

Epi-2 Report: Epi-Aid 2012-044

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From: Katherine Fowler, Ph.D., EIS Officer, Division of Violence Prevention, National Center for Injury Prevention and Control

Subject: Epi-Aid Trip Report: Adolescent Suicides in Kent and Sussex counties, Delaware

To: Douglas H. Hamilton, M.D., Ph.D., Director, Epidemic Intelligence Service, Scientific Education and Professional Development Program Office (SEPDPO)

Through: Howard Spivak, M.D., Director, Division of Violence Prevention (DVP), National Center for Injury Prevention and Control (NCIPC)
Lynn Jenkins, Ph.D., Branch Chief, Etiology and Surveillance Branch (ESB), NCIPC

Introduction

Between January 11 and March 22, 2012, eight adolescents and young adults (age 13-21) were known to have died by suicide in Kent and Sussex counties, Delaware. These events attracted a great deal of local concern for two primary reasons: First, the number of deaths in the first quarter of 2012 exceeded the number of suicide deaths typically reported in this two county area in an entire year; for example, from 2009-2011, the average annual number of deaths by suicide among persons aged 12-21 years was four. Second, four of these deaths occurred among students attending the same high school, over a period of about 2 months. Of the other four known decedents, one was a middle school student, one was a student at another high school, one was a young adult who

had graduated from an area high school and was still living in Sussex County, and one was a young adult whose education status was unknown.

The Delaware Department of Health and Human Services, Division of Public Health asked the Centers for Disease Control and Prevention (CDC) to assist in conducting an epidemiological study to determine the rates of fatal and nonfatal suicidal behaviors in the first quarter of 2012, examine risk factors, and make recommendations about potential strategies that might be used by community and state leaders to prevent future suicides.

Background

Through a variety of sources, including the Department of Children, Youth and Families, community organizations, school personnel, and newspaper reports, the Delaware Department of Health and Social Services became aware that at least eight adolescents and young adults in Kent and Sussex counties died by suicide between January and March, 2012. Four of these suicides had occurred at the same high school, increasing the perception that the deaths were part of a youth suicide cluster. CDC was asked to assist the Delaware Department of Health and Social Services in conducting a comprehensive descriptive epidemiologic investigation of youth suicidal behaviors in Kent and Sussex counties. In response to this request, CDC initiated an Epi-Aid investigation to gather quantitative and qualitative data about fatal and nonfatal suicidal behavior in Kent and Sussex counties from multiple sources.

The objectives were to: 1) characterize the fatal and non-fatal suicidal behaviors among youth occurring between January and May (when the CDC visit would conclude), 2012, in Kent and Sussex counties, Delaware; 2) describe trends in fatal and non-fatal suicidal behaviors over the past 4 years (2008 - 2012) among youth in Kent County and Sussex County, Delaware to determine the degree to which the current suicide deaths demonstrate an increase over prior years; 3) identify, where possible, victim, family and community risk and protective factors; and 4) identify relevant prevention strategies for youth suicide.

Timeline of Activities

- 3/12/12 – Initial contact by Jim Lafferty, Director of Mental Health Association in Delaware at the request of Rita Landgraf, Secretary of Delaware Health and Social Services. At this point there were 6 known suicide deaths (3 at High School A) among young people in Kent and Sussex counties since January 11, 2012. A conference call was scheduled for 3/26 to further discuss the possibility of CDC assistance.
- 3/22/12 – Another suicide death occurs. Decedent is a student at High School A. Delaware Governor's office becomes involved. CDC receives a call from the Delaware Secretary of Health and Human Services requesting CDC assistance.

- 3/26/12 – First conference call with stakeholders in Delaware. Immediate crisis response activities are discussed, as well as process of initiating a formal request for CDC assistance.
- 4/2/12 – 4/22/12 - Multiple conference calls to discuss scope of the investigation and logistics regarding trip and activities.
- 4/24/12 – 5/4/12 – CDC Epi-Aid team travels to Delaware
 - Opening session with key stakeholders
 - Further consultation with stakeholders about potential sources of data
 - Finalized agenda, confirmed meetings
 - Data review and collection
 - Key informant interviews (2 one-on-one, 3 group) with High School A officials
 - Preliminary analysis of findings
 - Debriefing with stakeholders
- 5/7/12 – 5/18/12 – Continuing correspondence with DHSS staff assisting with additional data collection, and receipt of additional data.
- 5/21/12 - present – Continuing data analysis and drafting of Epi-2 report
- 5/24/12 – Key informant interview with principal of High School B & interviews with staff (guidance counselor & health clinic) from High School B

Methods

The study consisted of the following phases:

- Case definition
- Data gathering
 - Quantitative
 - Existing data on fatal and non-fatal suicidal behaviors from federal, state, and local sources
 - County medical examiner files
 - Emergency room medical records
 - Law enforcement reports
 - Survey data
 - Qualitative
 - Key informant interviews
 - Superintendent of School District A
 - Principal of High School A
 - Select teachers from High School A
 - Guidance counselors at High School A
 - Select crisis workers from area counseling service agency
 - Principal of High School B
 - Guidance counselor at High School B
 - Staff member from wellness center health clinic at High School B
- Data analysis
 - Quantitative
 - Qualitative
- Reporting results
 - Scientific report

- Community debriefings

Phase 1: Case Definition:

- a) A fatal case was defined as a resident of Kent or Sussex County, aged 12-21 years whose death was classified in coroner/medical examiner records as being caused by intentional self-harm, and occurred between January 1, 2012 and May 4, 2012.

- b) A non-fatal case was defined as resident of Kent or Sussex County, aged 12-21 years whose records (medical record and/ or police report) indicated suicidal behaviors during the time period between January 1, 2012 and May 4, 2012. Cases were selected as follows:
 - Chief complaint that contained the word 'suicide' or variations of the word suicide (e.g., suicidal); psychiatric evaluation (for the ER only) or related terms (e.g., depression); or overdose or related terms (e.g., OD, ingestion, intentional overdose), OR
 - Circumstances in the clinical narrative that indicated suicidal behavior, AND
 - The record indicated that suicidal behavior occurred, either by explicitly stating that suicide was attempted or describing behavior consistent with a suicide attempt. Cases involving suicidal ideation and threats that were not accompanied by suicidal behaviors were excluded.

- c) A control (for purposes of a case-control analysis in which the above-defined fatal suicides constitute ‘cases’) was defined as a resident of the state of Delaware, aged 12-21 years whose death was attributed to causes other than intentional self-harm (e.g., unintentional drug overdose, road traffic accident, natural causes) by the county medical examiner, and occurred in the time period between January 1, 2009 and the April 28, 2012.

Phase 2: Data Gathering:

Quantitative Data

Data sources were identified that could be used to determine rates of fatal suicidal and nonfatal suicidal behaviors in Kent and Sussex counties, as follow:

- Fatal Suicidal Behaviors
 - Medical examiner records
 - Law enforcement records
 - Supplemented medical examiner records for certain variables such as weapon type and legal history
- Non-Fatal Suicidal Behaviors
 - Hospital Emergency Department (ED) data
 - EDs A, B, C, and D
 - Inpatient psychiatric hospital data
 - Psychiatric hospitals A and B
 - Law enforcement records

- Used to corroborate health facility location for patients since many persons were transported to the facility by law enforcement
- Youth Risk Behavior Survey Data for 2011
 - Bullying victimization at school
 - Suicidal thoughts and behavior
- National Suicide Prevention hotline national reports and report for the state of Delaware
 - Delaware call volume January 01, 2005 - March 31, 2012
 - Year-to-date call volume report from December, 2011
 - March 2012 monthly report

Quantitative data were used to determine: (1) The rate of fatal and non-fatal suicidal behaviors occurring between January 1 and May 4, 2012 in Kent and Sussex counties, Delaware, (2) Risk factors associated with the fatal and nonfatal suicide behaviors captured, (3) The descriptive epidemiological profile of the cases, including demographics of the decedents/patients, methods used, and risk factors indicated.

Comparisons were made with fatal suicidal behaviors in the same counties in previous years (see Figure 1).

Qualitative Data

Seven key informant interviews (4 individual and 3 group) were conducted in Kent and Sussex counties.

The purpose of the interviews was to talk to adults who regularly interact with young people, particularly the youth affected by the recent suicide deaths in the community. The questions were designed to: 1) assess whether participants believe suicide is a problem in the Kent and Sussex county area; 3) ask participants what they think is contributing to the problem; 4) determine awareness of available resources in the community; 5) inquire about barriers to accessing resources, and 6) ask participants what they think could be done to prevent suicide in their community (see Appendix A).

Phase 3: Data Analysis:

Quantitative Data Analysis

Analyses of county medical examiner, emergency department, inpatient psychiatric, and law enforcement data were conducted in order to describe the characteristics of fatal and non-fatal suicidal behaviors in Kent and Sussex counties from January 1 - May 4, 2012 (see Tables 1 and 2, and Figures 3 and 3). Also see Figure 4 for a summary of suicide hotline calls for the state of Delaware from October 2011-March 2012.

Multiple variables were used to identify cases duplicated across sources. Duplicate cases were only counted once (e.g., if the same person had an ED and a CME record, they were only counted once among fatal cases).

Additionally, we compared and contrasted 2011 youth survey data (YRBS) concerning the topics of bullying and suicidal thoughts and behavior (see Figure 5).

Qualitative Data Analysis

All scheduled key informant interviews were completed. Despite the sensitive nature of the discussions, participants expressed thoughts/feelings and shared their perspectives freely.

The following themes about barriers to suicide prevention and accessing community resources emerged from the key informant interviews:

- Limited activities for youth outside of school
- Limited mental health resources, particularly for children and adolescents; long wait lists
- Lack of transportation to mental health appointments and activities
- Lack of parent/community education (mental health, substance use, suicide prevention, parenting skills)
- Resistance to seeking mental health treatment (parents and kids)
- Inappropriate access to firearms
- Limited student education on substance use, mental health, and suicide
- Limited ongoing staff training specific to substance use, mental health, crisis response, available resources

Other perspectives that emerged from the structured key informant interviews as well as through informal interviews with other adults who interact with youth in the community included the following:

- Although social media was not perceived to play a direct role in the suicide events in the community, it was often a source of information about suicidal behavior, including false rumors. Adults in the community expressed frustration with the degree to which social media is of intense interest among young people, and at the same time provides a virtually unchecked forum for rumors, gossip, and derisive comments.
- Adults generally agreed that the recent suicidal behaviors represent a perceived increase in the rate of such behaviors among youth in the community. No one could recall another time when they observed a series of fatal or nonfatal suicide behaviors like this among young people in the community even though some had lived or worked in the community for over 20 years.
- The clinical personnel at medical and mental health facilities reported impressions of an increase in patients hospitalized for nonfatal suicidal behaviors in the past few months. One provider hypothesized that some of this increase may be due to increased community sensitivity to suicidal ideation among young people, perhaps lowering the threshold for bringing a young person to the hospital. Other providers added that even though this is true, they perceive an increase in serious attempts as well.

- The suicides since January have taken an emotional toll on students in the community, and staff at local schools, particularly High School A.
- The death of the first decedent in the cluster at High School A was reported by the local media in a way that many people found sensationalistic. Namely, the reporter drew quotes and pictures from Facebook, and implied that bullying played a role in the student's death. Several key informants voiced disagreement that bullying was a circumstance in the decedent's suicide, and said that this was sensationalism.
- Several key informants reported that in addition to a lack of many other activities in the community, many young people engage in the use of illicit drugs and alcohol, and abuse prescription drugs.
- State suicide hotline calls for October 2011-March 2012 did not show an overall increase in calls across age groups for the state during this time, or therefore any indication of a general increasing trend.

Limitations

Limitations of this investigation include the following:

- We did not speak directly with students or other young people in the community. It is possible that they may have differing or additional impressions about suicide, and its prevention and response in the community.

- Although we reviewed posted activity on High School A school social media accounts, we were unable to thoroughly investigate other social media activity (such as that between individual students) that could be related to the suicides in this cluster or suicidal behavior in the community.
- Although we canvassed the hospitals in the area that would have most likely received patients who had engaged in suicidal behaviors, and focused on those that would receive the most cases, we were unable to visit every facility.
- Due to ambiguity of circumstances, suicidal behavior is sometimes misclassified. Therefore, there are cases that may have been missed during this investigation (e.g., single occupant motor vehicle accidents; poisonings, other injuries that appear to be accidents). We addressed this by reviewing all cases classified as overdoses (which would likely be the most frequently misclassified) in the age group and time period of interest at all EDs visited to determine whether narratives suggested suicidal intent. Some overdose cases were subsequently classified as suicide attempts in our analyses. As a check on misclassifications of other injuries, we reviewed all trauma cases in the age group and time period of interest at one ED. This review did not yield any additional cases. Still, it is always possible that some additional cases could have been missed because of the way they were classified.

Phase 4: Reporting Results:

The CDC Epi-Aid team presented preliminary data and results during a meeting at the Delaware Department of Public Health in Dover, DE on May 4, 2012.

In this meeting, the CDC team reviewed the background, objectives, and methods of the investigation, and then briefed the stakeholders on the preliminary quantitative and qualitative findings described in this report. Recent findings from large community self-report surveys (e.g., the Youth Risk Behavior Survey; Delaware School Climate Survey) were added for context. Highlights of our findings follow:

- There were 11 deaths by suicide among youths aged 12-21 years in Kent and Sussex counties, Delaware between January 1 and May 4, 2012. This number includes one death that occurred during the course of our investigation (May 2). It excludes one death that occurred just prior to our cutoff date (death occurred on 11/20/11; body of decedent found 12/6/11). This case is notable not only due to its temporal proximity to the other cases, but also because the decedent was an adult education student at High School A. Of the 11 decedents, 4 were students at High School A, 2 were students at other area high schools (2 different schools), 1 was a middle school student, 2 were graduates of area high

schools still living in the area, 1 had dropped out of high school, and 1 was a young adult with an unknown education status.

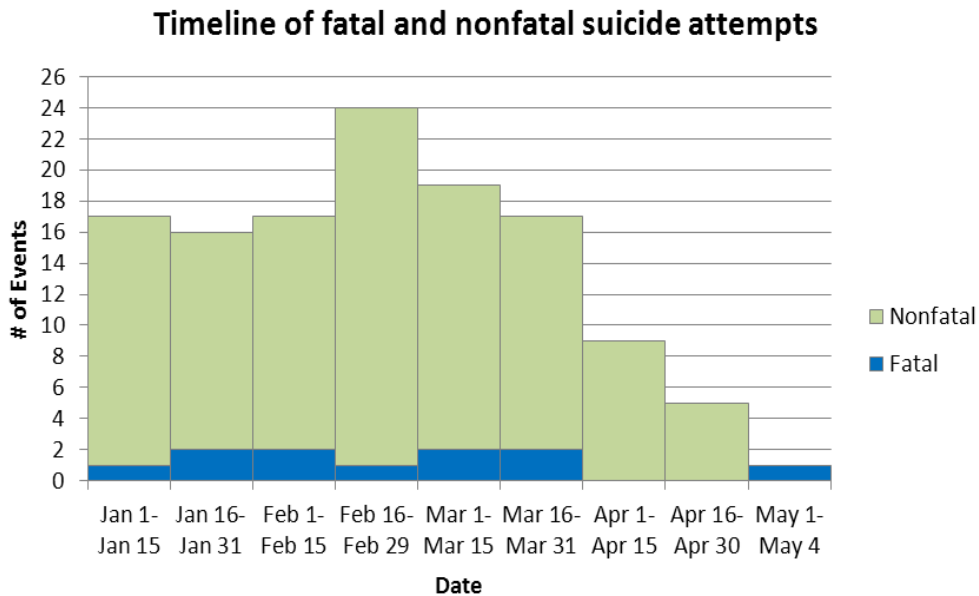
- Hanging was the most frequently used method of self-injury among the decedents, followed by self-inflicted gunshot wound. This is consistent with the national pattern for this age group.
- We estimated 116 nonfatal suicide attempts among youths aged 12-21 years in Kent and Sussex counties, Delaware between January 1 and May 4, 2012. Although this estimate likely includes the majority of cases, it should be noted that we were unable to cover every facility that might attend a patient who has attempted suicide, and that there are often other persons who do not seek medical attention after making a suicide attempts and go undetected in official records.
- Overdose was the most frequently used method of nonfatal suicide attempts. Many of these attempts, likely the majority (the precise proportion will be quantified in pending analyses), involved prescription and/or over-the-counter drugs. The second leading method was cutting. These two leading methods are consistent with the methods recorded for this age group at the national level.
- Multiple youth who engaged in nonfatal suicidal behavior had a mention in their medical record of personally knowing or knowing of another young person in the community who died of or attempted suicide. Seventeen of the 116 youth who attempted

suicide indicated that a peer or friend had attempted or died by suicide; 11 of these 17 specifically indicated that the peer or friend was a fellow student.

- The most commonly found circumstances surrounding the suicides in this cluster and the number of decedents reporting each (n) were as follows: mental health problems (e.g., depression, anxiety, prior suicidal ideation; n=7); recent problem between decedent and parent(s) (n=5); recent legal problems (n=5); recent problem with boyfriend or girlfriend (n=4); substance use (n=4); academic problems (n=3); left a note, called or texted about suicide (n=3); recent problem with peers (n=2); decedent was a sexual minority (n=2). These circumstances were consistent with the scientific research literature regarding the most commonly identified factors associated with youth suicidal behavior.
- All decedents' cases included two or more of these circumstances. Over half of the decedents were found to have experienced 5 or more. This is consistent with research literature that indicates that youth who commit or attempt suicide usually have multiple risk factors for suicide.
- 2011 youth survey data (YRBS) Youth in both Kent and Sussex Counties were approximately equal to the U.S. average for self-reported suicidal behavior. Youth in both counties report a lower prevalence of suicidal thoughts than the U.S. average. Youth in

Kent Co. reported less bullying victimization than the US average while those in Sussex Co reported about the same as the US average.

A timeline of the fatal and nonfatal suicidal behaviors in Kent and Sussex counties for the first quarter of 2012 was constructed:



Youth who commit or attempt suicide typically have multiple risk factors for suicide before an attempt is made. A precipitating event then often triggers the attempt in an already vulnerable person. Therefore, it is possible to detect risk factors for suicide in youth, and prevent suicidal behaviors in vulnerable young

persons. With this context in mind, the preliminary recommendations presented by the CDC team were:

- Periodic mental health (including suicidal behavior) awareness training for persons in youth-serving organizations, to help staff identify youth at risk, and guide those youth to appropriate services.
- Develop partnerships to help address needs of youth. Two suggested areas of focus for community partnerships are:
 - Data gathering and monitoring – e.g., health department, hospitals, medical examiner – to identify trends in youth suicide behaviors.
 - Youth programs through the education system, faith-based organizations, and community-based organizations. Organizations may individually have limited resources, so partnerships that facilitate the combining of resources are particularly important.
- Review evidence-based suicide prevention strategies for youth. Some suggested resources are:
 - Through funding from a Garrett Lee Smith Suicide Prevention Grant, the Department of Services for Children, Youth, and Their Families has already been implementing the “Lifelines” program developed by Maureen Underwood in local middle schools. . . . Program implementation can be extended to Kent and Sussex county high schools and any middle schools that have not yet implemented it.

- The Suicide Prevention Research Centre (SPRC) adolescent suicide prevention program manual:
http://www.sprc.org/library_resources/items/adolescent-suicide-prevention-program-manual
- The National Registry of Evidence-based Programs and Practices (NREPP):
<http://www.nrepp.samhsa.gov/>
- The recent toolkit released by the [Suicide Prevention Resource Center](#) of the [Substance Abuse and Mental Health Services Administration](#) (SAMHSA), "Preventing Suicide: A Toolkit for High Schools.":
<http://store.samhsa.gov/shin/content/SMA12-4669/SMA12-4669.pdf>
- Continued implementation of the CDC media guidelines for reporting on suicide, introduced and reviewed in pre-visit conference calls.

Next steps include: Case-control analyses of fatalities, further analysis of risk factors for fatal and nonfatal suicide behaviors (including areas of special interest to our stakeholders, such as childhood trauma/victimization), and distribution of the final report to stakeholders.

Katherine Fowler, PhD, EIS Officer
EIS Officer

Table 1. Descriptive findings: Fatal and nonfatal suicide behaviors in youths aged 12-21 in Kent & Sussex Counties, Delaware, Jan 1-May 4, 2012.

		Fatal		Nonfatal	
		<i>n</i>	%	<i>n</i>	%
Age					
	12-13	1	9	8	7
	14-15	0	0	31	27
	16-18	8	73	45	39
	19-21	2	18	32	28
	<i>Total</i>	11	100	116	100
Sex					
	Female	4	36	65	56
	Male	7	64	51	44
	<i>Total</i>	11	100	116	100

Table 2. Circumstances indicated in deaths by suicide among youths aged 12-21 in Kent & Sussex Counties, Delaware, Jan 1-May 4, 2012.

Circumstance	Fatal	
	<i>n</i>	%
Mental health problem(s)	7	64
Recent conflict w/parent	5	46
Recent legal problem	5	46
Recent problem w/boyfriend or girlfriend	4	36
Substance use	4	36
Academic problem	3	27
Left note, called or texted about suicide	3	27
Sexual minority	2	18
Recent peer problem	2	18

Figure 1. Number of deaths by suicide among Kent and Sussex County youth aged 12-21 from 2009-May 2012, by year

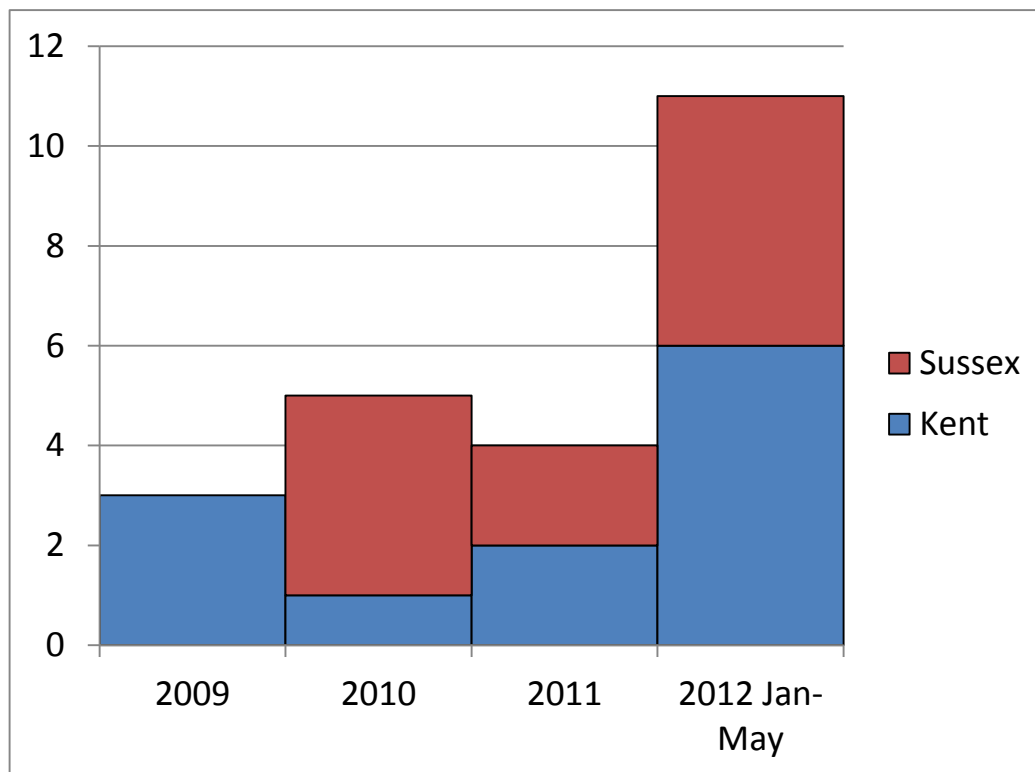


Figure 2. Method of suicide attempt or death by suicide for fatal and nonfatal cases among Kent and Sussex County youth aged 12-21 from January 1 - May 4, 2012

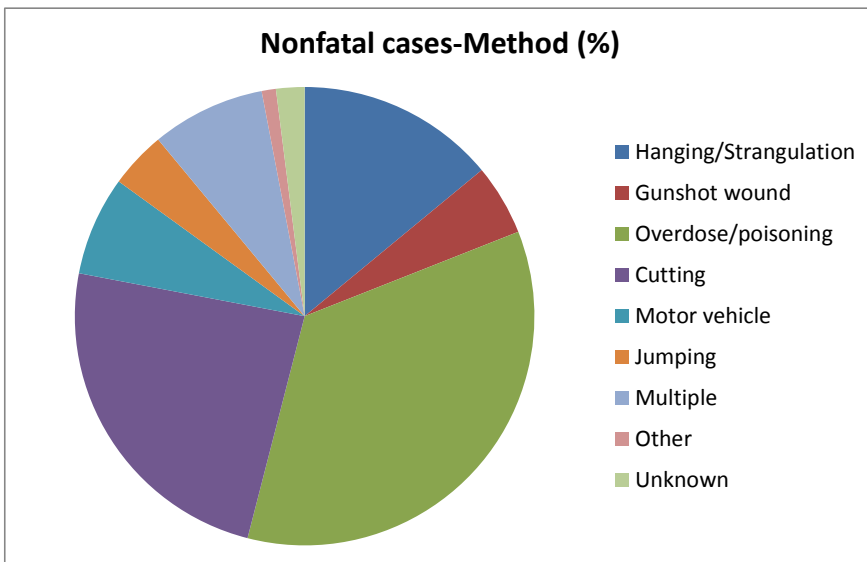
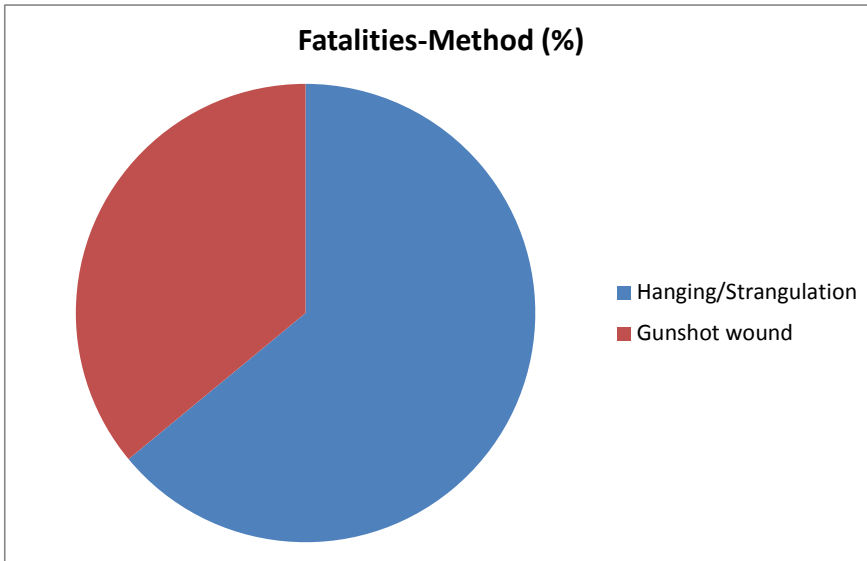


Figure 3. Number of circumstances per decedent in Kent and Sussex County youth suicide cluster January 1- May 4, 2012

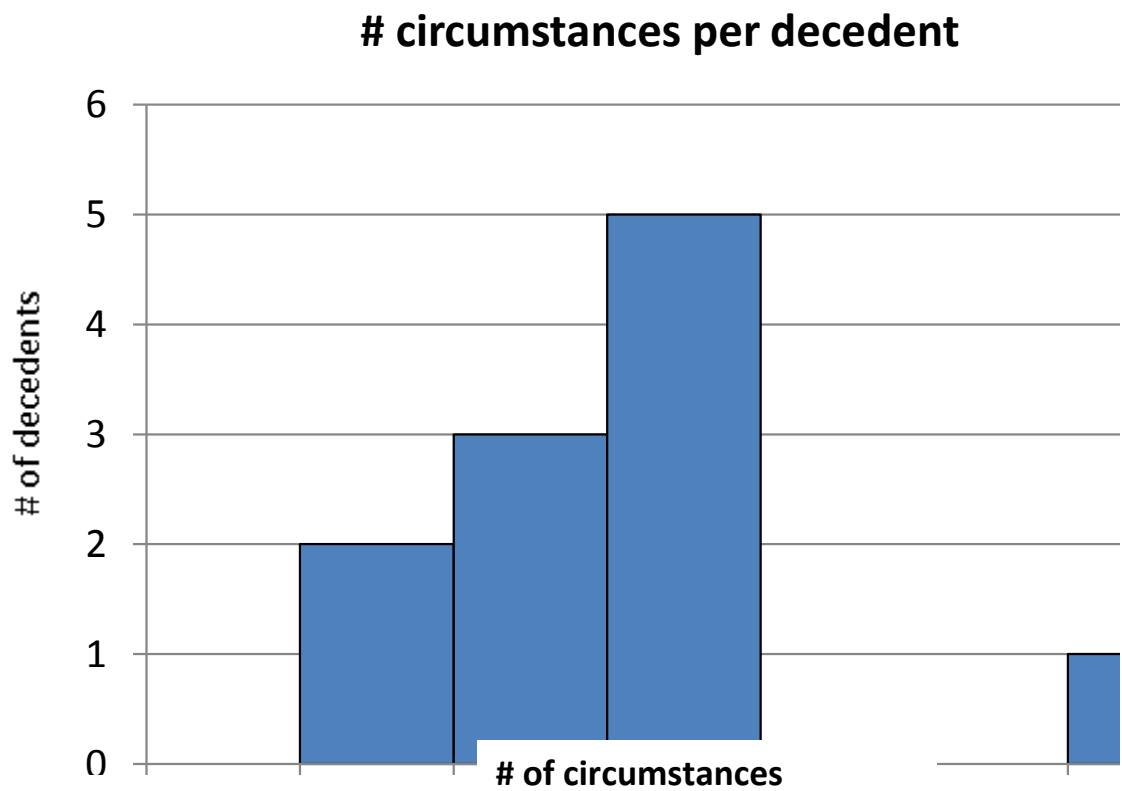


Figure 4. National Suicide Prevention Lifeline calls for the state of Delaware from October 2011 – March 2012

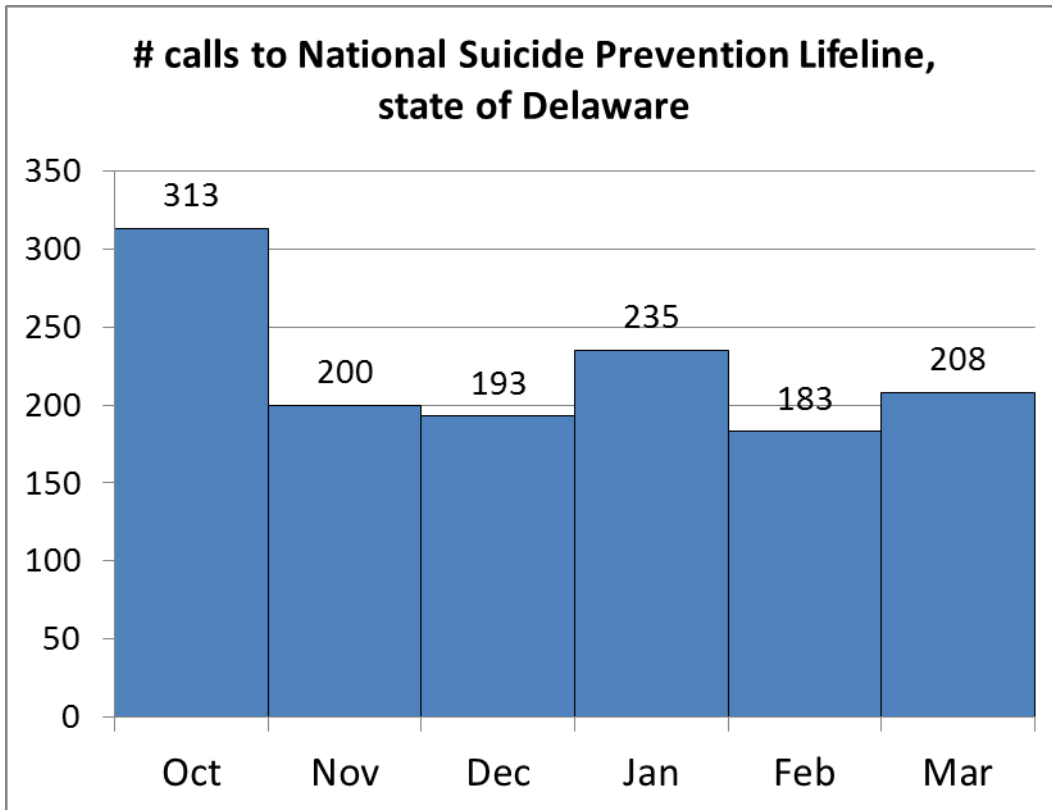
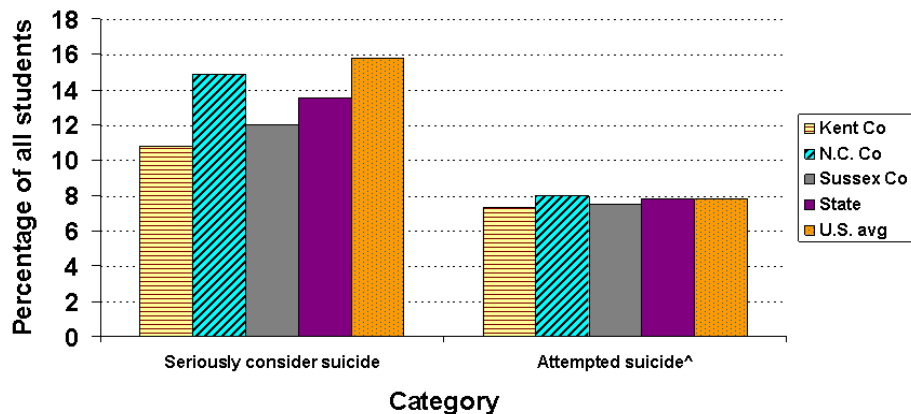


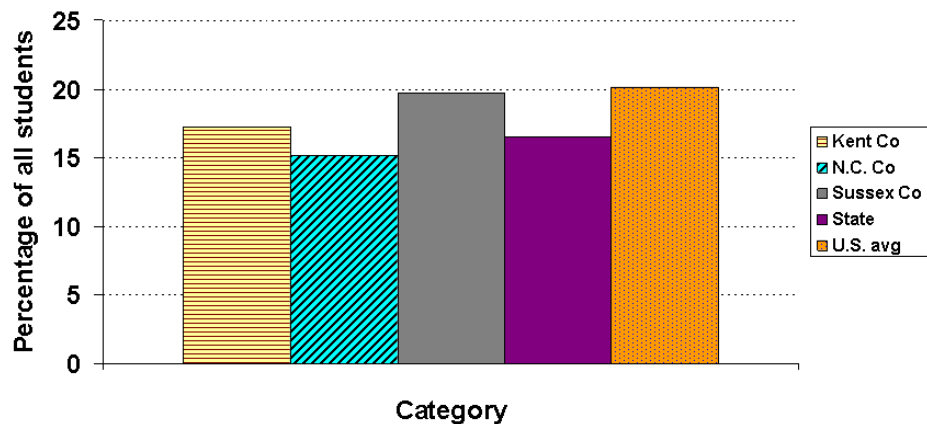
Figure 5. YRBS suicidal ideation and bullying data: Kent and Sussex counties, state of Delaware, and national data.

Suicidal ideation and behavior among high school students by category and sex* -- US and Delaware, 2011



Source: CDC Youth Risk Behavior Survey
 * During the 12 months preceding the survey
 ^One or more times

Ever bullied on school property among high school students by category and sex* -- U.S and Delaware, 2011



Source: CDC Youth Risk Behavior Survey
 * During the 12 months preceding the survey

Appendix A. Key informant interview

Introductory information

- a) Title/position:
- b) Role in the community
- c) How long this person lived and/or worked in the community (is this person from the area or an “outsider”. Does s/he remember any previous local cluster to current events?

Questions:

1. Do you think there is a suicide problem in this area? Why or why not?
 - a) If yes, do they think it's specifically a youth suicide problem?
2. Do you personally know someone who died by suicide or attempted suicide?
3. Have you been affected by the recent suicides in the community? How?
4. How do people in this area respond when someone dies by suicide?
 - a) How does the town respond?
 - b) How do schools respond?
 - c) How do parents respond?.
 - d) How do young people respond?
5. Is there something about this community that affects the way people think about or respond to suicide?
6. What resources are available in the area for helping young people who might be feeling suicidal?
7. What kind of resources or people do you think might help prevent suicide?
 - a. Are those people currently involved?
 - b. If not, what might help them get involved?

8. When it comes to addressing the needs and problems of young people, what do you think the community needs most?

9. What are the barriers, if any, to seeking and accessing mental health care/resources?

a. Any specific barriers among youth/young adults?

b. In the community, in general?

10. Do you think or know of any role social media has played in the recent events (suicides)?

11. Is there anything else you think we should know?