



MASSACHUSETTS
GENERAL HOSPITAL

PSYCHIATRY ACADEMY

Suicide Prevention

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Suicidal ideation and behavior

- **2019 Youth Risk Behavior Surveillance**

- *“During the past 12 months, did you ever seriously consider attempting suicide?”*

Yes = 19%

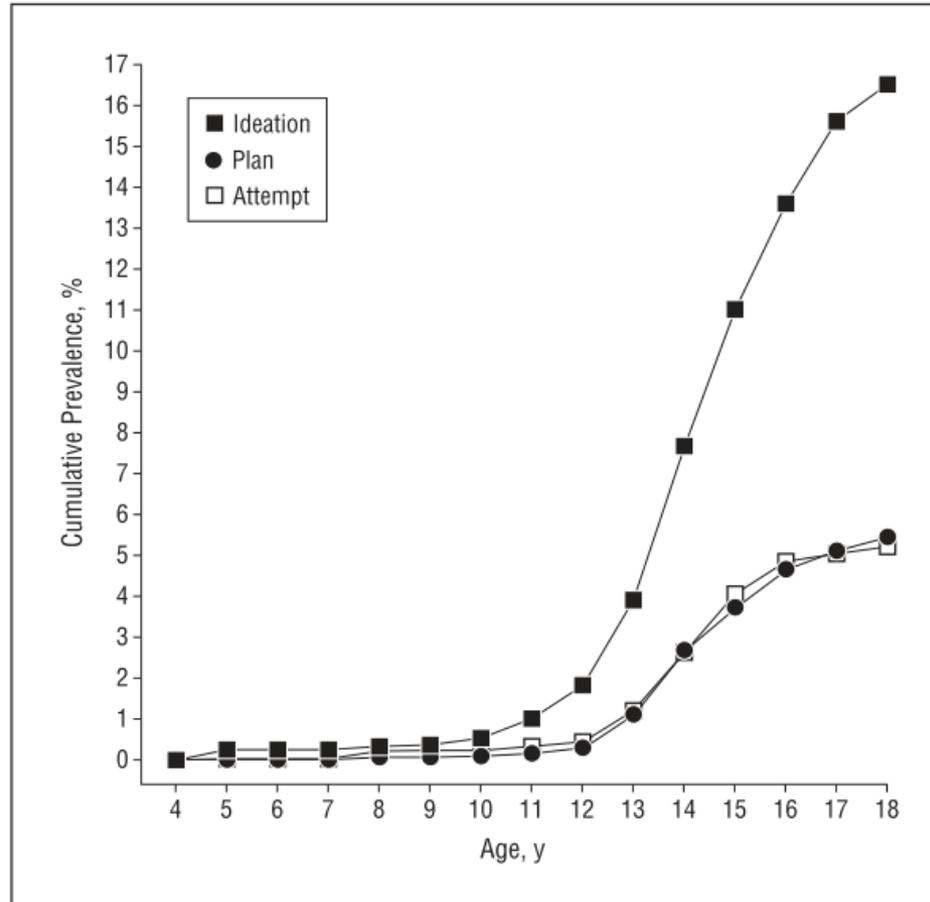
- *“During the past 12 months, did you make a plan about how you would attempt suicide?”*

Yes = 16%

- *“During the past 12 months, how many times did you actually attempt suicide?”*

1+ = 9%

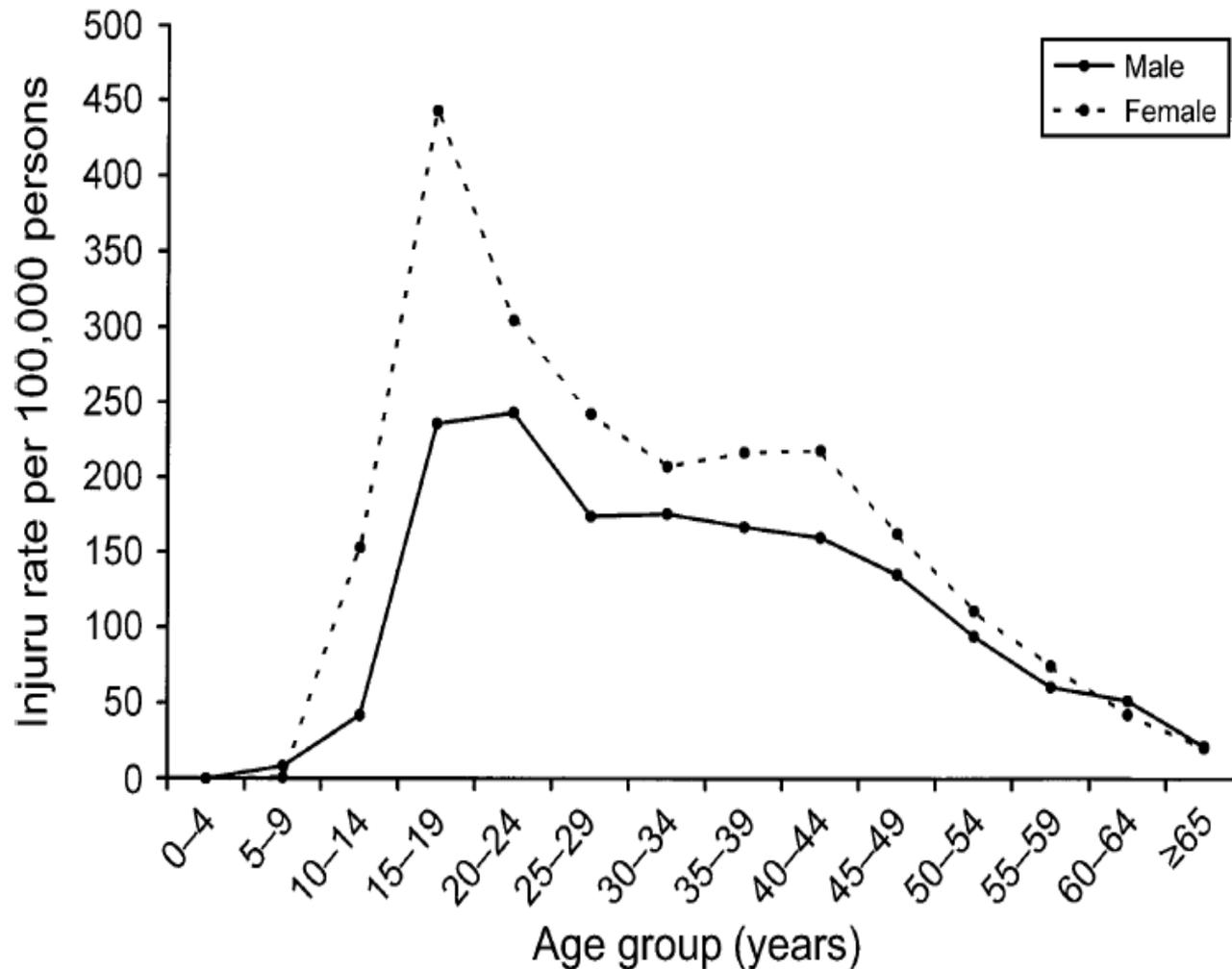
Onset of suicidal thoughts and behaviors by age



Age-at-onset curves of suicidal thoughts and behaviors.

Nock et al. (2013) *JAMA Psychiatry*

Suicide attempts by age



Nock et al. (2008) *Epidemiologic Reviews*

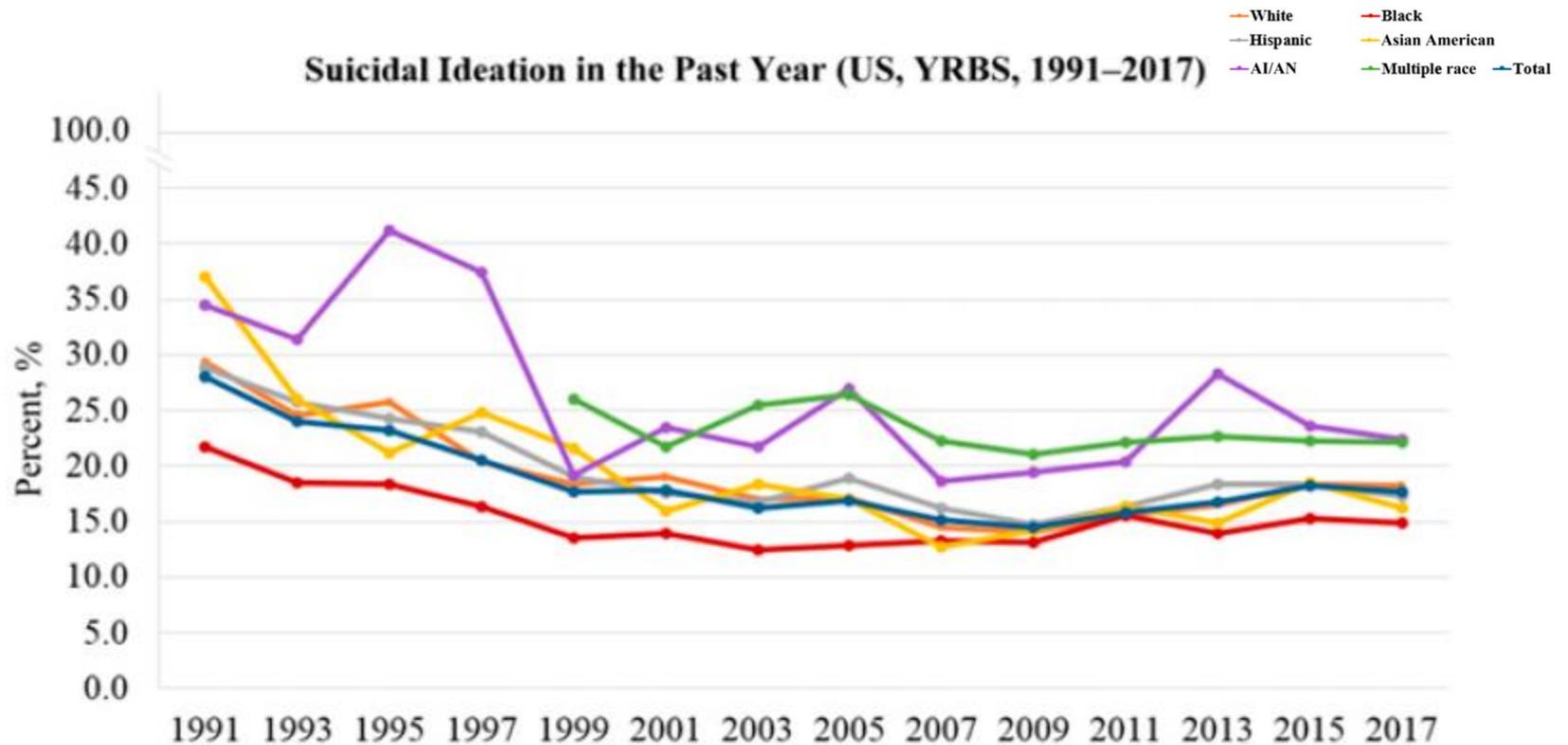
Suicidal thoughts and behaviors: Longitudinal course

- 1/3 of teens with SI → suicide plan
- 60% of teens with suicide plan → attempt
- >85% of teens with SI or plan who attempt do in 1 year
(Nock et al., 2013)

Suicidal thoughts and behaviors: Longitudinal course

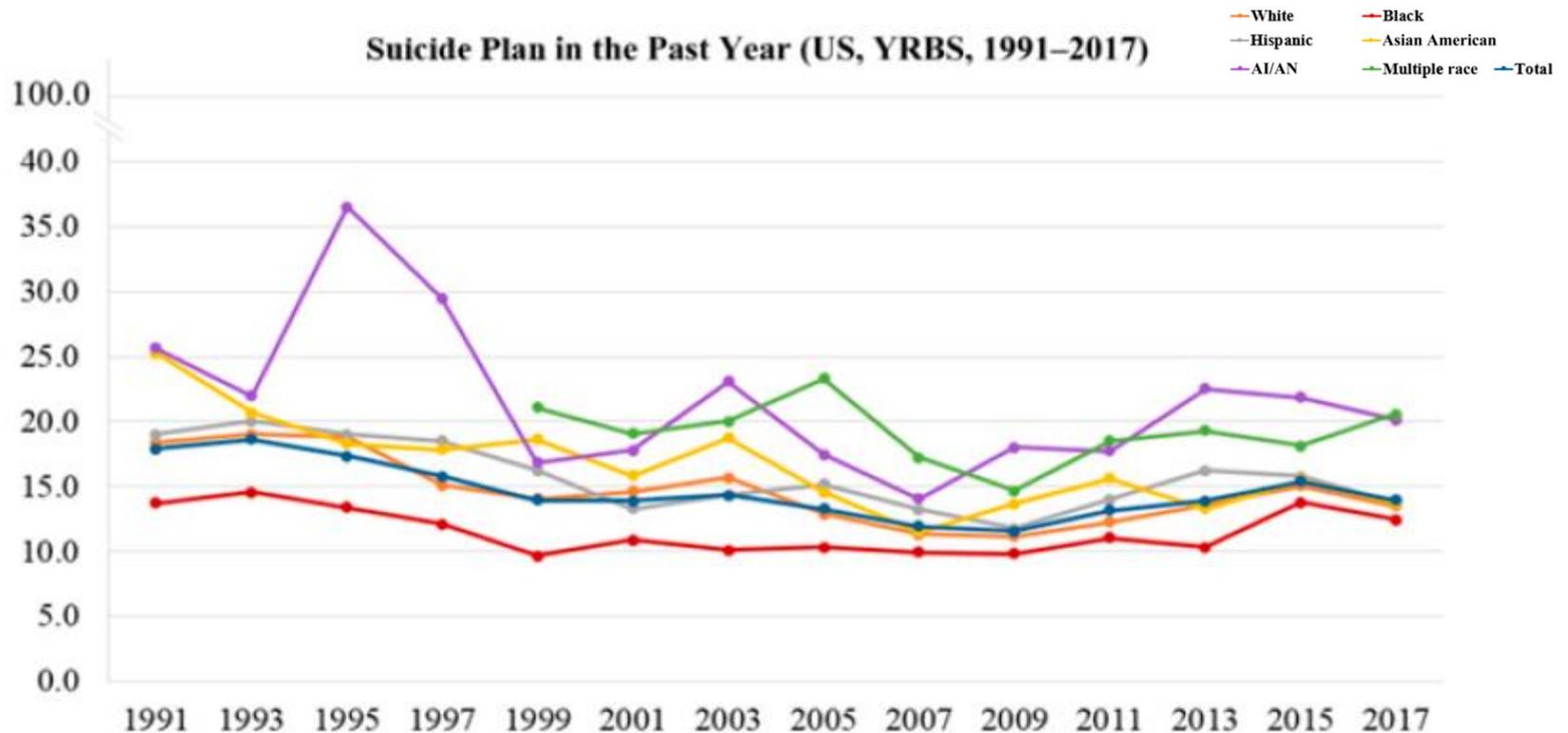
- History of attempt = 6-8x more likely for future attempt
(Lewinsohn et al 1994; Pfeffer et al. 1993)
- Progressively worsening course from adolescence into early adulthood
(Goldston et al., 2015)
 - Decreased time between attempts
 - Intent increased with # attempts

Temporal trends in suicidal thoughts



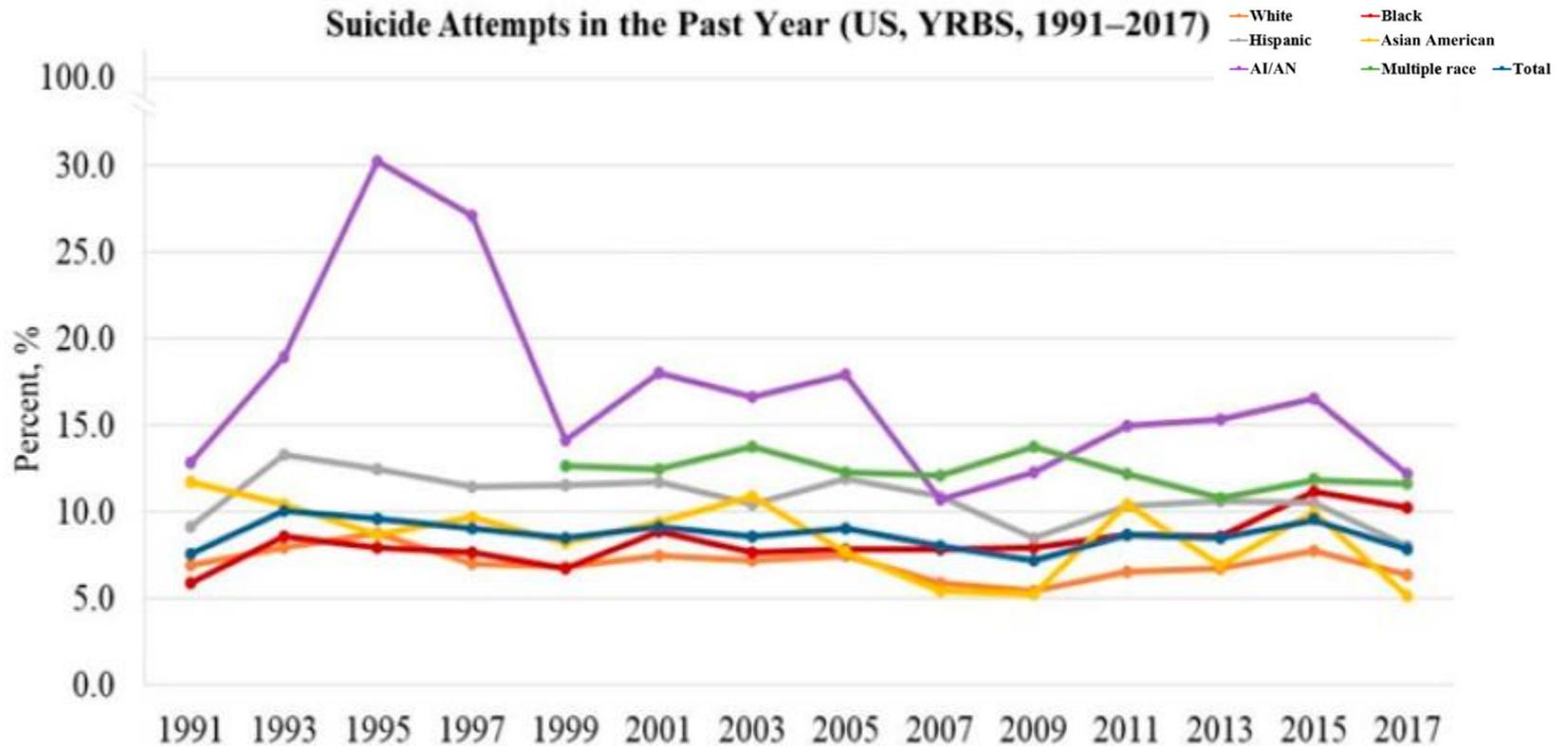
Lindsey et al. (2019) *Pediatrics*

Temporal trends in suicide plans



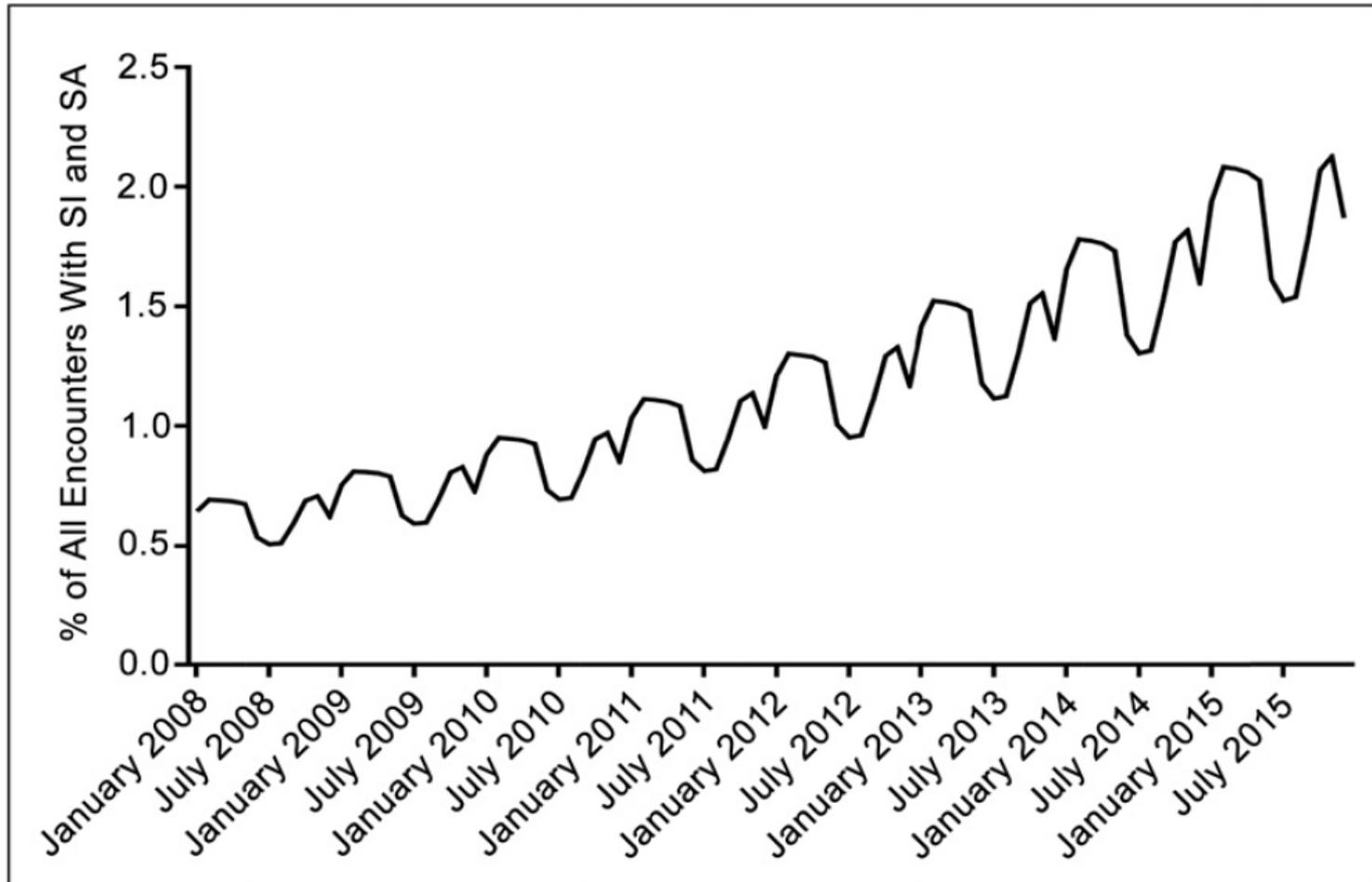
Lindsey et al. (2019) *Pediatrics*

Temporal trends in suicide attempts



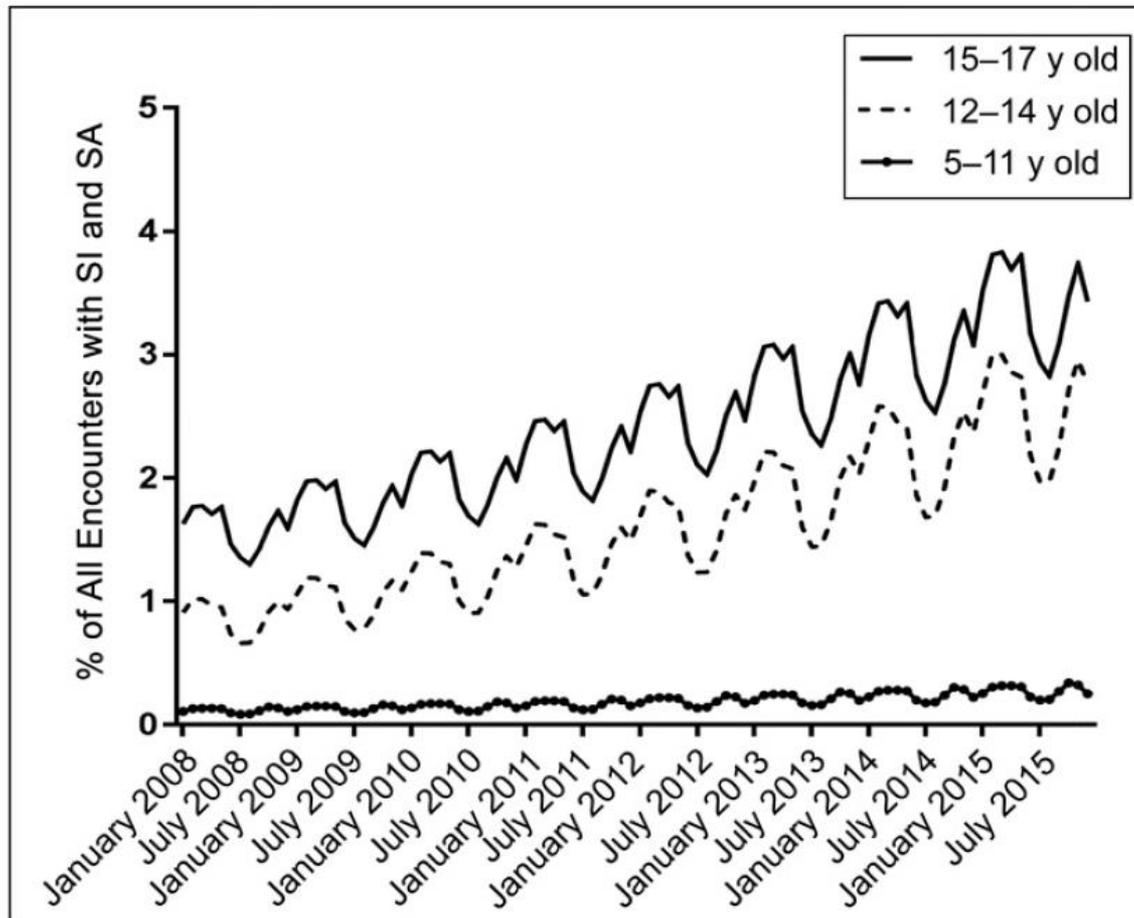
Lindsey et al. (2019) *Pediatrics*

Temporal trends in ED/hospitalization for suicidality



Trends in ED and Inpatient Visits for Suicidal Ideation and Suicide Attempts across 31 children's hospitals

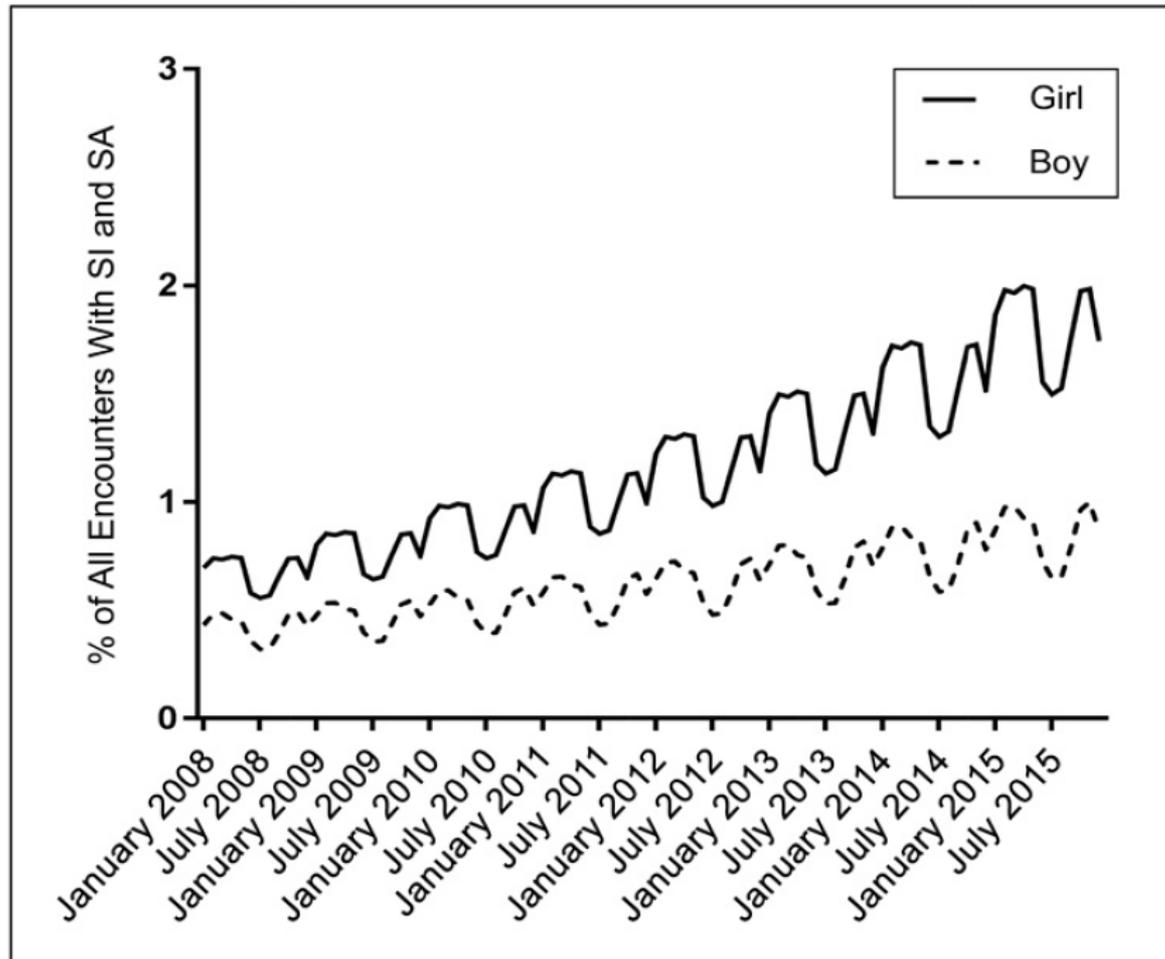
Temporal trends in ED/hospitalization for suicidality



Trends in ED and Inpatient Visits for Suicidal Ideation and Suicide Attempts by Age

Plemmons et al. (2018) *Pediatrics*

Temporal trends in ED/hospitalization for suicidality



Trends in ED and Inpatient Visits for Suicidal Ideation and Suicide Attempts by sex

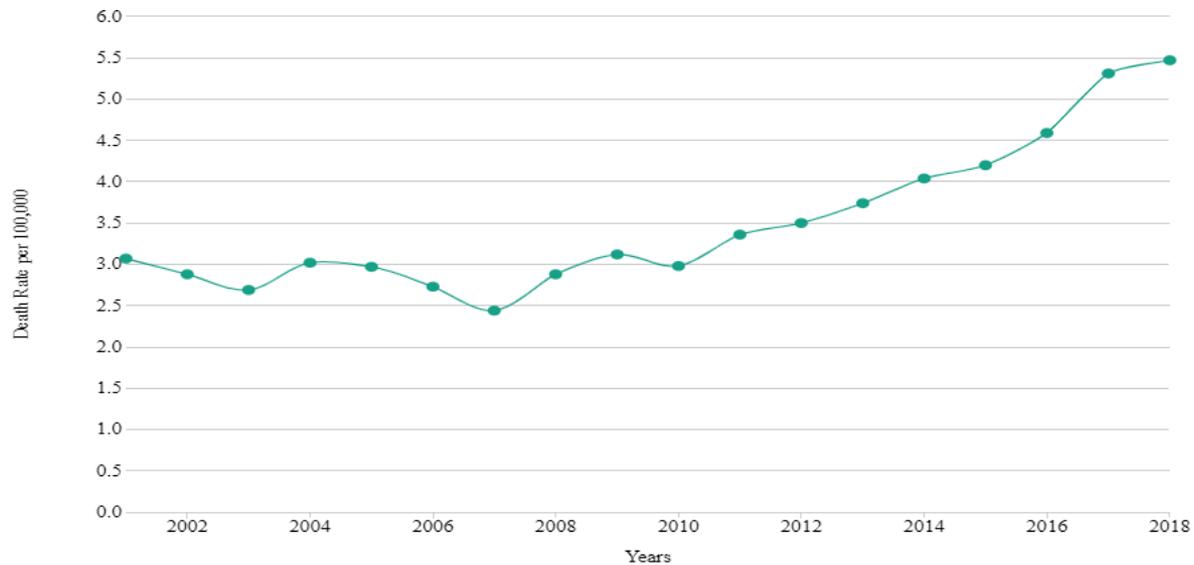
Plemmons et al. (2018) *Pediatrics*

Suicide in adolescence

10 Leading Causes of Death by Age Group, United States – 2018

Rank	Age Groups									
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+
1	Congenital Anomalies 4,473	Unintentional Injury 1,226	Unintentional Injury 734	Unintentional Injury 692	Unintentional Injury 12,044	Unintentional Injury 24,614	Unintentional Injury 22,667	Malignant Neoplasms 37,301	Malignant Neoplasms 113,947	Heart Disease 526,509
2	Short Gestation 3,679	Congenital Anomalies 384	Malignant Neoplasms 393	Suicide 596	Suicide 6,211	Suicide 8,020	Malignant Neoplasms 10,640	Heart Disease 32,220	Heart Disease 81,042	Malignant Neoplasms 431,102
3	Maternal Pregnancy Comp. 1,358	Homicide 353	Congenital Anomalies 201	Malignant Neoplasms 450	Homicide 4,607	Homicide 5,234	Heart Disease 10,532	Unintentional Injury 23,056	Unintentional Injury 23,693	Chronic Low. Respiratory Disease 135,560
4	SIDS 1,334	Malignant Neoplasms 326	Homicide 121	Congenital Anomalies 172	Malignant Neoplasms 1,371	Malignant Neoplasms 3,684	Suicide 7,521	Suicide 8,345	Chronic Low. Respiratory Disease 18,804	Cerebrovascular 127,244
5	Unintentional Injury 1,168	Influenza & Pneumonia 122	Influenza & Pneumonia 71	Homicide 168	Heart Disease 905	Heart Disease 3,561	Homicide 3,304	Liver Disease 8,157	Diabetes Mellitus 14,941	Alzheimer's Disease 120,658

Temporal trends in suicide

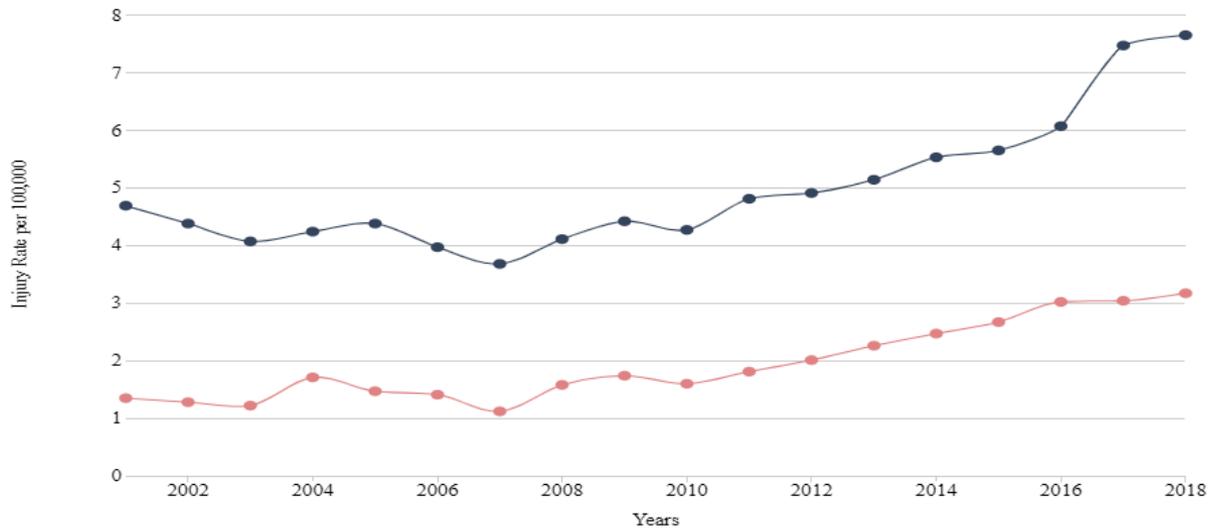


■ 10 to 17

Applied Filters:
Suicide All Injury Deaths
State: All States
Race: All Races
Ethnicity: All Ethnicities
Sex: All Sexes
Year Range: Year Range: 2001 - 2018
Age Range: Age Range: 10 - 17

CDC WISQARS, 2019

Temporal trends in suicide

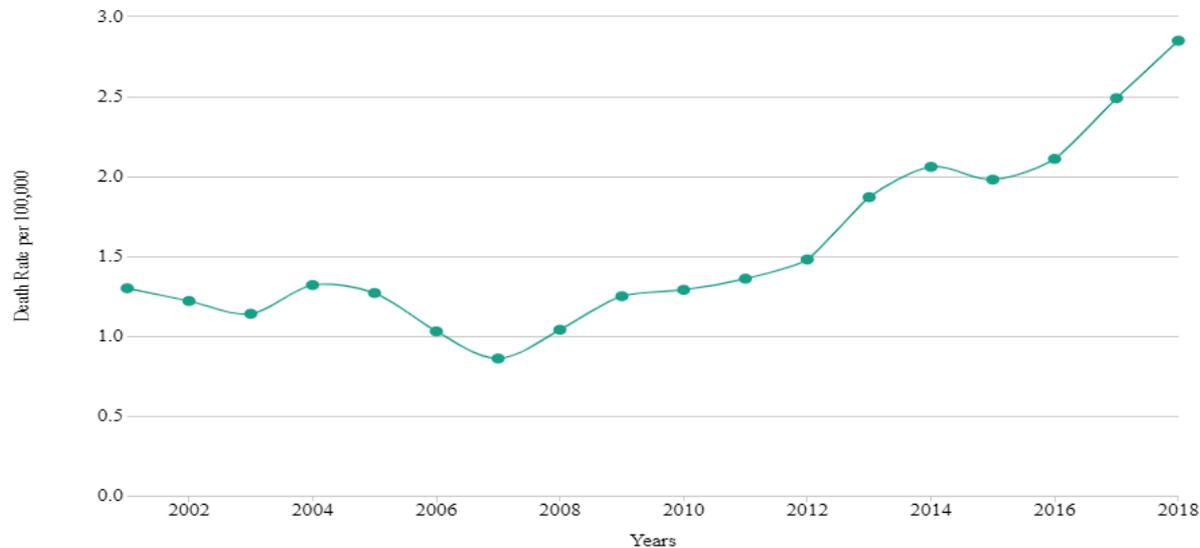


■ Females
■ Males

Applied Filters:
Suicide All Injury Deaths
State: All States
Race: All Races
Ethnicity: All Ethnicities
Sex: All Sexes
Year Range: Year Range: 2001 - 2018
Age Range: Age Range: 10 - 17

CDC WISQARS, 2019

Temporal trends in suicide

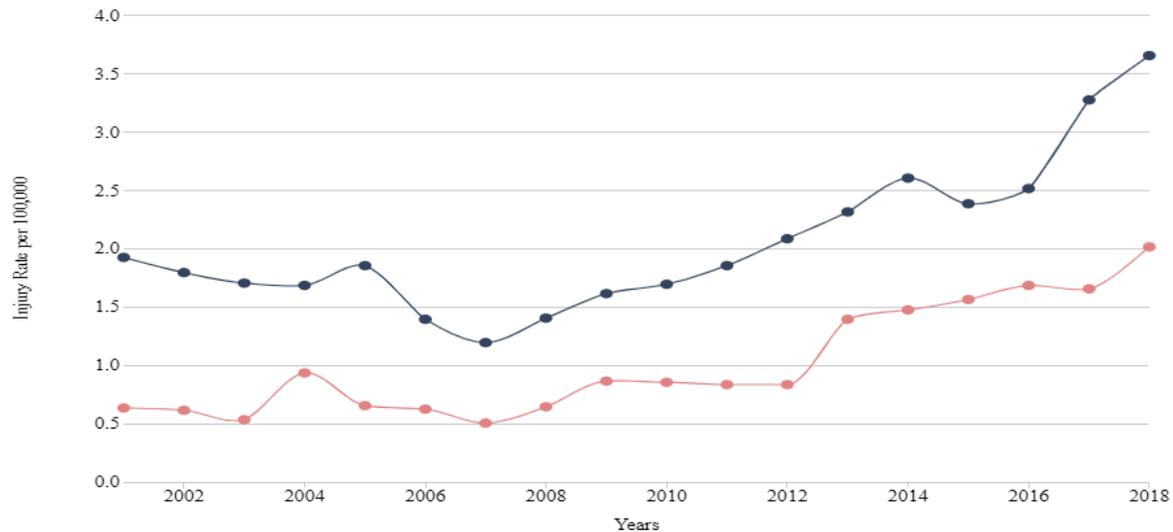


■ 10-14

Applied Filters:
Suicide All Injury Deaths
State: All States
Race: All Races
Ethnicity: All Ethnicities
Sex: All Sexes
Year Range: Year Range: 2018 - 2018
Age Range: Age Range: 10 to 14 - 10 to 14

CDC WISQARS, 2019

Temporal trends in suicide



■ Females
■ Males

Applied Filters:
Suicide All Injury Deaths
State: All States
Race: All Races
Ethnicity: All Ethnicities
Sex: All Sexes
Year Range: Year Range: 2018 - 2018
Age Range: Age Range: 10 to 14 - 10 to 14

CDC WISQARS, 2019

Risk factors and at-risk populations

- Where to focus?
 - Certain experiences?
 - Bullying
 - Cyberbullying
 - Specific communities?
 - LGBTQ youth

Risk factors and at-risk populations

- Where to focus?
 - Certain experiences?
 - **Bullying**
 - **Cyberbullying**
 - Specific communities?
 - LGBTQ youth

Bullying

- Interpersonal life stress and suicide:
 - ↑ interpersonal life stress = ↑ suicidal thoughts and behaviors (Liu & Miller, 2014)
 - ↑ interpersonal life stressors in the 24 hours before the attempt than the 24-48 hours prior (Bagge et al., 2013)
- Adolescence characterized by:
 - ↑ focus on peer relationships and social networks (Brown, 1990)
 - ↑ sensitivity to social context and stressors (Choudhury et al., 2006; Somerville, 2013)

Social media and suicide

- Meta-analysis: total of 61 studies
- Despite public focus on frequency of use, few studies and no sig. effects
- Largest effects were found for:
 - Cybervictimization
 - SITB-related use
 - Problematic/addictive use
- Need to focus on *specific* experiences and behaviors

	<i>k</i>	<i>N</i>	Effect Size Analyses		
			<i>OR</i>	95% CI	<i>p</i>
Cybervictimization					
Suicidal Ideation	45	139,804	2.81	2.34 – 3.38	<.001
Suicide Plans	10	40,760	3.07	2.18 – 4.34	<.001
Suicide Attempts	25	110,783	3.22	2.50 – 4.14	<.001
NSSI	3	532	4.36	2.32 – 8.20	<.001
SITB-Related Social Media Use					
Suicidal Ideation	5	3,871	2.79	1.85 – 4.21	<.001
Suicide Plans	3	10,980	3.78	1.90 – 7.55	<.001
Suicide Attempts	5	11,735	3.94	2.20 – 7.07	<.001
NSSI	2	245	2.98	1.46 – 6.11	.003
Problematic/Addictive Social Media Use					
Suicidal Ideation	4	21,391	2.81	1.72 – 4.59	<.001
Frequency of Social Media Use					
Suicidal Ideation	6	2,974	1.45	0.95 – 2.23	.089
Suicide Plans	2	391	1.47	0.33 – 6.43	.612
NSSI	3	570	2.03	0.79 – 5.21	.143

Nesi et al. (under review)

Risk factors and at-risk populations

- Where to focus?
 - Certain experiences?
 - Bullying
 - Cyberbullying
 - Specific communities?
 - **LGBTQ youth**

LGB youth

↑ suicide risk for LGB individuals (Haas et al., 2011)

- Why?

- Minority Stress Theory (Meyer, 2003)

- SM individuals experience:

- ↑ stigma, prejudice, and discrimination

LGB youth

- Aims:
 - Assess temporal trends in prevalence of STBs in adolescents over a 23-year period
 - LGB youth
 - Heterosexual youth
 - Sample representative of Massachusetts
 - Multiple indices of sexual orientation

Liu, Walsh, Sheehan, Cheek, & Carter (2020) *Pediatrics*

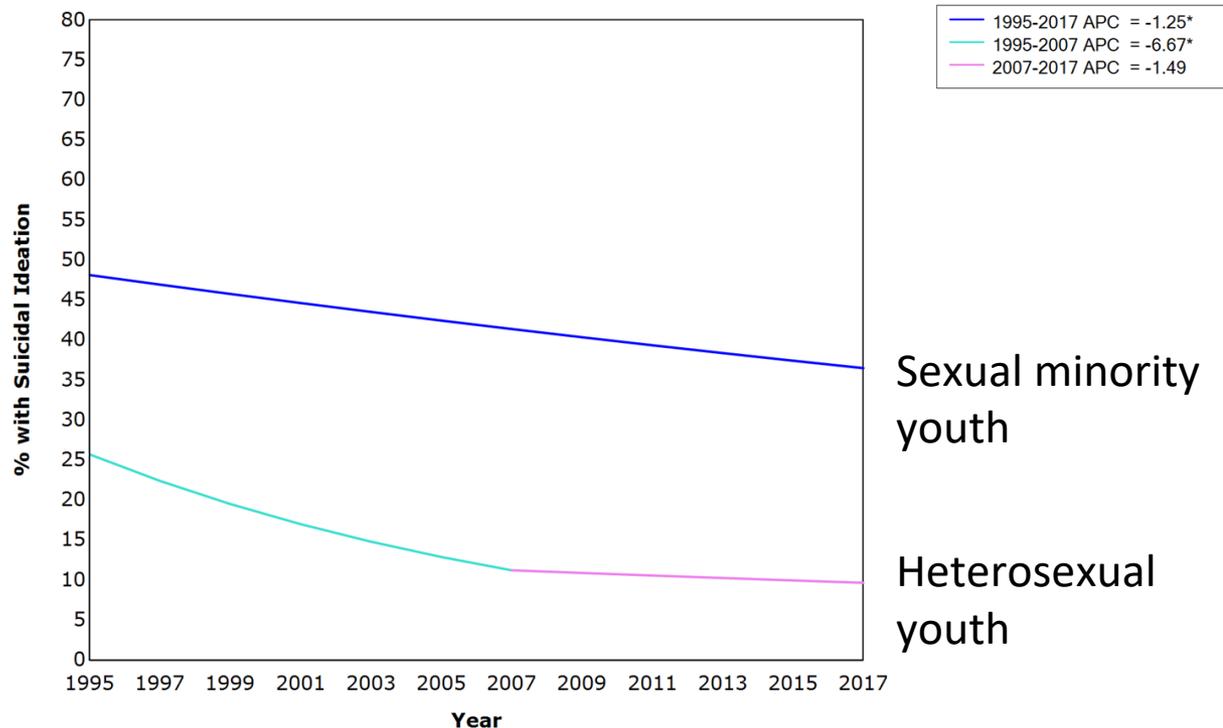
LGB youth

- Massachusetts YRBS 1995-2017 (unweighted $n = 41,636$)
 - Anonymous self-reports by students in grades 9-12
 - Multistage sample cluster design
 - Assessed prevalence of past-year STBs through 3 questions:
 - (1) seriously considered suicide
 - (2) had a suicide plan
 - (3) had attempted suicide
 - Sexual orientation determined two ways:
 - Self-report of sexual identity as heterosexual, gay or lesbian, bisexual, or unsure*
 - Self-report of same-sex behavior
- Utilized joinpoint regression to determine annual percent change (APC)

Results: Suicidal ideation

- Prevalence rates for **suicidal ideation** higher among SM youth:
 - Based on sexual identity
 - Rates for SM youth ranged from 32.5% to 40.4%
 - Rates for heterosexual youth ranged from 9.4% to 25.1%
 - Based on sexual behavior
 - Rates for SM youth ranged from 34.5 to 55.1%
 - Rates for heterosexual youth ranged from 12.0% to 31.0%

Results: Suicidal ideation

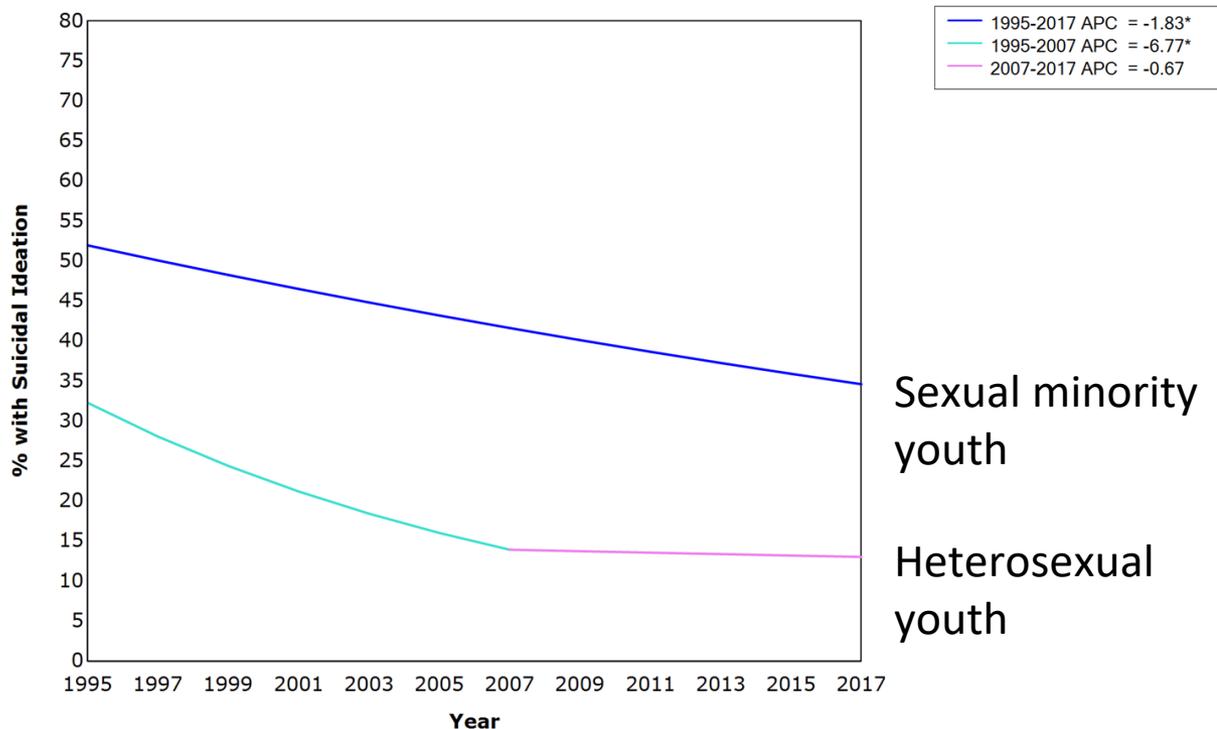


Sexual Identity

- Rate of decline for **suicidal ideation** faster among heterosexual youth
 - $z = 5.49, p < 0.001$

* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Results: Suicidal ideation



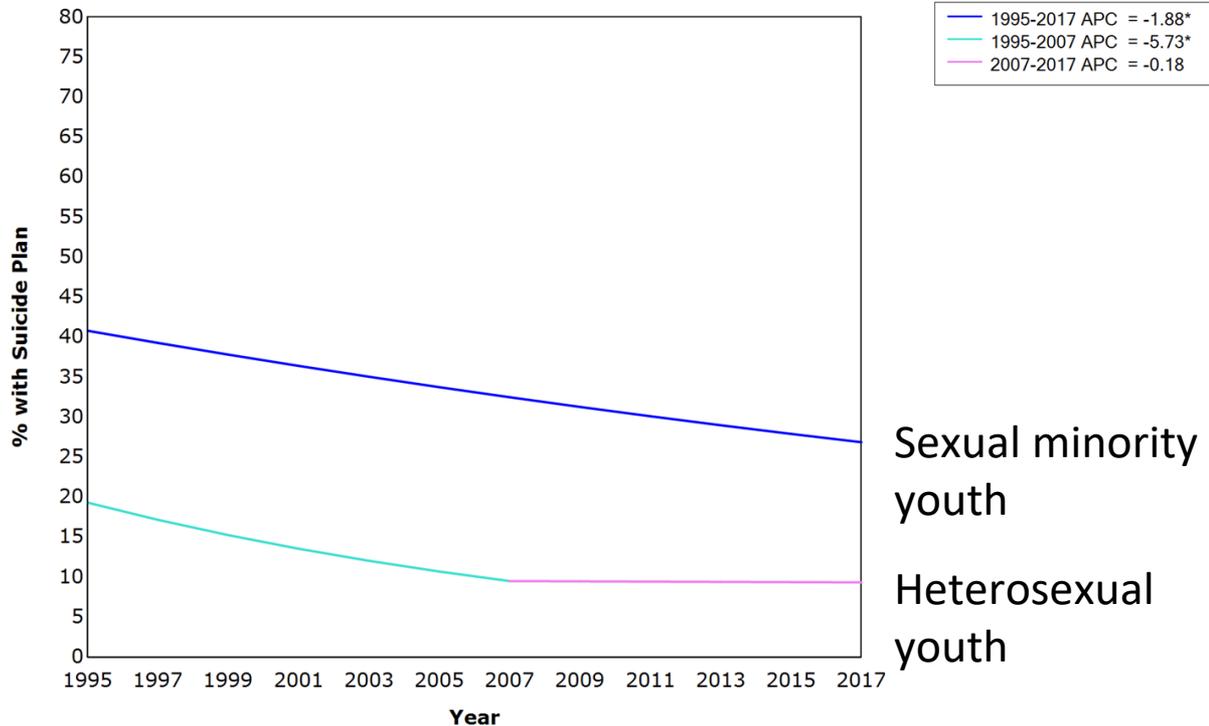
- Sexual Behavior**
- Rate of decline for **suicidal ideation** faster among heterosexual youth
 - $z = 4.45, p < 0.001$

* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Results: Suicide plans

- Prevalence rates for **suicide plans** higher among SM youth
 - Based on sexual identity
 - Rates for SM youth ranged from 24.3% to 40.4%
 - Rates for heterosexual youth ranged from 8.8% to 18.2%
 - Based on sexual behavior
 - Rates for SM youth ranged from 26.1% to 43.7%
 - Rates for heterosexual youth ranged from 10.2% to 22.8%

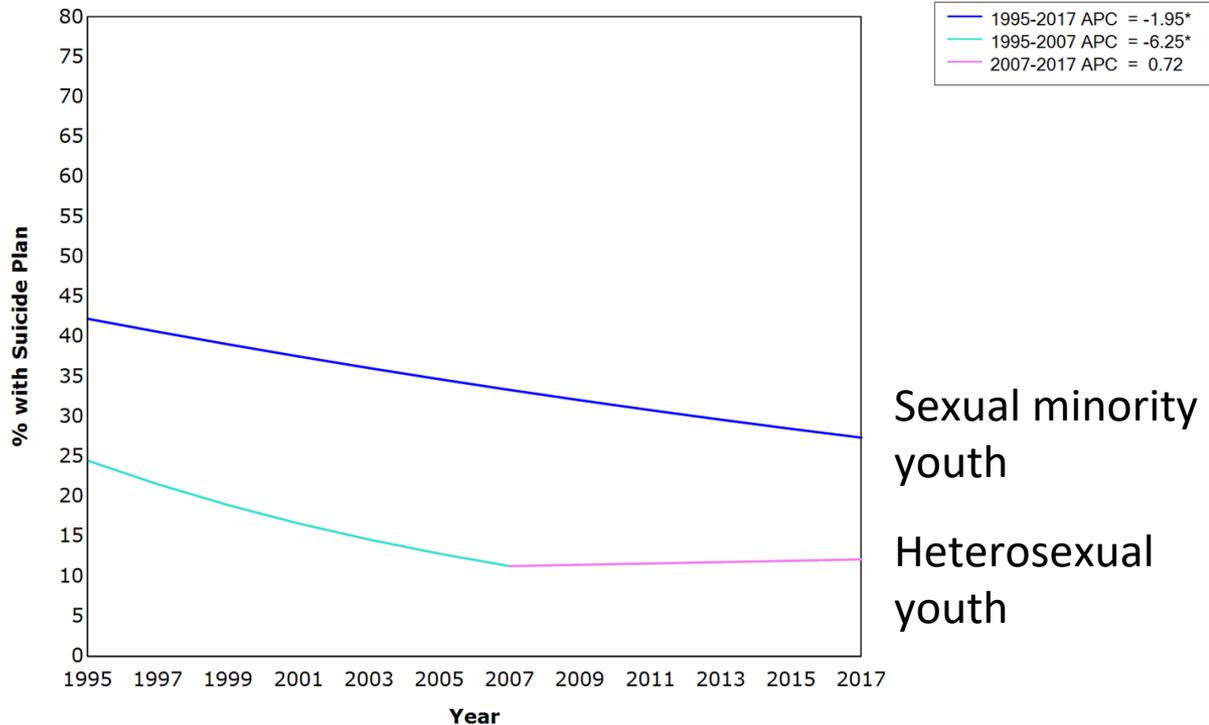
Results: Suicide plans



- Sexual Identity**
- Rate of decline for **suicide plans** faster among heterosexual youth
 - $z = 4.28, p < 0.001$

* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Results: Suicide plans



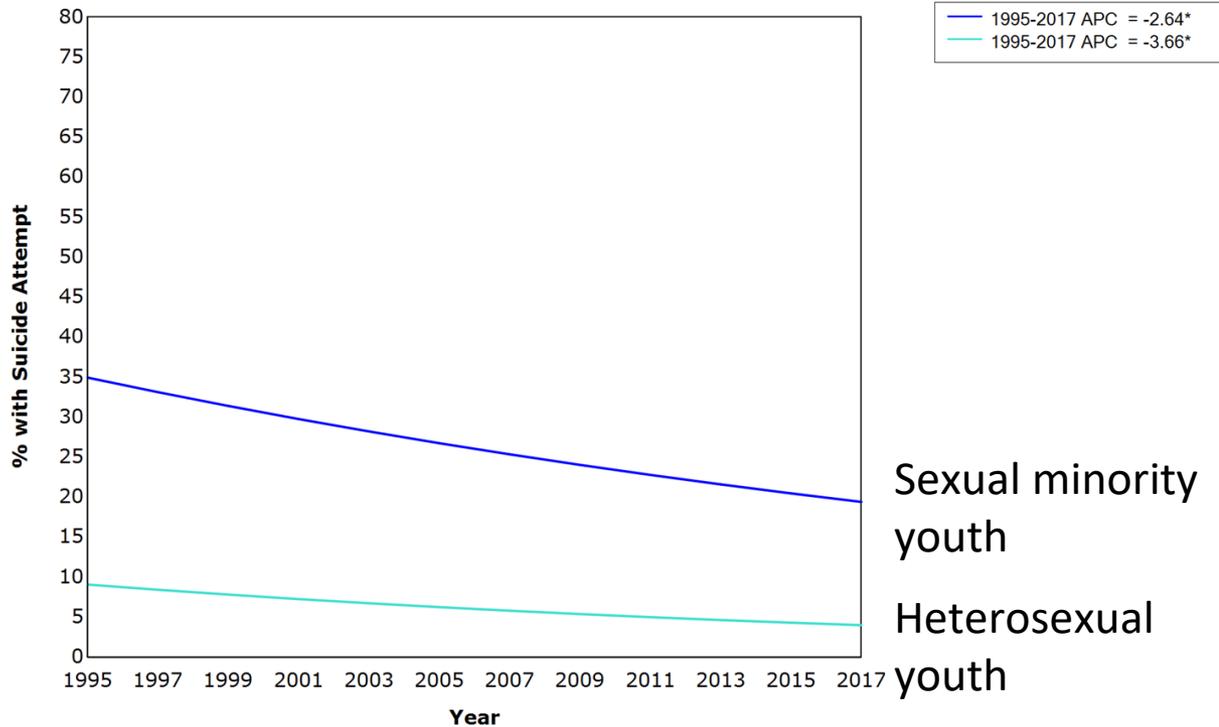
- Sexual Behavior**
- Rate of decline for **suicide plans** faster among heterosexual youth
 - $z = 4.25, p < 0.001$

* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Results: Suicide attempts

- Prevalence rates for **suicide attempts** higher among SM youth
 - Based on sexual identity
 - Rates for SM youth ranged from 15.0% to 32.7%
 - Rates for heterosexual youth ranged from 3.5% to 9.0%
 - Based on sexual behavior
 - Rates for SM youth ranged from 12.2% to 37.9%
 - Rates for heterosexual youth ranged from 5.5% to 13.0%

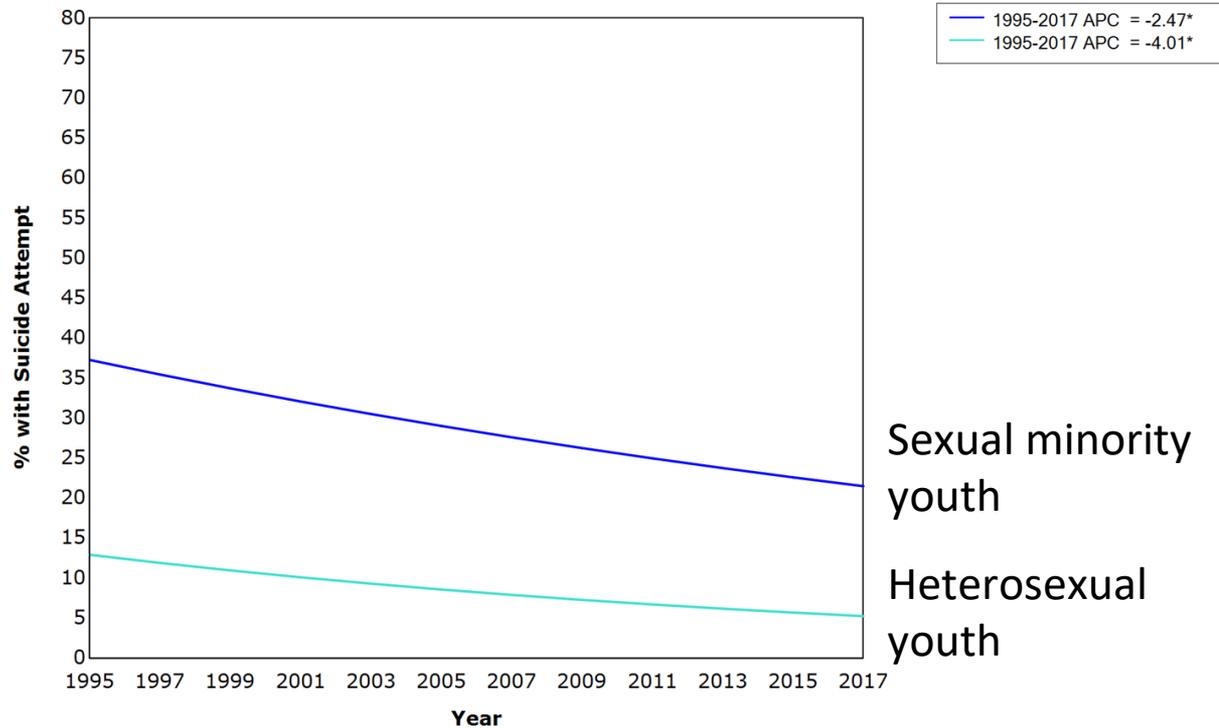
Results: Suicide attempts



- Sexual Identity**
- Rate of decline for **suicide attempts** did not differ by sexual orientation
 - $z = 1.29, p = 0.10$

* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Results: Suicide attempts



- Sexual Behavior**
- Rate of decline for **suicide attempts** did not differ by sexual orientation
 - $z = 4.25, p = 0.08$

* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

LGB suicide

- There are good news and less positive news
- First, the good news:
 - Prevalence of STBs has gone down over time
 - True for both SM and heterosexual youth

LGB suicide

- Now, the not-so-good news:
- Prevalence of STBs in SM youth continues to be very high
 - Even in most recent year (2017): Suicidal Ideation = 32.5% - 34.5%
Suicide plans = 24.3% - 26.1%
Suicide attempts = 12.2% - 15.0%
- Prevalence of STBs persistently higher among SM youth
- Disparity may be increasing
 - Steeper decline for SI and suicide plans among heterosexual youth
- Despite sustained focus on disparities since 2001
- Considerable room for improvement remains

LGB suicide

LGBTQ crisis hotlines

The Trevor Project

Providing confidential support for LGBTQ youth in crisis, 24 hours a day, 7 days a week.

TrevorLifeline

[1-866-488-7386](tel:1-866-488-7386)

Crisis intervention and suicide prevention phone service available 24/7/365.

TrevorChat

Confidential [online instant messaging](#) with a Trevor counselor, available 24/7.
Access through a computer.

TrevorText

Text START to 678-678

Confidential text messaging with a Trevor counselor, available 24/7/365.
Standard messaging rates may apply.

SAGE LGBT Elder Hotline

Talk and be heard at the SAGE LGBT Elder Hotline. Connects LGBT older people with friendly responders. For LGBT elders and caretakers.

[1-877-360-LGBT \(5428\)](tel:1-877-360-LGBT(5428))

Confidential support and crisis response, available 24/7.

Trans Lifeline

A 24/7 hotline available in the U.S. and Canada staffed by transgender people for transgender people.

[1-877-565-8860](tel:1-877-565-8860) (United States)

[1-877-330-6366](tel:1-877-330-6366) (Canada)

Confidential, 24/7 crisis support.

<https://afsp.org/lgbtq-crisis-and-support-resources>