

Saving Holden Caulfield: Do We Have What it Takes to Prevent Teen Suicide?

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Services for Teens At Risk (STAR-Center)
Annual Conference
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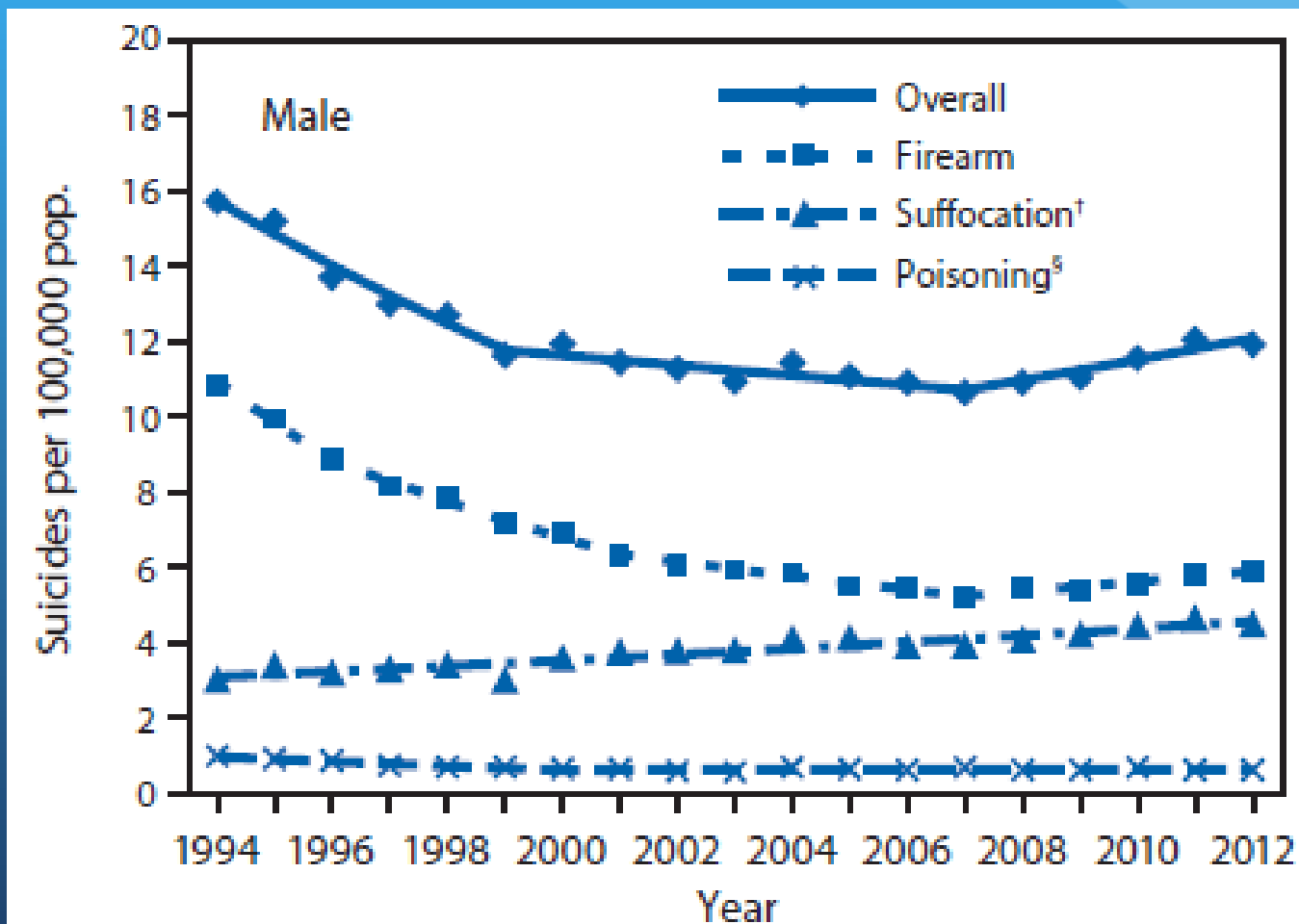
A Catcher in the Rye

- Anyway, I keep picturing all these little kids playing some game in this big field of rye and all. Thousands of little kids, and nobody's around - nobody big, I mean - except me. And I'm standing on the edge of some crazy cliff. What I have to do, I have to catch everybody if they start to go over the cliff - I mean if they're running and they don't look where they're going I have to come out from somewhere and catch them. That's all I'd do all day. I'd just be the catcher in the rye and all. I know it's crazy, but that's the only thing I'd really like to be. I know it's crazy." (22.51-55)

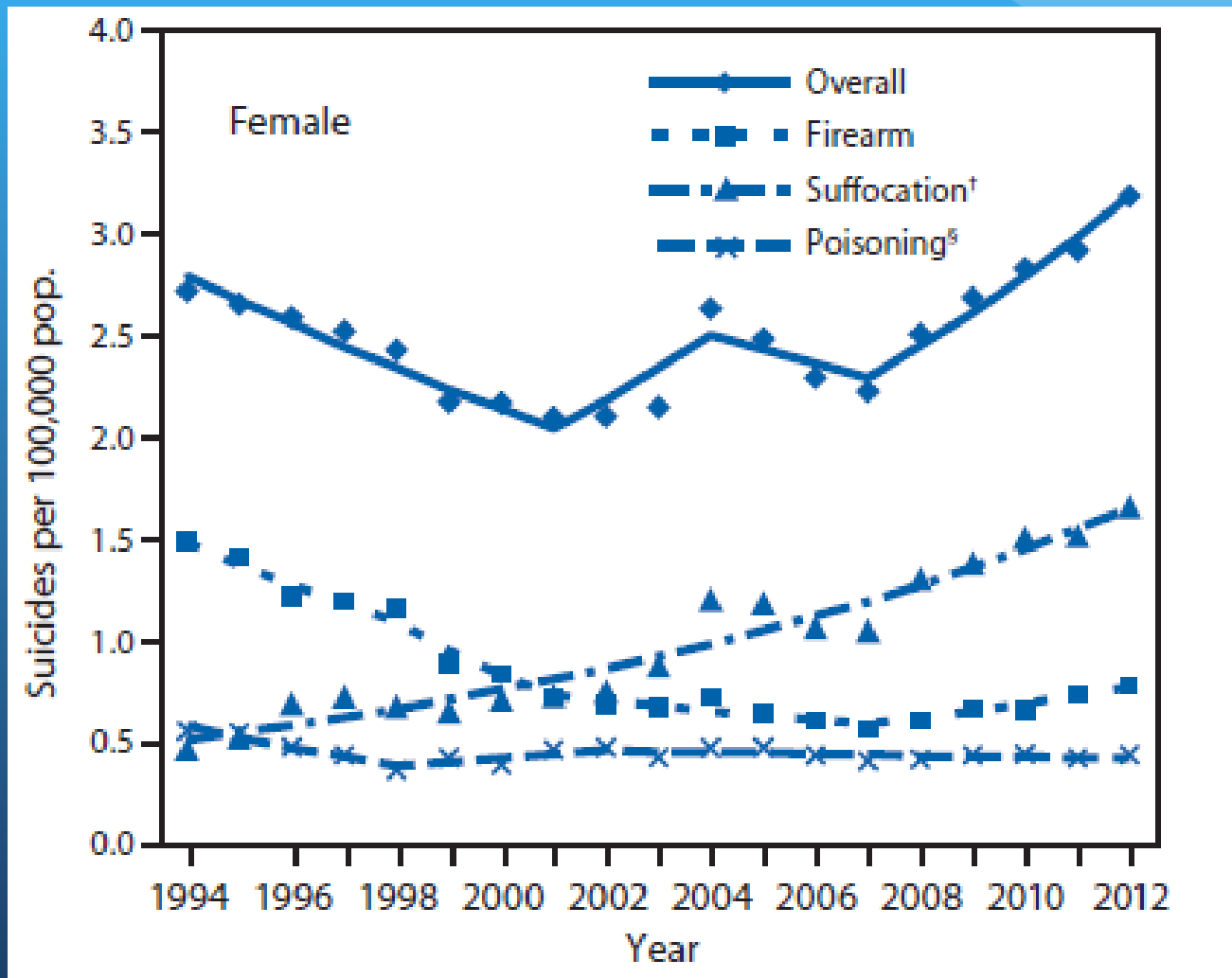
Holden's Mistakes

- He is standing by the cliff, at which point it is almost too late. Someone should be leading kids away from the cliff.
- If kids are playing in a field with a cliff, shouldn't there be a fence?
- He is alone
 - Need a team
 - Embedded in the field where the kids are
 - Change the culture of those who are in the field

Suicide Rates in 10-24 Year Olds, US, 1994-2012 (Males)



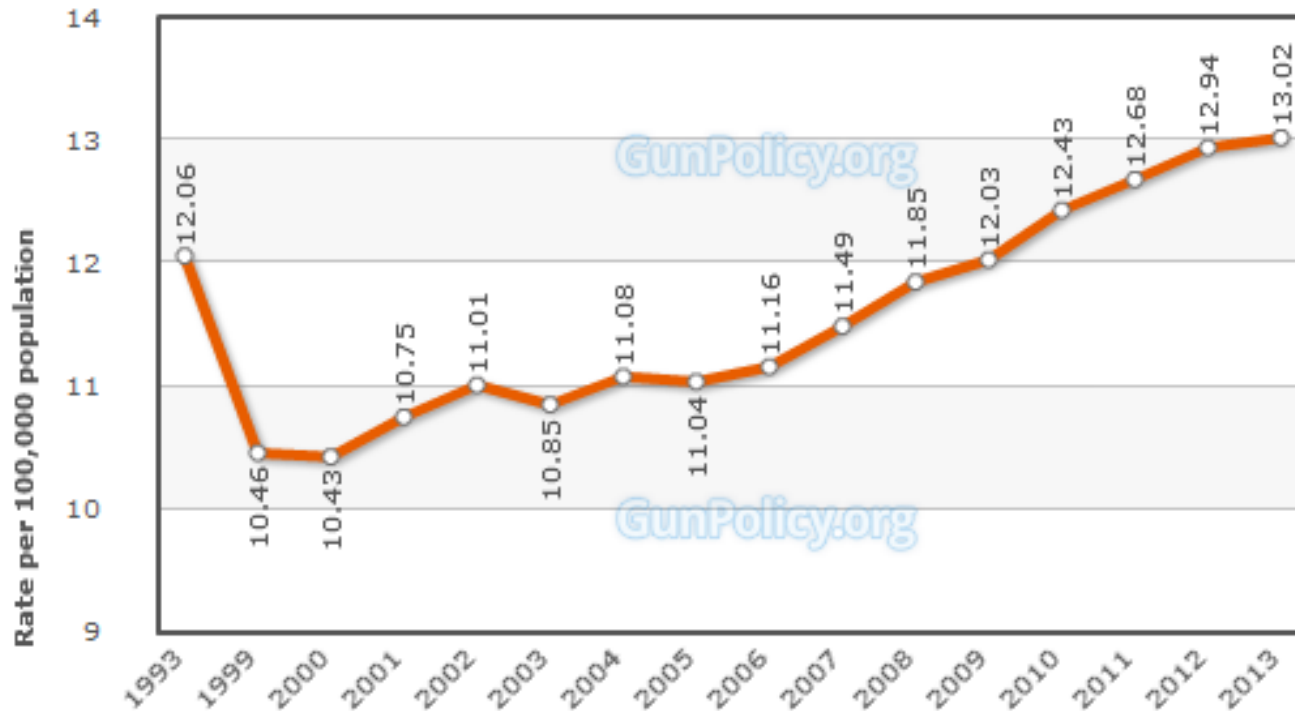
Suicide Rates in 10-24 Year Olds, US, 1994-2012 (Females)



Suicide Rates in the US, 1993-2013

United States

Rate of Suicide per 100,000 People (any method)



Alpers, Philip, Amélie Rossetti and Daniel Salinas. 2015. Guns in the United States: Rate of Suicide per 100,000 People (any method). Sydney School of Public Health, The University of Sydney. GunPolicy.org, 3 September. Accessed 1 October 2015. at: http://www.gunpolicy.org/firearms/compareyears/194/rate_of_suicide_any_method

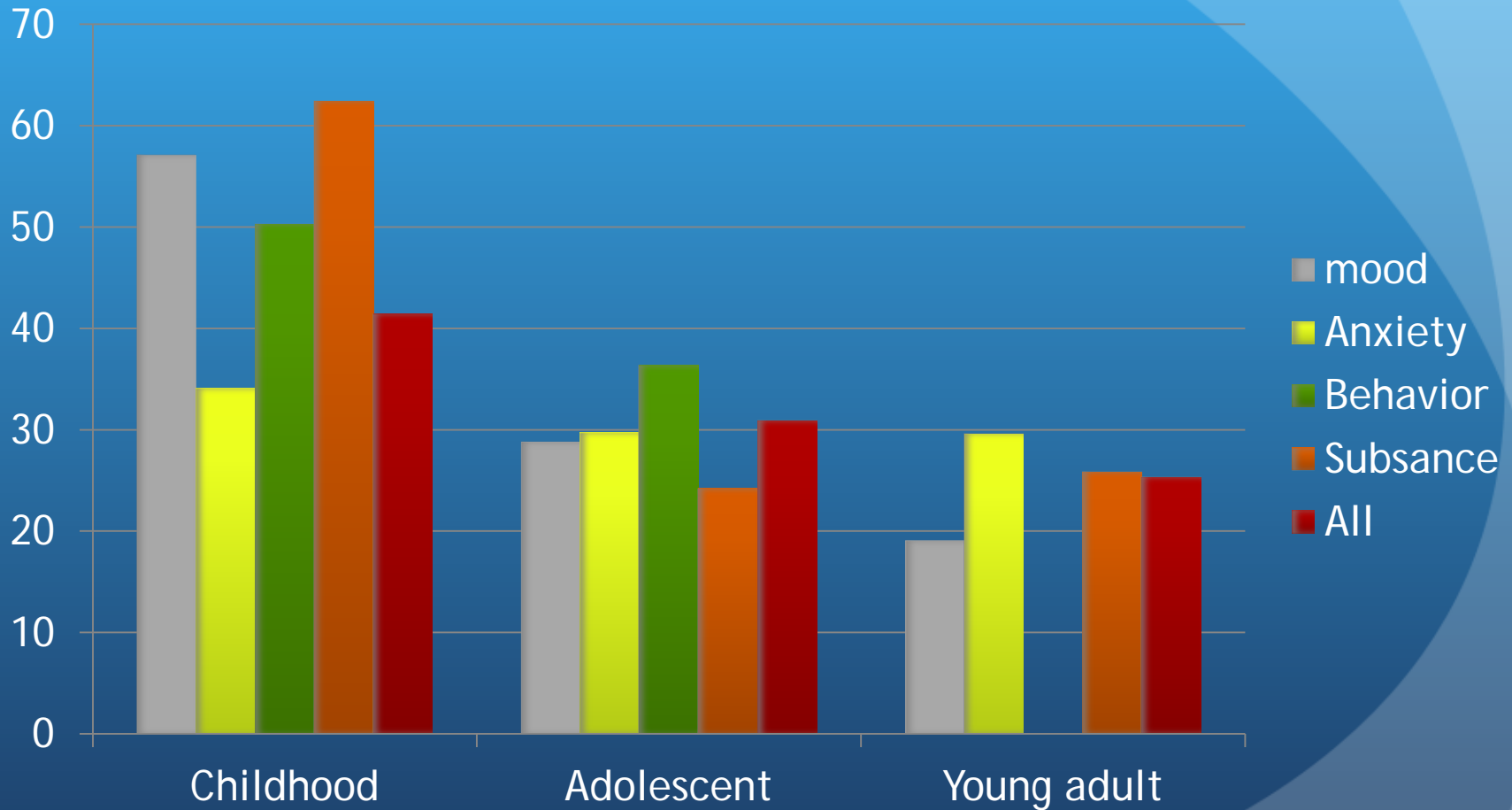
Leading Kids Away From the Cliff

- Prevent common risk factors for adolescent suicidal behavior
- Maltreatment, disruptive disorder, alcohol/substance abuse
- These three are risk factors for the strongest predictors of suicide: depression and for suicidal behavior
- All of these risk factors lead to adverse outcomes through common processes, so possible to prevent multiple adverse outcomes

Maltreatment

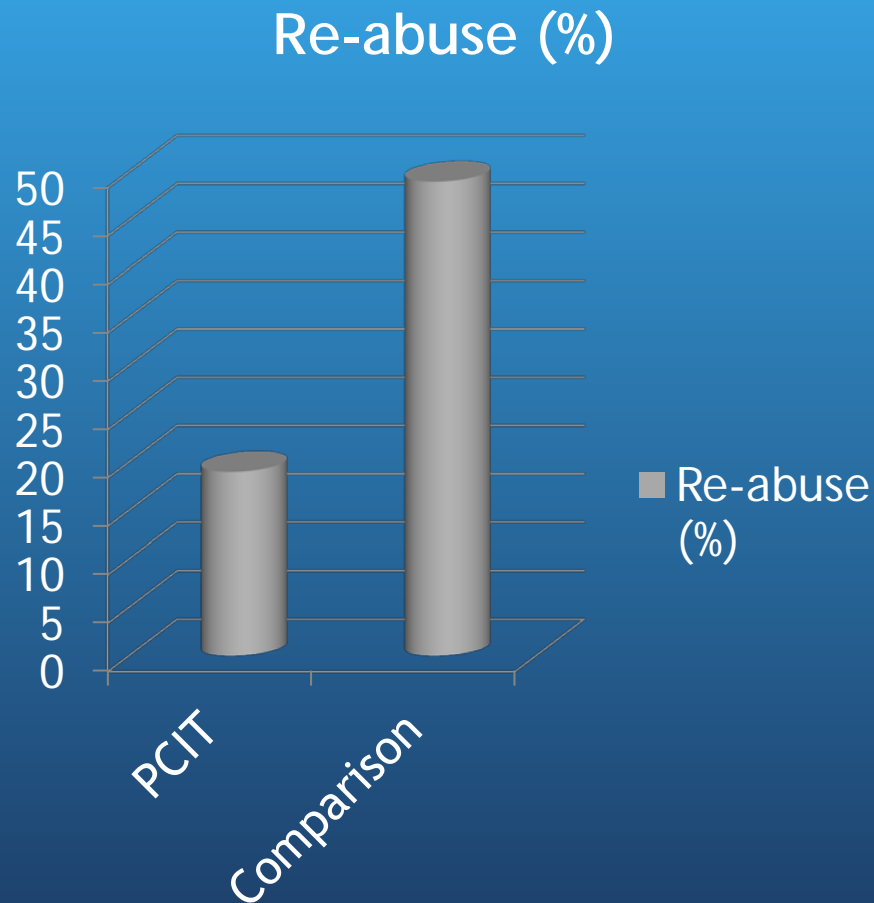
- Population attributable risk (PAR) of sexual abuse with respect to suicide attempt= 19%. (Fergusson et al., 2000; Molnar et al., 2007; Enns et al., 2006)
- Sexual abuse increases risk for attempt even controlling for psychopathology
- Depressed patients have earlier onset, more persistent disorder, less responsive to treatment (Nanni et al., 2012)

Population Attributable Risk (%) of Maltreatment on Psychiatric Disorder Onset*



*Green et al. 2010

Impact of PCIT on Re-abuse (Chaffin et al., 2004) (%)

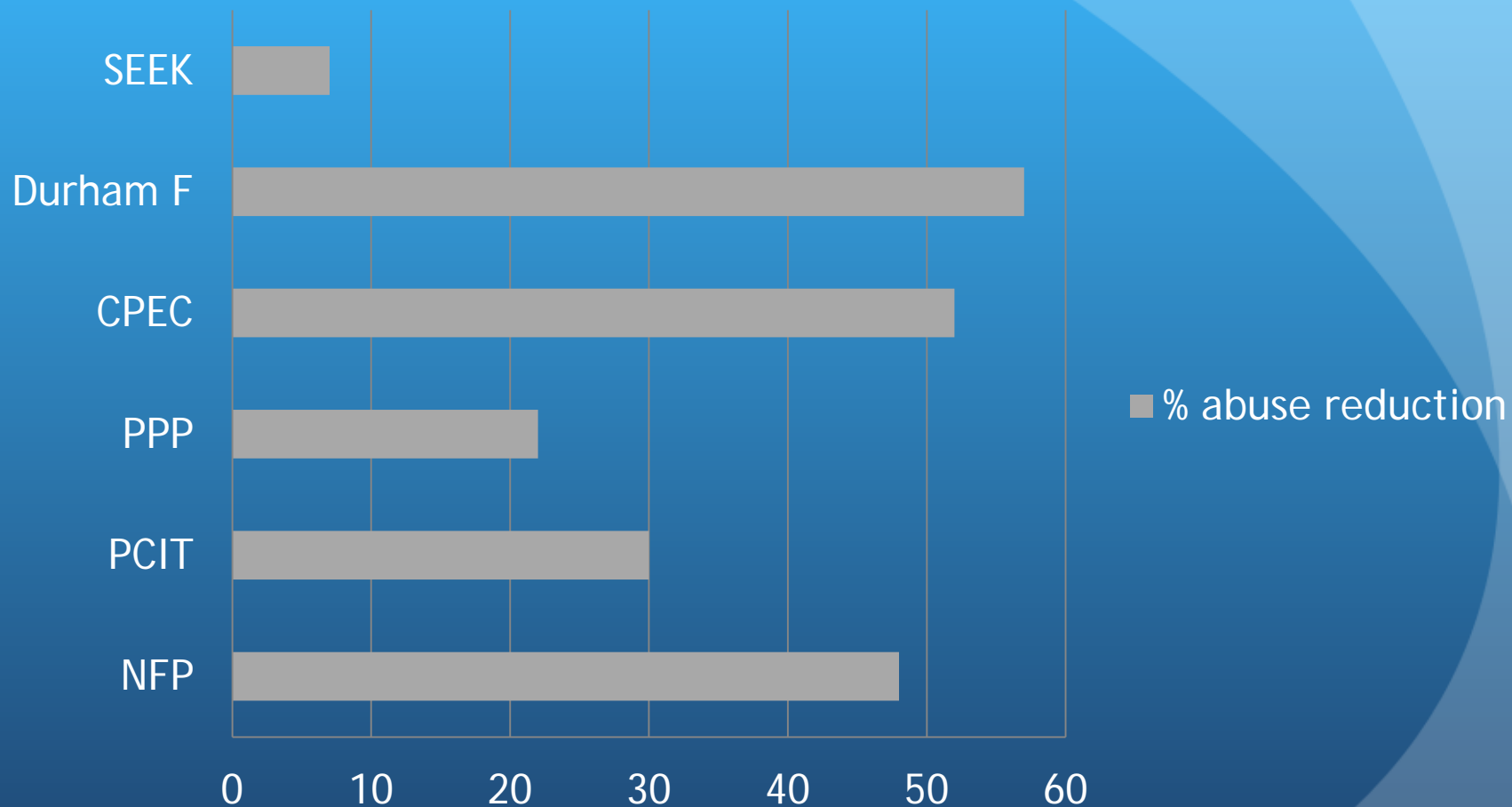


- PCIT is an evidence-based treatment for parent-preschool dyads
- Designed to improve consistency and efficacy of parental discipline
- Reduce harsh parenting

SEEK (Dubowitz et al., 2009)

- Based in pediatric primary care
- Pediatrician screens parents with parenting questionnaire and refers screen positive families to a social worker or to usual care VS. usual care
- Review using charts and Child Protective Services records
- 7% risk reduction in cases of abuse, NNT=14
- 3-fold reduction in physically aggressive discipline

Reduction in Child Abuse Rates by Intervention (%)



SEEK=Safe Environment for Every Kid; Durham F=Durham Family Initiative; CPEC=Child Parent Educational Centers; PPP=Positive Parenting Program; NFP=Nurse Family Partnership

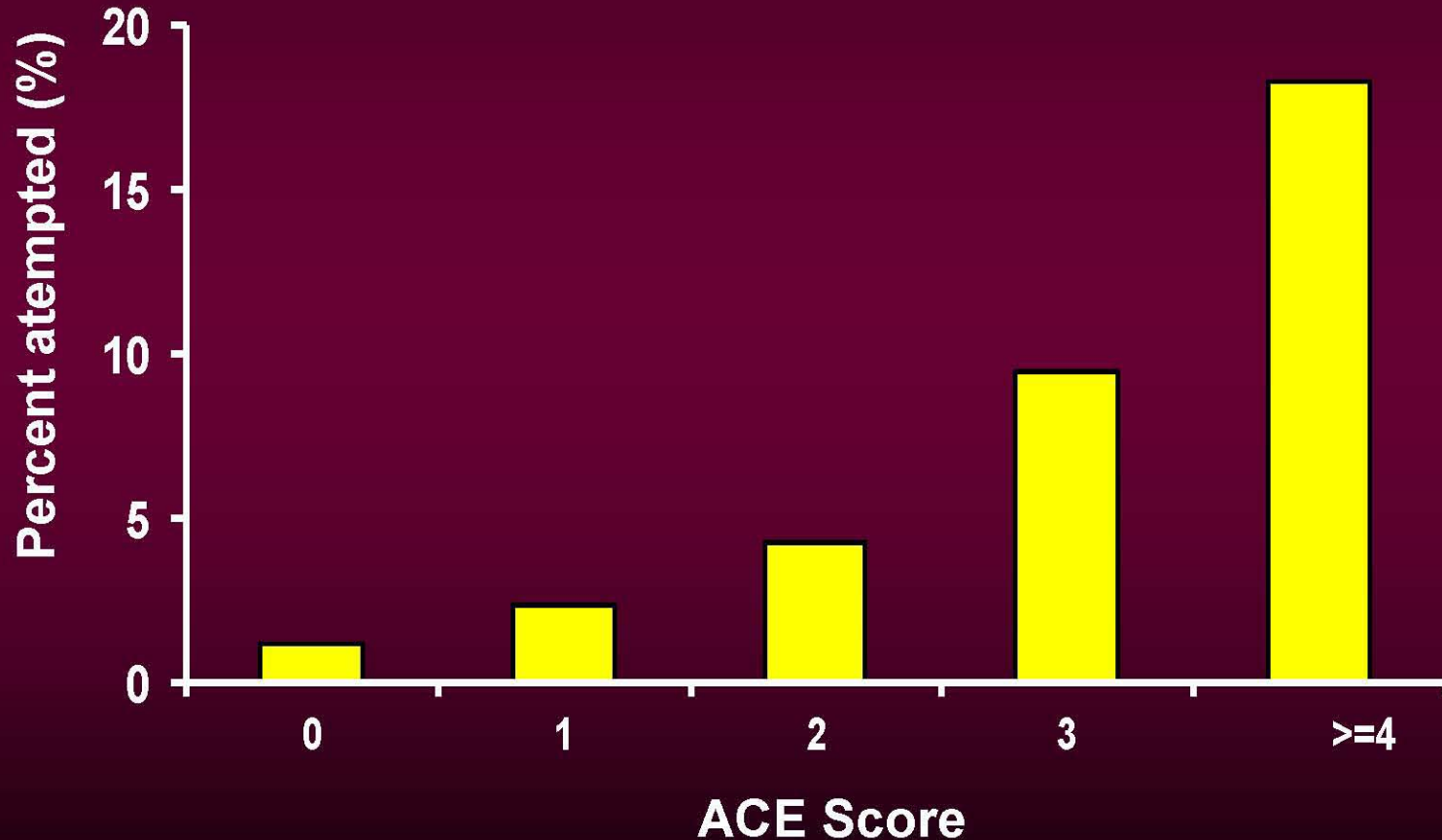
Potential Impact of Reduction in Abuse Rate on Suicide Rate

- Population attributable risk for suicide of abuse around 25%
- Programs impact on abuse range from 17-58%, median effect around 30% reduction
- $30\% \times 25\% = 7.5\%$ reduction in suicide and suicidal behavior

Other Forms of Child Adversity

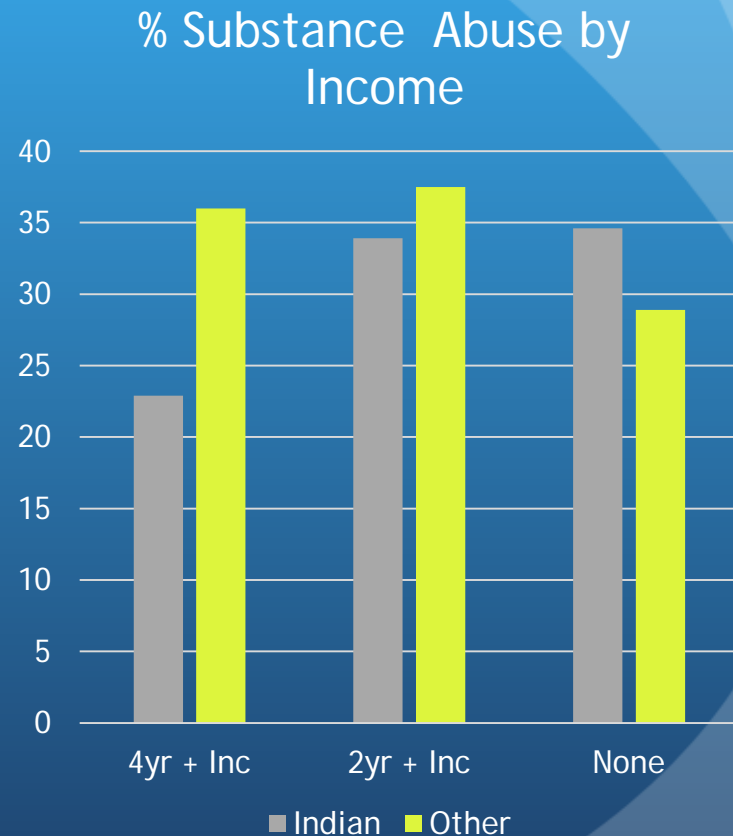
- Poverty
- Parental criminality and incarceration
- Parental substance abuse, depression
- Parent loss, divorce, bereavement

The ACE Score and the Prevalence of Attempted Suicide



SES Adversity

- Natural experiment with casino on Native American reservation
- Increased employment and income supplements to population
- Those who moved from below the poverty line to above it showed declines in child externalizing symptoms that persisted into adulthood (Costello et al., 2003, 2010)



Parent-child Relationship is Core Predictive Factor in Child Outcome

- Positive parenting protective against externalizing and internalizing disorders (Sandler et al., 2014) and against attempts (Samm et al., 2010)
- Low parental monitoring and inconsistent discipline related to risk for alcohol/substance abuse and externalizing disorders (Sandler et al., 2014)
- Family discord and poor relationship risk factors for suicide attempt (Fergusson et al., 2000)

Promoting Positive Parenting (PPP)

- Meta-analysis of 101 studies (Sanders et al., 2014)
 - Emotional/behavioral symptoms child $d=.47$
 - Parenting behavior $d=.58$
 - Observed parent-child behavior $d=.50$
 - Relatively few (3/22) studies with 3+ year outcomes have examined suicidal outcomes (Sandler et al., 2015)

Bereavement

- Parental sudden death related to higher rates of depression, alcohol and substance abuse, and PTSD even controlling for pre-death risk factors; suicide offspring have most extreme outcomes (Melhem et al., 2008)
- Parental bereavement by suicide both increase risk for attempt in offspring (vs. loss by accident), but risk is greater in offspring of maternal suicide (Wilcox et al., 2010; Kuramoto et al., 2010; Gulden et al., 2015)

Divorce and Bereavement

- 12 session group sessions parallel for parent and child
 - Parent: positive, engaged parenting, appropriate discipline and parental monitoring
 - Child: adaptive coping
- New Beginnings Program (NBP)- divorce
- Family Bereavement project (FBP)- parental bereavement

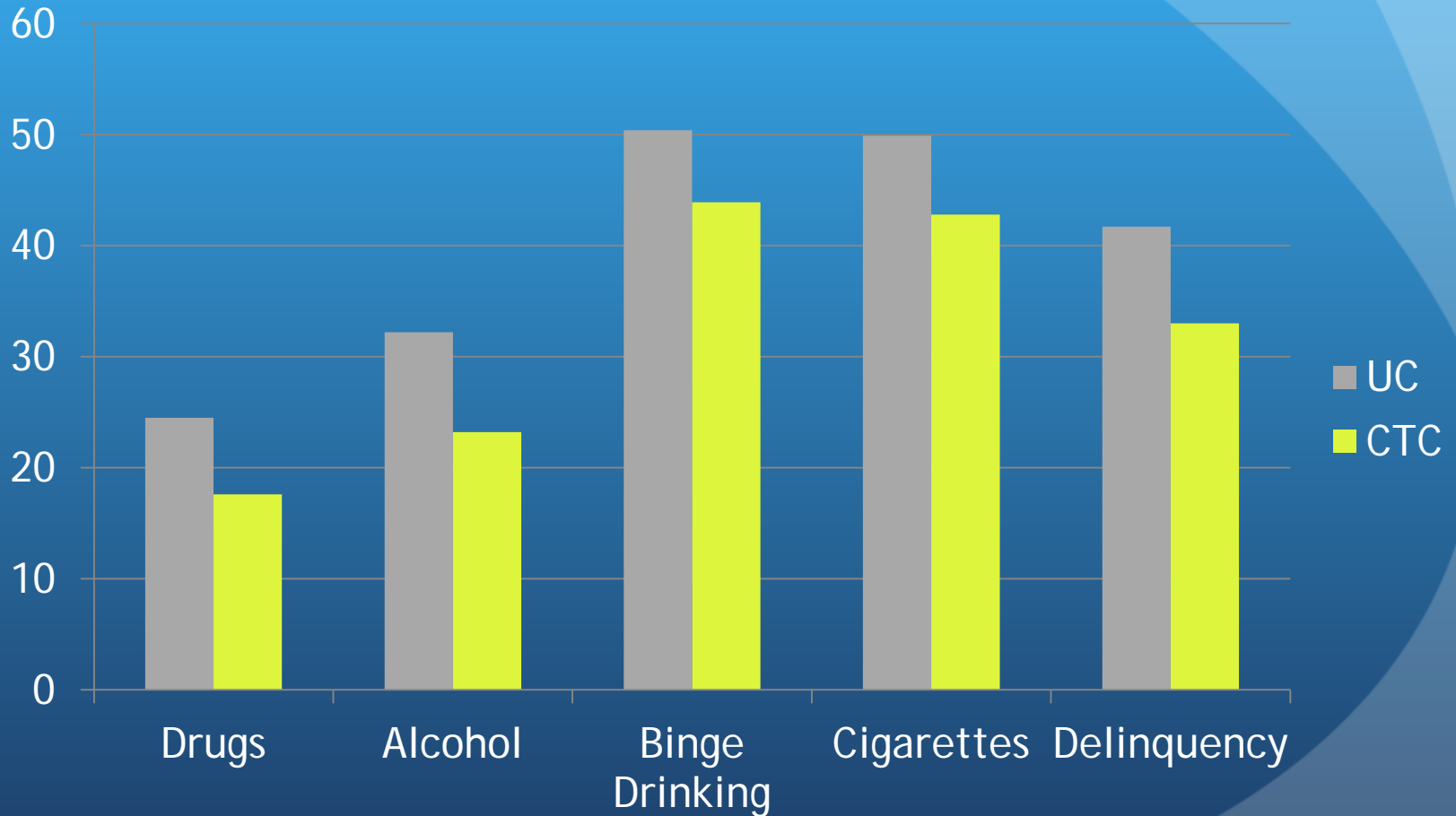
Divorce and Bereavement

- NBP (Wolchick et al., 2013)
 - 15 year follow-up, better parental mental and youth mental health, youth school performance
- FBP (Sandler et al., 2013)
 - 6 yr follow-up, better parental and youth mental health, less complicated grief in youth, better self-esteem
- In both studies, intervention group associated with follow-up lower cortisol
- Effects mediated by parenting and child coping variables

Communities that Care (CTC)

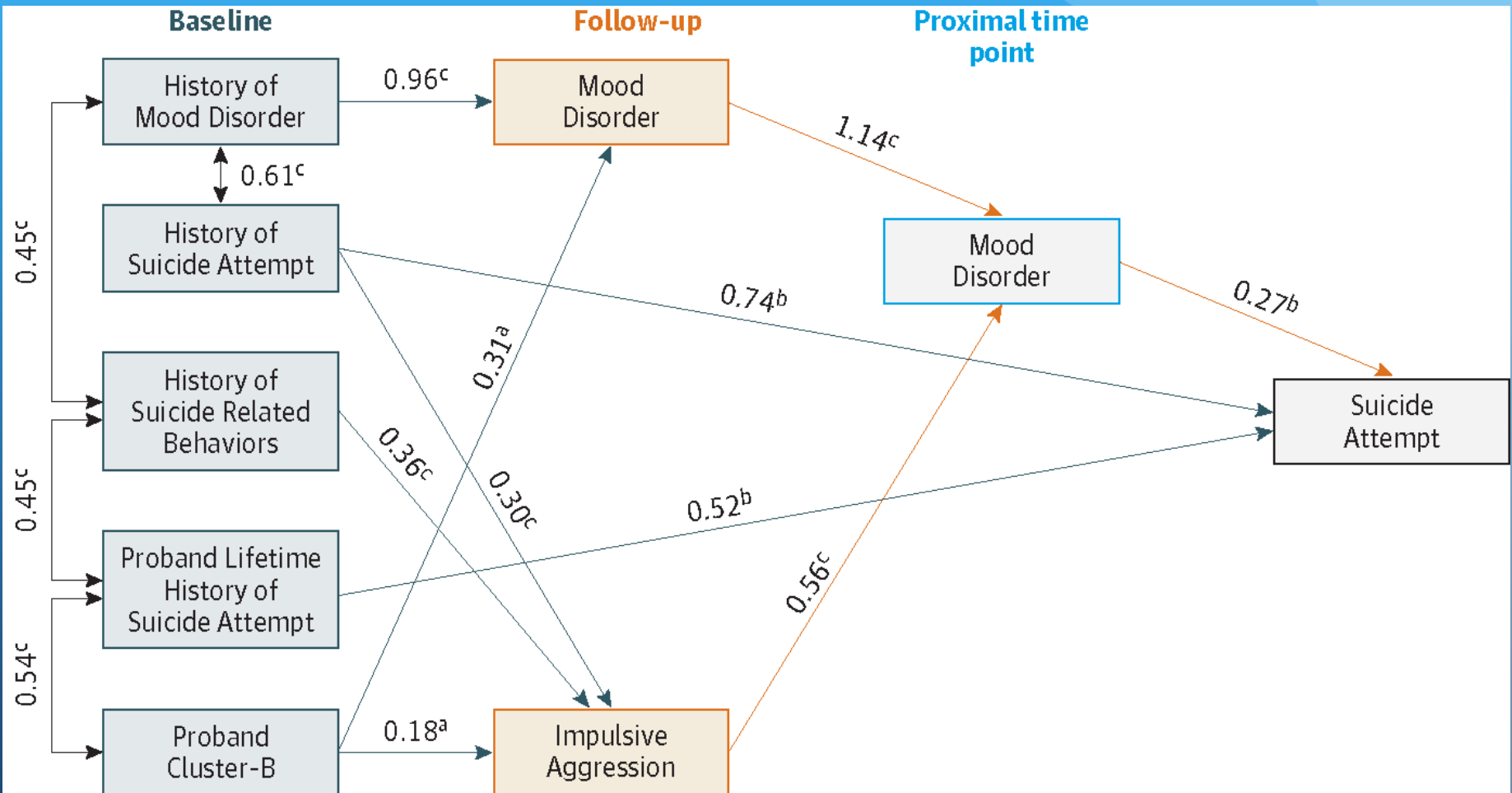
- Assesses risk and protective factors in community
- Implements a collaborative strategic planning process with the community to match evidence-based prevention programs to strengths and needs of the community based on survey
- RTC randomized 24 communities to either CTC or usual care (Hawkins et al., 2014):
 - Drug use decreased 32%
 - Alcohol abuse- 31%
 - Delinquency-- 18%

CTC: Effects by 12th Grade on Abstinence (Hawkins et al., 2014)



Intervention	Social Contextual Path	Individual Path	Suicide Effects
Families Unidas, (Vidot, in press)	Positive parenting, communication, monitoring	Reduced substance use, high risk sex, alcohol use	30 months In those with low parent-child connection
Family Check-Up, (Connell et al., in press)	Increased parent child relationship quality, monitoring Reduced family conflict	Reduced antisocial behavior, depression, obesity	5-15 years
Family Bereavement Program, (Sandler, in press)	Positive Parenting, parent depression, alcoholism, grief disorder, coping efficacy	Coping, emotional expression, cortisol, internalizing, externalizing, self- esteem, grief	6-15 years 3-6 fold decrease in suicidality

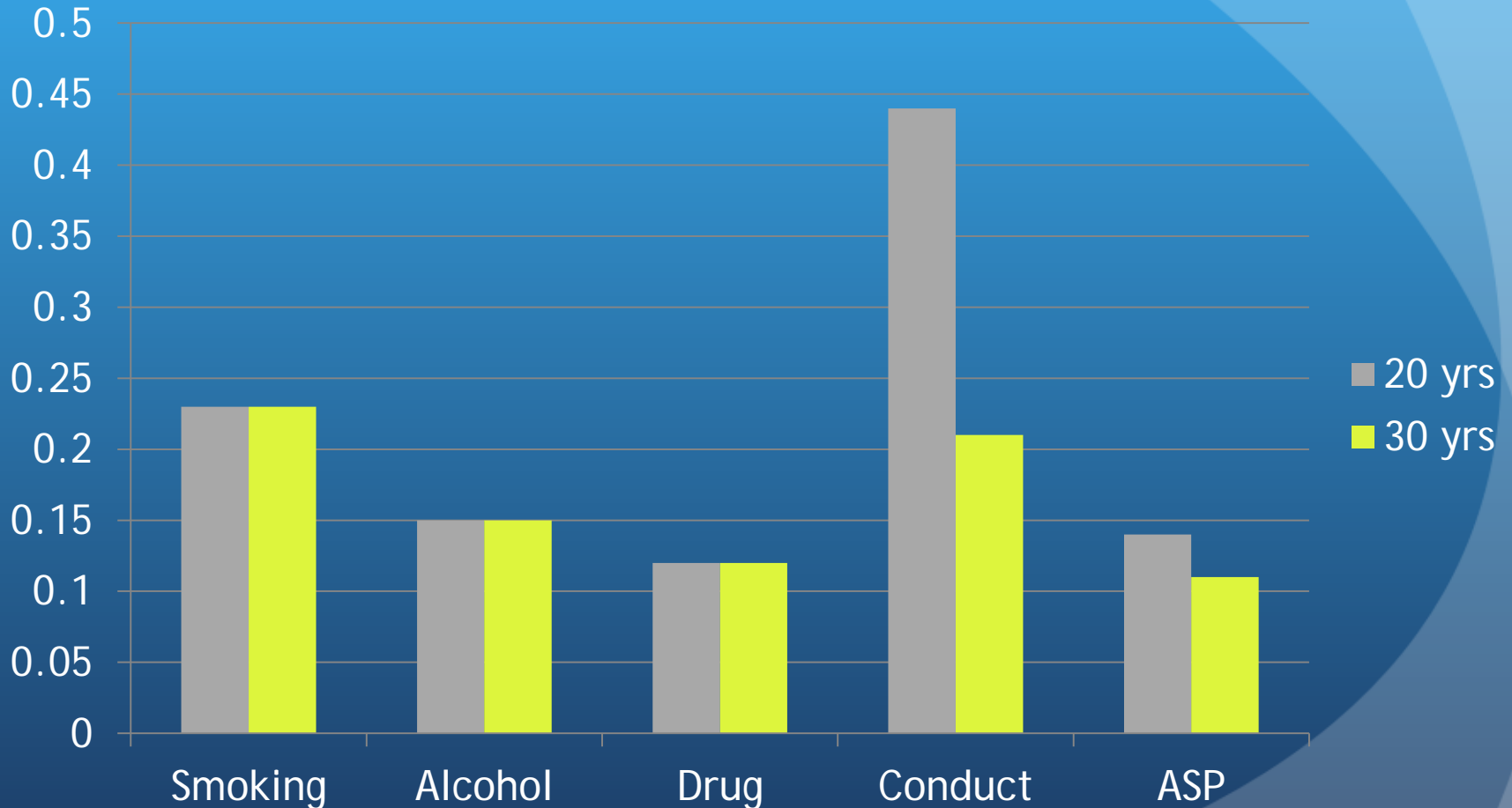
Familial Pathways to Suicide Attempts*



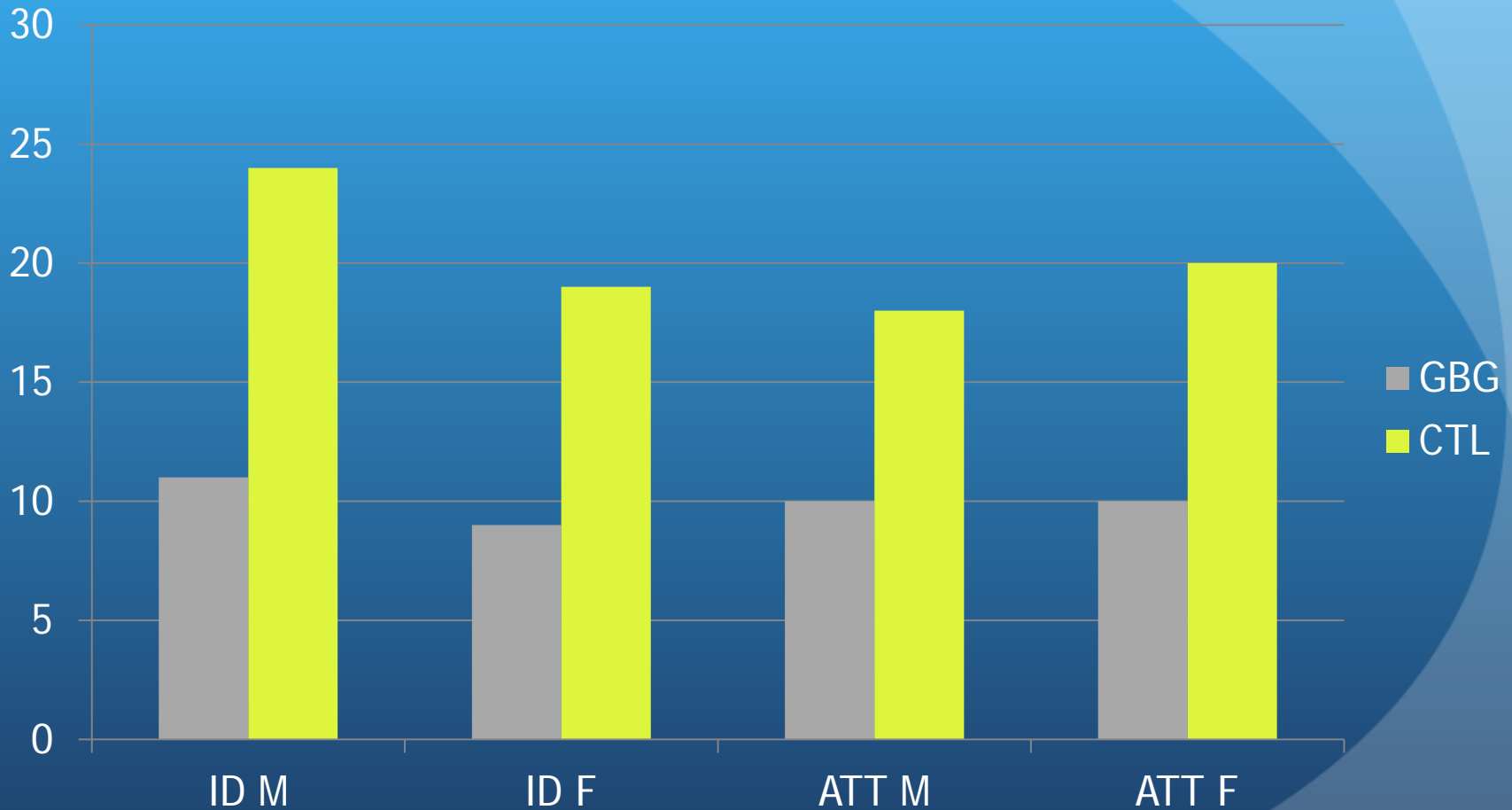
Good Behavior Game

- Universal prevention program
- Classroom based in 1st grade
- Socialize participants to student role
- Teachers get 40 hours training/support in Cohort 1; subsequent cohorts got less training/support
- Post rules in classrooms
- Teams of students reinforced for prosocial behavior
- Follow-up ages 19-21, 30-32 years of age.

Overall Effects of GBG at Ages 20 and 30 (Effect Size=ES) (www.wsppi.gov)



GBG Effects on Suicidal Ideation and Attempts (%) (Wilcox et al., 2008)



Good Behavior Game

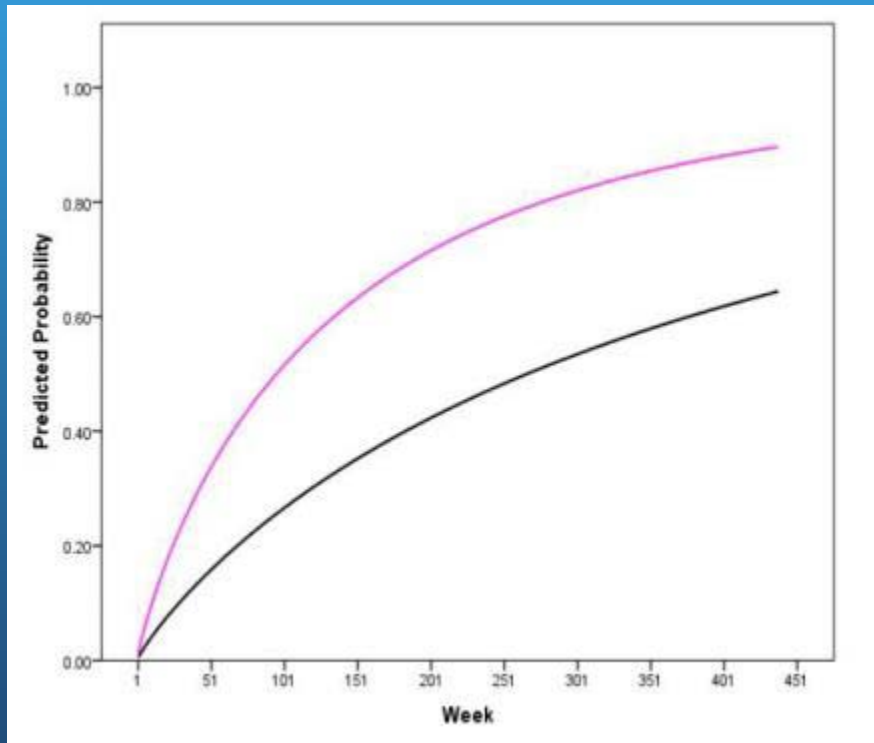
- Effects are stronger when teachers got more intensive supervision
- Effects are strongest in males who were aggressive by teacher rating in first grade
- Among aggressive males, impact on suicidal ideation and behavior mediated by positive peer ratings (Herman et al., 2015)

Prevention of Depression

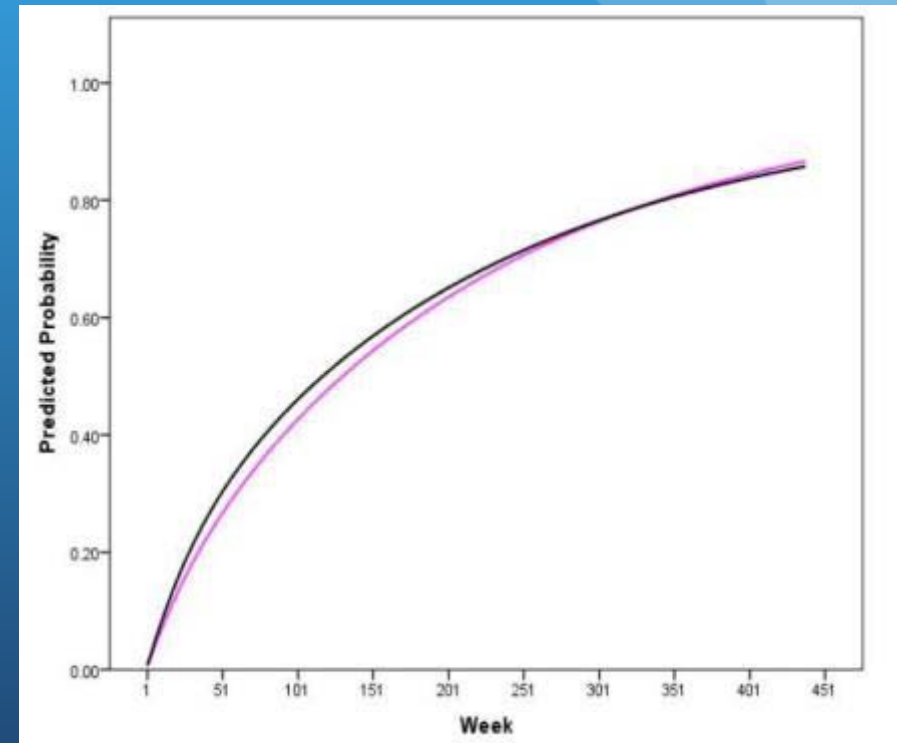
- Coping with Depression in Adolescents (Garber et al., 2009; Beardslee et al., 2013)
- Group CBT for offspring of parents with depression
- Intervention worked best if caregiving parent not depressed at the time of the intervention
- Impact on social functioning 7.5 years after the intervention mediated by DFDs

Parental Depression at Baseline Evaluation as Moderator of Primary Outcome

Parent not depressed at baseline

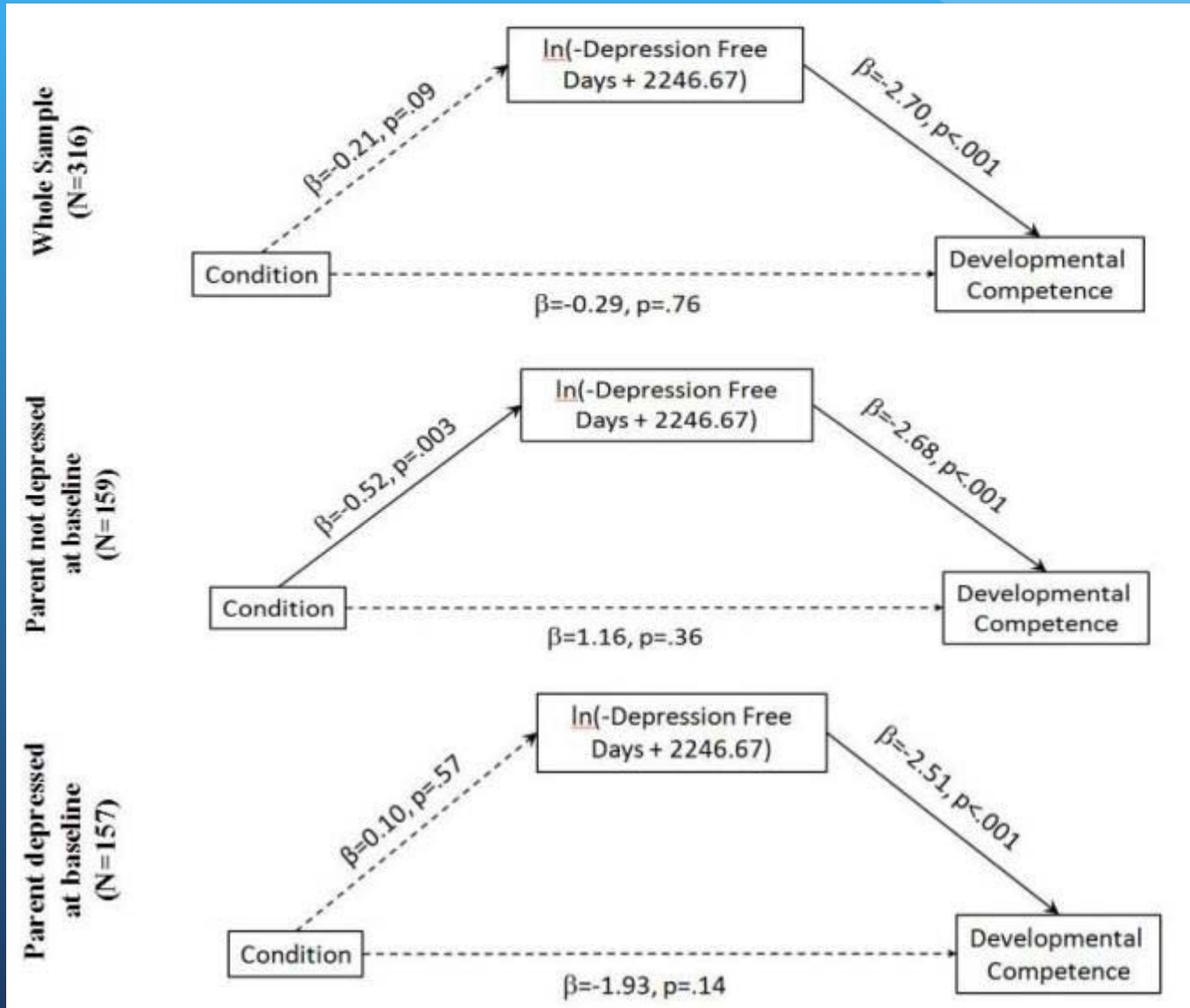


Parent depressed at baseline



— CBP — UC

Developmental Competence: Moderation/Moderated Mediation



School-based Interventions

- QPR
- Screening and referral
- Signs of Suicide
- YAM

Gatekeeper Training (Wyman, 2008)

- QPR=Question, Persuade, Refer
- RCT of QPR vs. usual care in schools
- QPR associated with:
 - improved knowledge
 - Improved perceived self-efficacy about identifying and referring suicidal teens
 - but did NOT affect identification of suicidal youth
- Because only 1/5 of suicidal youth would seek out an adult, interventions needed that also target youth's attitudes towards help-seeking.

Garrett Lee Smith Memorial Act

- Community suicide prevention programs
- Increase recognition of risk factors (gatekeeper training)
- Improved access and linkages to MH and SA treatment
- Surveillance of suicide-related outcomes
- Public awareness of suicide
- Reduction of stigma for treatment

Effect of GLSMA on Suicide Attempts

- 466 counties exposed to GLS (57,000)
- 1161 counties unexposed (84,000)
- Program delivered 2006-2009
- Adjust for pre-intervention suicide rate, socio-demographic factors
- Decline in suicide attempt rate in 16-23 year olds as assessed by the National Survey of Drug Use and Health
- Decline proportion to the number of gatekeepers trained

From: Effect of the Garrett Lee Smith Memorial Suicide Prevention Program on Suicide Attempts Among Youths
 JAMA Psychiatry. 2015;72(11):1143-1149. doi:10.1001/jamapsychiatry.2015.1933

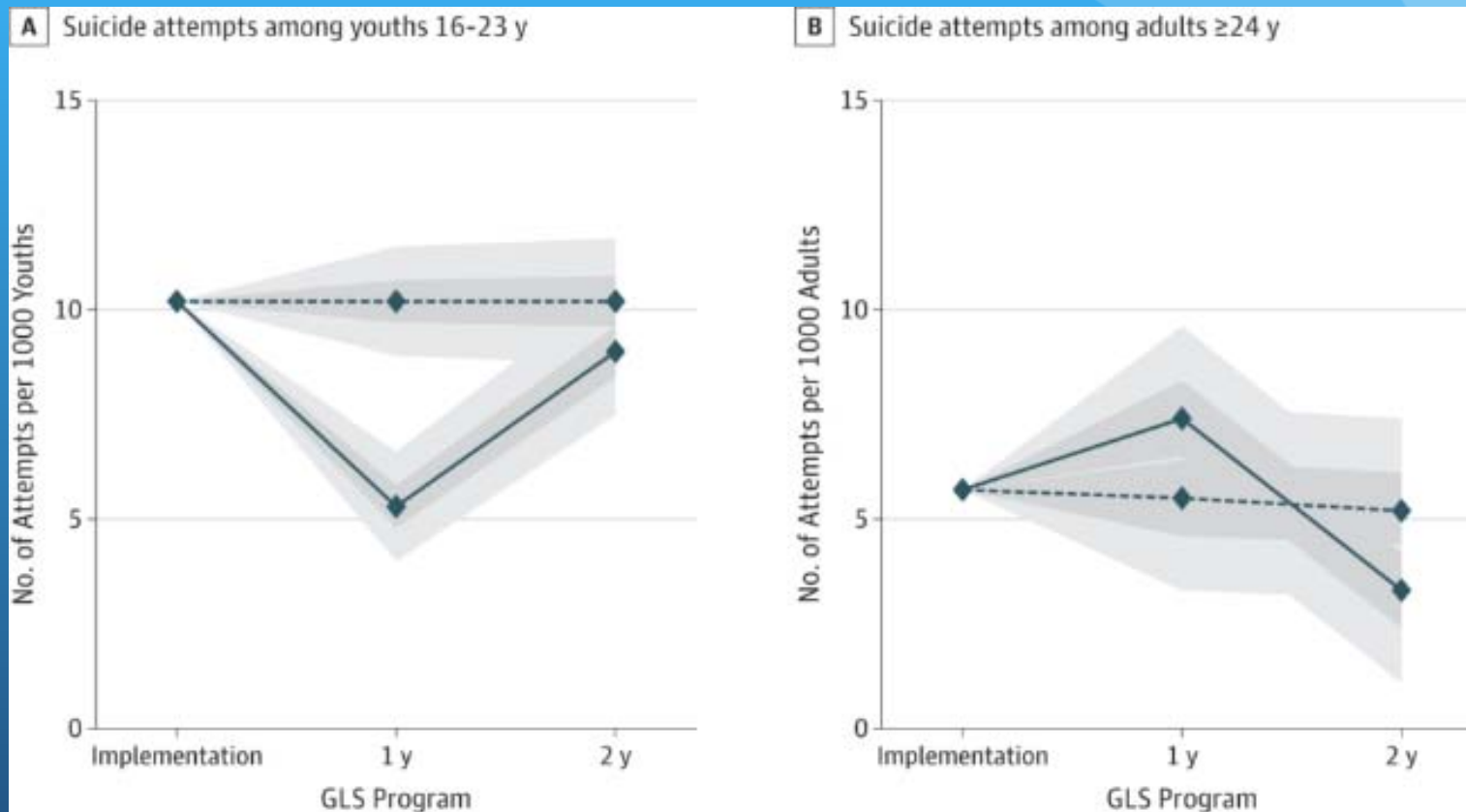


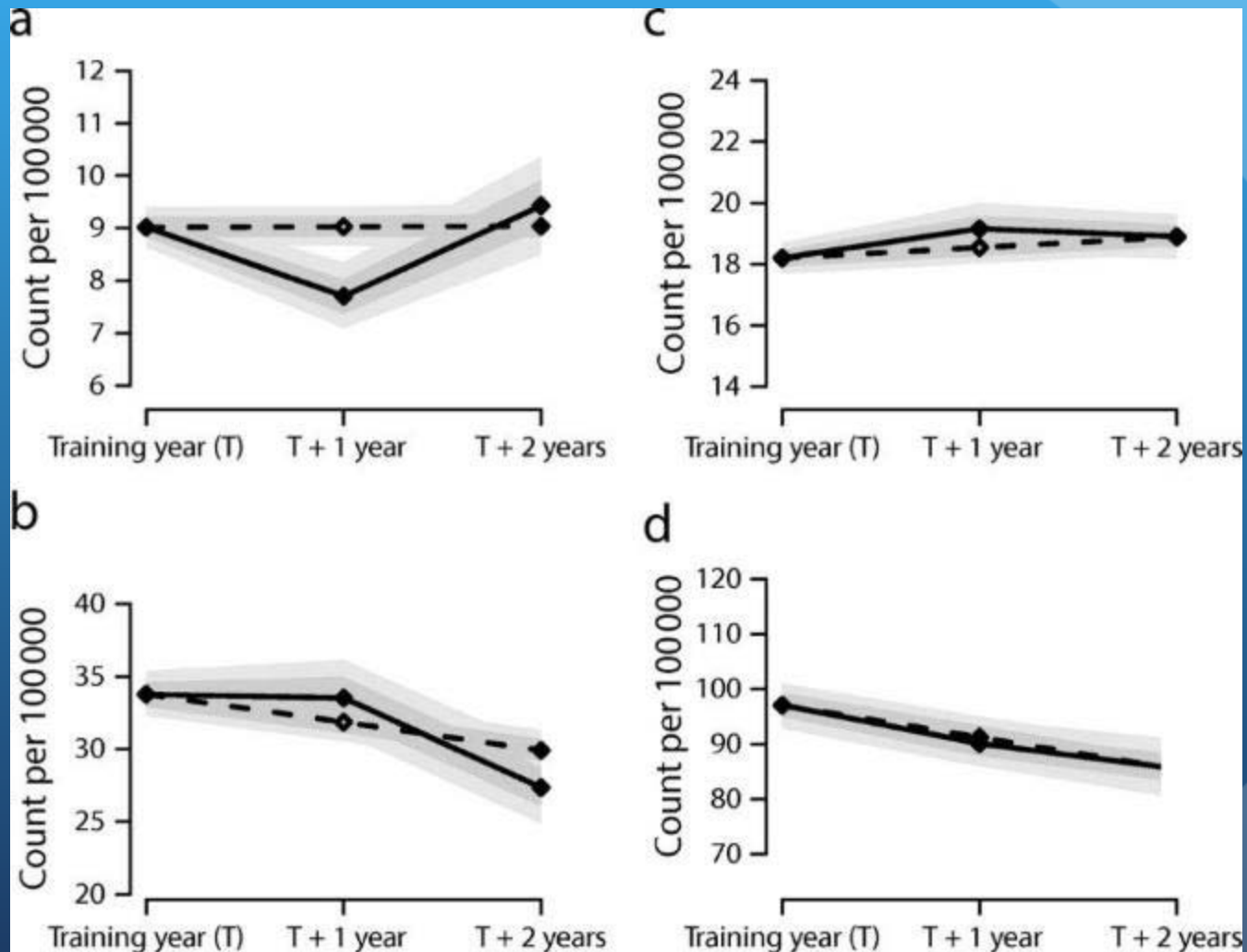
Figure Legend:

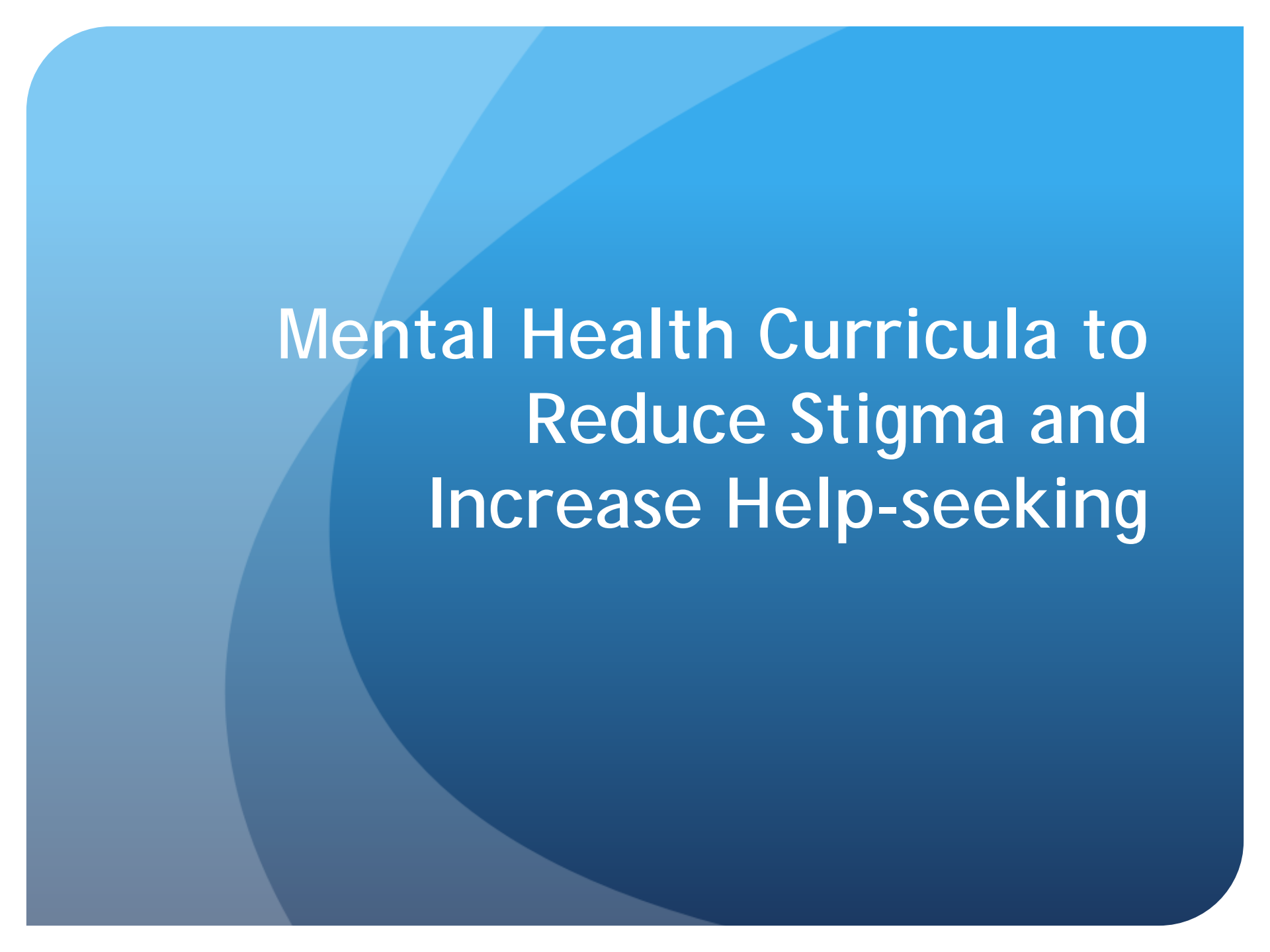
Main (A) and “Control” (B) Outcomes Following Implementation of the GLS Program Estimated trajectories of the attempt rates over a 3-year period for counties following 2 hypothetical patterns of implementation: counties implementing Garrett Lee Smith Memorial Suicide Prevention Program (hereafter referred to as the GLS program) activities for 1 year but not the subsequent 2 years (solid line) and counties not implementing GLS program activities in any of the 3 years (dashed line). The trajectories are estimated with a linear regression that combines information from the different patterns of implementation actually occurring during the period from 2006 to 2009. The 90% and 50% CIs around the difference in the trajectories are represented by the dark and light gray shading, respectively

Impact of GLSMA on Suicide

- Limited to counties with 3000+ youth
- 466 exposed counties and 1161 unexposed
- Found decline in suicide in adolescents and young adults but not older adults
- Proportional to number of gatekeepers trained
- More evident effects in rural counties

Impact of GLS on Suicide in those 10-24 and 25+ (Walrath et al., 2015)



The background is a blue gradient with several overlapping, semi-transparent circles of varying shades of blue, creating a layered effect. The text is centered in white.

Mental Health Curricula to Reduce Stigma and Increase Help-seeking

Signs of Suicide (SOS)

- Curriculum-based intervention consisting of two components
 - Education about suicide as related to mental illness, not just “too much stress”
 - Teach students how to respond to depression in suicidal ideation in self and in others (ACT: Acknowledge, Care, Tell)
 - Depression screener given to students to aid in self-recognition (information not given to school personnel)

SOS Results

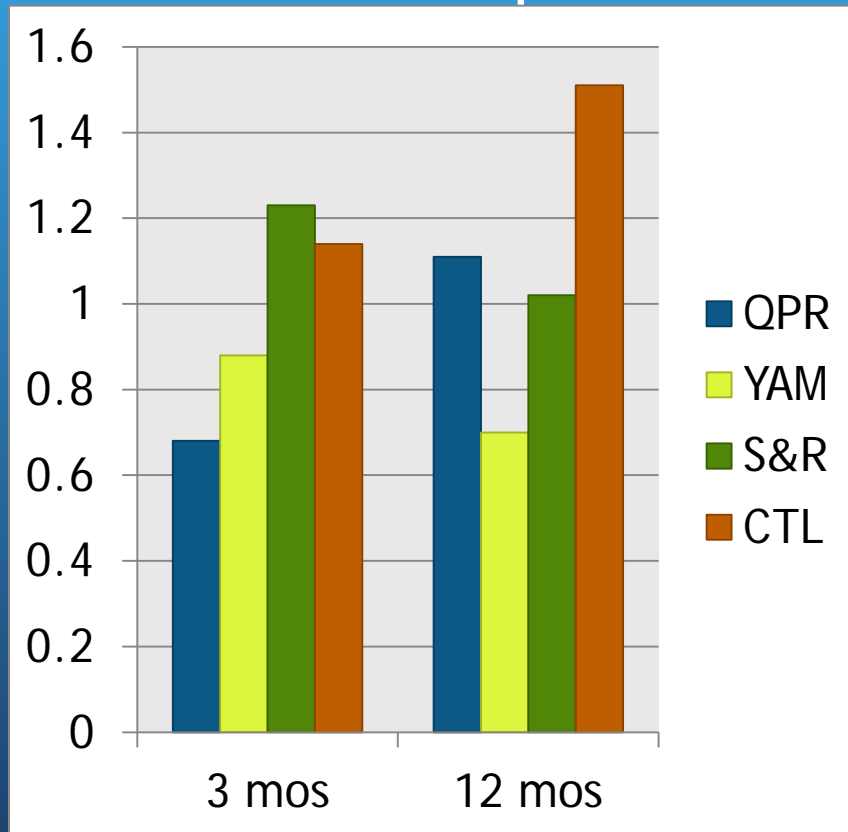
- **Study 1:** 2100 students, SOS decrease in suicide attempts mediated by improvements in knowledge about depression and suicide (Aseltine & DeMartino, 2004)
- **Study 2:** in 4133 students found reduction in suicide attempt (3.0% vs. 4.5%) (Aseltine et al., 2007)
- In neither study was there an impact on help-seeking.
- **Pilot study** in middle schoolers shows an effect on attempts in those with baseline ideation (Schilling et al., 2014).

SELYE Study (Wasserman, 2014)

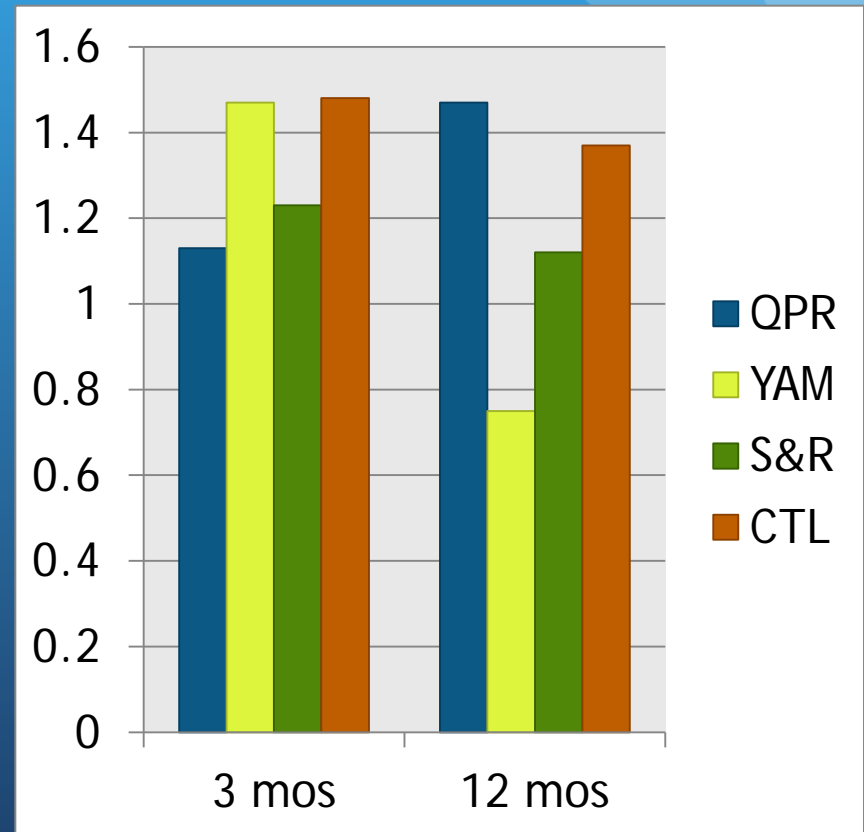
- EU Study of 168 schools, 11,100 students
- Randomized by school to one of 4 interventions
 - QPR- Gatekeeper training
 - Youth Aware of Mental Health (YAM)- interactive training on recognition and coping with depression and suicidal ideation
 - Screening and referral
 - Control
- Assessed for ideation and attempt at 3 and 12 months post intervention

Suicidal Ideation and Attempts at 3 and 12 Months Post-intervention (%)*

Attempts



Ideation



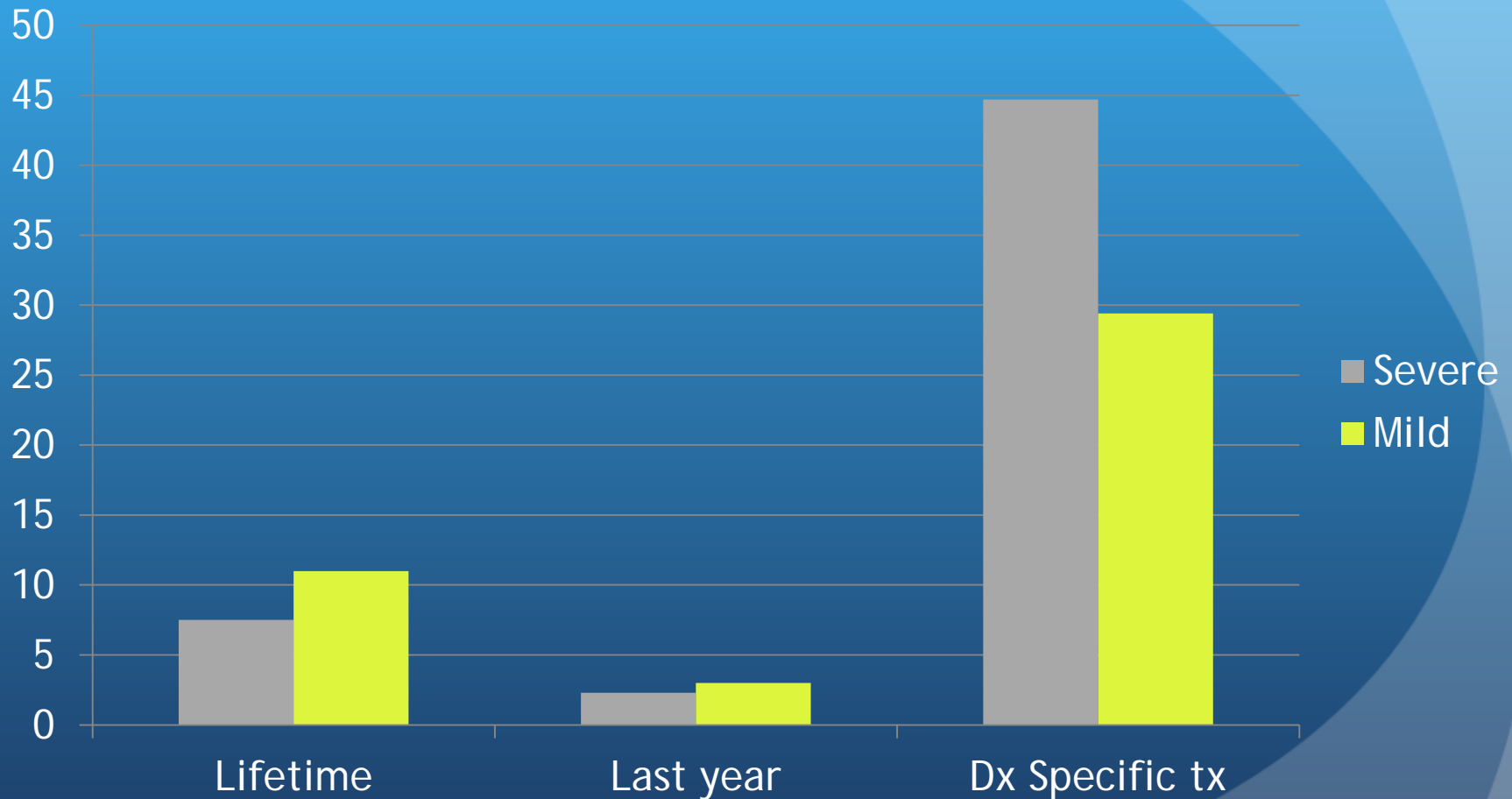
*SELYE study: Wasserman et al., 2014

Conclusions and Considerations

- YAM- most similar to Signs of Suicide (Aseeltine et al., 2004, 2007), both efficacious in reducing attempts
- QPR, Screening and referral not effective in preventing ideation or attempts
- Limitations
 - Low consent rate
 - Focus only on ideation and attempt- what about other outcomes?
 - Don't know how it worked

**Go to Where the Kids
Are: Improving Access to
Care by Provision of On-
site Services**

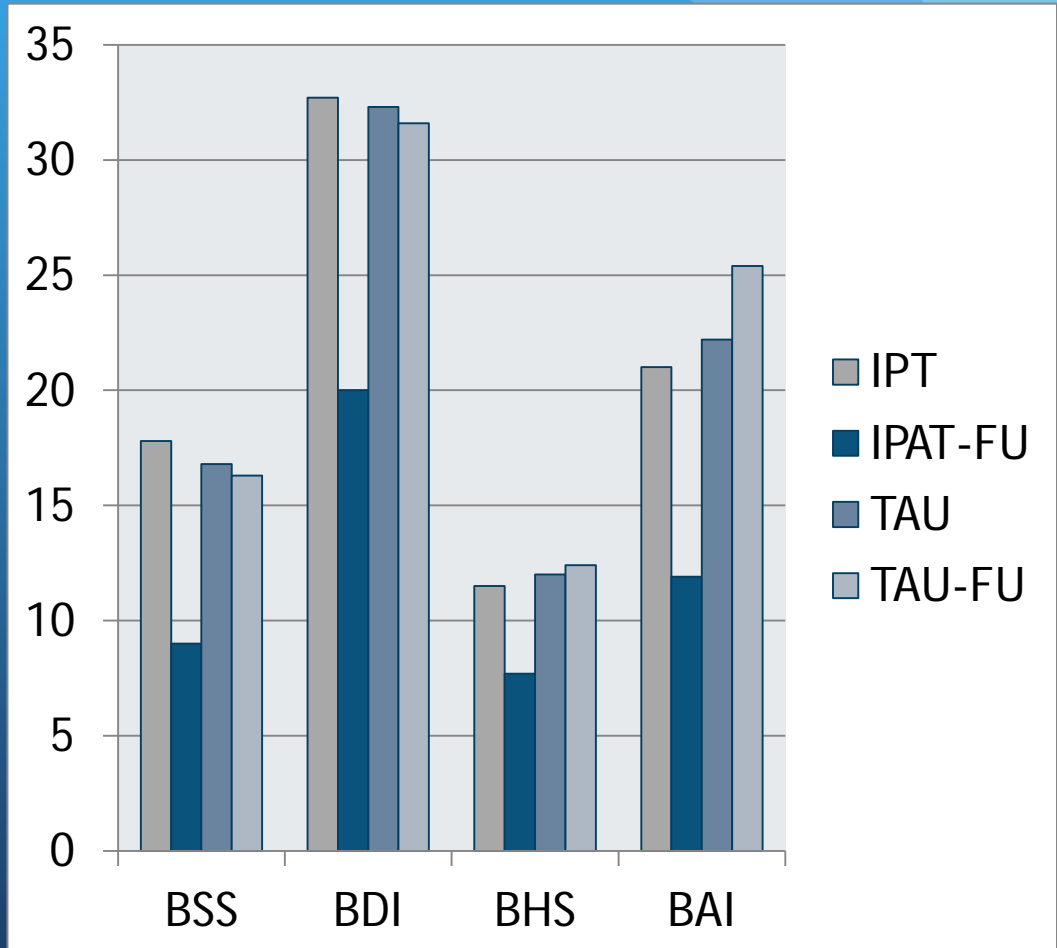
Adolescent Depression: Prevalence of Depression and Rate of Treatment (%)*



*Avenevoli et al., 2015

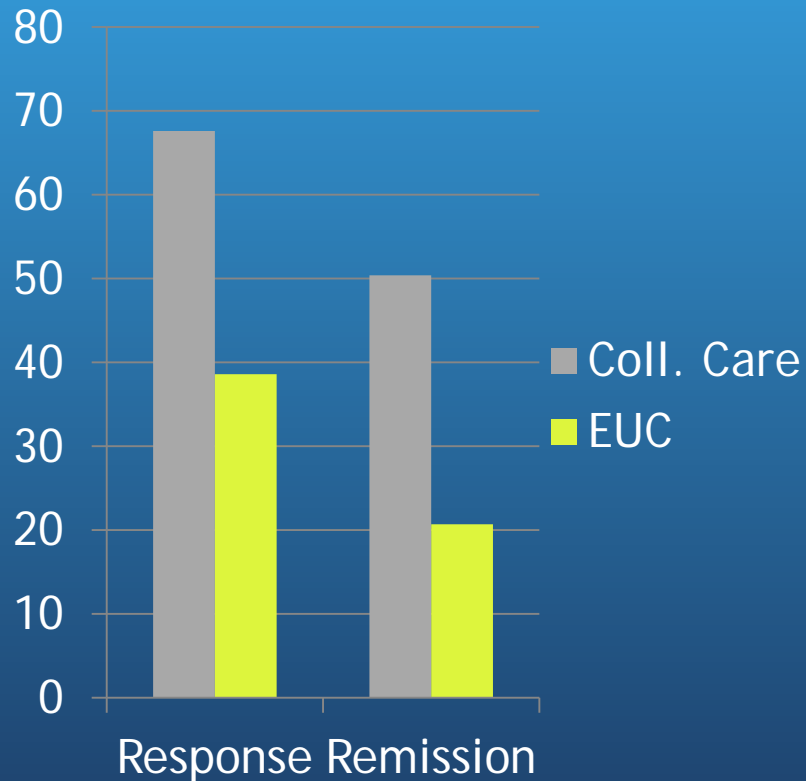
School-based IPT for Depressed, Suicidal adolescents (Tang et al., 2009)

- 73 adolescents screened in a high school in Taiwan and identify as depressed and suicidal
- RCT of IPT for Self Harm and depression vs. supportive care delivered at school

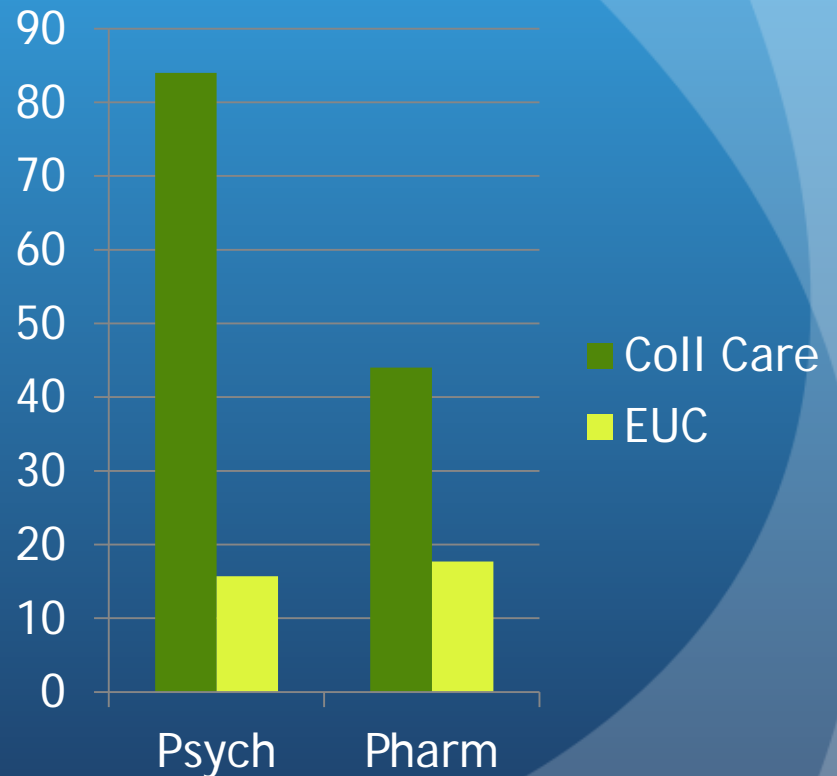


Collaborative Care for Adolescent Depression (Richardson, 2014)

- Response and Remission



- Treatment Received



Collaborative Care: Embed Folks Who Can Help in the Field

- Better access with less stigma
- Better integration with physical health care
- Outcomes superior to usual care
- With training primary care physicians in specific regions can reduce suicide rates (Hungary, Sweden)
- Need to reverse trend of therapeutic nihilism for adolescent depression

From: **Persisting Decline in Depression Treatment After FDA Warnings**

Arch Gen Psychiatry. 2009;66(6):633-639. doi:10.1001/archgenpsychiatry.2009.46

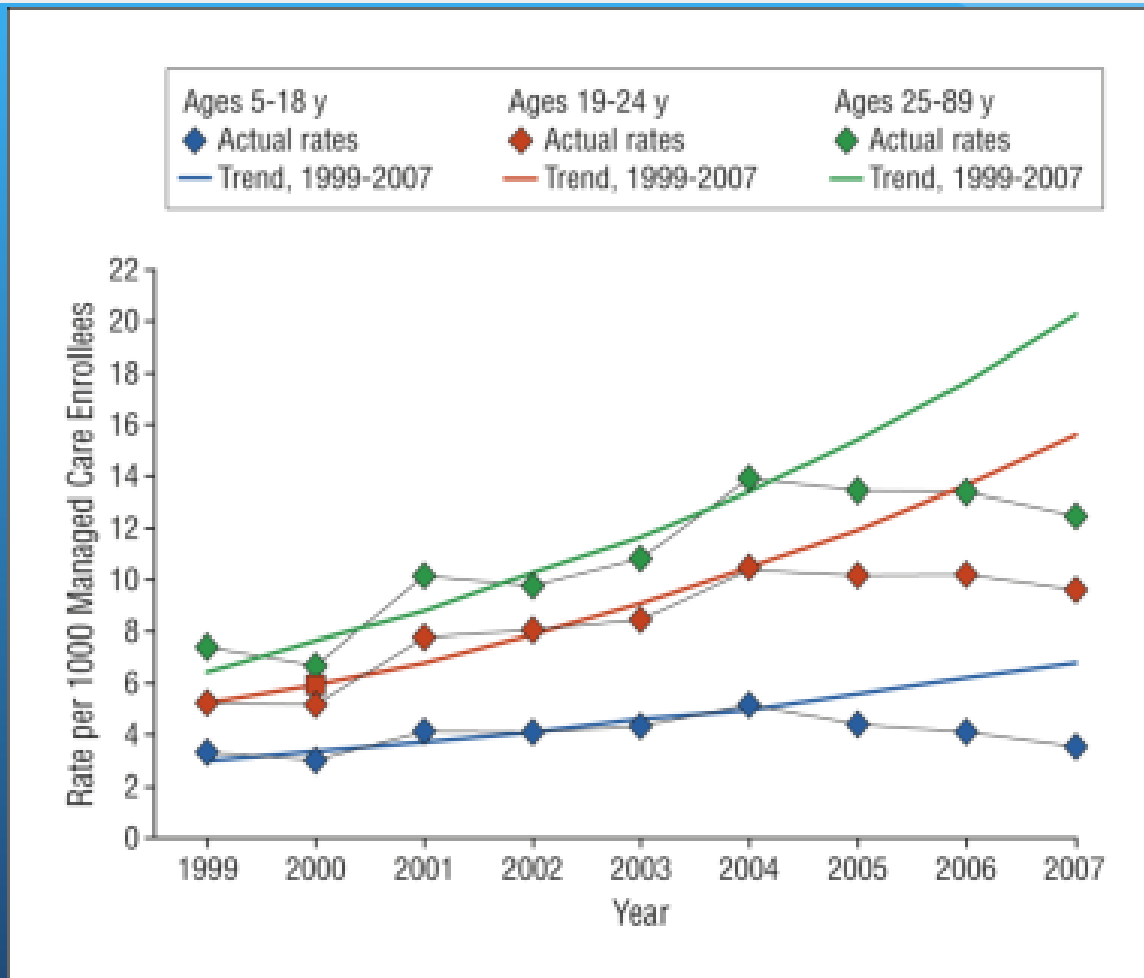


Figure Legend:

PHARMetrics Patient Centric Database population rates of major depressive disorder (actual and predicted) by age group (male and female individuals combined).

Insomnia

- Insomnia increases risk for suicidal risk 2-5 fold (Pigeon et al. 2012; Goldstein et al., 2008)
- Cause and consequence of substance abuse (Pieters et al., 2015)
- Association of hypnotic use with suicide attempt (OR=3.4, Browen et al, 2011)
- Treatment of insomnia with CBT-I reduces suicidal ideation (Trochel et al., 2015)
- School-based interventions feasible and effective (Owens et al., 2010; Quach et al., 2014)

Build a Fence Around the Field: Role of Availability of Agents in Suicide

- More relevant in youth suicide because more impulsive
- Related to case-fatality of the method
- Evidence to support role for restriction of access
 - Case-control studies showing association of presence in home with suicide
 - Tendency to use method most available
 - Ease of access of method related to likelihood of use
 - Changes in availability and access related to changes in rates of use

Build a Fence Around the Field

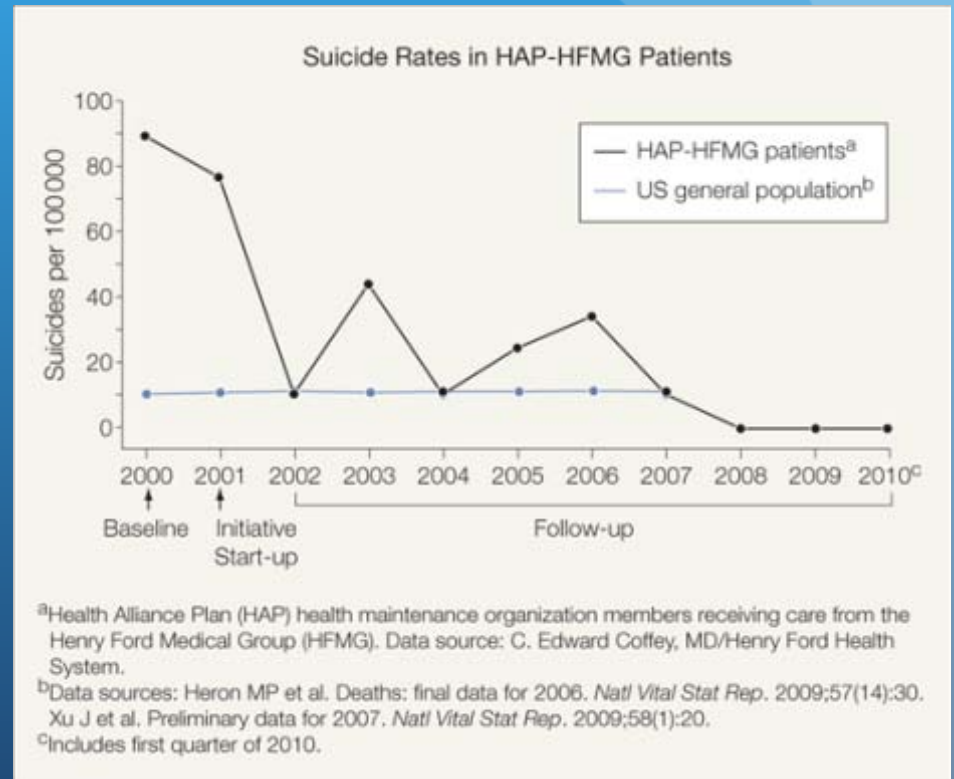
- Guns, storage and suicide
 - Loaded guns and impulsive suicide—especially in the young
 - People will respond to education for safe storage
- Acetaminophen
- Bridges
- Pesticides

Don't Work Alone: Teamwork and System Change

- Suicidal patients too demanding to be managed by one person without support and teamwork
- Prevention of suicide in an organization involves systemic change and top-to-bottom organizational commitment and involvement

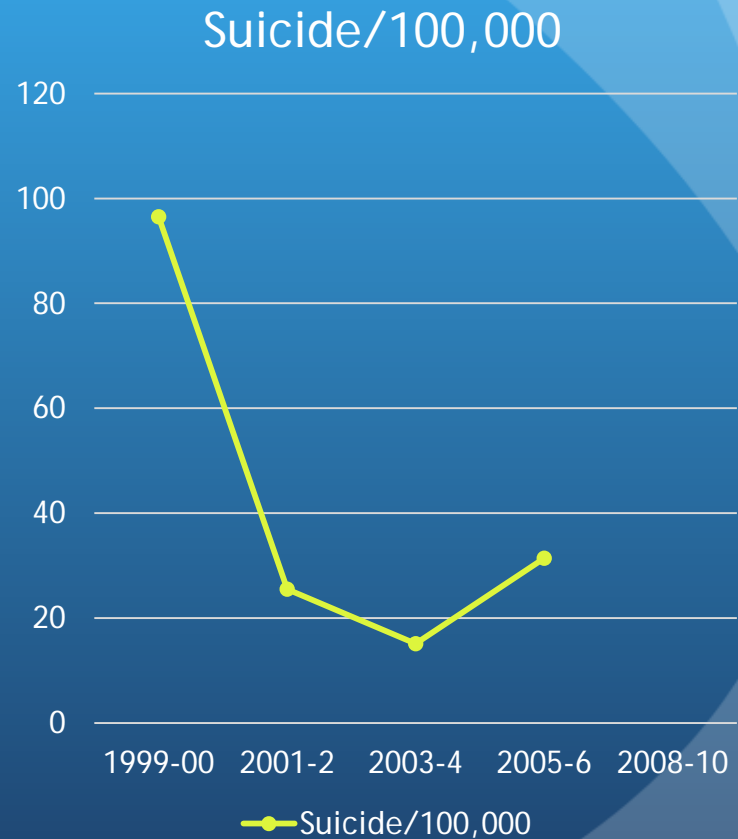
Systems Change: Henry Ford Hospital

- Consumer advisory group
- CBT training and in suicide risk
- Rapid access to care
- Assertive follow-up by phone of non-adherence
- Removal of lethal agents
- Support and education for families, patients, and staff



Zero Suicide at Henry Ford HMO

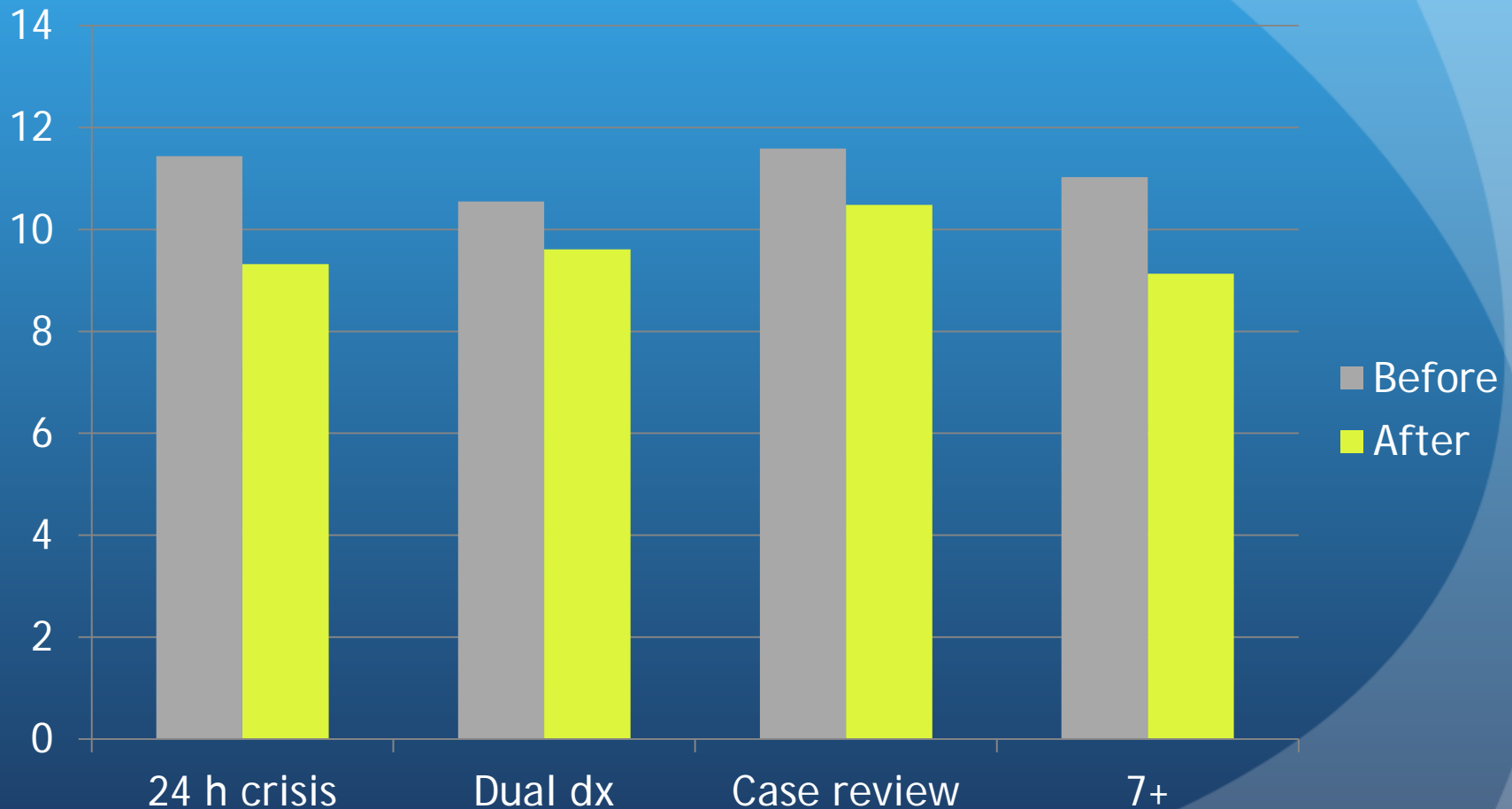
- Suicides declined in mental health patients
- Suicide did not decline in medical patients where there was no suicide intervention



Organization of Services in UK (While et al., 2012): Suicide in Care

- Suicide risk after contact with mental health care in past 12 months is high
- Implementation of these service system changes were associated with regional decreases in suicide rates within the past 12 months
 - Assertive outreach
 - 24-hour crisis line
 - Dual diagnosis treatment
 - Case review when suicide occurs

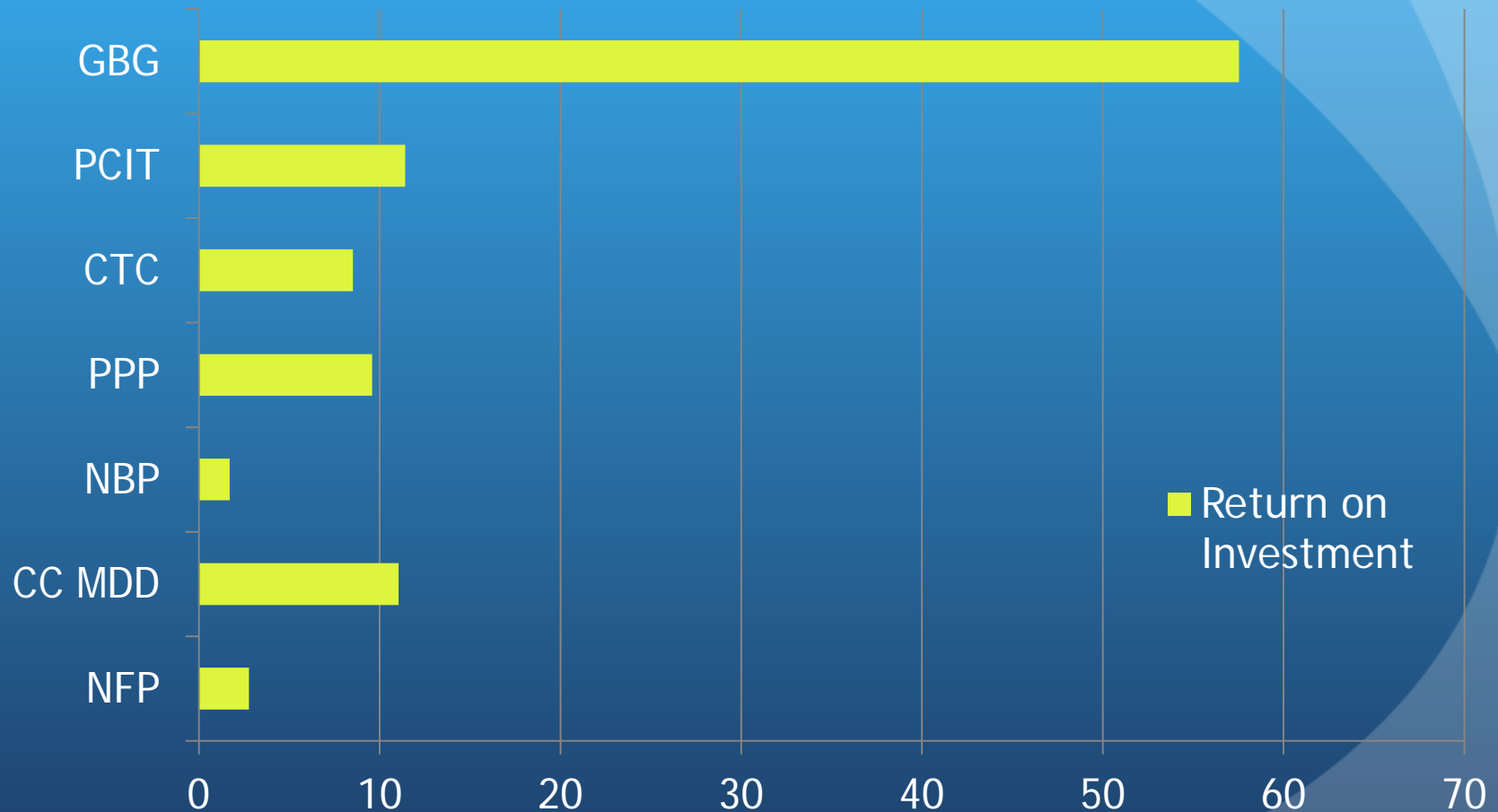
Implementation of Service Changes and Decline in Suicide Rates (per 100,000) (While et al., 2012)



How to Allocate Prevention and Intervention Dollars?

- **Narrow or broad focus?**– more broad focus like GBG or CTC may be more cost effective because it affects more outcomes
- **Early or late intervention?** Earlier may be more cost effective but may need booster interventions for sustained effects
- **Screening and gatekeeper efforts** alone do not appear to be sufficient unless paired with change in student attitudes, availability of effective services

Return on Investment for Prevention Programs (\$) (Washington State Public Policy Institute)




GBG=Good Behavior Game; PCIT=Parent-Child Interaction Therapy; CC-MDD=Collaborative Care for Depression; NFP=Nurse Family Partnership

Saving Holden Caulfield

- Prevention: lead children away from the cliff
- Improve access and quality of care: embed skilled professionals in the field
- Access to lethal agents: Build a fence between the cliff and the field
- Systems change: don't work alone, but together as part of a team that changes cultures in health care systems.

Acknowledgement

- We acknowledge with gratitude the Pennsylvania Legislature for its support of the STAR-Center and our outreach efforts.
- We will be hosting a youth suicide conference next year in celebration of 3 decades of work, May 3-4, 2017

A vibrant sunset scene with a sky filled with orange, red, and purple clouds. The sun is low on the horizon, creating a bright glow. In the foreground, the dark silhouette of a building's roof is visible, and in the background, a range of mountains is silhouetted against the bright sky.

Thank you for your attention!