Executive Summary
This report leverages hospitalization, vital records, youth survey and school health data to describe the impact of suicide and suicide attempts on youth living in Anne Arundel County, Maryland. As of 2016, of all reporting counties, Anne Arundel had the sixth highest suicide rate in Maryland. Between 2012 and 2016, over one-tenth of Anne Arundel County residents that committed suicide were age 10 to 24 years old. During that period, 79% of the youth suicides were male and 90% were white. Suicide attempts show a slightly different story. Youth suicide attempts comprised half of all suicide attempts for Anne Arundel County, 71% of which were female. The number of crisis interventions specific to the threat of suicide has been on the rise in Anne Arundel County school health rooms, peaking at 134 interventions in the 2015-2016 school year. Additionally, the number of crisis interventions for social and emotional problems has more than doubled since 2013. The report concludes with a call for early intervention for county youth in an effort to prevent suicide.

Introduction
In 2016, almost 45,000 individuals committed suicide in the United States, an average of 123 people per day. Nationally, suicide has consistently remained a leading cause of death, tenth overall in 2015\(^1\).

While the rates of the other leading causes of death have decreased over the past decade, suicide is the only exception. After remaining stable through the mid-eighties and nineties, suicide rates have been on the rise since the turn of the century, increasing between 1-2% each year\(^2\). Since 2000, the age-adjusted mortality rate for suicide nationwide has increased by 27%, reaching 13.5 deaths per 100,000 population in 2016\(^1,2\).

Suicides among youth comprise a large part of this increase in recent years. Between 2014 and 2015 alone, the suicide rate among individuals ages 15 to 24 years increased by 8%\(^1\) – the second leading cause of death in this age group behind unintentional injury.

Anne Arundel County is not immune to these trends. In 2016, suicide was also the eleventh leading cause of death in all age groups in the county\(^3\). However, among youth aged 10 to 24 years, suicide was the second leading cause of death\(^3\). Between 2012 and 2016, 13.8% of all deaths in Anne Arundel County youth aged 10 to 24 years were due to suicide\(^4\). One-fifth of Anne Arundel County’s population between 2012 and 2016 was in this age group (estimated 106,350 residents).

While the burden of mortality due to suicide in youth is considerable, the number of encounters for suicide attempts by youth is much larger. Although males are four times as likely as females to commit suicide, females are three times as likely to attempt suicide\(^5\).

There are many reasons adolescents and young adults may experience suicidal thoughts and behaviors, including the physical, mental and emotional pressures that are commonly present during this developmental period. In 2014, over a quarter (27.4%) of Anne Arundel County high school students reported feeling sad or hopeless so that they had stopped doing some usual activities in the past year\(^6\). Additionally, 17% of county high school students seriously considered attempting suicide, with 13.8% making a plan about how they would attempt suicide, during the past year\(^6\).
Drug and alcohol use are also contributing factors to suicidal ideations and attempts, especially in the young adult population. Recently, the impact of substance use disorders involving opioids has been substantial in the county. Although the link between drug overdoses and suicidal ideation is unknown, over 15% of overdoses occurring in Anne Arundel County in 2017 were among youth aged 18 to 24 years.

This report analyzes data on youth suicide and suicide attempts. These data help to define the scope of the problem, identify at-risk populations and inform future programmatic decisions around suicide surveillance and intervention in the community.

**Methodology**

**Data Sources**

Mortality data was extracted from the 2012-2016 Anne Arundel County death certificate data files provided by the Maryland Department of Health (formerly Maryland Department of Health and Mental Hygiene), Vital Statistics Administration. Suicide deaths were classified with the *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* (ICD-10) underlying cause-of-death codes for intentional self-harm (suicide): U03, X60-X84, Y87.0. Age-adjusted suicide rates were obtained from the Vital Statistics Annual Reports.

Hospitalization and emergency department encounter data was extracted from the 2012-2016 inpatient and outpatient hospital discharge files from the Maryland Health Services Cost Review Commission (HSCRC). Until 2015, hospital discharge diagnoses were classified using *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM). The ICD-9-CM incorporated a supplementary field to code for external causes of injury (E-codes), including suicide attempts. On October 1, 2015, health care providers in the United States were required to begin using the *International Classification of Diseases, Tenth Revision, Clinical Modification* (ICD-10-CM) for medical coding and reimbursement purposes. The ICD-10-CM discontinued the use of supplementary E-codes. Because the HSCRC dataset time periods used in this report overlap this shift, both ICD classifications were required for this analysis.

A suicide attempt encounter was defined as either the primary discharge diagnosis, any of the 28 secondary diagnoses or the E-code fields indicating the following:

<table>
<thead>
<tr>
<th>Hospital Discharge Diagnosis Codes</th>
<th>ICD-9-CM</th>
<th>ICD-10-CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>• E950 - E959: Suicide and self-inflicted injuries</td>
<td>T14.91: Injury of unspecified body region, suicide attempt</td>
<td>X71 – X83: Intentional self-harm</td>
</tr>
<tr>
<td>• T36 - T50: Poisoning by, adverse effect of and underdosing of drugs, medicaments and biological substances</td>
<td>T51 – T65: Toxic effects of substances chiefly nonmedicinal as to source</td>
<td>T71: Asphyxiation</td>
</tr>
</tbody>
</table>

*Note: In the following ranges, only diagnoses indicating “intentional self-harm” were extracted. These diagnoses typically ended with the incorporation of the number ‘2’ (e.g., -X2A, -2XA, -2A) and were embedded within the breadth of these listed range values.*
Data from police interactions was provided by the Anne Arundel County Police Department\textsuperscript{7}. Data on school room interactions was provided by the Anne Arundel County Department of Health, Bureau of School Health Services\textsuperscript{10}. Youth risk behavior data was adapted from the 2014 Youth Risk Behavior Survey (YRBS), which is administered in Maryland schools every other year\textsuperscript{6,11,12}. Results from the 2016 Maryland YRBS were not available at the time of this report’s publication.

Population and general county demographic data was obtained from the U.S. Census 2012-2016 American Community Survey 5-year estimate tables.

**Definitions**

- **Youth**: Individuals ages 10 to 24 years residing in Anne Arundel County.
- **Suicide**: Death caused by self-directed injurious behavior with any intent to die as a result of the behavior\textsuperscript{13}.
- **Suicide attempt**: A non-fatal, self-directed, potentially injurious behavior with intent to die as a result of the behavior. A suicide attempt might not result in injury\textsuperscript{13}.

**Data Limitations**

Hospital discharge data only provides information on Anne Arundel County residents with encounters or hospitalizations in Maryland hospitals. Therefore, residents, such as college-age students, with encounters or admissions for suicide attempts in other states or the District of Columbia were not included in these estimates.

The 2012, 2013 and 2014 datasets only provided a medical record number (MRN) which is patient-specific within a certain hospital, but does not transfer if the same patient has an encounter in a different hospital. Another identifier was provided in the 2015 and 2016 datasets that is assigned to the same patient regardless of hospital of encounter or admission. Therefore, the results in this report reflect individual encounter or hospitalization counts, not individual patient counts due to the limitations of the MRN stated above.

Due to the change in coding in the hospital discharge data files used in this analysis, the authors do not recommend direct comparisons to previously published reports on youth suicide by the Anne Arundel County Department of Health.
**Suicide Among All Ages in Anne Arundel County**

In 2016, suicide was the eleventh leading cause of death of Anne Arundel County residents\(^3\). The number of deaths due to suicide had been on the rise since 2011, reaching 69 deaths in 2015, but saw its first decline in 2016\(^3\). An average of 61 people committed suicide during this timeframe, an increase from an average of 52 deaths between 2008 and 2012\(^3\). Although the suicide rate in the county has trended above the state average, as of 2016, it remains lower than the national rate (13.5 deaths per 100,000)\(^1,3\). NOTE: A three-year rolling average of age-specific suicide death rates was computed to smooth fluctuations from one year to another.

![Number of Deaths by Suicide (All Ages), Anne Arundel County, 2012-2016]

*N = 304*

Source: Maryland Department of Health, Vital Statistics Administration, Death Certificate Files 2012-2016

![Age-Adjusted Suicide Rates per 100,000 (All Ages), Anne Arundel vs. Maryland vs. United States, 2012-2016]

Source: Maryland Department of Health, Vital Statistics Administration, 2012-2016 Annual Reports; U.S. Centers for Disease Control and Prevention, CDC Wonder
Suicide Among All Ages in Anne Arundel County

Of counties reporting at least 20 deaths from suicide, Anne Arundel had the fourth highest suicide rate of the Maryland jurisdictions between 2014 and 2016.3

![Age-Adjusted Suicide Rates per 100,000 by County (All Ages), Maryland, 2014-2016](source)

Source: Maryland Department of Health, Vital Statistics Administration, 2016 Annual Report
Youth Suicides in Anne Arundel County

Between 2012 and 2016, over one-tenth of Anne Arundel County residents that completed suicide were age 10 to 24 years old. During this timeframe, the average population of this age group was 106,350 residents. As of 2016, the Anne Arundel County youth suicide rate was 7.8 per 100,000, an increase compared to the rate of 5.3 per 100,000 in 2012. The county suicide rate exceeded the state average since 2014, but remained lower than the national average as of 2016. Although there is one year of overlap in 2012, the number of suicides was higher for 2012-2016 (N=42) compared to the previous report for 2008-2012 (N=38). NOTE: A three-year rolling average of age-specific suicide death rates was computed to smooth fluctuations from one year to another.

Number of Suicides Among Youth Aged 10-24 Years,
Anne Arundel County, 2012-2016
N = 42

Suicide Rate Among Youth Aged 10-24 Years,
Anne Arundel vs. Maryland vs. United States, 2012-2016

Source: Maryland Department of Health, Vital Statistics Administration, Death Certificate Files 2012-2016

Source: Centers for Disease Control and Prevention, CDC Wonder
Demographics of Youth Suicide

Although the rate of suicide among young women aged 15 to 19 years has doubled in the U.S. since 2007, male youth continue to be at a higher risk of suicide death overall\textsuperscript{14}. In Anne Arundel County: \textbf{31 (74\%)} of youth suicides aged 10 to 24 years between 2012 and 2016 were male\textsuperscript{4}.

White youth were more likely than other races to die from suicide in Anne Arundel County during that same time period. Almost 90\% of youth suicides between 2012 and 2016 were by white residents\textsuperscript{4}. This composition varies slightly from the national racial breakdown, but is considerably different than breakdown statewide. Countywide, these estimates also differ from the racial composition in this age group; Anne Arundel County youth aged 10 to 24 years is roughly 70\% white and 21\% black.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
\textbf{Race} & \textbf{Anne Arundel} & \textbf{Maryland} & \textbf{United States} \\
\hline
\textbf{White} & 88\% & 67\% & 81\% \\
\textbf{Black} & 5\% & 27\% & 11\% \\
\textbf{Other} & 7\% & & \\
\hline
\end{tabular}
\caption{Proportion of Suicides Among Youth Aged 10-24 Years by Race, Anne Arundel vs. Maryland vs. United States, 2012-2016}
\end{table}

Source: Maryland Department of Health, Vital Statistics Administration, Death Certificate Files, 2012-2016; CDC Wonder
Risk Factors of Youth Suicide

Reducing access to common lethal means of suicide has shown to decrease suicide rates by as much as half\textsuperscript{15}. Primary access to these means for youth, and therefore the core of this prevention strategy, is deeply rooted in the home. Two-fifths (40\%) of youth suicides in Anne Arundel County between 2012 and 2016 occurred at home, while another almost 40\% occurred elsewhere in the community (e.g., recreational site or street/highway)\textsuperscript{4}.

Nationally, firearms continued to be the most common mechanism of youth suicide; however, over the past decade, suffocation (including hanging and strangulation) rates increased significantly across all sexes, races/ethnicities and age groups, the largest increase among youth aged 15 to 19 years\textsuperscript{16}. Between 2012 and 2016, almost two-thirds of youth suicides in Maryland and half of Anne Arundel County were due to suffocation\textsuperscript{3,4}.
Preventing access to lethal means is not the only way to decrease suicide rates. **Protective factors** for suicide include: supportive, involved family members and caregivers who are attuned to a child’s needs and promote a sense of safety, especially at home; a sense of connectedness and belonging; good social and problem-solving/reasoning skills. Conversely, other **risk factors** for suicide include childhood trauma and abuse (which may/may not involve substance use disorders); lack of family support/understanding; poverty; bullying; social isolation; a sense of disconnection and depression.

**Youth Suicide Attempts Leading to Emergency Department Encounters**

One of the most obvious but most impactful risk factors for youth suicide is any history of suicide attempt. The magnitude of suicide attempts is much larger than suicide: the Centers for Disease Control and Prevention (CDC) estimates that for each youth suicide, there are 25 suicide attempts\(^1\). Between 2012 and 2016, there were 1,306 emergency department (ED) encounters in Maryland hospitals for suicide attempts by Anne Arundel County youth aged 10 to 24 years, an average of 261 per year\(^9\). Similar to the completed suicides among this age group, there were more ED encounters for suicide attempts between 2012-2016 compared to the previous report for 2008-2012 (N=1,070). Youth suicide attempts comprised half of all suicide attempts for Anne Arundel County, 71% of which were female\(^9\). The rate of suicide attempts by female youth has steadily increased since 2012 in the county\(^9\).

![2 to 1: The number of youth suicide attempts made by Anne Arundel County females compared to males between 2012 and 2016.](image)

![Rate of Suicide Attempts Among Youth Aged 10-24 Years by Sex, Anne Arundel County, 2012-2016](chart)

**Rate of Suicide Attempts Among Youth Aged 10-24 Years by Sex, Anne Arundel County, 2012-2016**

\(N = 1,306\)

- **2012**: Male 142.4, Female 927, Total 348.0
- **2013**: Male 170.9, Female 379.6, Total 269.8
- **2014**: Male 149.5, Female 393.4, Total 265.1
- **2015**: Male 158.4, Female 407.3, Total 276.3
- **2016**: Male 117.5, Female 433.0, Total 267.0

Source: Maryland Health Services Cost Review Commission (HSCRC), Outpatient Hospital Discharge Files 2012-2016.
Youth Suicide Attempts Leading to Emergency Department Encounters

Among youth, the suicide attempt rate was almost two times higher among 15 to 19 year olds, compared to other youth age groups\(^9\). The risk of suicide attempt was highest among female youth aged 15 to 19 years (591.2 per 100,000); a 43% increase compared to the previous 5-year period\(^9\).

![Rate of Suicide Attempts Among Youth by Age Group, Anne Arundel County, 2012-2016](chart)

Three-quarters of suicide attempts between 2012 and 2016 were by white youth, followed by 17% by black youth\(^9\). The racial composition is similar to the county’s overall demographic profile, and there have been no remarkable changes in the rates of suicide attempts by race during this time period.

![Proportion of Suicide Attempts Among Youth Aged 10-24 Years by Race, Anne Arundel County, 2012-2016](chart)

Source: Maryland Health Services Cost Review Commission, Outpatient Hospital Discharge Files 2012-2016
Youth Suicide Attempts Leading to Emergency Department Encounters

Similar to the preceding 5-year period, poisoning and cutting/piercing represented well over three-quarters of emergency room encounters for Anne Arundel County youth suicide attempts between 2012 and 2016, and they were the primary methods of suicide attempts among female youth.

Source: Maryland Health Services Cost Review Commission, Outpatient Hospital Discharge Files, 2012-2016
Youth Suicide Attempts Leading to Emergency Department Encounters

Although each region of the county contributed different proportions of emergency department encounters for youth suicide attempts between 2012 and 2016, the estimates were parallel with the population proportions of the county each region represents.
## Youth Suicide Attempts Leading to Emergency Department Encounters

**Frequency and Rate of Suicide Attempts Among Youth Aged 10-24 Years by ZIP Code, Anne Arundel County, 2012-2016**

<table>
<thead>
<tr>
<th>ZIP Code</th>
<th>Area</th>
<th>Number of Suicide Attempts</th>
<th>Rate per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>20701*</td>
<td>Annapolis Junction</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20711</td>
<td>Lothian</td>
<td>22</td>
<td>336.6</td>
</tr>
<tr>
<td>20714*</td>
<td>North Beach</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20724</td>
<td>Laurel</td>
<td>30</td>
<td>221.1</td>
</tr>
<tr>
<td>20733</td>
<td>Churchton</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20736*</td>
<td>Owings</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20751</td>
<td>Deale</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20754*</td>
<td>Dunkirk</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20755</td>
<td>Ft. Meade</td>
<td>21</td>
<td>139.5</td>
</tr>
<tr>
<td>20758</td>
<td>Friendship</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20764</td>
<td>Shady Side</td>
<td>20</td>
<td>359.1</td>
</tr>
<tr>
<td>20765</td>
<td>Galesville</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20776</td>
<td>Harwood</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20778</td>
<td>West River</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20779</td>
<td>Tracy’s Landing</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>20794*</td>
<td>Jessup</td>
<td>19</td>
<td>**</td>
</tr>
<tr>
<td>21012</td>
<td>Arnold</td>
<td>70</td>
<td>340.7</td>
</tr>
<tr>
<td>21032</td>
<td>Crownsville</td>
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<td>376.9</td>
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<tr>
<td>21035</td>
<td>Davidsonville</td>
<td>20</td>
<td>233.6</td>
</tr>
<tr>
<td>21037</td>
<td>Edgewater</td>
<td>72</td>
<td>361.0</td>
</tr>
<tr>
<td>21054</td>
<td>Gambrills</td>
<td>27</td>
<td>344.2</td>
</tr>
<tr>
<td>21056</td>
<td>Gibson Island</td>
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<td>**</td>
</tr>
<tr>
<td>21060</td>
<td>Glen Burnie (East)</td>
<td>58</td>
<td>221.5</td>
</tr>
<tr>
<td>21061</td>
<td>Glen Burnie (West)</td>
<td>131</td>
<td>259.5</td>
</tr>
<tr>
<td>21076*</td>
<td>Hanover</td>
<td>17</td>
<td>**</td>
</tr>
<tr>
<td>21077</td>
<td>Harmans</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>21090</td>
<td>Linthicum Heights</td>
<td>19</td>
<td>**</td>
</tr>
<tr>
<td>21108</td>
<td>Millersville</td>
<td>31</td>
<td>157.8</td>
</tr>
<tr>
<td>21113</td>
<td>Odenton</td>
<td>73</td>
<td>246.4</td>
</tr>
<tr>
<td>21114</td>
<td>Crofton</td>
<td>60</td>
<td>258.7</td>
</tr>
<tr>
<td>21122</td>
<td>Pasadena</td>
<td>169</td>
<td>289.5</td>
</tr>
<tr>
<td>21140</td>
<td>Riva</td>
<td>16</td>
<td>**</td>
</tr>
<tr>
<td>21144</td>
<td>Severn</td>
<td>80</td>
<td>229.5</td>
</tr>
<tr>
<td>21146</td>
<td>Severna Park</td>
<td>76</td>
<td>288.3</td>
</tr>
<tr>
<td>21225*</td>
<td>Brooklyn Park</td>
<td>36</td>
<td>256.5</td>
</tr>
<tr>
<td>21226*</td>
<td>Curtis Bay</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>21401</td>
<td>Annapolis</td>
<td>81</td>
<td>277.6</td>
</tr>
<tr>
<td>21402</td>
<td>Naval Academy</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>21403</td>
<td>Eastport</td>
<td>61</td>
<td>279.5</td>
</tr>
<tr>
<td>21405</td>
<td>Sherwood Forest</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>21409</td>
<td>Annapolis</td>
<td>40</td>
<td>185.1</td>
</tr>
</tbody>
</table>

**Anne Arundel County**

<table>
<thead>
<tr>
<th>Number of Suicide Attempts</th>
<th>Rate per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,306</td>
<td>247.6</td>
</tr>
</tbody>
</table>

**Source:** Maryland Health Services Cost Review Commission, Outpatient Hospital Discharge Files, 2012-2016

*ZIP codes shared with other jurisdictions; data presented is for Anne Arundel County only.

**Counts under 11 observations and rates based on counts less than 20 observations are suppressed.
Youth Suicide Attempts Leading to Emergency Department Encounters

The majority (82.1%) of youth suicide attempt ED encounters were treated at the two hospitals located within Anne Arundel County: Anne Arundel Medical Center, located in Annapolis, and University of Maryland Baltimore Washington Medical Center, located in Glen Burnie. The ED charges totaled $1.1 million during this 5-year time period, with more than 70 Anne Arundel youth having multiple encounters for suicide attempts. Although winter has traditionally been associated with increased suicide incidence, the spring months of March and April recorded the most county emergency room visits for youth suicide attempts compared to other months of the year.

### Proportion of Suicide Attempt Emergency Department Encounters Among Youth by Treatment Hospital, Anne Arundel County, 2012-2016

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne Arundel Medical Center</td>
<td>40.4%</td>
</tr>
<tr>
<td>Baltimore Washington Medical Center</td>
<td>41.7%</td>
</tr>
<tr>
<td>Harbor Hospital</td>
<td>3.9%</td>
</tr>
<tr>
<td>Other Hospitals</td>
<td>14.0%</td>
</tr>
</tbody>
</table>

Source: Maryland Health Services Cost Review Commission, Outpatient Hospital Discharge Files 2012-2016

### Number

- **72 People**: The number of persons with at least two youth suicide attempts between 2012-2016.

- **April**: The month with the most encounters for youth suicide attempts between 2012-2016. Followed by March, December, and January.

- **$1.1 Million**: The total emergency department charges for youth suicide attempts between 2012-2016. An average of $788 per visit.

Source: Maryland Health Services Cost Review Commission, Outpatient Hospital Discharge Files 2012-2016
Youth Suicide Attempts Leading to Inpatient Hospitalizations

On average each year, 90 youths are hospitalized for attempted suicide in Anne Arundel County. Parallel to the emergency department encounter data, female youth had more hospitalizations for suicide attempts. Poisoning was the most common method reported. The median hospitalization charge due to suicide attempts during this time period was $6,091. The total charges were $4,588,542.

![Number of Hospitalizations for Suicide Attempts Among Youth Aged 10-24 Years by Sex, Anne Arundel County, 2012-2016](image)

Source: Maryland Health Services Cost Review Commission, Inpatient Hospital Discharge Files 2012-2016

![Method of Suicide Attempt Leading to Hospitalization Among Youth Aged 10-24 Years, Anne Arundel County, 2012-2016](image)

Source: Maryland Health Services Cost Review Commission, Inpatient Hospital Discharge Files 2012-2016
Emergency Evaluations Reported by Police

There were over 1,800 emergency evaluations performed by Anne Arundel County Police for juvenile (age 17 years and younger) suicidal or out of control behavior between 2012 and 2016. Two-thirds of juveniles were white, followed by 29% black and 5% other or unknown race. A little over half (55%) were emergency evaluation for female juveniles.

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total*</td>
<td>322</td>
<td>323</td>
<td>422</td>
<td>385</td>
<td>396</td>
</tr>
<tr>
<td>Male</td>
<td>146</td>
<td>135</td>
<td>190</td>
<td>165</td>
<td>181</td>
</tr>
<tr>
<td>Female</td>
<td>175</td>
<td>180</td>
<td>226</td>
<td>214</td>
<td>209</td>
</tr>
</tbody>
</table>

*Total includes male, female and missing sex; male and female totals will not add exactly to total.

Source: Anne Arundel County Police Department, Police Reports
School Health Room Visits for Crisis Interventions

The Anne Arundel County Department of Health provides school health services to all students enrolled in Anne Arundel County Public Schools. School nurses work collaboratively with guidance counselors and other school staff members to ensure that students’ social, physical and mental health needs are addressed.

The number of crisis interventions specific to the threat of suicide had been on the rise in Anne Arundel County school health rooms, peaking at 134 interventions in the 2015-2016 school year\textsuperscript{10}. The number of crisis interventions for social and emotional problems has more than doubled since 2013\textsuperscript{10}.

Although concerning at first glance, the reduction in suicide threats between the 2015-2016 and 2016-2017 school years complemented an increase in reports of social and emotional crises during the same time period, a potential indication that students sought help instead of planning suicide. Correspondingly, an increase in QPR (Question, Persuade, Refer) suicide prevention training, that promotes help-seeking behavior, was implemented in the schools during this same time.

![Graph: Number of Crisis Interventions for Suicide Threats, Anne Arundel County Public Schools, 2012-2017](source: Anne Arundel County Department of Health, Bureau of School Health Services)

![Graph: Number of Crisis Interventions for Social/Emotional Problems, Anne Arundel County Public Schools, 2012-2017](source: Anne Arundel County Department of Health, Bureau of School Health Services)
Maryland Youth Risk Behavior Survey

The Maryland Youth Risk Behavior Survey (YRBS) is administered in Maryland middle and high schools biennially to monitor behaviors affecting morbidity and mortality among youth. One of the 12 risk behaviors that the YRBS addresses is suicide.

High School Youth

In 2014, over a quarter of Anne Arundel County high school students reported that they were sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities in the past year; 17% seriously considered a suicide attempt with 13.8% making a suicide attempt plan. These estimates were slightly higher than the statewide averages: In Maryland, 26.8% felt sad or hopeless impeding usual activities, 15.9% seriously considered a suicide attempt and 12.7% made a suicide attempt plan.

Female high school students were twice as likely to report feeling sad or hopeless so that it impeded usual activity compared to male high school students (36.3% vs. 18.5%), as well as more likely to seriously consider suicide attempt (21.6% vs. 12.2%) and make a suicide attempt plan (17.5% vs. 9.8%). The disparity was even more pronounced comparing high school students identifying as lesbian, gay or bisexual compared to heterosexual students: over half of LGBTQ youth (53.9%) reported feeling sad or hopeless impeding usual activities compared to 23.3% of heterosexual youth. LGBTQ students were three times as likely as heterosexual students to seriously consider suicide (40.5% vs. 13.4%) and to make a suicide attempt plan (34.8% vs. 10.1%).

Suicide attempt contemplation and planning also differed by age group, grade and race/ethnicity; however, the estimates were not statistically different from each other.

![Chart](image)

Source: Maryland Youth Risk Behavior Survey, Anne Arundel High School Results, 2014
The 2014 YRBS also reports that 15.9% of Anne Arundel County middle school students seriously thought about killing themselves. Similar to the high school estimates, female middle school students were significantly more likely than male students to think about killing themselves (19.2% vs. 12.4%). Although the percentage of middle school students contemplating suicide increased with age group and grade, these estimates were not statistically different from one another.

Middle School Youth

The 2014 YRBS also reports that 15.9% of Anne Arundel County middle school students seriously thought about killing themselves. Similar to the high school estimates, female middle school students were significantly more likely than male students to think about killing themselves (19.2% vs. 12.4%). Although the percentage of middle school students contemplating suicide increased with age group and grade, these estimates were not statistically different from one another.

Source: Maryland Youth Risk Behavior Survey, Anne Arundel High School Results, 2014

Source: Maryland Youth Risk Behavior Survey, Anne Arundel Middle School Results, 2014
Public Health Burden of Youth Suicide in Anne Arundel County

The burden of youth suicide in Anne Arundel County goes beyond just deaths. For each completed youth suicide there are several more youth who are thinking about attempting suicide or have attempted suicide.

![Diagram](image.png)

**Public Health Burden of Suicide and Suicidal Behavior Among Youth Aged 10-24 Years, Anne Arundel County, 2012-2016**

- Suicide Deaths: 42
- Suicide Attempt Hospitalizations: 459
- Suicide Attempt ED Visits: 1306
- Suicidal Thoughts, Contemplation, Planning: 1000's?
Summary and Next Steps/Strategies

The Anne Arundel County Department of Health is addressing the following priority areas holistically by bringing together a team comprised of multiple County agencies and community stakeholders. This team will be tasked with designing and executing strategies that educate and empower the community, parents, students and school personnel alike to:

- Promote help-seeking behaviors at home, in school and among peers
- Foster resiliency in our youth
- Reduce mental health related stigma
- Expose and prevent bullying behavior
- Address the unique challenges of social media and cyberbullying
- Create a conversation around mental health and firearm safety

Through prevention efforts and early intervention, we can strive to “preserve, promote and protect” the health of our youth in Anne Arundel County.

<table>
<thead>
<tr>
<th>Identified Priority Area:</th>
<th>Recommendation/Action Item(s)</th>
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<tbody>
<tr>
<td><strong>1. Impact of the Family and the Home Environment</strong></td>
<td>1. Continue to monitor trends in suicide completion (Vital Statistics) and suicide attempts (hospital discharge data) with annual quantitative updates.</td>
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<td>• Suicide is the 11th leading cause of death (all ages) in Anne Arundel County; however, the average number of completed suicides increased to 61 per year between 2012 and 2016, compared to an average of 52 completed suicides per year during the previous 5-year period. Children with a family history of suicide are at a higher risk of suicide themselves.</td>
<td>2. Coordinate presentations to county hunting/sportsman clubs on mental health and gun safety. Print publications from the American Foundation for Suicide Prevention (AFSP) and the Maryland Licensed Firearms Dealer Association can be distributed regarding firearm safety and suicide prevention.</td>
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<td>• Many completed youth suicides continue to occur within the home of residence; therefore, there is an opportunity for caretakers to inventory and eliminate availability to lethal means directly within the home. Although the majority of completed youth suicides continued to involve suffocation, over one-third of remaining youth suicides involved firearms between 2012 and 2016.</td>
<td>3. Distribute brochures and other print media to pediatricians addressing the proper storage of firearms and ammunition, how to identify the signs of depression and suicidal ideation, including the “Be Kind to Your Mind” postcards.</td>
</tr>
<tr>
<td>• While firearms are a traditional “lethal means,” caretakers should also limit access to less obvious risks, such as easy access to prescription opioid medications. Half of the 1,300 suicide attempts between 2012 and 2016 involved poisoning of some type.</td>
<td></td>
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</tbody>
</table>
2. Identification and Outreach to Special Populations at Risk

- Four out of five completed youth suicides in Anne Arundel County are male; however, over two-thirds of suicide attempts are among females, an indication of the possibility that warning signs may be limited or less apparent among males before an actual event occurs.
- Sexual orientation may be a significant risk factor: In both the 2013 and 2014 Youth Risk Behavior Surveys, Anne Arundel County LGBTQ middle and high school students were more likely to report feeling sad or hopeless to the point it impeded normal activity, considering a suicide attempt and making a plan for suicide than their heterosexual student counterparts.

1. Conduct a public service announcement competition for students about kindness, tolerance, acceptance and speaking up about bullying in time for Mental Health Month in May.
2. Facilitate the printing of crisis hot/text lines on the student school identification cards for the beginning of the 2018-19 school year.
3. Promote help-seeking behaviors and guidance to youth on how to talk with peers if concerned about depression or suicide risk.
4. Purchase and disseminate the film “It’s Real – College Students and Mental Health,” an 18-minute film produced by AFSP to show to high school juniors and seniors to promote help-seeking behaviors, awareness of mental health symptoms and stigma reduction.

3. Sustained Capacity to Identify Risk in the Community

- While the home environment and family support structure is the foundation for youth, it is also important to recognize crucial points of influence in the community, such as the Anne Arundel County school system. Although there was a substantial increase of crisis interventions for social and emotional problems in over the past few years, this may be indicative that school children feel more comfortable reporting potential destructive behavior by themselves or friends and/or teachers may have increased awareness of these problems. Furthermore, the number of crisis interventions for suicide threat decreased over the past school year which, when compared to the increased number of interventions, may indicate that problems are addressed earlier preventing reaching the point of making a suicide plan.
- The police are another peripheral source of interaction. The number of calls for juvenile suicidal or out-of-control is on the rise over the past few years. It is important that police also have the appropriate means for referral to services when an incident occurs.
- Finally, although there are several sources of data on youth suicide risk factors, there is a significant dearth in the amount of data available to describe protective factors (e.g., effective mental health care, problem-solving skills and social support systems) for youth.

1. Work with schools to provide a Bullying Prevention Program to PTA/PTO groups, as well as in-service trainings to teachers, targeting elementary and middle schools. This program incorporates resilience, problem-solving strategies and tips for conversing with one’s children at different ages.
2. Ensure that all first responders, including law enforcement, are trained in youth mental health first aid.
3. Continue to operate the Community of Hope Teen/Disconnected Youth Drop-In Center, located in Brooklyn Park, MD.
4. Follow ongoing research related to the effectiveness of various interventions, such as texting vs. phone hotlines, online interactive screening programs, and the influence of sleep and appetite on suicidal ideation.
4. Role of Social Media and Media Messaging in Youth Development

- Although not explicitly measured by the quantitative data provided in this report as it is a relatively new influence, the impact of social media should be taken into consideration. With children and teenagers spending more and more time in front of a screen (with recent estimates by the nonprofit Common Sense Media of up to nine hours a day), it is expected that the impact of social media (and general media messaging) will become more significant.

- Cyberbullying is one risk factor for youth suicide attempt. According to the 2014 YRBS, almost 16% of Anne Arundel County high school and 21% of middle school students reported being bullied electronically (including through email, chat rooms, instant messaging, websites or texting).

- The amount of information on suicide found on social media platforms can have both positive and negative effects. While the internet and social media sites are powerful tools to promote resources for suicide prevention, they also provide the opportunity for contributors to disseminate pro-suicide dialogues, such as suicide methods and/or suicide pacts.

1. Educate the community on the definition and prevalence of cyberbullying in the county. Since cyberbullying is not physical, educating parents and friends on the variety of formats (e.g., private messages, emails, photographs) is important.

2. Provide resources on how to report cyberbullying across a variety of social media and online platforms

3. Promote the use of anti-bullying applications, such as:
   a. STOPit (bullying reporting app)
   b. ReThink (filtering technology for offensive content)
   c. Puresight (filtering app to alert parents of verbal violence)
Resources

County Resources:

- Anne Arundel County Mental Health Agency
  - Provides linkage to care for mental health case management, outpatient therapy, residential programs and mobile crisis to county residents
  - 410-222-7858/http://www.aamentalhealth.org

- Anne Arundel County Department of Health, Adolescent and Family Services
  - Provides outpatient mental health and addiction services for county children and adolescents ages 4 to 18 and their families

- Partnership for Children, Youth and Families
  - Provides activities to strengthen current systems of care so that children and families’ basic needs are met, including connecting youth to resources in the community

- Anne Arundel County Youth Suicide Action Team (YSA)
  - Provides support, services and resources to promote optimal mental health in order to prevent youth suicide and eliminate its stigma
  - http://www.achoicetolive.org

- National Alliance on Mental Illness (NAMI), Anne Arundel County
  - Local advocate for access to mental health services, treatment and research
  - 443-569-3498/http://www.namiaac.org

- Chesapeake Life Center
  - Provides grief/trauma support for community members, regardless of type of loss
  - 1-888-501-7077/http://www.hospicechesapeake.org

- Anne Arundel County Students Against Destructive Decisions (SADD) Chapters
  - Student-led prevention coalitions in 12 public high schools, 19 public middle schools, two special needs schools and six private schools in the county
  - 410-222-6724/http://www.preventsubstanceabuse.org/coalitions/sadd/

Crisis Text/Hotlines:

- Crisis Text Line: 741741 (text only)
- National Suicide Prevention Lifeline: 1-800-273-TALK (8255)/En Espanol 1-888-628-9454
- Maryland Youth Crisis Hotline: 1-800-422-0009
- Anne Arundel County Crisis Response System: 1-410-768-5522
- Anne Arundel County Public Schools Student Safety Hotline: 1-877-676-9854

General Information:

- American Foundation for Suicide Prevention (AFSP): http://www.afsp.org/maryland
- Johnson Family Foundation: http://www.jffnd.org

LGBTQ-Specific Information:

- LGBT Youth Crisis and Support Lifeline: http://www.thetrevorproject.org
- Gay, Lesbian and Straight Education Network (GLSEN): http://www.glsen.org

IMPORTANT:
In case of emergency, call 911.
References


7Anne Arundel County Police Department.

8Maryland Health Services Cost Review Commission. Inpatient Hospital Discharge Files 2012-2016.

9Maryland Health Services Cost Review Commission. Outpatient Hospital Discharge Files 2012-2016.


