

# Northern New England Poison Center

1-800-222-1222

[www.nnepc.org](http://www.nnepc.org)

Text **POISON** to 85511



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# Objectives

- Overview of the Northern New England Poison Center
- Review national, regional and local trends
- Highlight recent suicide and self poisoning research
- Discuss poison center data regarding suspected suicide attempt cases
- Discuss prevention efforts

# Northern New England Poison Center

## 1-800-222-1222

- American Association of Poison Control Centers Certified Regional Center
  - Serves Maine, New Hampshire and Vermont- 3.5 M population
  - Federal, State and Local Funding
- Free, confidential 24/7 Hotline
- 330 calls a day
  - Medication #1 poisoning
- Highly trained staff
  - Nurses certified in poison information
  - Doctors & Doctors in Pharmacy boarded in toxicology
  - Other specifically trained health care professionals
  - Poison prevention educators



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# Mission

*Prevents poisonings*  
*Minimizes the effects of*  
*poisonings*  
*Reduces health care costs*

## **Provides**

- 24 x 7 Hotline
- Consultation services
- Education
- Surveillance
- Research

**National Poison Data  
System is a valuable tool  
for evaluating  
epidemiology of suspected  
suicide by self-poisoning**



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# National Data

- Suicide 2<sup>nd</sup> leading cause of death in 10—24 year olds
- Self poisoning leading cause of suicide attempts and 3<sup>rd</sup> leading cause of suicide in adolescents
- Females have higher rates for attempts and suicide
- Rate tripled for girls 10- 14 year old girls
- 56% increase from 2007 to 2016 among 10-19 year olds - Rate had been decreasing before 2007
- 2017 YRBS reports 17.2% of high school students consider suicide in a given year



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Clinical Research

# Repetition of intentional drug overdose: a population-based study

Yaron Finkelstein , Erin M. Macdonald, Simon Hollands, Marco L. A. Sivilotti, Janine R. Hutson, Muhammad M. Mamdani, ...show all

Pages 585-589 | Received 29 Nov 2015, Accepted 04 Apr 2016, Published online: 12 May 2016

## Original Investigation

June 2015

### Risk of Suicide Following Deliberate Self-poisoning

Yaron Finkelstein, MD, ABCP(Dip)<sup>1,2,3,4</sup>; Erin M. Macdonald, MSc<sup>5</sup>; Simon Hollands, MSc<sup>5</sup>; [et al](#)

[» Author Affiliations](#) | [Article Information](#)

*JAMA Psychiatry.* 2015;72(6):570-575. doi:10.1001/jamapsychiatry.2014.3188

Epidemiology  
Research

## Trends in self-poisoning and psychotropic drug use in people aged 5–19 years: a population-based retrospective cohort study in Australia

Rose Cairns<sup>1, 2</sup>, Emily A Karanges<sup>3</sup>, Anselm Wong<sup>4</sup>, Jared A Brown<sup>1</sup>, Jeff Robinson<sup>5</sup>, Sallie-Anne Pearson<sup>3</sup>, Andrew H Dawson<sup>1, 6</sup>, Nicholas A Buckley<sup>1, 7</sup>

[Author affiliations](#) +



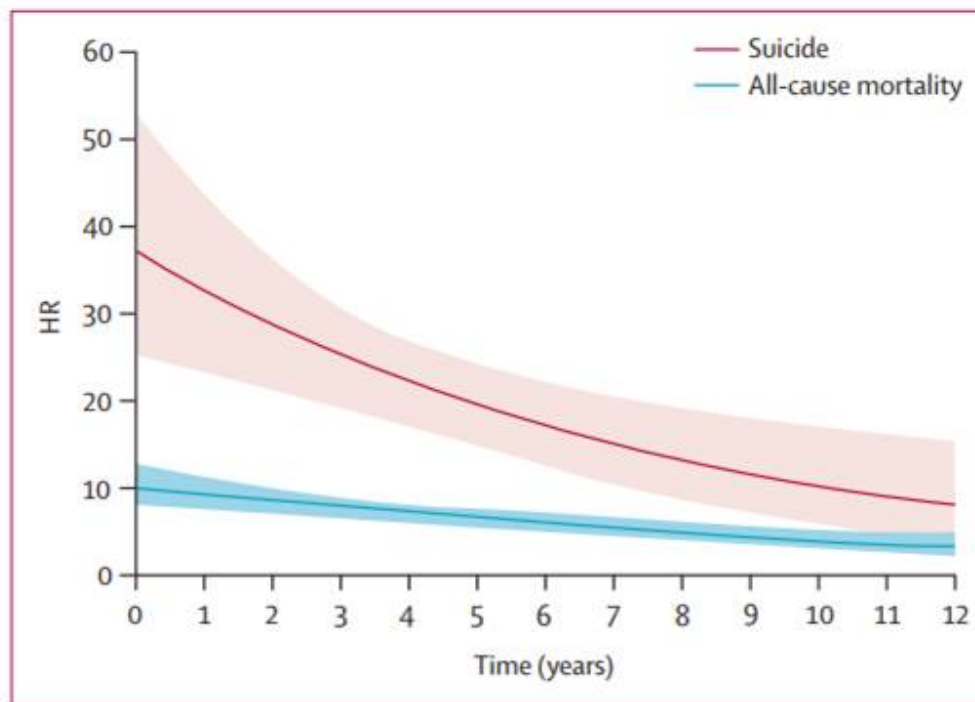
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- First episode of deliberate self-poisoning is a strong predictor of subsequent suicide and premature death.
- Suicide accounts for roughly 1 in 4 fatalities in the decade following self-poisoning



**Figure 1: Suicide and all-cause mortality following self-poisoning**  
Instantaneous HRs (95% CIs) for suicide and all-cause mortality after a first episode of self-poisoning over follow-up. HR=hazard ratio.



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## Sex- and Age-specific Increases in Suicide Attempts by Self-Poisoning in the United States among Youth and Young Adults from 2000 to 2018

Henry A. Spiller, MS, DABAT<sup>1,2</sup>, John P. Ackerman, PhD<sup>3,4</sup>, Natalie E. Spiller, BS<sup>5</sup>, and Marcel J. Casavant, MD<sup>1,2</sup>

**Objective** To evaluate the incidence and outcomes from intentional suspected-suicide self-poisoning in children and young adults ages 10-24 years old from 2000 to 2018.

**Study design** Retrospective review of intentional suspected-suicide self-poisoning cases reported to the National Poison Data System from US poison centers from 2000 to 2018 for patients 10-24 years old. For comparison of annual rates, population data by year of age were obtained from the US Census Bureau. We evaluated changes in the annual incidence, the annual rate per 100 000 population, and the medical outcome by patient age and sex.

**Results** There were 1 627 825 intentional suspected-suicide self-poisoning cases, of which 1 162 147 (71%) were female. In children 10-15 years old from 2000 to 2010, there was a decrease in number and rate per 100 000 population followed by a significant increase (from 125% to 299%) from 2011 to 2018. In children 10-18 years old, the increase from 2011 to 2018 was driven predominantly by females. In 19-24 years old age groups, there was a temporal delay and reduced increase in slope compared with the younger groups. There were 340 563 moderate outcomes, 45 857 major outcomes, and 1404 deaths. The percentage of cases with a serious outcome, major effect, or death increased over time and with age.

**Conclusions** The incidence and rate of suicide attempts using self-poisoning in children less than 19 years old increased significantly after 2011, occurring predominantly in young girls. There has been an increase in the severity of outcomes independent of age or sex. (*J Pediatr* 2019;■:1-8).



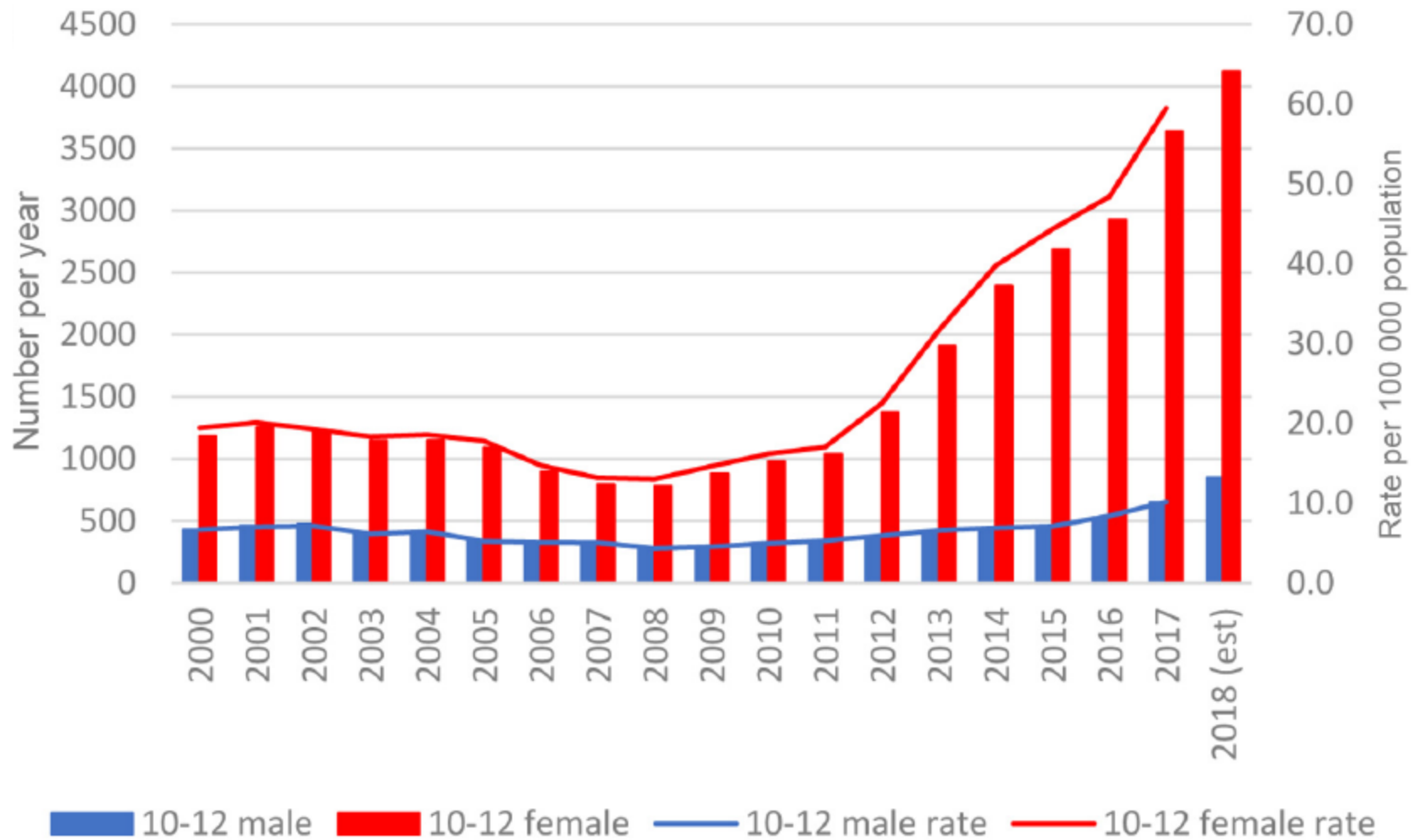
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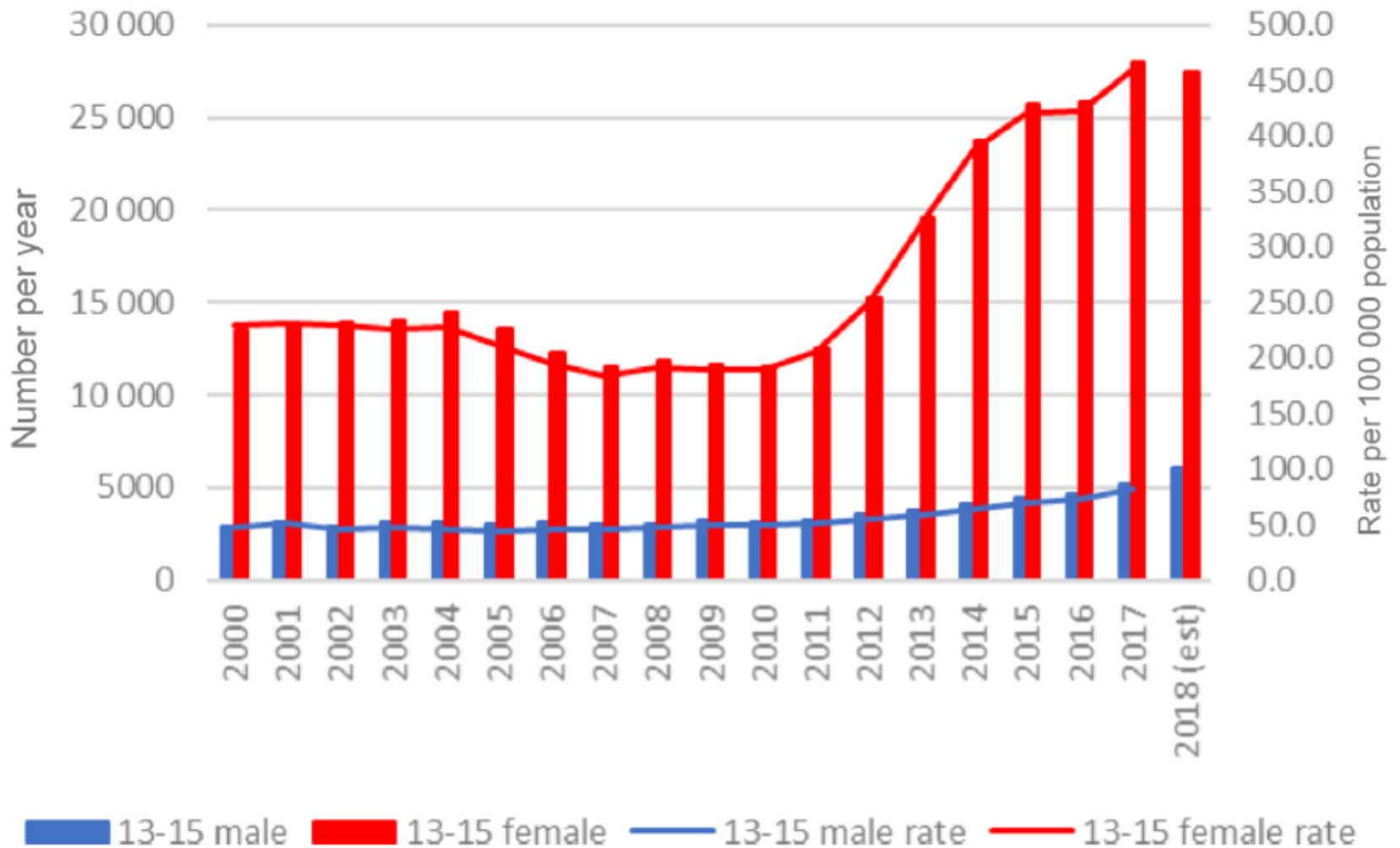
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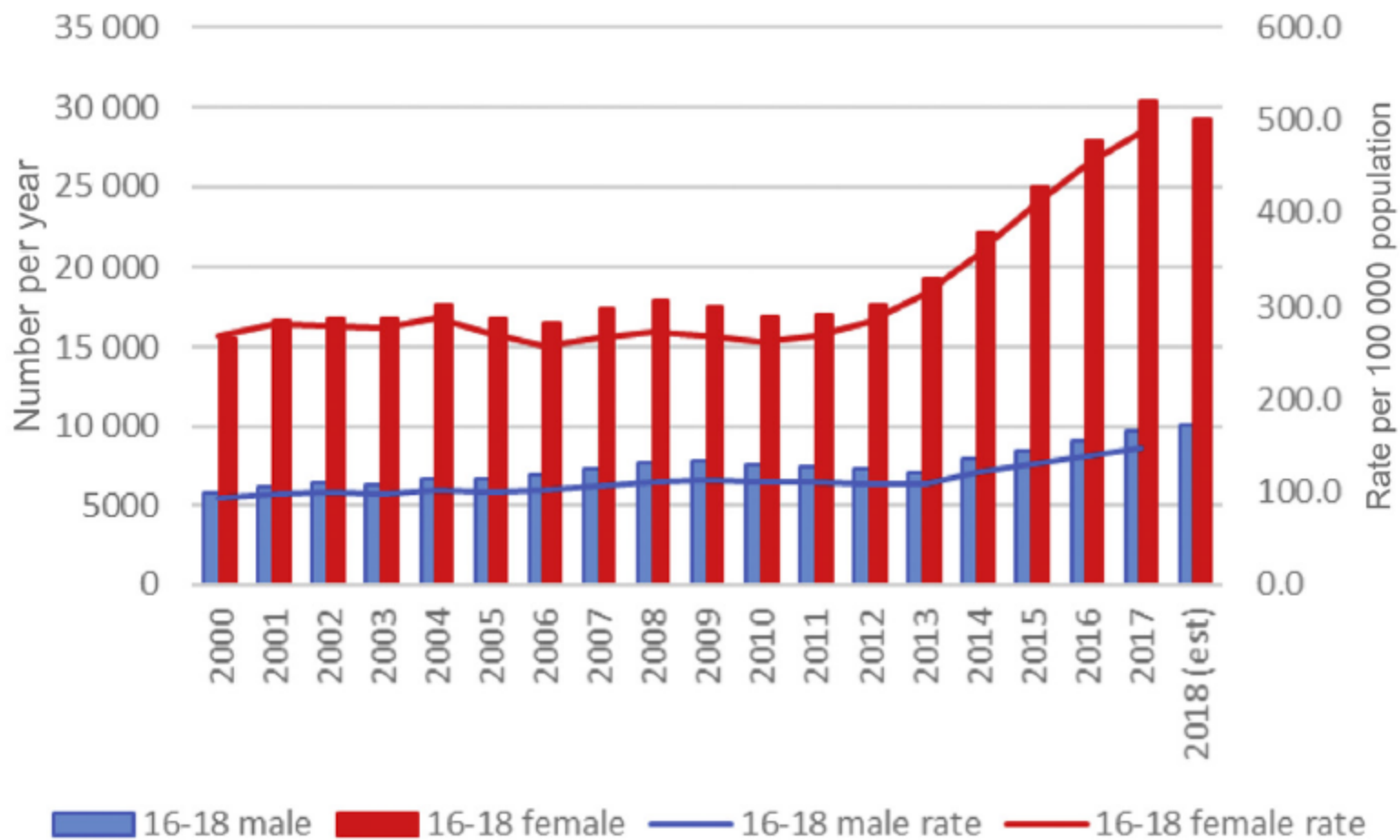
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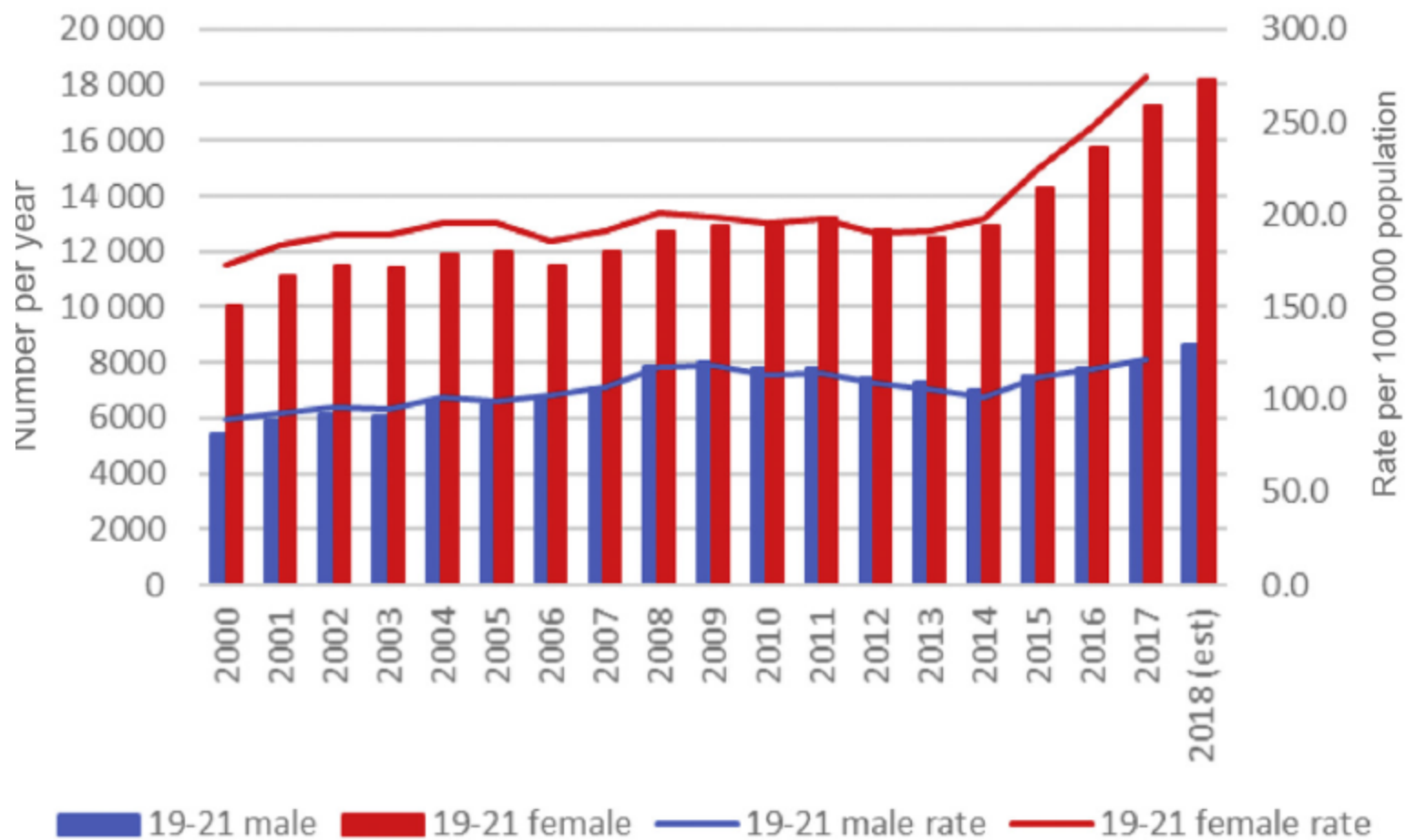
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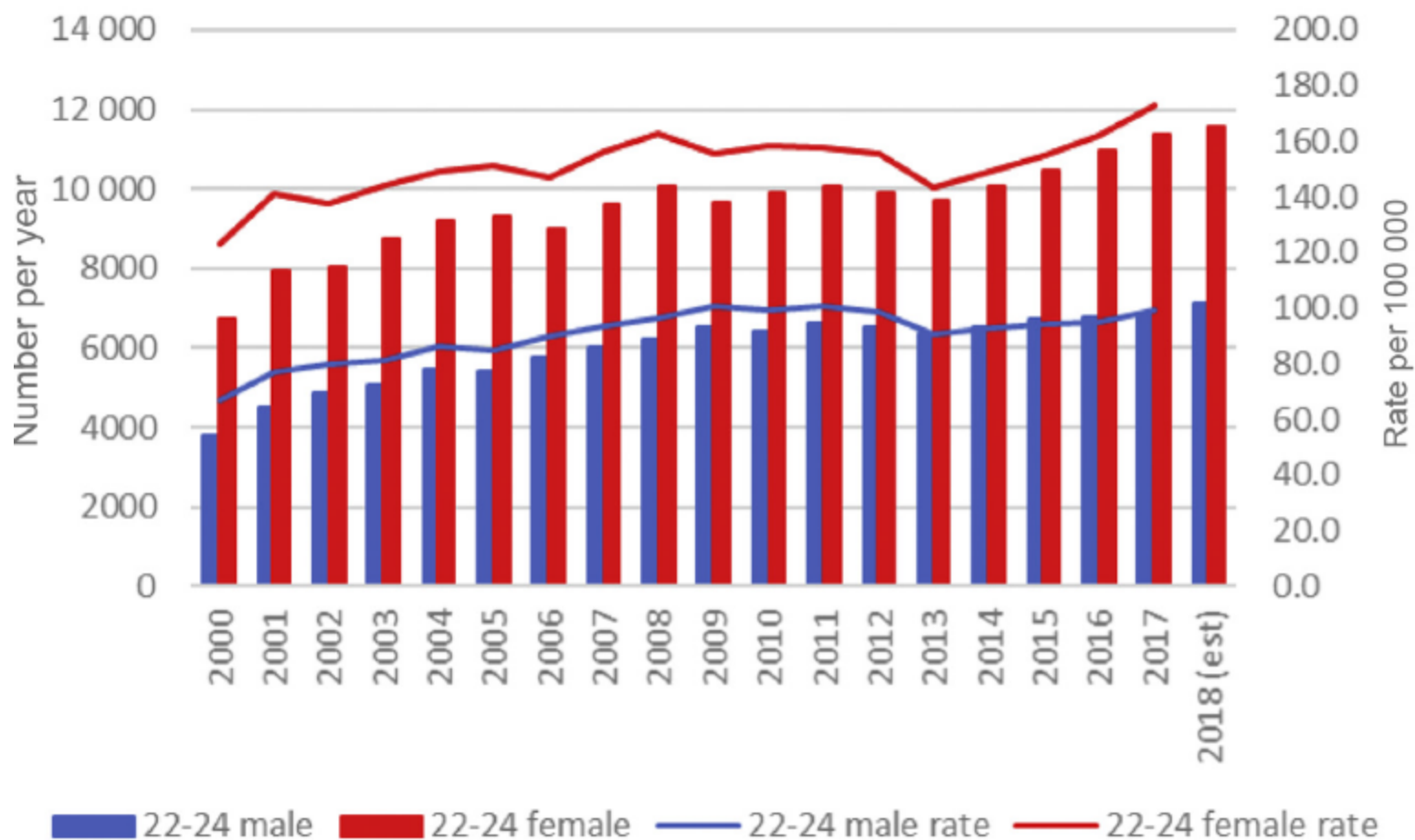
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# National Poison Center Data

- Number of cases per year with serious outcomes increased
- Greatest increase in rate and number occurred in 10-15 year olds
- Highest number of cases in 13-18 yrs.
- % of cases per age group with serious outcome, major effect or death increased with age
- Children <19 yrs. - the annual suicide attempts by self-poisoning doubled from 2000 to 2018
- Serious outcomes increased 235%



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Source: Spiller, 2019

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# National Trends

- Overall suicide attempt rates are increasing
- Suicide attempt by self-poisoning driven by girls
- Significant rate of increase less than 18 years
- Increase in severity of suicide attempts independent of age or sex
- One third of intentional suicide patients having serious outcome
- No causal explanation
  - Psychosocial, technological, economic factors

# National Poison Center

## Reason for Human Exposure Cases

### Intentional - 2017

- Suspected suicide – 13%
- Misuse – 2.7%
- Abuse – 2.3%
- Unknown - .9%

18.9% Intentional

American Association of Poison Control Center's Annual Report 2017



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# National Poison Center **Fatalities** Intentional Suicide - 2017

- 702 cases
  - 96% were 20 years or older (n=671)
  - 4% were 13 to 19 years (n= 25)
  - < 1% were 6 to 12 years (n=3)

American Association of Poison Control Center's Annual Report 2017

# VT Suicide Attempt Cases 2009-2018

- 5,459 Vermont suicide-attempt cases
- **23 resulting in death (0.4%).**
  - 20s – 4
  - 30s – 1
  - 40s – 6
  - 50s – 6
  - 60s – 4
  - 70s – 1
  - 80s – 1



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# NNEPC Trends

- **Suspected suicide attempts** remain a significant concern, accounting for 15% of exposures (n = 708) and **increasing for the sixth straight year**.
- Cases are up 50% from the 2011-12 grant year, with increases among teenagers of particular concern.
- This was a 10% increase in suicide attempt cases over the previous grant year and marked the sixth consecutive grant year with an increase.
- Patients attempting suicide were more often female.



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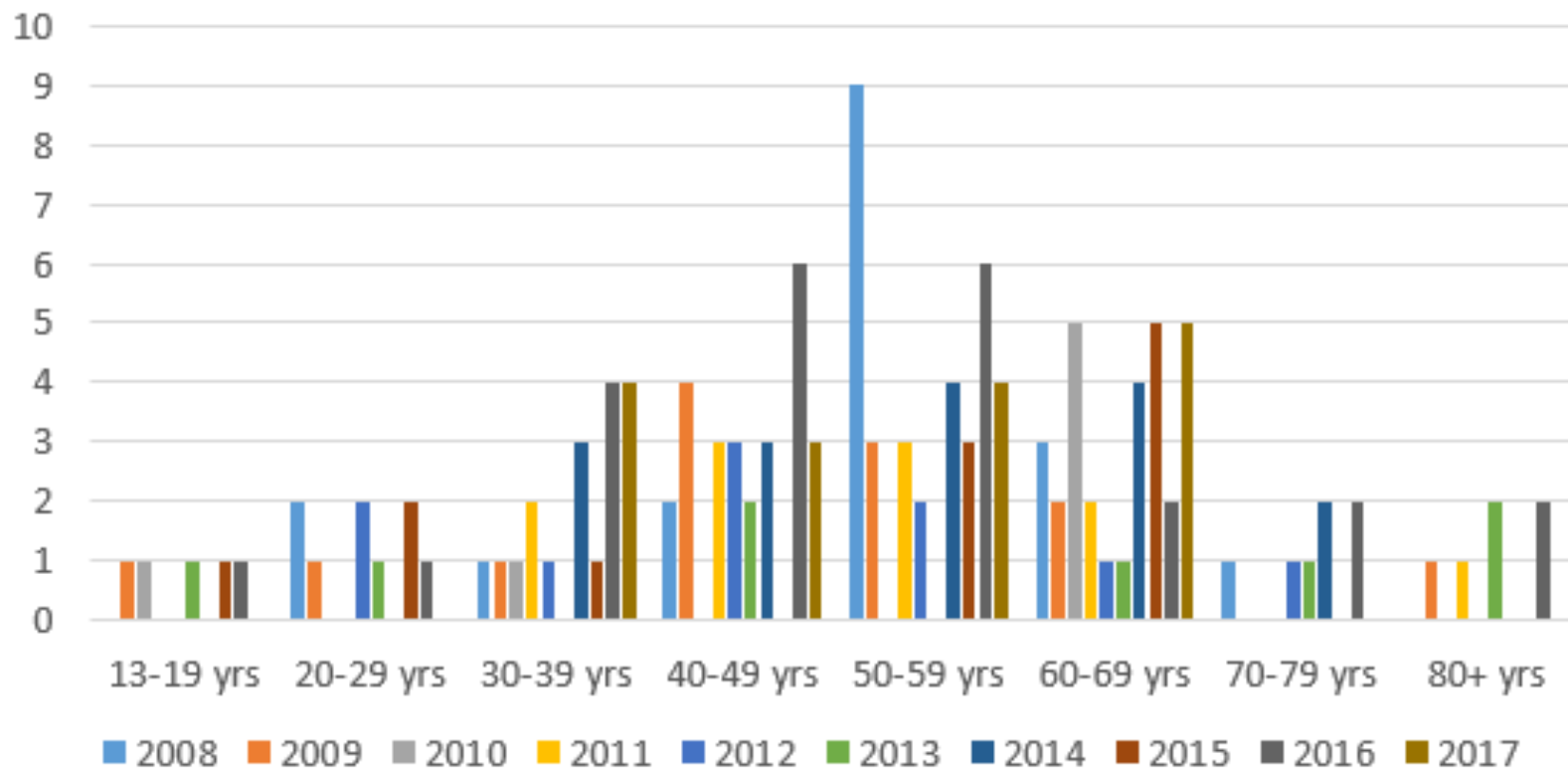
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# Trends-NNEPC Suicide Attempt Cases

- Patients attempting suicide most often take substances easily available to them, either over-the-counter medications or their own psychiatric medications.
- The NNEPC also appears to be seeing an increase in suicide attempts among adults involving their own cardiovascular medications

# NNEPC Suicide Attempt Cases Resulting in Major Effect or Death Involving Beta Blockers, Calcium Antagonists and/or Antiarrhythmic



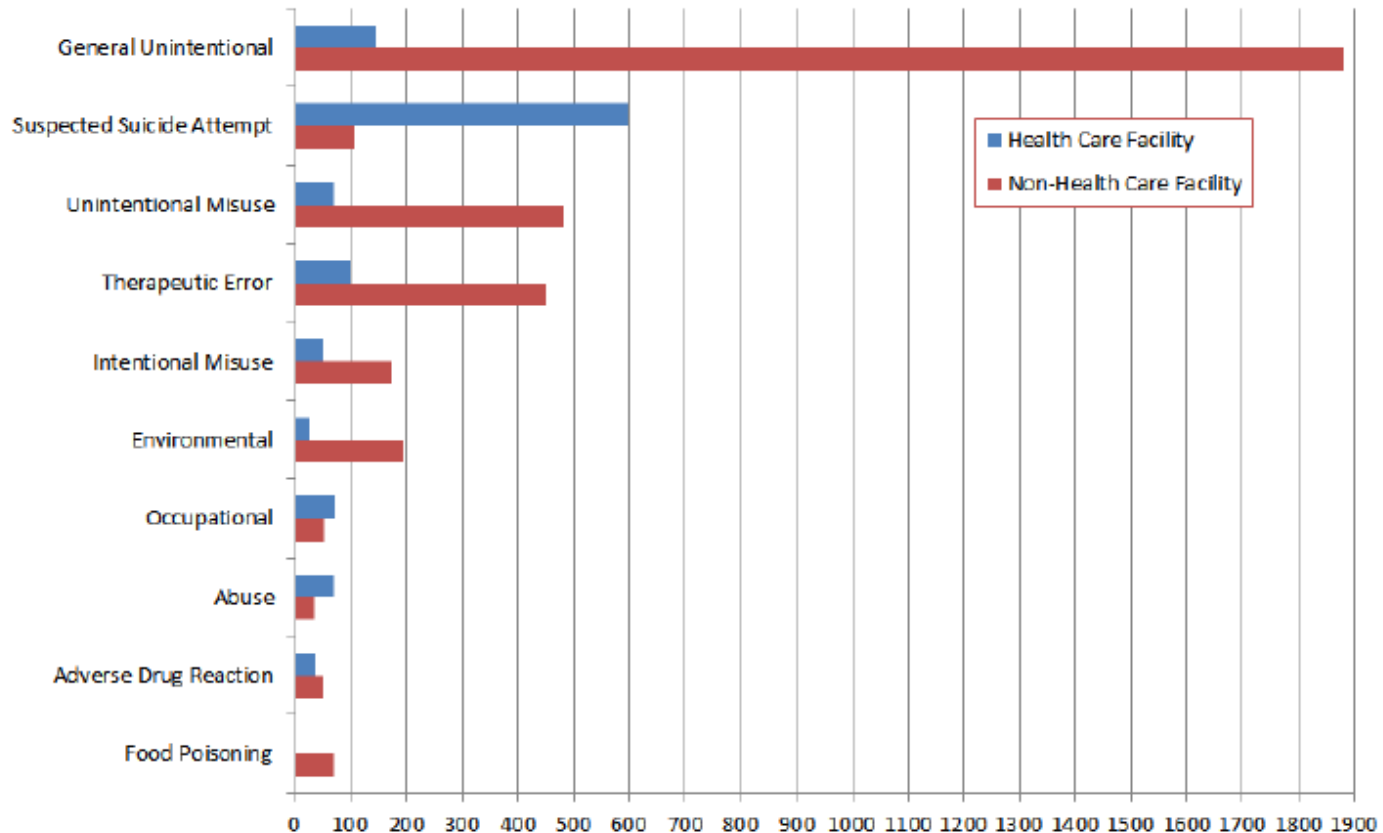
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ME/NH/VT Cases

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# Top Reasons for Exposure by Caller Site

n = 4,880



Vermont - September 2017 - August 2018

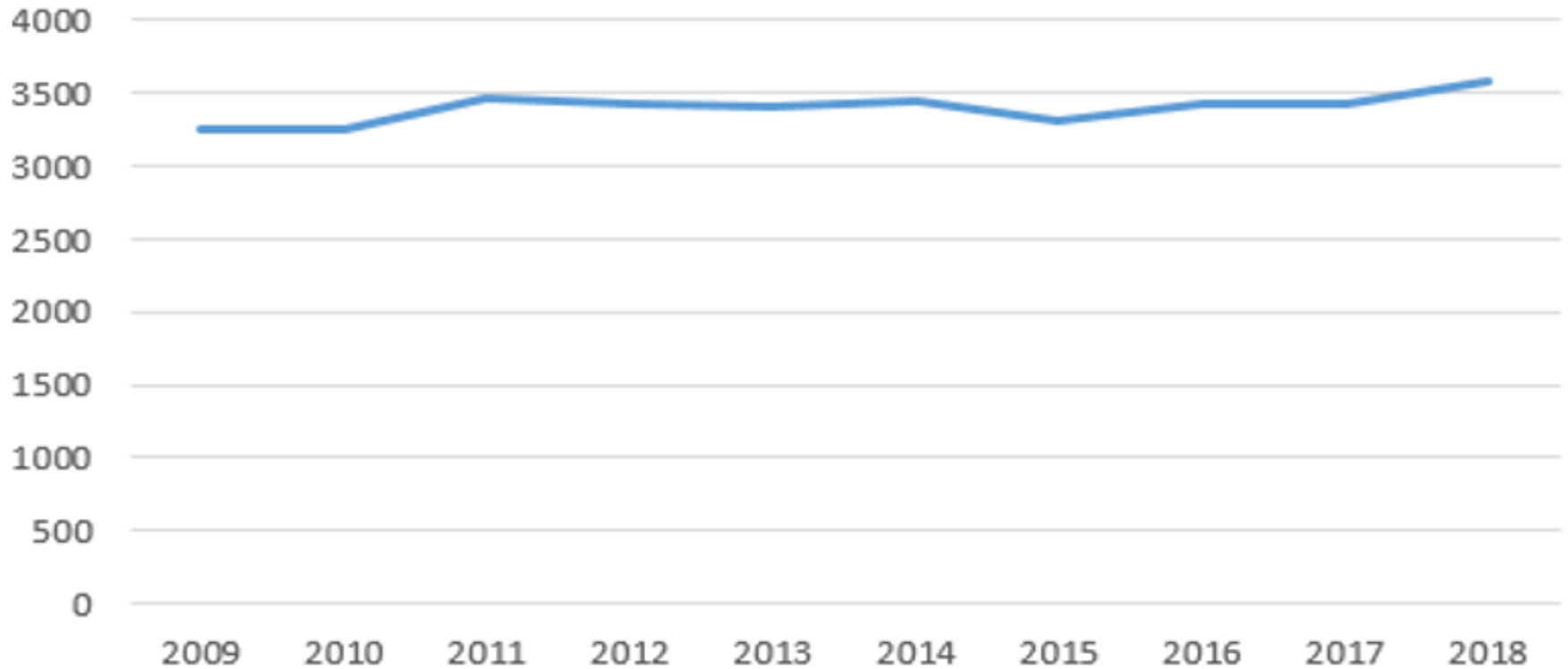


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## NNEPC Suicide Attempts by Year - ME/NH/VT

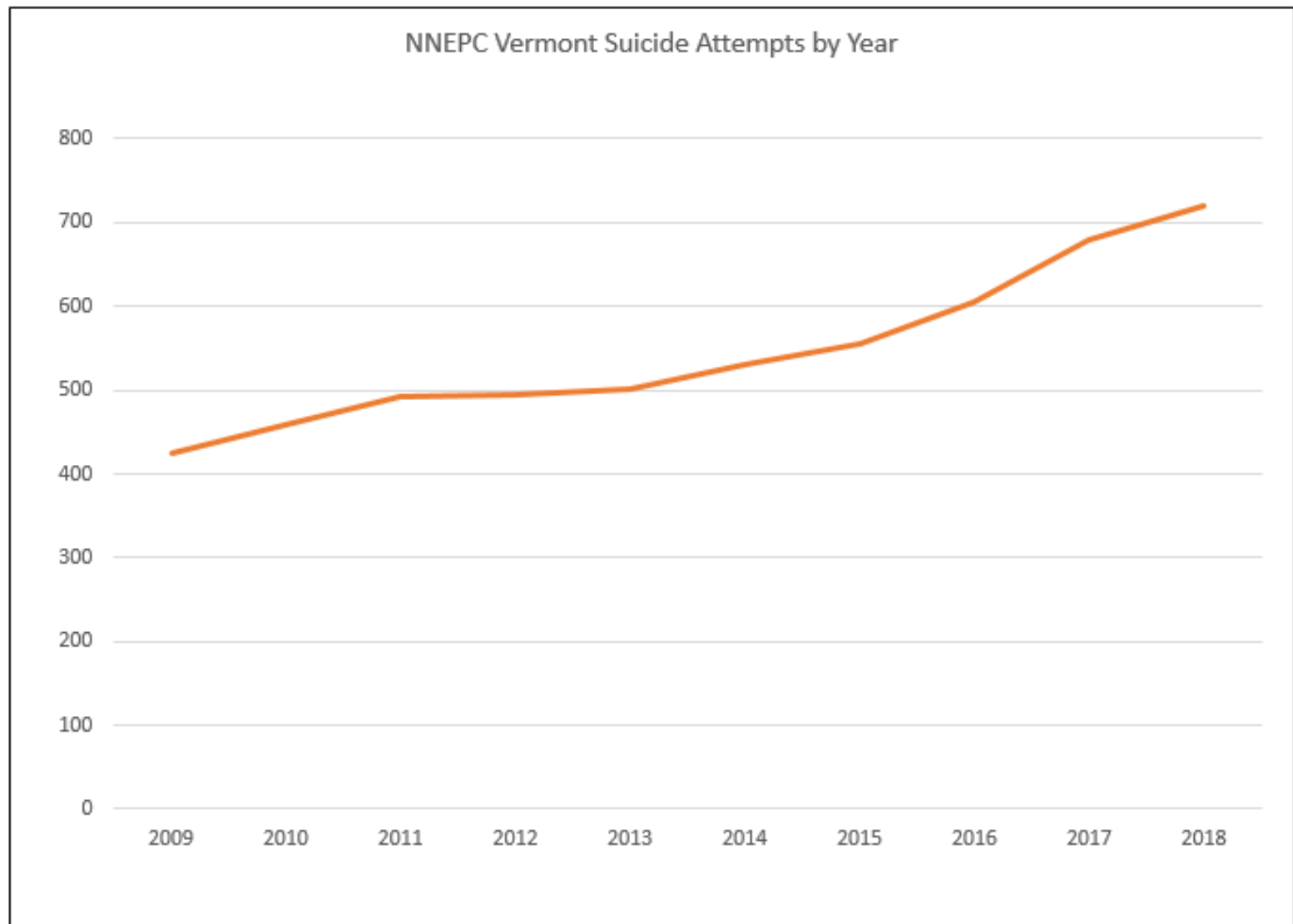


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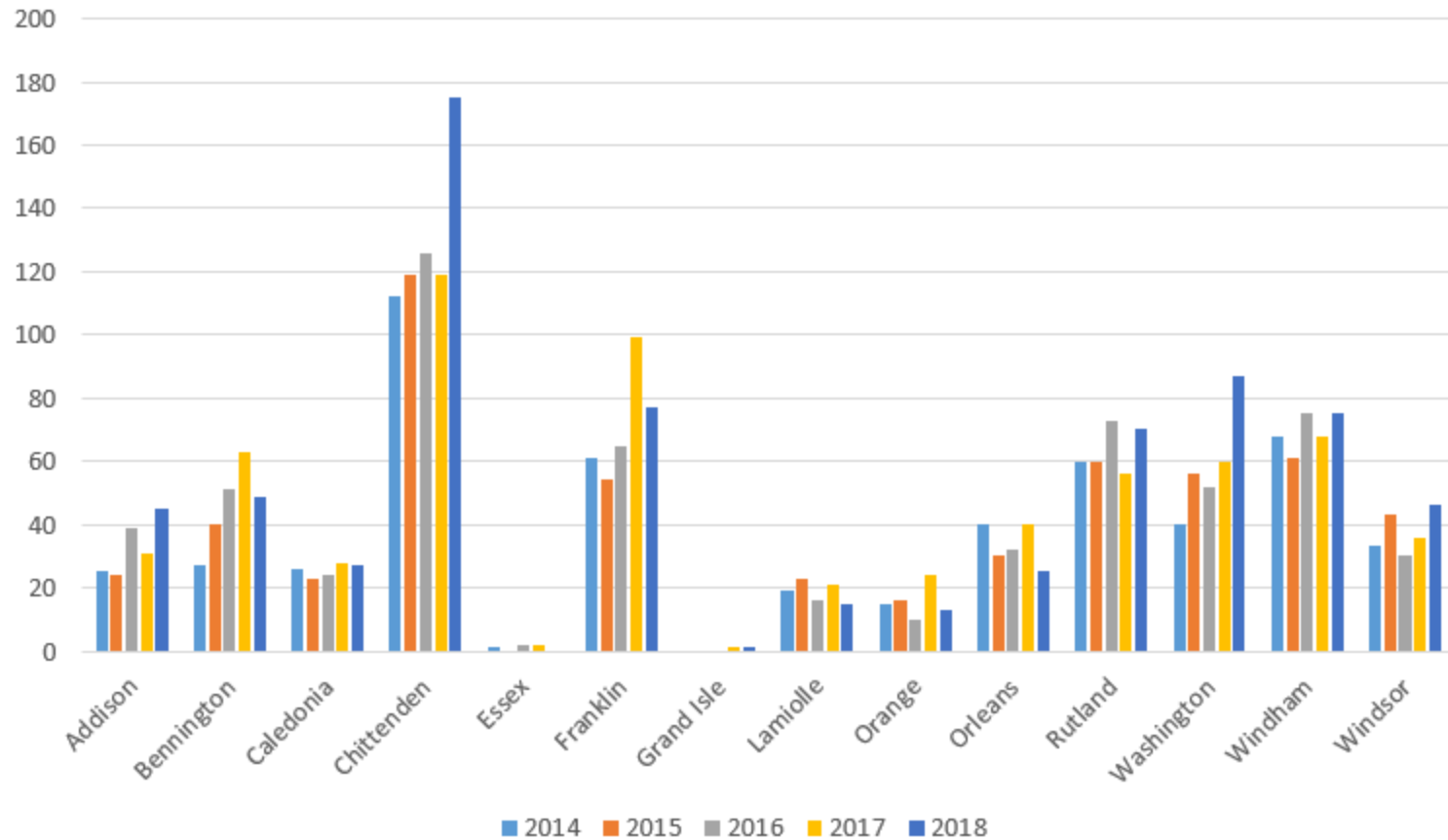


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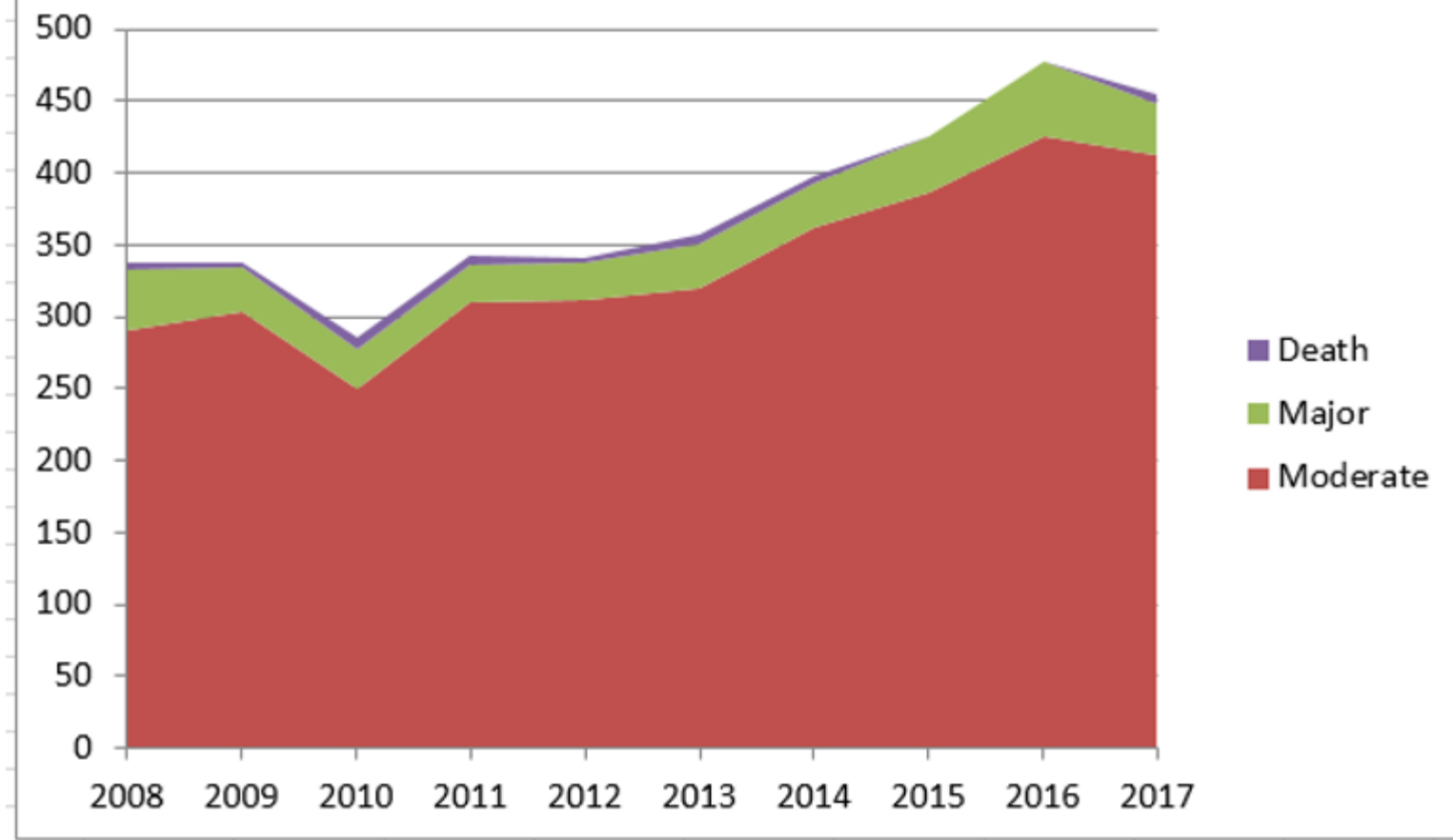
## NNEPC Vermont Suicide Attempts by Caller County



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## NNEPC Cases Resulting in Moderate or Greater Effect Vermont, 2008-2017



Minor – Self-limiting symptoms such as brief vomiting or headache  
Moderate – More persistent or severe symptoms  
Major – Potentially life-threatening effects



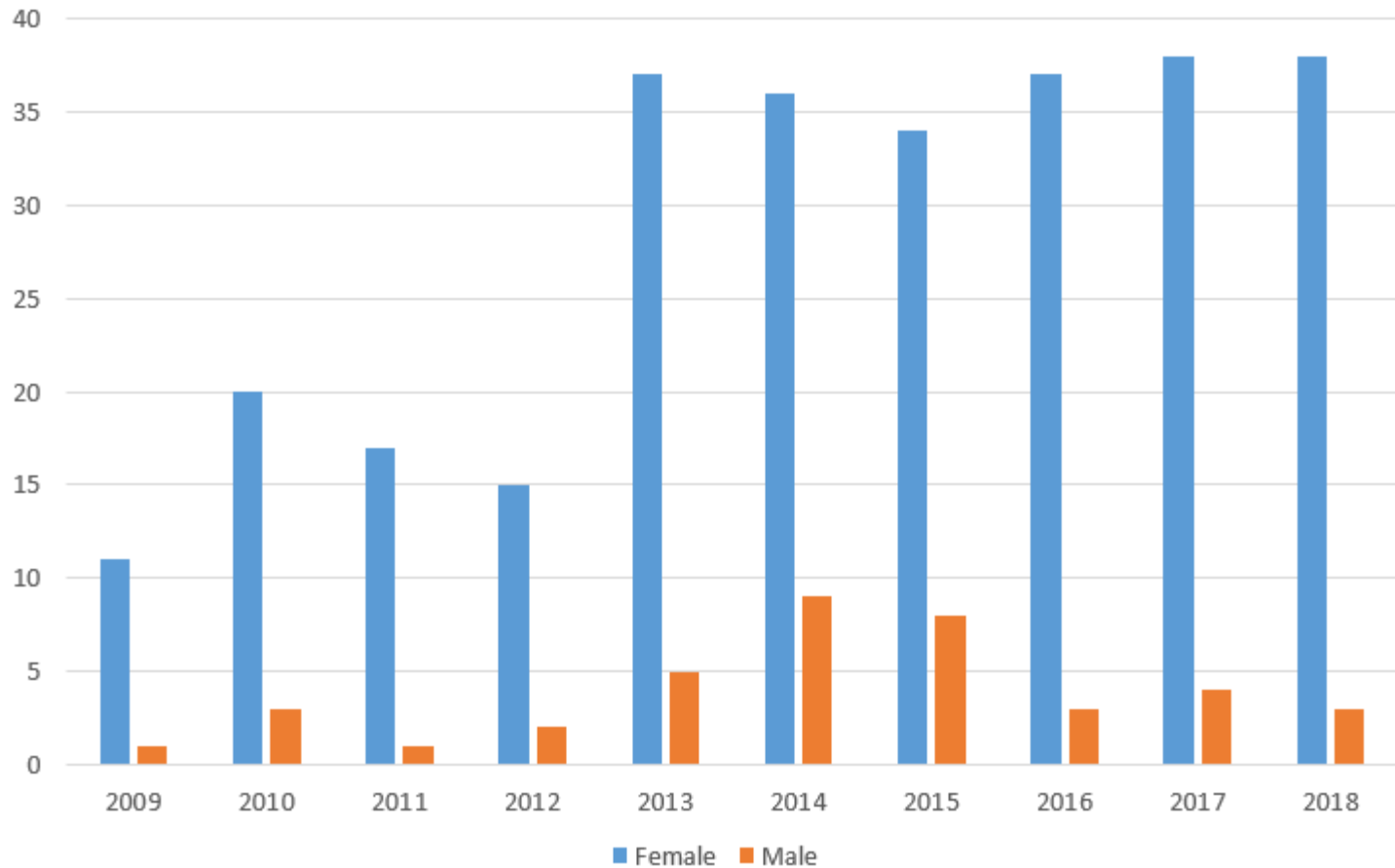
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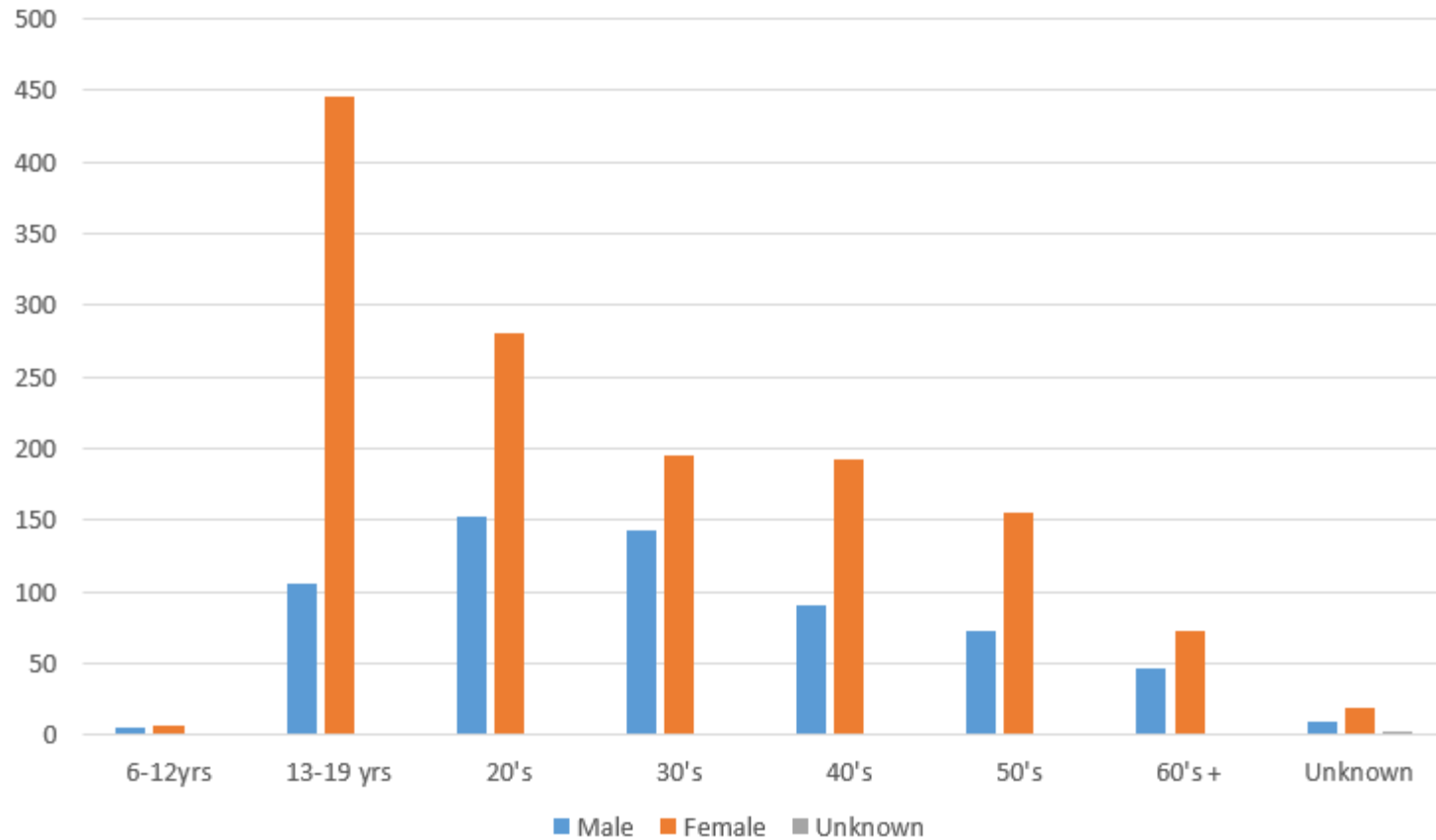
## VT Suspected Suicide Attempt Cases By Gender



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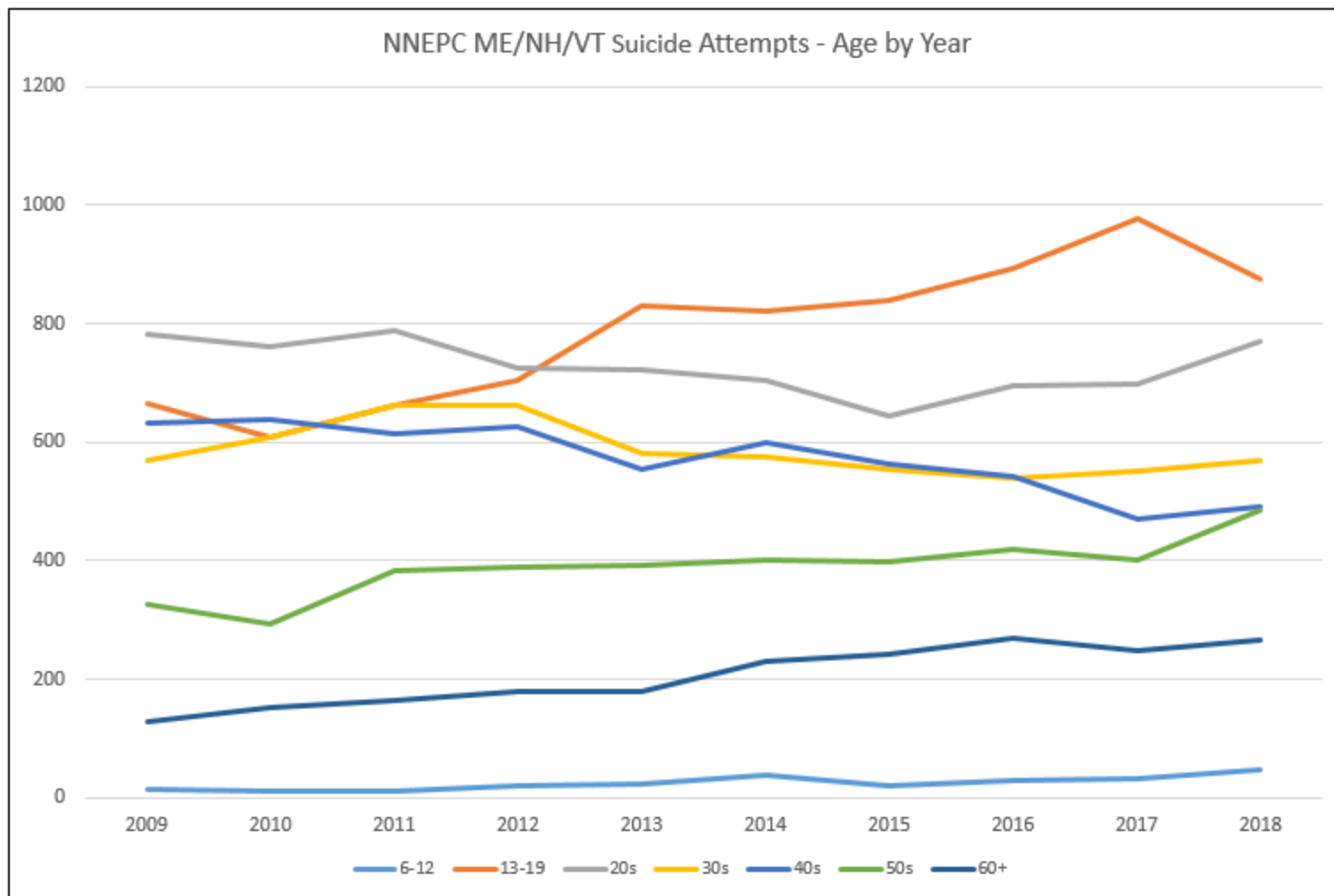
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## VT Suicide Attempt by Gender 2016-2018



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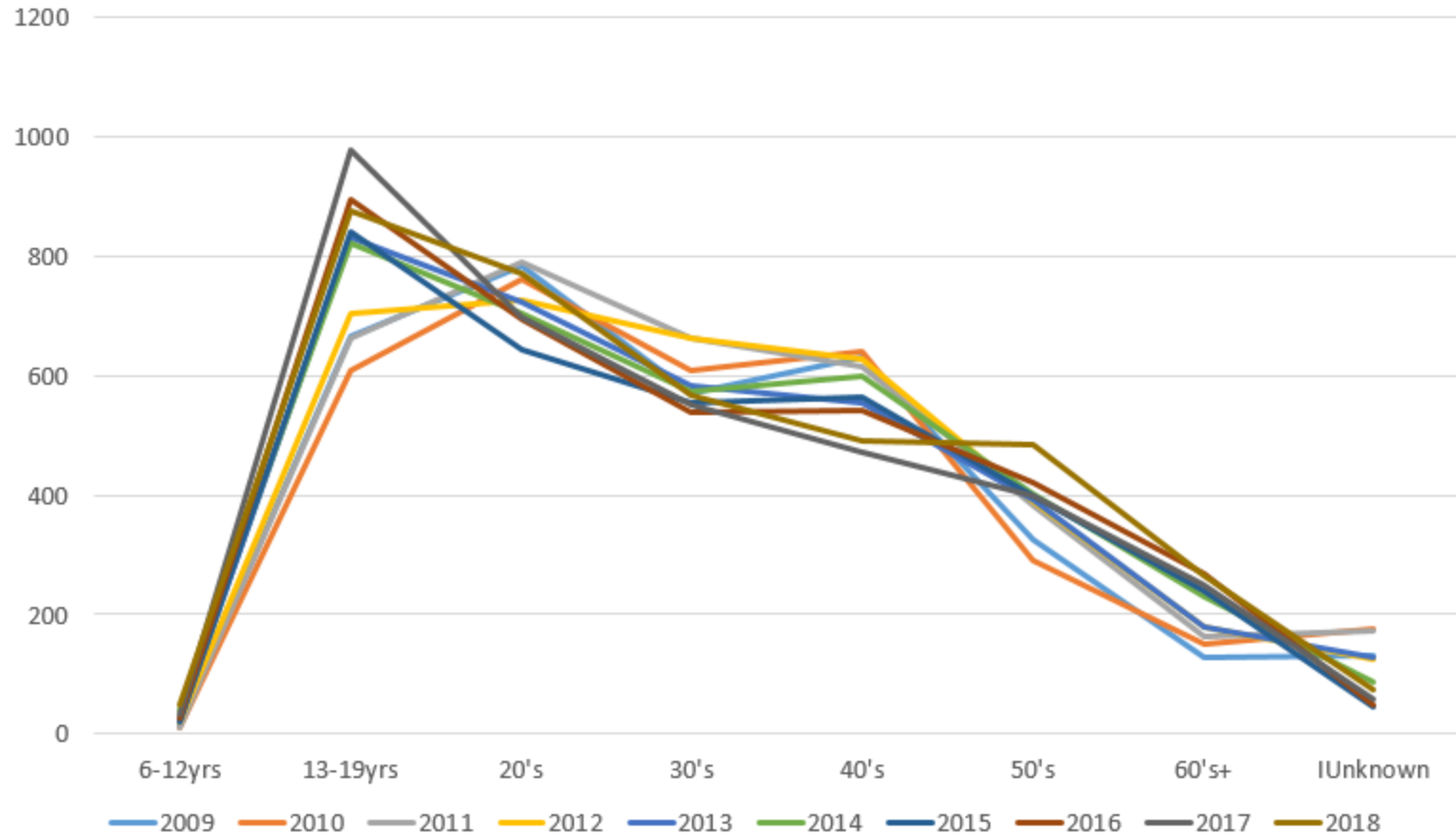
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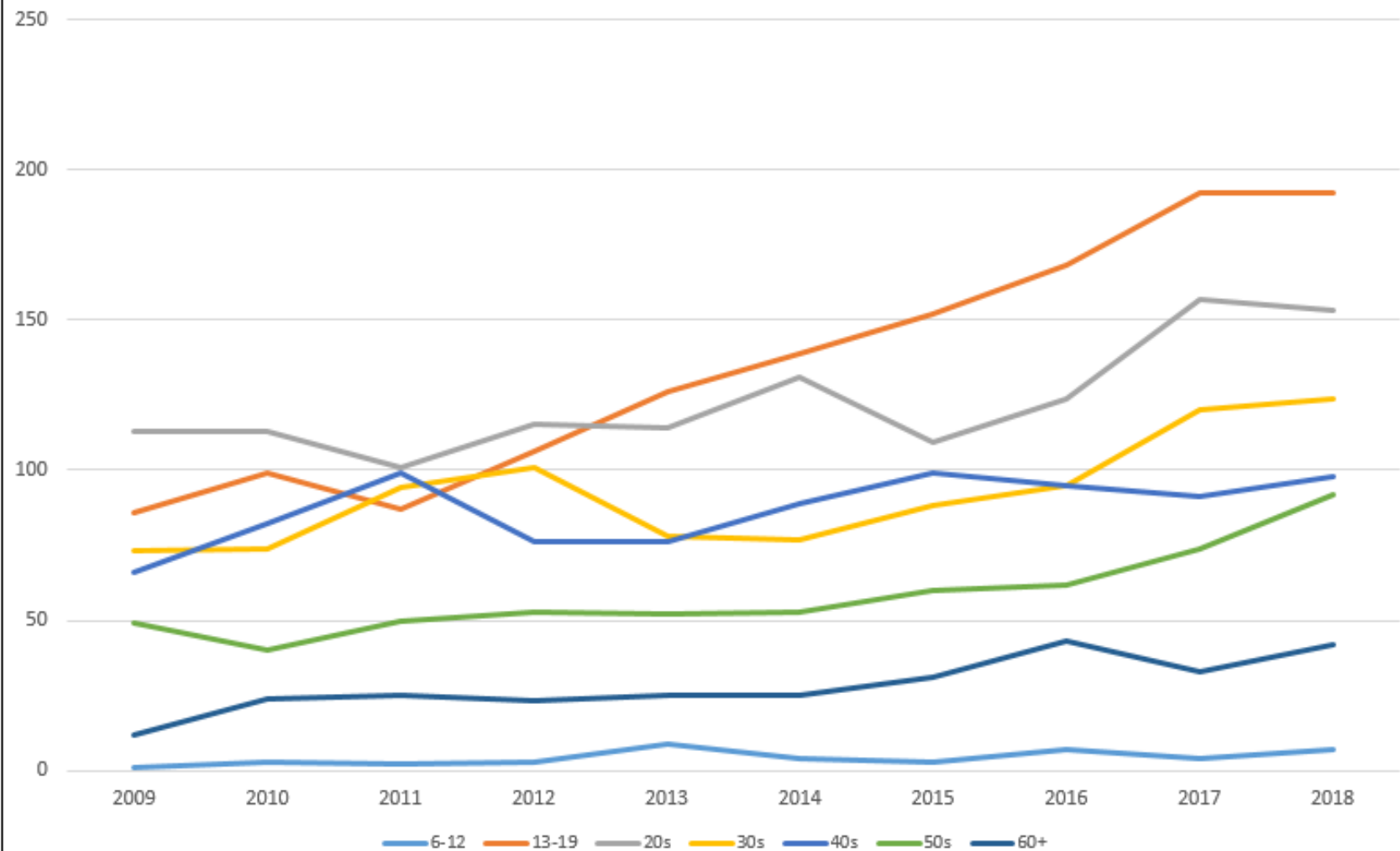
## NNEPC ME/NH/VT Suspected Suicide Attempts



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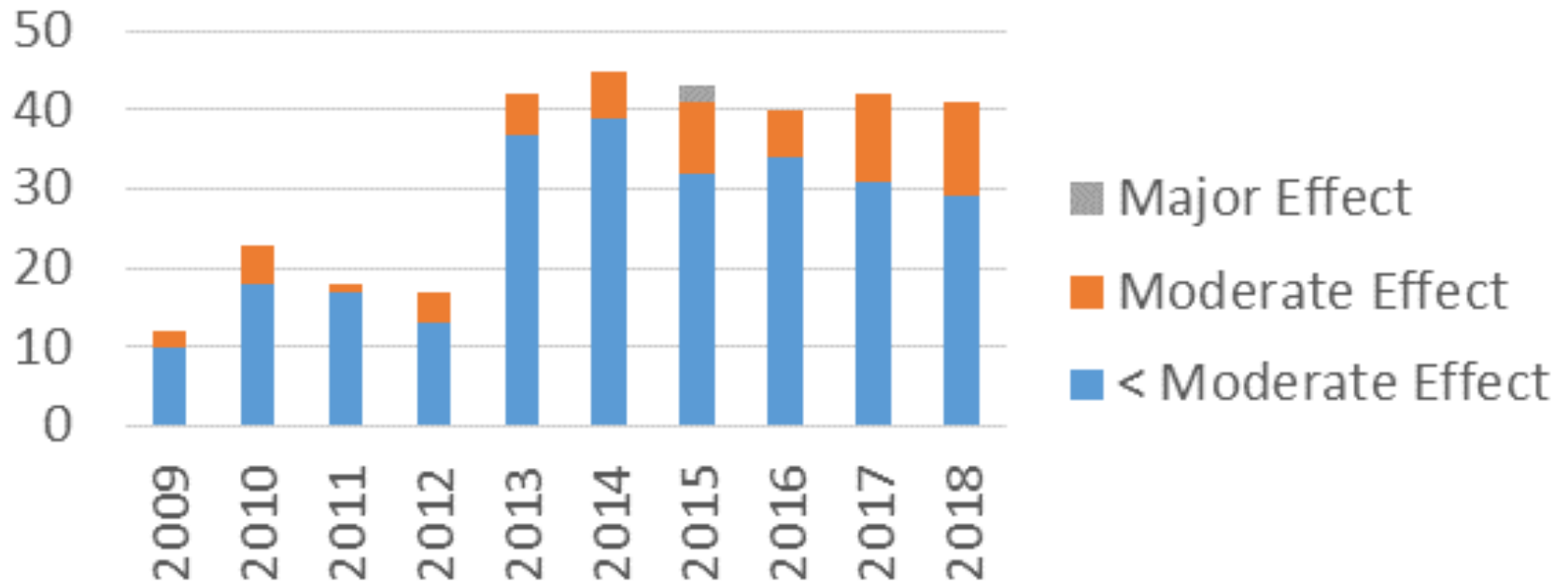
NNEPC Vermont Suicide Attempts - Age by Year



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## Vermont Children Ages 10-14 Suspected Self-Poisoning (2009-2018)



1 in 5 cases resulted in moderate clinical effect  
Only 2 had major effect



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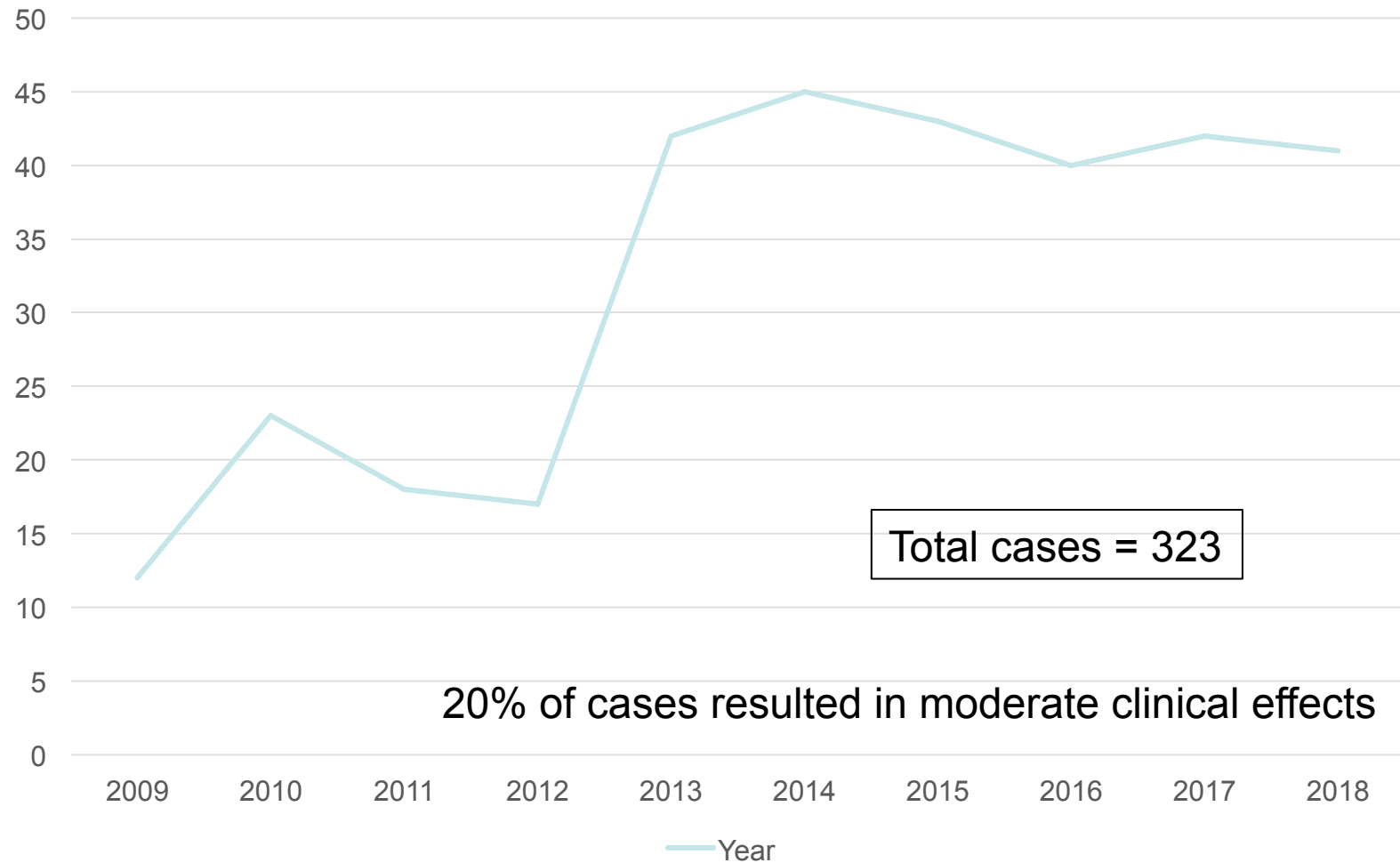
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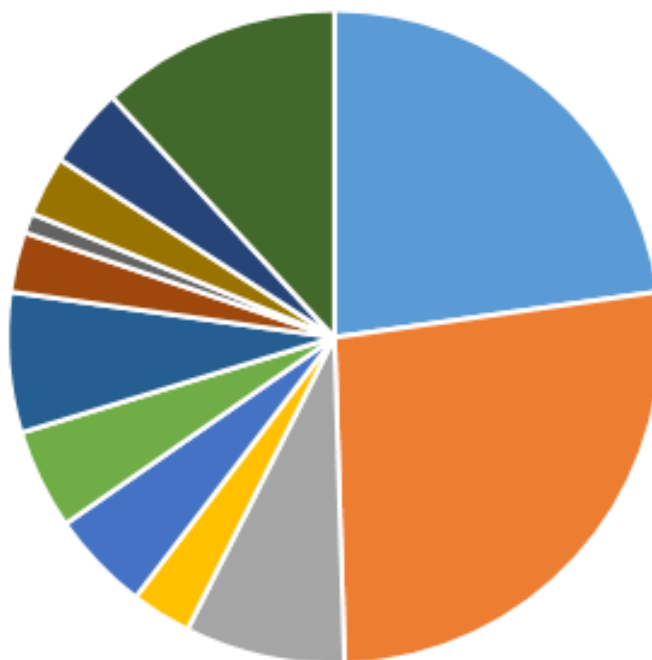
## NNEPC VT Suspected Suicide Cases Age 10-14 years



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## Suicide Attempt Calls by Substance 2016-2018-<20 years



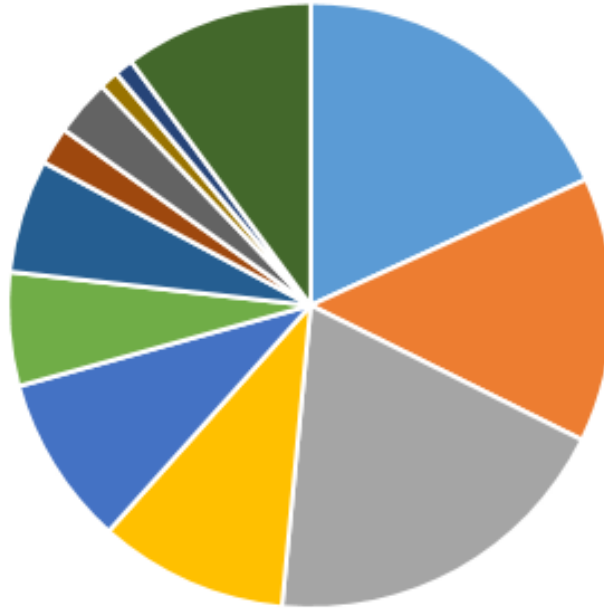
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|---------------------------|-------------------------------|-----------------------|
| ■ Antidepressants         | ■ Analgesics                  | ■ Sedatives/Hypnotics |
| ■ Alcohol/containing      | ■ Anticonvulsants             | ■ Cardiovascular      |
| ■ Antihistamines          | ■ Stimulants/street drugs     | ■ Muscle Relaxants    |
| ■ Cold/cough preparations | ■ Dietary supplements/herbals | ■ All others          |



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## Suicide Attempt Calls by Substance 2016-2018-20-59 years



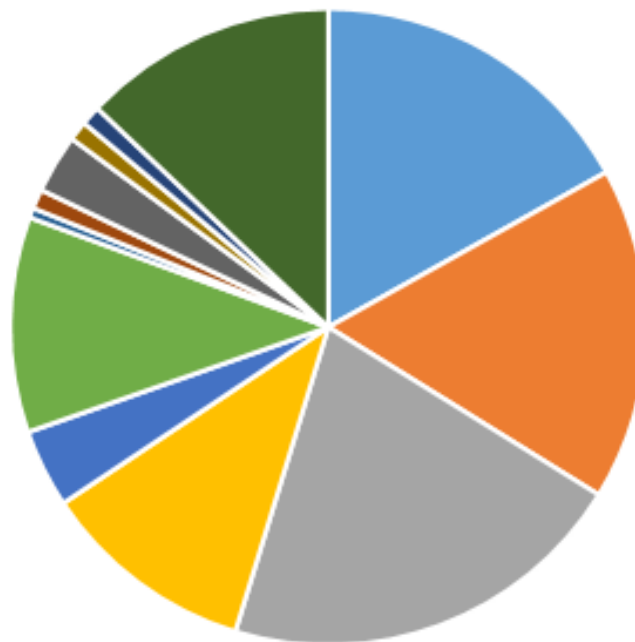
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| ■ Antidepressants         | ■ Analgesics                  | ■ Sedatives/Hypnotics |
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## Suicide Attempt Calls by Substance 2016-2018-60+ years



- |                           |                               |                       |
|---------------------------|-------------------------------|-----------------------|
| ■ Antidepressants         | ■ Analgesics                  | ■ Sedatives/Hypnotics |
| ■ Alcohol/containing      | ■ Anticonvulsants             | ■ Cardiovascular      |
| ■ Antihistamines          | ■ Stimulants/street drugs     | ■ Muscle Relaxants    |
| ■ Cold/cough preparations | ■ Dietary supplements/herbals | ■ All others          |



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# NNEPC – Health Care Facility Cases

- Cases involving self-harm attempts are more likely to be called in from health care facilities
- Self-harm attempts referred to health care facility to ensure proper medical and psychiatric evaluation
- Most common reason for exposure in these cases was:
  - Suspected suicide attempt (47%)
  - General unintentional (11%)
    - Therapeutic error (8%)
    - Occupational (6%)
  - Unintentional misuse (6%)
  - Substance abuse (6%)



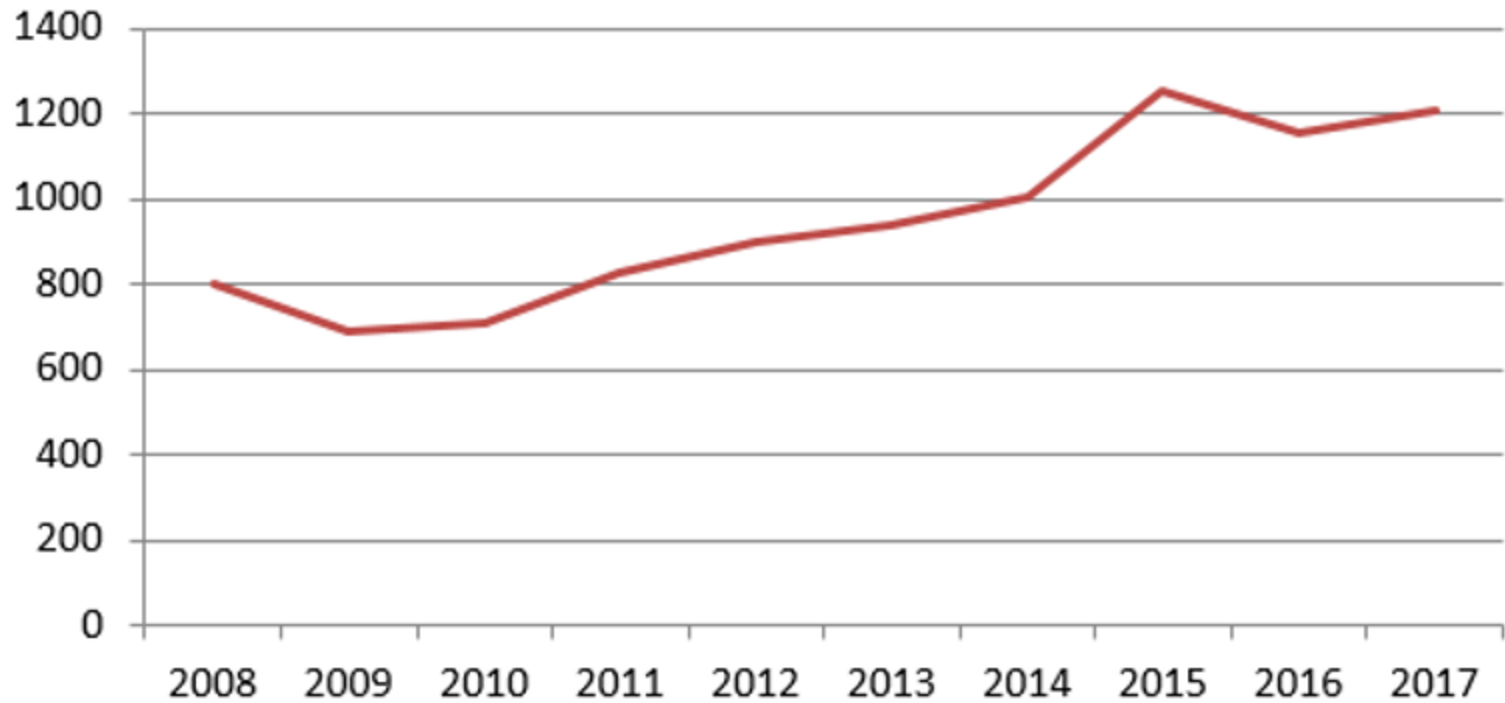
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## NNEPC Vermont Human Exposure Cases Calls Originating from Health Care Facilities 2008-2017



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# Prevention Efforts

- Webinars
- Podcasts
- Fact sheets for health care providers
- Share data to target educational efforts
- Media
  - Cable access television
  - VRP
  - WCAX “Across the Fence” etc.



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# www.nnepc.org

- **Chat:** Real-time online communication
- **Text:** Send **POISON** to 85511
- Blog posts on current poisoning topics
- Downloadable materials
- Webinars, Podcasts, fact sheets
- Data requests
- Sign up for electronic newsletters



# Vermont Education Coordinator

**Immediate clinical assistance:  
Poison Center Hotline  
1-800-222-1222**

**Vermont Educator:** Gayle Brady Finkelstein MSN, RN  
802-338-2762, [gayle.finkelstein@uvmhealth.org](mailto:gayle.finkelstein@uvmhealth.org)



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