

Registered Sex Offender (State of Illinois): YES NO

Incarcerated at time of death: YES NO

Noted Previous attempts: YES NO UNKNOWN

Known Mental Health issues (if noted in case file): YES NO

Specific mental health issue(s) (list here):

Figure 2. St. Clair County Circuit Clerk Court Records Database Search.

St. Clair County Circuit Clerk > Courts > Court Records Search

Court Records Search

Criminal Cases





Civil Cases

Name Search
Case Number Search
Ticket Number Search
Attorney Bar Number Search
Court Calendar Search

Search By Defendant Name

Last Name First Name Date of Birth

Last name is required. First name and date of birth are optional.



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Figure 3. ICD-10 Code for Intentional Self-Harm

- X60:** Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antiinflammatories
- X61:** Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified.
- X62:** Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified
- X63:** Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system
- X64:** Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances
- X65:** Intentional self-poisoning by and exposure to alcohol
- X66:** Intentional self-poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours
- X67:** Intentional self-poisoning by and exposure to other gases and vapours
- X68:** Intentional self-poisoning by and exposure to pesticides
- X69:** Intentional self-poisoning by and exposure to other and unspecified chemicals or noxious substances
- X70:** Intentional self-harm by hanging, strangulation and suffocation
- X71:** Intentional self-harm by drowning and submersion
- X72:** Intentional self-harm by handgun discharge
- X73:** Intentional self-harm by rifle, shotgun and larger firearm discharge
- X74:** Intentional self-harm by other and unspecified firearm discharge
- X75:** Intentional self-harm by explosive material
- X76:** Intentional self-harm by smoke, fire and flames
- X77:** Intentional self-harm by steam, hot vapours and hot objects
- X78:** Intentional self-harm by sharp object
- X79:** Intentional self-harm by blunt object
- X80:** Intentional self-harm by jumping from a high place
Incl. intentional fall from one level to another
- X81:** Intentional self-harm by jumping or lying before a moving object
- X82:** Intentional self-harm by crashing a motor vehicle
Incl. intentional collision with:
- motor vehicle
 - train
 - tram (streetcar)* *Excludes crashing of aircraft*
- X83:** Intentional self-harm by other specified means
Incl. Intentional self-harm by:
- caustic substances, except poisoning
 - crashing of aircraft
 - electrocution
- X84:** Intentional self-harm by unspecified means

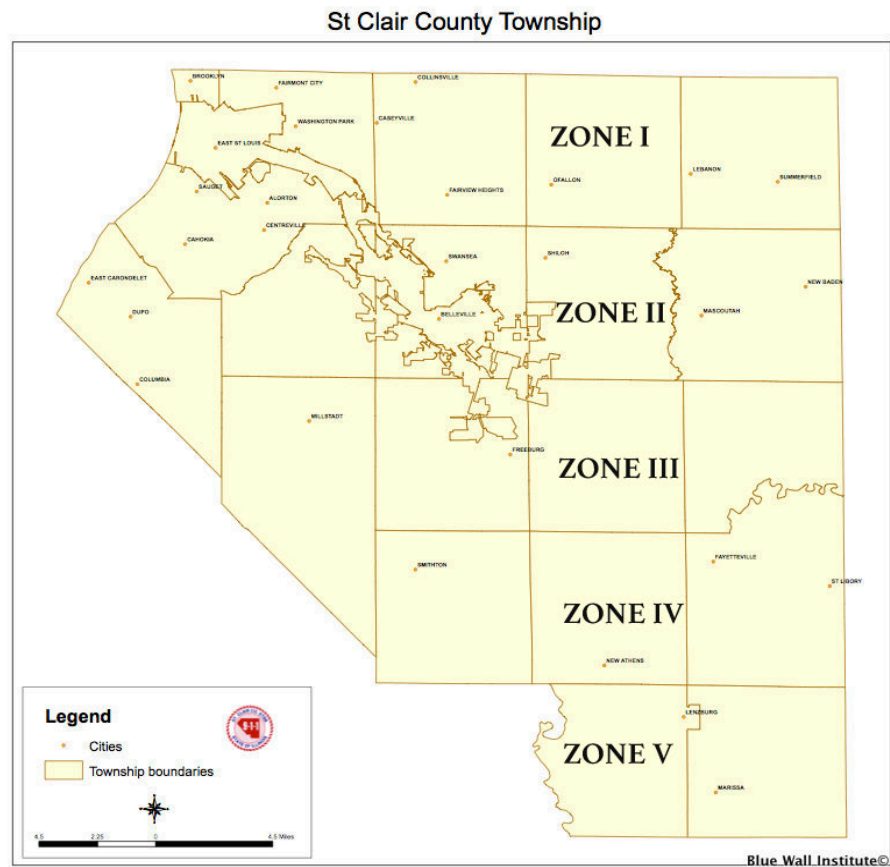
Figure 4. Astrological signs depicted by beginning and ending date.

Aries	Taurus	Gemini	Cancer
21-Mar	20-Apr	21-May	21-Jun
19-Apr	20-May	20-Jun	22-Jul

Leo	Virgo	Libra	Scorpio
23-Jul	23-Aug	23-Sep	23-Oct
22-Aug	22-Sep	22-Oct	21-NOV

Sagittarius	Capricorn	Aquarius	Pisces
22-Nov	22-Dec	20-Jan	19-Feb
21-Dec	19-Jan	18-Feb	20-Mar

Figure 5. Zoned map of St. Clair County [SCC], Illinois.



Note. Township boundaries were noted per the legend, but zones were given to provide a broader understanding of the data.

Figure 6. St. Clair County, Illinois Sheriff's Department – Quiet Room/Suicide Watch Policy and Procedure (Rev. Aug. 1, 2016).



SHERIFF'S DEPARTMENT
ST. CLAIR COUNTY, ILLINOIS
OFFICE OF THE SHERIFF



POLICY AND PROCEDURES

Revision Date: August 1 2016

Pages 4

Quiet Room/Suicide Watch Policy and Procedure

Purpose

To provide guidelines for the housing units referred to as quiet rooms. Quiet rooms are used as part of the plan to prevent suicidal or homicidal attempts. This policy will provide guidelines for detainees who are classified by jail staff, law enforcement officers, or mental health professionals to be suicidal or homicidal in their behavior. This policy will also provide a frame work for suicide watch and/or monitoring while such detainees are in the St. Clair County Jail.

Procedure

1. Detainees who are classified for disciplinary segregation will not be placed in the quiet room unless there is a suicide watch initiated by an appropriate authority.
2. Every inmate, upon admittance to detention shall be screened for mental health risk issues, including mental illness, suicide, mental retardation, and acquired brain injury, by the personnel of the facility in which the inmate is to be detained.
3. In an emergency, emergency medical services shall be notified for immediate response.
4. When a detainee shows signs of or reports unusual physical or mental distress, he or she shall be referred to a qualified mental health professional as soon as possible.
5. The booking officer shall receive from the arresting officer the completed Sheriff's booking form which includes the brief jail mental health screen.
6. The booking officer shall check the incoming inmate's history; to the extent such history exists, thru the jail record management system for any alerts related to the particular inmate.
7. If it is determined a detainee is suicidal during the booking process, a shift supervisor will be immediately notified. The on duty supervisor will ensure the following:

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- A. A photo is to be taken of the detainee before being placed in the quiet room.
- B. All movement in the jail shall cease when someone is being placed in a quiet room.
- 8. A correctional officer will video record the placement of a detainee into the quiet room.
 - A. Camera operator will only record the audio portion of the detainee disrobing in the quiet room.
 - B. At the termination of video recording, a supervisor will announce the detainee's name, time, date, and officers involved.
 - C. The detainee will be given a gown and mattress approved for quiet room custody.
 - D. Inform medical staff of the quiet room placement.
 - E. Clothing and other property will be secured in a bag with the detainee's name on it and placed in the property room.
 - F. A shift supervisor will ensure all required reports are submitted by staff members involved in the movement of the detainee.
 - G. Any necessary medical forms and/or notifications will be completed and forwarded to the jail administration.
 - H. After the detainee is placed in the quiet room, a mental health referral form must be completed by the reporting officer.
 - i. No razors will be issued to detainees housed in the quiet room.
 - ii. Detainees housed in the quiet room will not be permitted to have visiting privileges.

III. SUICIDE WATCH:

- 1. As part of the intake screening by correctional officers or jail medical staff, detainees may be placed on suicide watch to help prevent any self inflicted injury or suicidal behavior.
- 2. In addition, any actions or verbal statements by detainees which indicate they may be suicidal/homicidal shall be justification to initiate suicide watch and placement in the quiet room. This watch will include but not limited to, placement in the jail quiet room.
- 3. A member of the correctional supervisory staff or jail mental health staff will determine the level of monitoring for a suicide watch.
- 4. The reporting officer and his/her supervisor will ensure psychological referral sheets are completed appropriately.
- 5. Any medical or behavioral changes at any level of suicide watch will be reported to medical personnel and a shift supervisor immediately.

IV. LEVELS OF SUICIDE WATCH:

- 1. Continuous Watch:

This watch requires a detainee be constantly observed by a correctional officer 24 hours a

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day. Recent or potentially lethal suicide attempts would warrant a continuous watch. This watch must be approved by a member of the medical psychological staff or the jail superintendent.

2. Fifteen Minute Watch: This watch requires a detainee be observed by a correctional officer every 15 minutes. This watch must be approved by a member of the medical psychological staff or the jail superintendent.
3. Thirty Minute Watch: This watch requires a detainee be observed by a correctional officer every 30 minutes. This watch can be approved by an on duty supervisor.
4. Restraint Chair: Detainees placed in the security restraint chair will be at the recommendation of a member of the medical staff or an on duty supervisor.
 - A. A restraint chair can also be used in a housing unit other than the quiet room with the approval of the jail superintendent, on duty supervisor, and/or a member of the mental health staff.
 - B. Detainees are to be taken out of the restraint chair and checked by medical personnel every two hours.
 - C. At no time will other detainees have contact with a detainee who is in the restraint chair.
 - D. A minimum of three officers will be present when the detainee is taken out of the restraint chair.
 - E. Medical personnel will check the restraints every time a detainee is secured back into the chair. These checks will be documented by medical and supervisory personnel and turned in with the shift paperwork.
 - F. The restraint chair is to be disinfected after each use.

V. COMMUNICATION:

1. Medical/mental health staff shall communicate daily with correctional officer supervisory staff regarding the status of detainees on suicide watch.
2. The jail classification officer will determine the placement of detainees once they are released from suicide watch.
3. No detainee will be released from suicide watch without the appropriate documented release by the mental health staff.
4. All suicide attempts or actual suicides will be reported immediately to the jail superintendent by the shift supervisor.
5. All actual suicides will be reported to the investigation division and the scene of the incident will be secured for a crime scene investigator.
6. Photographs will be taken by jail staff to visually document evidence at the scene of the suicide.
7. Incident reports will be completed by all staff involved in the incident.

8. All completed suicides or suicide attempts that require medical treatment will be reported to the Illinois Jail and Detention Standards Unit within 72 hours of the incident.

Per orders,

Richard Watson
Sheriff

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