

Health Disparities in Pediatric Mental Health Outcomes

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Disclosures

Dr. Lee receives royalties from SpringerNature as co-editor for the book, *Pediatric Firearm Injuries and Fatalities: The Providers' Guide to Approaches, Policies and Harm Prevention*

I am discussing mental health disparities—but I am not specialty trained in mental health.

Given the scope of the talk, I will be discussing mental health disorders in general.



Objectives



1. Recognize disparities for mental health outcomes in children and youth
2. Understand the mechanisms behind disparities in care and outcomes for pediatric mental health disorders
3. Discuss strategies to decrease these mental health disparities in children and youth



Health Disparities

- Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their:
 - Racial or ethnic group
 - Religion
 - Socioeconomic status
 - Gender
 - Age
 - Mental health
 - Cognitive, sensory or physical disability
 - Sexual orientation or gender identity
 - Geographic location



<https://www.healthypeople.gov/2020/about/foundation-health-measures/Disparities>



Identify

- Describe the health disparities
- Define vulnerable populations
- Measure disparities in these populations

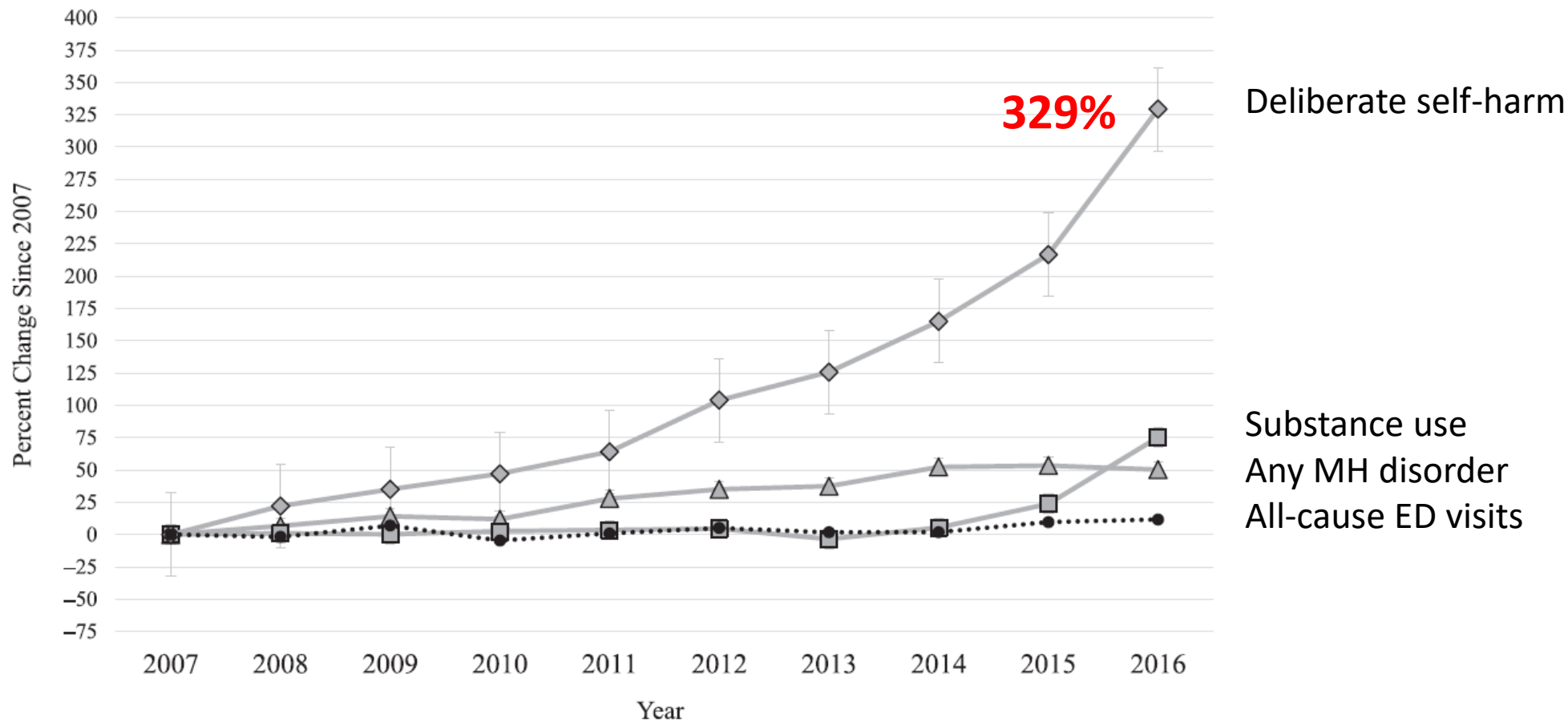
Understand

- Determinants and mechanisms of disparities
 - Individual/population
 - Clinician/Clinical Encounter
 - Healthcare System

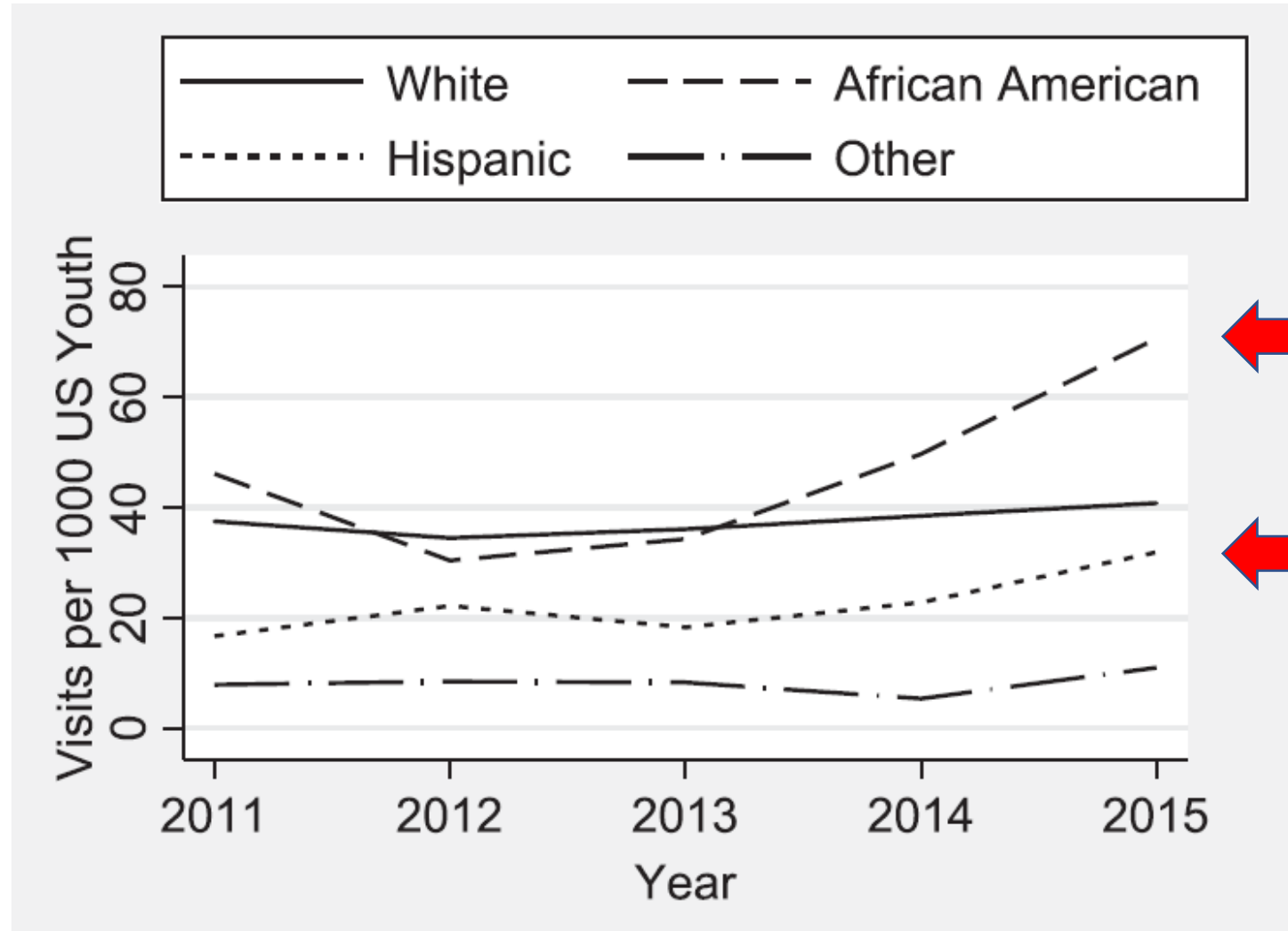
Reduce

- Intervene
- Evaluate
- Translate
- Change policy

Percent Change of Pediatric Mental Health ED Visits, 2007-2016



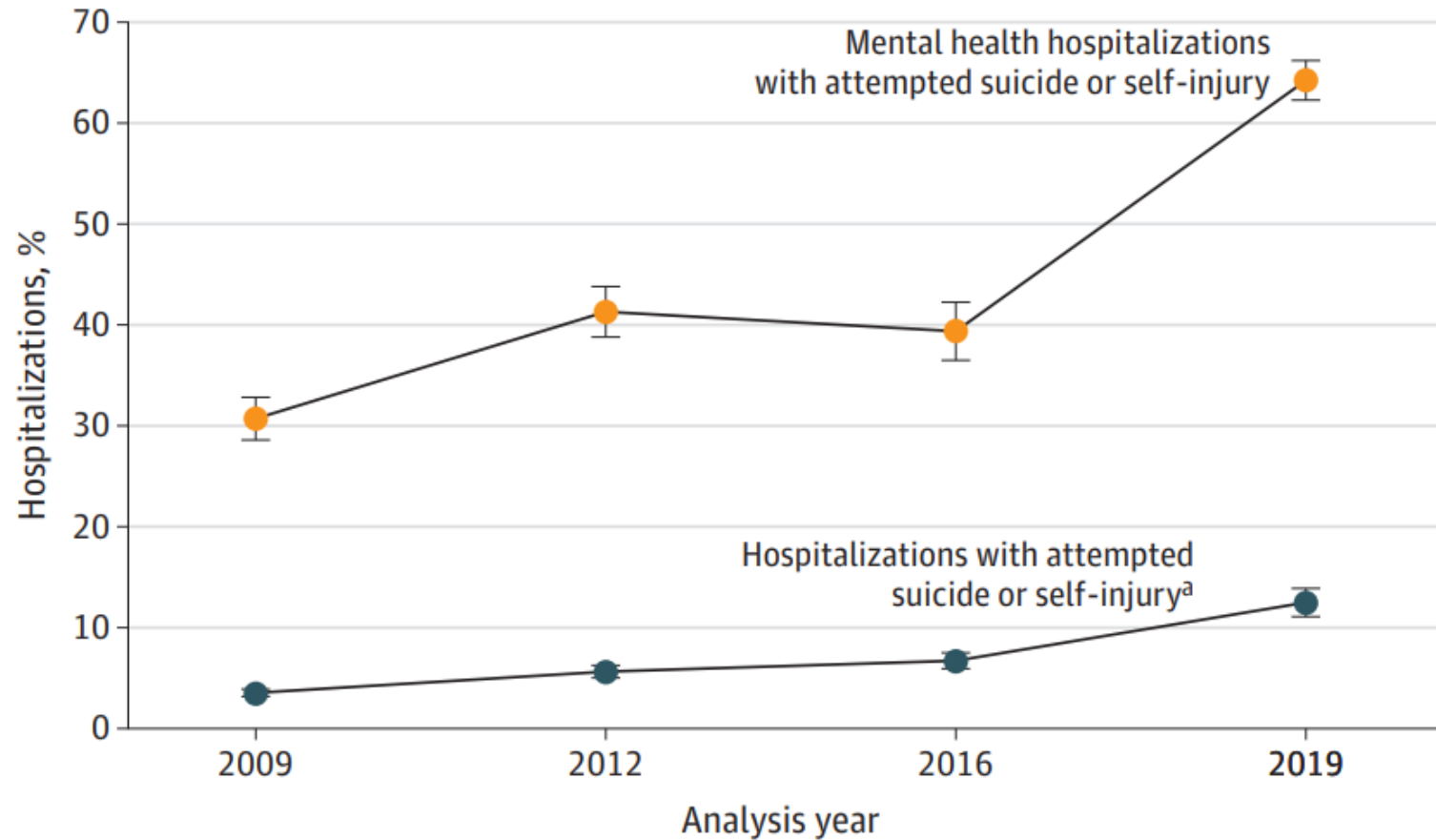
Race and Ethnicity Trends in Mental Health ED Visits, 2011-2015



After controlling for insurance type



Youth with Attempted Suicide/Self-Injury Hospitalizations, 3-17 Years



163% increase from 2009-2019
(all hospitalizations)



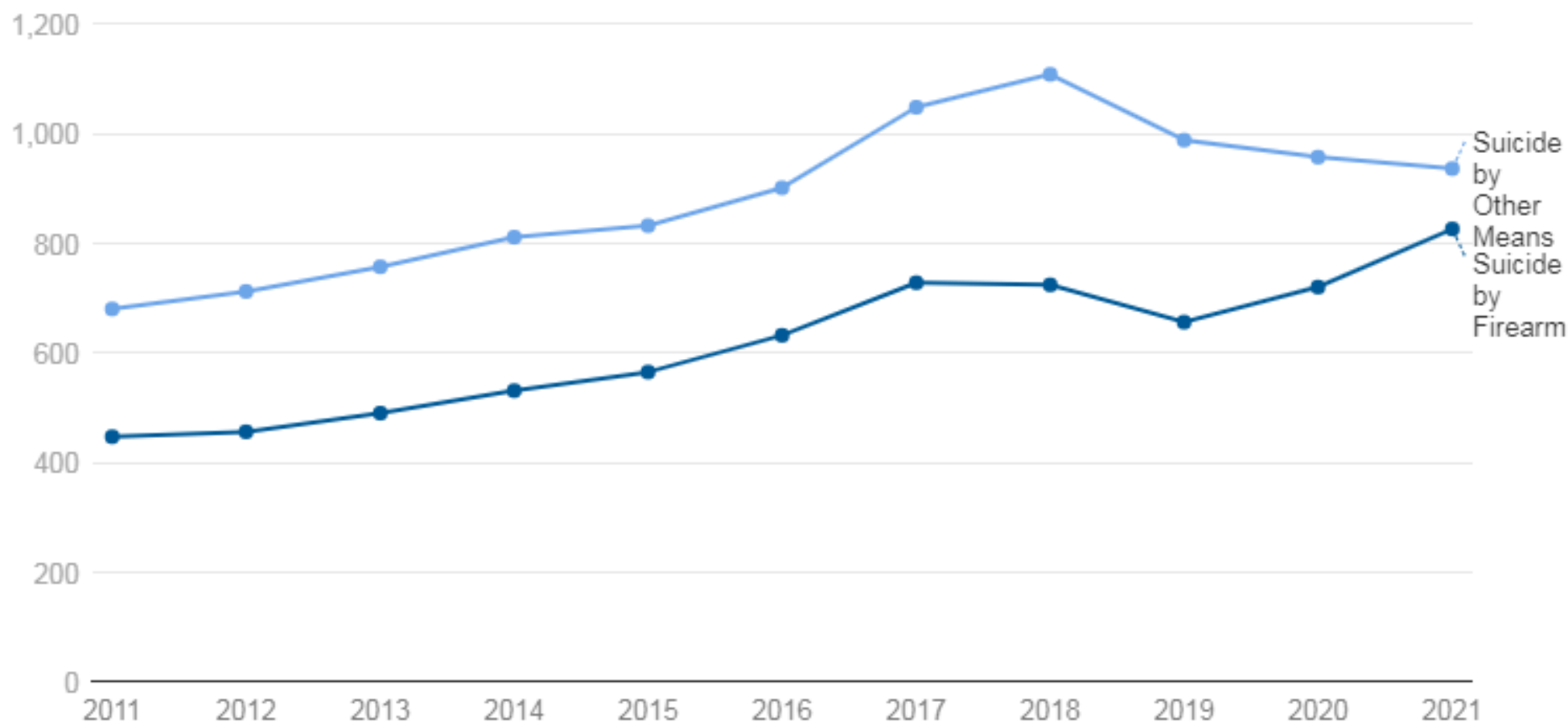
Suicide

Second leading cause of death
in children and youth 5-19
years old

<https://www.cdc.gov/injury/wisqars>



Number of Deaths Due to Suicide, by Firearm or Other Means, Among Children and Adolescents 2011 to 2021

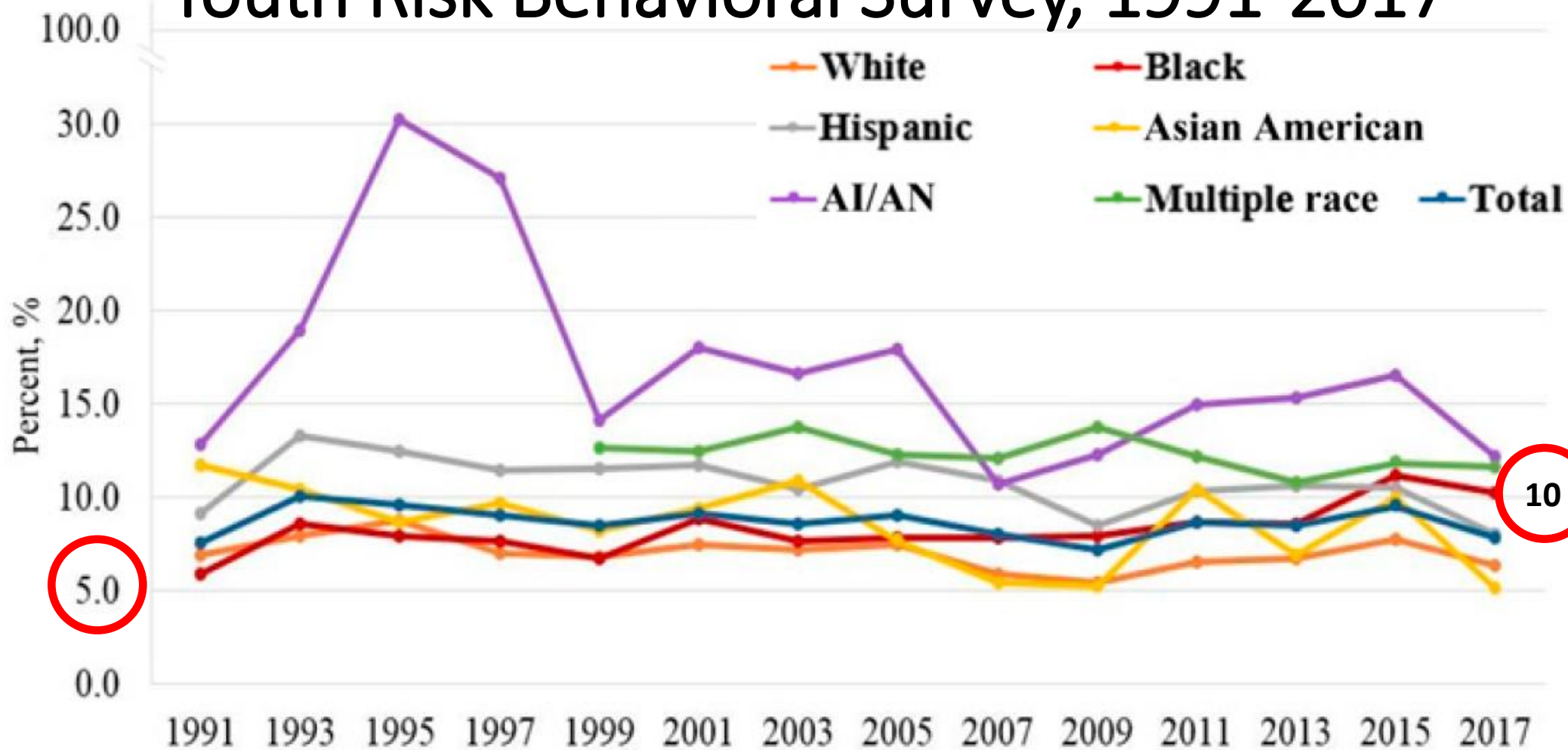


NOTE: Data from 2021 is provisional. Suicide deaths shown are among children ages 17 and under. Suicide deaths by the discharge of a firearm were identified using codes X72-X74. Suicide deaths by other/unspecified means were identified using ICD-10 codes U03, X60-X71, X75-X84, and Y87.0. It is possible that some suicides may be classified under other categories.

SOURCE: KFF analysis of CDC Wonder, 2011-2020, and CDC Wonder Provisional Mortality Statistics, 2021, Online Databases • PNG

Suicide Attempts in the Past Year

Youth Risk Behavioral Survey, 1991-2017

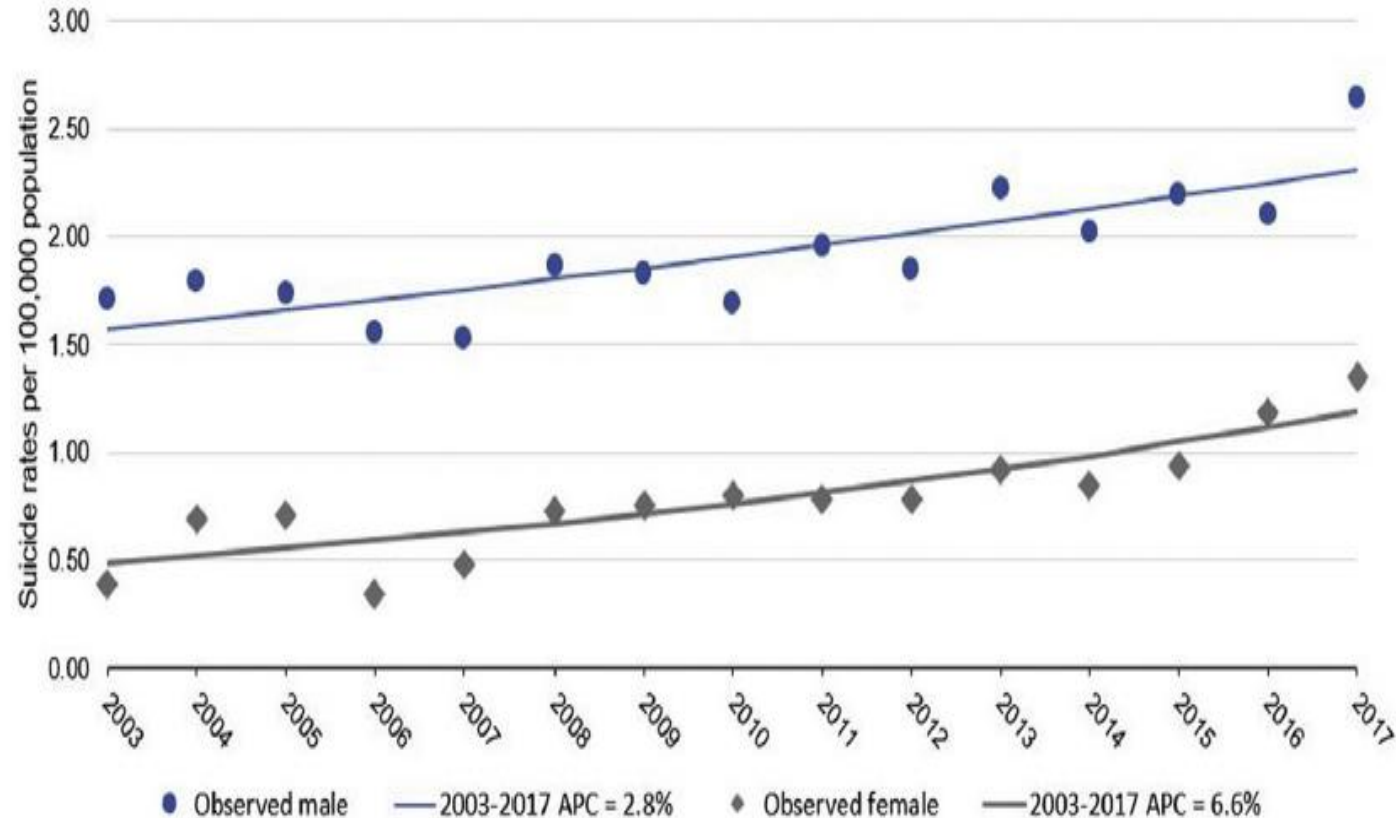


Suicide attempt Black youth: OR 1.02 (1.01-1.04)


Disparities in Suicide Trends in Black Youth 5-17 Years

FIGURE 2 Suicide Trends by Sex Among Black Youth Aged 5 to 17 Years in the United States, from CDC-WISQARS (2003-2017)

For Black youth 5-17 years old annual percentage change:
Females: 6.6%
Males: 2.8%



Note: ^aAPC = annual percent change. CDC-WISQARS = Centers for Disease Control and Prevention (CDC) Web-based Injury Statistics Query and Reporting System



Increased Risk of Suicide Attempts in Transgender and Sexual Minority Youth

- Suicide attempts compared to heterosexual peers
 - OR 3.5, 95% CI 2.98, 4.12
- Transgender youth: OR 5.9, 95% CI 3.51, 9.82
- Homosexual youth: OR 3.7, 95% CI 3.15, 4.37
- Bisexual youth: OR 3.7 95% CI 2.96, 4.61

Di Giacomo E, et al. JAMA Pediatrics. 2018.



Mental Health Symptoms and Psychosocial Factors Between Black and Latinx Transgender Youth and Peer Groups

Measure	Adjusted odds ratio (95% CI)	
	White transgender youth vs Black and Latinx transgender youth	Black and Latinx cisgender youth vs Black and Latinx transgender youth
Dichotomous measures ^a		
Depression symptoms	0.6 (0.4 to 1.1)	2.7 (2.0 to 3.7) ^b
Suicidal ideation	1.1 (0.6 to 1.8)	5.9 (4.3 to 8.0) ^b
Harassment		
Race-based	1.5 (0.8 to 2.6)	3.2 (2.4 to 4.5) ^b
Gender-based	1.2 (0.6 to 2.0)	12.9 (9.3 to 17.9) ^b
Sexuality-based	0.7 (0.4 to 1.2)	7.8 (5.8 to 10.7) ^b
Continuous measures, adjusted linear regression coefficient (95% CI) ^c		
Victimization	0.5 (-0.3 to 1.3)	1.8 (1.3 to 2.3) ^d
School connectedness	-1.6 (-2.9 to -0.4) ^d	-2.6 (-3.3 to -1.8) ^d
Caring adult relationship	-0.6 (-1.4 to 0.09)	-0.9 (-1.3 to -0.5) ^d

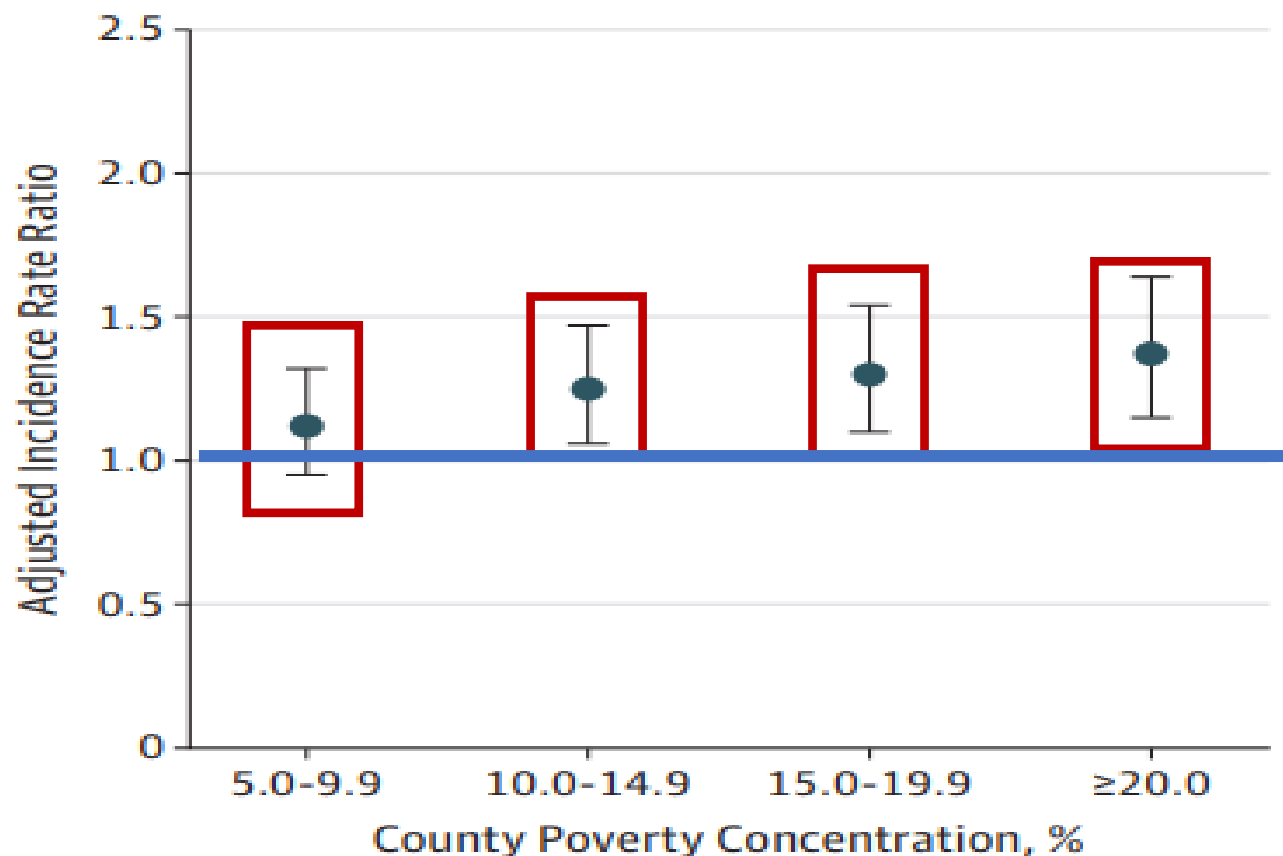
Adjusted for age, reported sex, living arrangement



Association of Pediatric Suicide With County-Level Poverty in the United States, 2007-2016

Jennifer A. Hoffmann, MD; Caitlin A. Farrell, MD; Michael C. Monuteaux, ScD; Eric W. Fleegler, MD, MPH; Lois K. Lee, MD, MPH

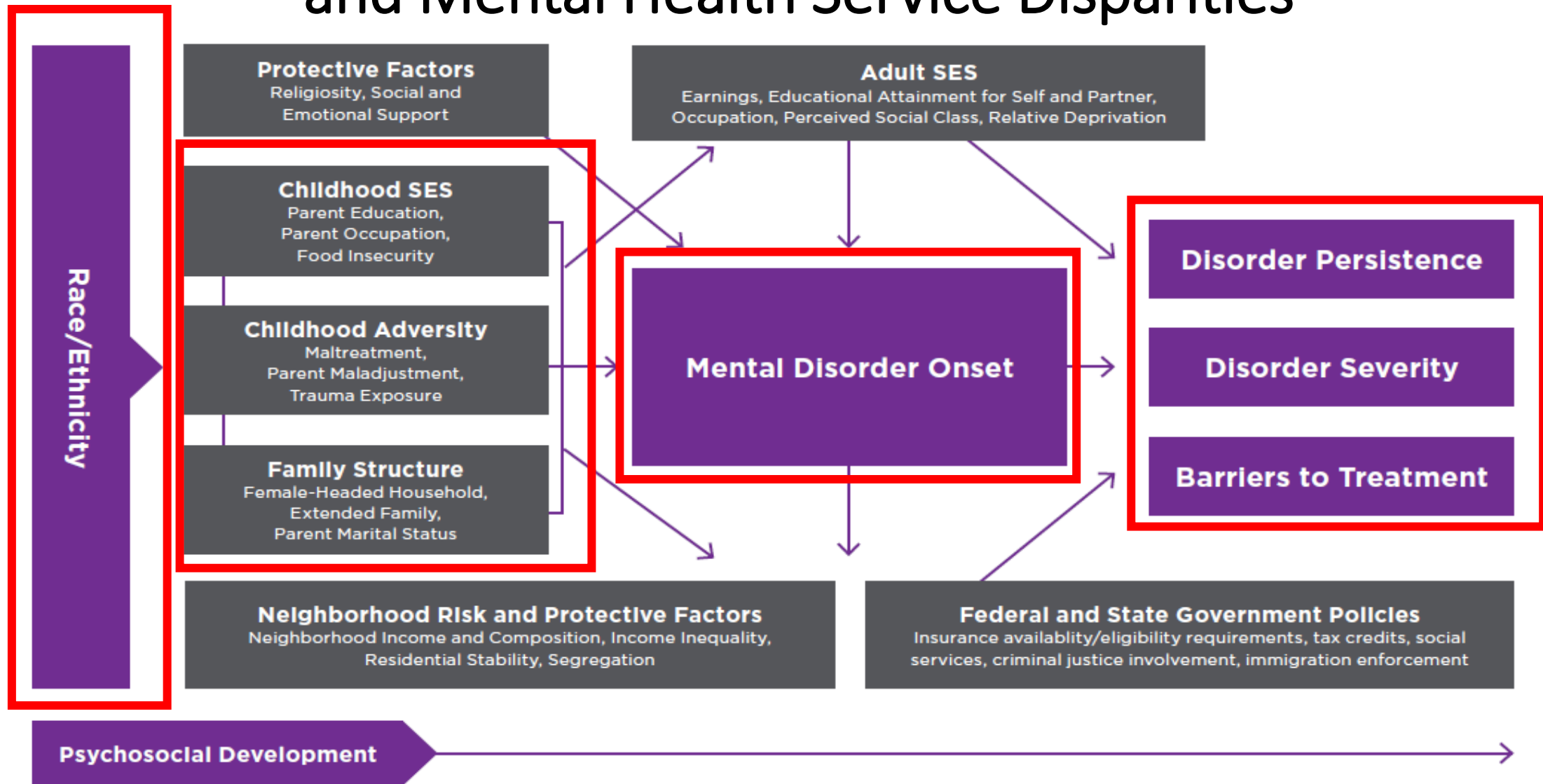
A All methods



Increased suicide incidence rate with increasing county level poverty

Models control for year, individual demographics, county urbanicity, a county youth demographic composition. Data are reported compared with the lowest poverty concentration (0%-4.9% of the county population living below the federal poverty level). Error bars indicate 95% CIs.

Conceptual Model for Child Mental Health and Mental Health Service Disparities



Cumulative Adversity

Minority Experiences

- Childhood trauma
- Stress
- Pollution
- Low SES
- Community violence
- Poor housing
- Low education

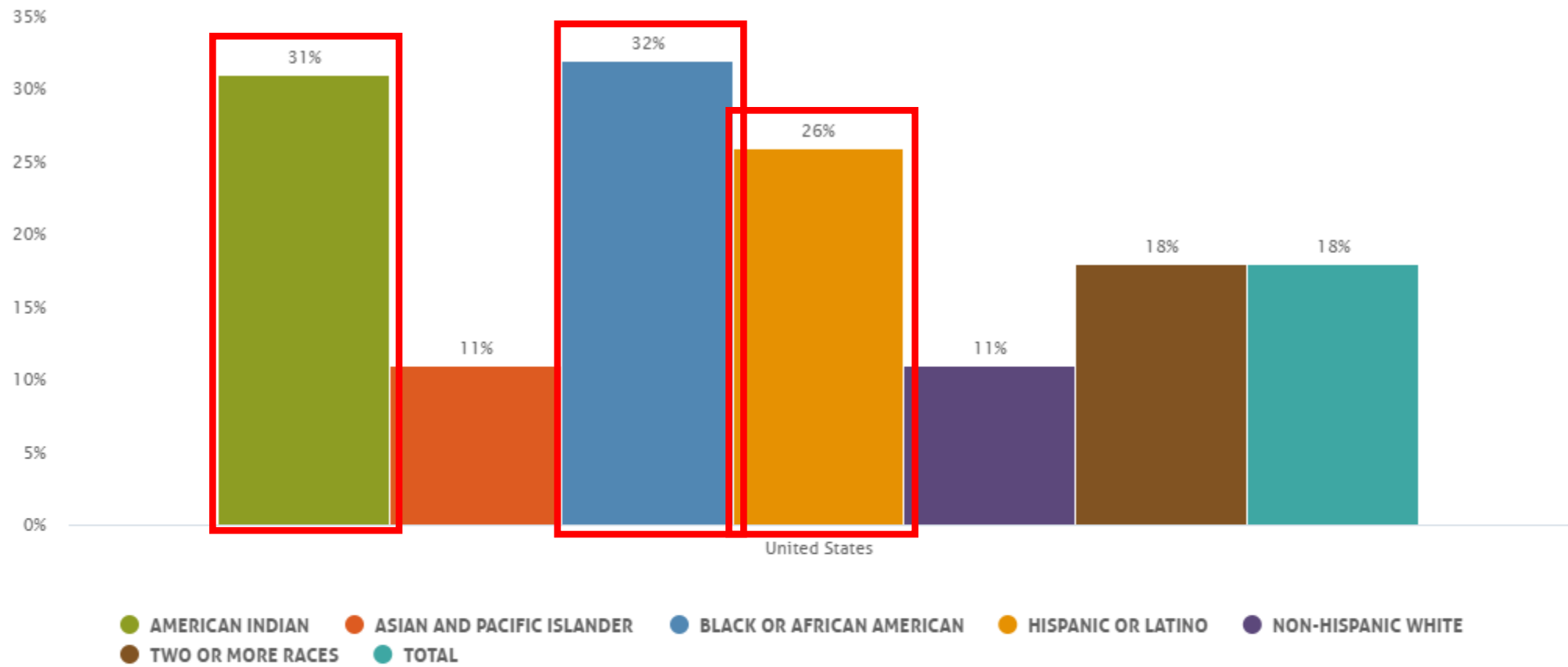
Cultural Hardship

- Discrimination
- Prejudice
- Unfairness
- Stereotyping
- Sense of not belonging
- Mistrust

Mental Health Effects

- Decreased access to mental health care
- Increased risk of adverse mental health effects
- Increased risk of suicide

Algeria M, et al. Disparities in Child and Adolescent Mental Health and Mental Health Services in the United States. William T. Grant Foundation. 2015; Trent M, et al. Pediatrics, 2015; Hodgkinson S, et al. Pediatrics. 2017.



Children In Poverty By Race And Ethnicity (Percent) - 2018

National KIDS COUNT

KIDS COUNT Data Center, datacenter.kidscount.org

A project of the Annie E. Casey Foundation

Federal Poverty Level 2018:
\$26,200 family of 4



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Barriers to Equitable Mental Health Care



Individual/Population

- Socioeconomic disparities
- Stigma
- Poor health education
- Language



Clinician

- Deficits in cross-cultural knowledge and skills
- Attitudinal sensitivity



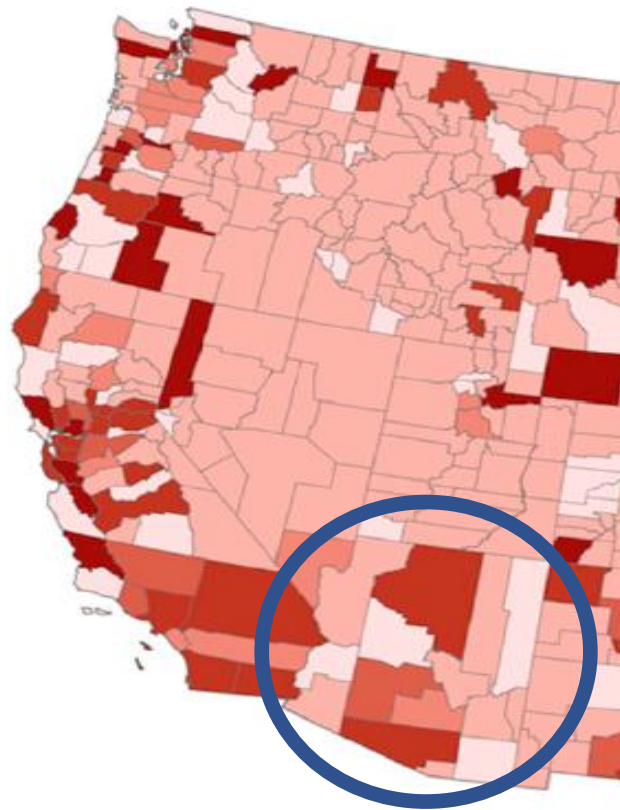
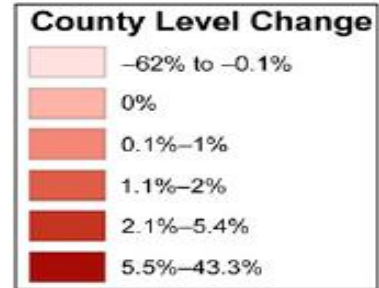
Healthcare System

- Services location/organization
- Culturally appropriate services
- Language appropriate services

Alegria M, et al. Child Adolesc Psychiatr Clin N Am. 2010; Yun K, et al. JAMA Peds. 2019.

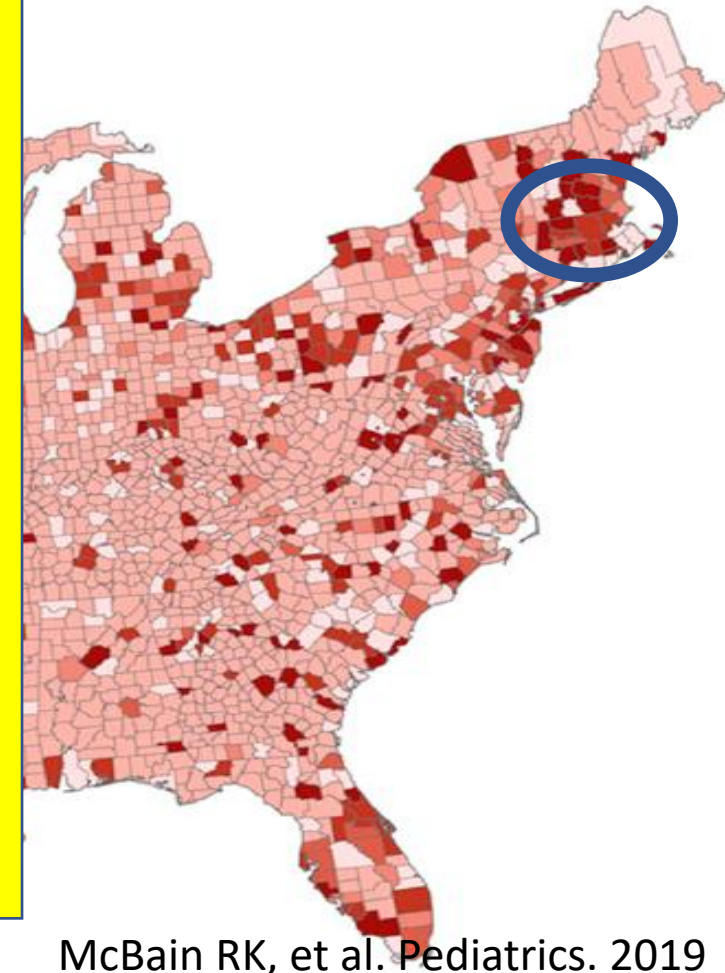


County Level Change in Child Psychiatrists per 100,000 Children, 2007-2016



More child psychiatrists in:

- **Higher income** counties:
5.04/100,000 children
- Lower income counties:
1.40/100,000 children
- **Higher education level** counties:
9.79/100,000 children
- Lowest education level counties:
1.10/100,000 children
- No differences between:
 - Insurance
 - Unemployment



Psychiatric Follow-Up Visit after Psychiatric Hospitalization

Associated factors, 10-18 years old:	RR (95% CI)
• Female:	1.05 (1.02-1.07)
• Non-Hispanic White	
• Non-Hispanic Black:	0.82 (0.79-0.84)
• Hispanic:	0.91 (0.88-0.93)
• Foster care (compared to poverty) :	1.32 (1.28-1.37)
• Managed care insurance:	0.88 (0.87-0.91)
• Diagnosis of bipolar/mood disorder:	1.02 (1.00-1.05)
• Prior inpatient care:	1.19 (1.12-1.25)
• Prior ED visit:	1.12 (1.08-1.17)
• Prior outpatient care:	1.58 (1.51-1.65)

Follow-up visit associated with decreased risk of suicide 6 months after discharge

Adjusted RR: 0.44
(95%CI 0.23-0.83)

Fontanella CA, et al. JAMA Network Open. 2020.



Disparities in 90-Day Rehospitalization for Pediatric Mental Health Admissions

Youth 5-18 years old, U.S. children's hospitals 2016-2018

Increased odds of 90-day rehospitalization:

- Non-Hispanic Black: 1.26 (95% CI 1.08, 1.48)
- Public insurance: 1.18 (1.04, 1.34)

Decreased odds:

- Suburban location: 0.78 (0.63, 0.97)
- Lower odds with high income

Multivariable logistic regression model included distance from hospital, primary mental health diagnosis, hospital case mix index, number of complex chronic conditions

Sociocultural Framework for Children's Mental Health

Legal, Economic, Sociocultural and Political Parameters



Policies, Laws and Regulations

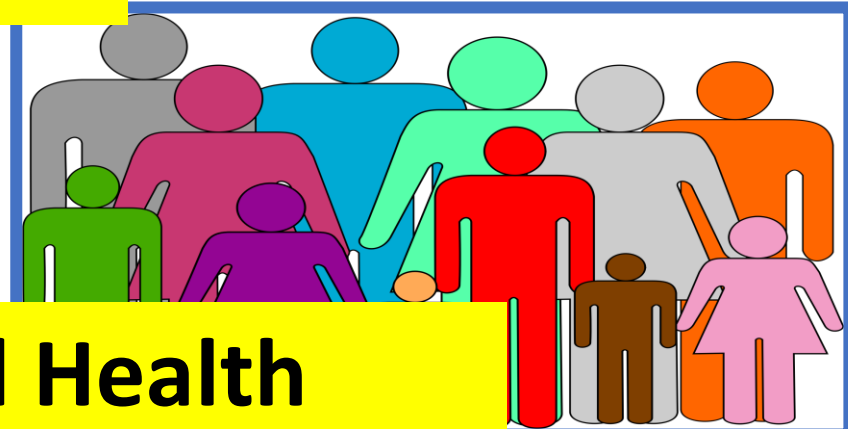


Community Context

Cumulative Advantage



Healthcare



Family

Improved Mental Health Outcomes for Youth

Alegria M.
et al., 2022.
Hoffmann J.
et al., 2022

Execute
Mental
Health
Policies

Implement
Prevention
&
Intervention

Increase
Mental
Health Care
Access

Improve
Mental
Health Care
Provision

Strategies for Addressing Mental Health Disorders in Childhood Health Disparities

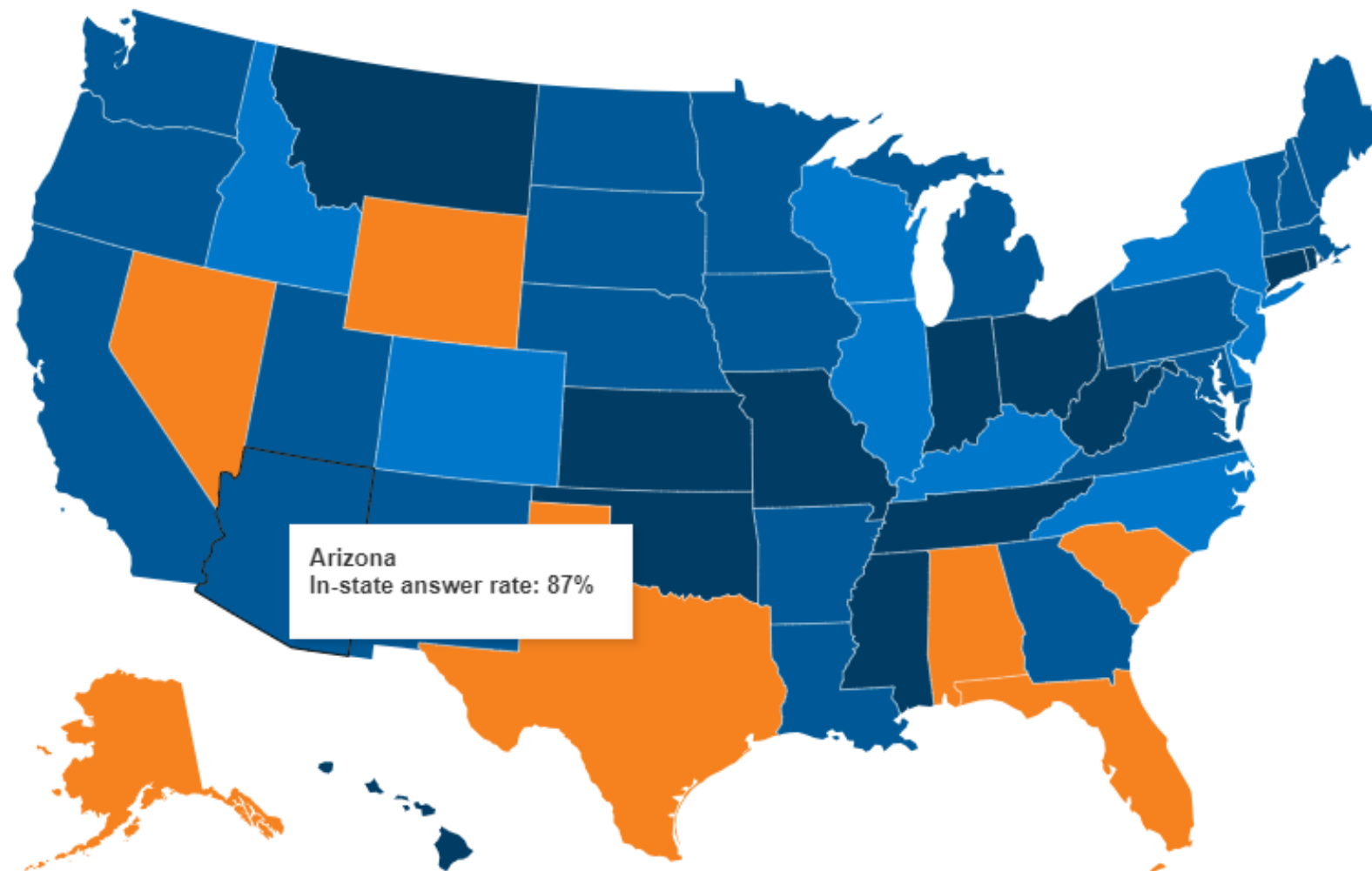
Collins PY, et al. Nature. 2011. Whitney DG, et al. JAMA Peds. 2019.



Figure 3

Variation in 988 In-State Answer Rates, December 2022

■ 90-98% (12 states + D.C.) ■ 80-89% (22 states) ■ 70-79% (9 states) ■ 51-69% (7 states)



NOTE: Lifeline defines an in-state answer rate as "all 'answered in-state' calls divided by all calls 'received' to the state"

SOURCE: KFF analysis of Lifeline Performance Metrics (Vibrant Emotional Health's 988 Lifeline Data) • PNG

KFF

<https://www.kff.org/other/issue-brief/taking-a-look-at-988-suicide-crisis-lifeline-implementation/>

Teen Lifeline's new program supports kids struggling with suicidal thoughts

By **Kirsten Dorman**

Published: Monday, June 26, 2023 - 3:55pm

Updated: Tuesday, June 27, 2023 - 9:42am

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Teen Lifeline

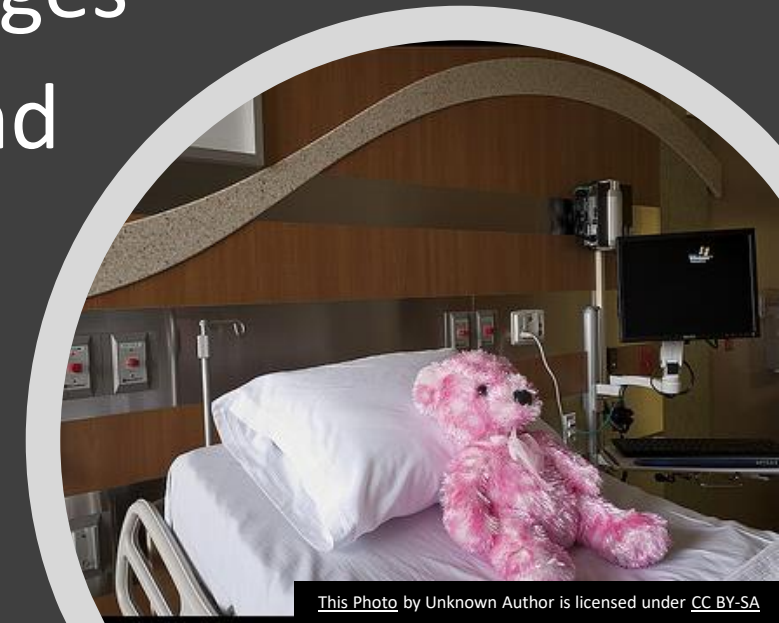
Dani spends a lot of time answering calls in the hotline room, where she has been volunteering with Teen Lifeline for more than two years.

[Arizona Teen Lifeline hotline's new program supports teens struggling with suicidal thoughts | Fronteras \(fronterasdesk.org\)](https://fronterasdesk.org)



Execute Child-Focused Mental Health Policies

- Reduce burden of obtaining care
 - Develop systems for care linkages
- Create parity between mental and physical illness



Advocacy

- Support efforts to ensure insurance coverage for all children and youth
- Increase funding to train pediatric mental health specialists
- Increase capacity for higher level of psychiatric care



ACEP and AAP. Mental Health Emergencies Policy Statement; Yun K, et al. JAMA Peds. 2019.



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Advocacy

- Improve reimbursement for mental health care
- Expansion of telehealth mental health services reimbursement
- Medicaid funding to bill for interpreter services
- Increase funding for pediatric mental health research
- Advocate for anti-poverty policies



ACEP and AAP. Mental Health Emergencies Policy Statement; Yun K, et al. JAMA Peds. 2019.



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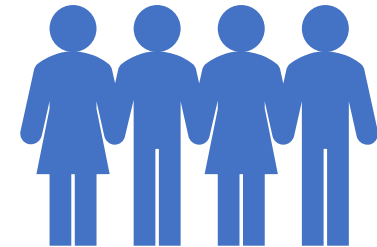


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Implement Prevention and Early Intervention programs



Hospital-based programs



Community programs

School Referrals for Behavioral Health Emergencies for Children and Youth



School Referrals for Behavioral Emergencies



Patient Characteristic	School Referral vs. Other Sites aOR (95% CI)	School vs. Home Referral aOR (95% CI)
Sex (Male)	0.79 (0.50, 1.22)	0.93, (0.58, 1.51)
Age Group		
5-8 yrs	4.83 (2.15, 10.83)	6.27 (2.67, 14.75)
9-12 yrs	1.68 (0.79, 3.56)	2.39 (1.09, 5.26)
13-15 yrs	1.55 (0.70, 3.43)	1.69 (0.73, 3.89)
16-18 yrs	referent	referent
Race/Ethnicity		
White/Non-Latinx	referent	referent
Black/Non-Latinx	2.26 (1.32, 3.88)	2.11 (1.16, 3.85)
Latinx	2.91 (1.42, 5.97)	3.22 (1.42, 7.28)
Other	2.38 (1.31, 4.33)	2.02 (1.05, 3.86)
Unavailable	2.04, (0.65, 6.33)	1.71 (0.51, 5.76)
Insurance		
Public	Referent	Referent
Private	0.98 (0.57, 1.70)	0.70, (0.39, 1.26)
Both	0.73 (0.40, 1.33)	0.57 (0.29, 1.09)
Developmental delay/learning disability	2.55 (1.64, 3.97)	2.58 (1.59, 4.19)

Tolliver D, et al.



School Referrals for Behavioral Emergencies for Children and Youth

	School site of referral (n= 147)	Non-school site of referral (n = 366)	Total (n=513)
Total Amount Paid	\$154,269	\$983,053	\$1,137,322
Total Amount Paid by Public Insurance	\$53,646	\$215,567	\$269,214
Total Amount Paid by Private/Self-Pay	\$100,623	\$766,409	\$867,032
Median Amount Paid (IQR)	\$367 (\$224, \$926)	\$736 (\$251, \$1876)	\$532 (\$251, \$1702)
Median Amount Paid by Public Health Insurance (n=324) (IQR)	\$256 (\$204, \$434)	\$301 (\$233, \$786)	\$298 (\$220, \$716)
Median Amount Paid by Private Insurance/Self-Pay (n=189) (IQR)	\$1,204 (\$501, \$2361)	\$2,044 (\$1058, \$3046)	\$1,830 (\$944, \$2770)

^aDollar amounts in table represent payments to the hospital for clinical services rendered.

Increase Mental Health Care Access

Expand the Workforce



Primary Care Integration in the Medical Home



Community Based Care



Alegria M, et al. Child Adolesc Psychiatr Clin N Am. 2010; Adar J, et al. Pediatrics. 2015. Hodgkinson S, et al. Pediatrics. 2017.

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Behavioral Health Integration Program



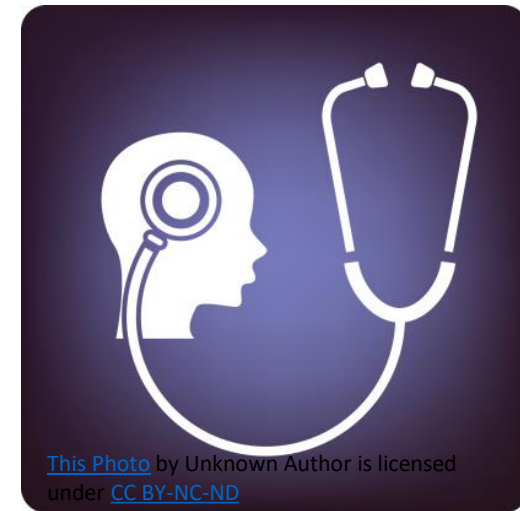
Pediatrician education



Practice Transformation



Psychiatric consultation



On-site BH service

Walter HJ, et al. Pediatrics. 2019.

Behavioral Health Integration with Primary Care

- After 5 years, associated with increased practice-level:
 - BH integration
 - Psychotherapy
 - Medical BH visits
 - Guideline-congruent medication prescriptions for anxiety, depression, and ADHD

Strategies to Improve Mental Health Care Provision



Individual/Population

- Address socioeconomic disparities
- Education to address stigma



Clinician

- Training
 - Implicit bias
 - Upstander/bystander
- Acquiring skills to serve diverse populations



Healthcare System

- Revise practices presenting barriers to diverse populations
- Staff training on culturally appropriate care
- Recruitment of diverse staff
- Ensure workflow accommodates LEP families

Alegria M, et al. Child Adolesc Psychiatr Clin N Am. 2010; Adar J, et al. Pediatrics. 2015. Hodgkinson S, et al. Pediatrics. 2017.



Future Directions

Resource allocation

- Foster care and juvenile justice settings
- Telehealth

Research

- Treatment preferences among youth and families
- Interventional studies
- Improve assessment instruments for diverse populations

Take Home Points

- Children and youth experience mental health disparities in clinical outcomes, access to care, and provision of care
- Mechanisms of disparities in mental health outcomes are intersectional and multi-factorial
- Multi-pronged strategies are essential to decrease disparities in pediatric mental health

