From Nothing Works to Effective Prevention of Behavioral Health Problems

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Austin, TX
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The content is solely the responsibility of the author.

Behavioral health problems of young people

- Anxiety
- Depression
- Autistic Behaviors
- Alcohol, tobacco, other drug use
- Risky driving
- Aggressive behavior and conduct problems
- Delinquent behavior
- Violence
- Self-inflicted injury
- Risky sexual behavior
- School dropout
A Changing Population

- There has been a shift in the leading causes of mortality from infectious diseases to non-communicable health conditions.

- Behavioral health problems contribute to this shift


<table>
<thead>
<tr>
<th>Cause</th>
<th>Total deaths (per 100,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Vehicle Crashes</td>
<td>15.9</td>
</tr>
<tr>
<td>Accidents</td>
<td>11.5</td>
</tr>
<tr>
<td>Intentional self harm (suicide)</td>
<td>10.7</td>
</tr>
<tr>
<td>Assault (homicide)</td>
<td>10.3</td>
</tr>
<tr>
<td>Malignant neoplasms</td>
<td>3.7</td>
</tr>
<tr>
<td>Diseases of heart</td>
<td>2.2</td>
</tr>
<tr>
<td>Congenital malformations, deformations and abnormalities</td>
<td>1.0</td>
</tr>
<tr>
<td>Influenza and pneumonia</td>
<td>0.5</td>
</tr>
<tr>
<td>Cerebrovascular diseases</td>
<td>0.4</td>
</tr>
<tr>
<td>Pregnancy, childbirth and the puerperium</td>
<td>0.4</td>
</tr>
<tr>
<td>All other causes (Residual)</td>
<td>11.1</td>
</tr>
</tbody>
</table>

### Leading Causes of Mortality 15-24 Year Olds
African Americans (2014, U.S.)

<table>
<thead>
<tr>
<th>Cause</th>
<th>Total deaths (per 100,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Assault (homicide)</td>
<td>36.3</td>
</tr>
<tr>
<td>2 Accidents</td>
<td>20.7</td>
</tr>
<tr>
<td>3 Intentional self harm (suicide)</td>
<td>7.4</td>
</tr>
<tr>
<td>4 Diseases of heart</td>
<td>3.9</td>
</tr>
<tr>
<td>5 Malignant neoplasms</td>
<td>3.7</td>
</tr>
<tr>
<td>6 HIV</td>
<td>1.7</td>
</tr>
<tr>
<td>7 Chronic low respiratory disease</td>
<td>1.0</td>
</tr>
<tr>
<td>8 Congenital malformations, deformations and abnormalities</td>
<td>0.9</td>
</tr>
<tr>
<td>9 Anemias</td>
<td>0.9</td>
</tr>
<tr>
<td>10 Diabetes Mellitus</td>
<td>0.8</td>
</tr>
<tr>
<td>All other causes (Residual)</td>
<td>13.0</td>
</tr>
</tbody>
</table>

*66.1/100,000 or 74% of all deaths*

My story: From probation to prevention
Prevention of Behavioral Health Problems in the U.S.

• Before 1980, nine experimental tests of delinquency prevention programs were conducted in the U.S.

• None prevented delinquency.

“Nothing works” Lipton, Martinson, & Wilks (1975)

Drug Abuse Prevention in 1970’s

• Strategies:
  – Information
  – Fear arousal
  – Just say “no”

• Outcomes:
  – No decreases in drug use
  – Some programs increased drug use (Tobler, 1986)

• Lesson: Untested good ideas can make things worse.
Paradigm Shift: A Risk and Protection Focused Approach to Prevention

- To Prevent a Problem Before It Happens, Address its Predictors

- Research has Identified Predictors:
  - **Risk Factors**
  - **Protective Factors**

- Develop Interventions to Change Malleable Risk and Protective Factors

<table>
<thead>
<tr>
<th>Risk Factors for Behavioral Health Problems</th>
<th>Substance Abuse</th>
<th>Delinquency</th>
<th>Teen Pregnancy</th>
<th>School Dropout</th>
<th>Violence</th>
<th>Depression &amp; Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Availability of Drugs</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>Availability of Firearms</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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</tr>
<tr>
<td>Community Laws and Norms Favorable Toward Drug Use, Firearms, and Crime</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Media Portrayals of the Behavior</td>
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<td>●</td>
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<tr>
<td>Transitions and Mobility</td>
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<td>●</td>
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<tr>
<td>Low Neighborhood Attachment and Community Disorganization</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Extreme Economic Deprivation</td>
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<tr>
<td>Family</td>
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<tr>
<td>Family History of the Problem Behavior</td>
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<td>Family Management Problems</td>
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<td>●</td>
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<tr>
<td>Family Conflict</td>
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<td>●</td>
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<tr>
<td>Favorable Parental Attitudes and Involvement in the Problem Behavior</td>
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<td>●</td>
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<tr>
<td>School</td>
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<tr>
<td>Academic Failure Beginning in Late Elementary School</td>
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<tr>
<td>Lack of Commitment to School</td>
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<td>●</td>
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<tr>
<td>Individual/Peer</td>
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<tr>
<td>Early and Persistent Antisocial Behavior</td>
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<td>●</td>
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<tr>
<td>Rebelliousness</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>Gang Involvement</td>
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</tr>
<tr>
<td>Friends Who Engage in the Problem Behavior</td>
<td>●</td>
<td>●</td>
<td>●</td>
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</tr>
<tr>
<td>Favorable Attitudes Toward the Problem Behavior</td>
<td>●</td>
<td>●</td>
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<td>●</td>
</tr>
<tr>
<td>Early Initiation of the Problem Behavior</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Constitutional Factors</td>
<td>●</td>
<td>●</td>
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</tr>
</tbody>
</table>
Risk reduction is essential, but not enough

• Build Protective/nurturing environments and individual strengths

• Protective factors predict decreased behavioral health problems, even in the presence of risk.

Protective Factors

• Individual Characteristics
  • High Intelligence
  • Resilient Temperament
  • Competencies and Skills (cognitive, affective and behavioral)

• In social domains of family, school, peer group and neighborhood
  • Prosocial Opportunities
  • Reinforcement for Prosocial Involvement
  • Bonding (connectedness, attachment)
  • Clear and Healthy Standards for Behavior
The Social Development Strategy

The Goal…

Healthy Behaviors

…for all children and youth

Ensure…

Healthy Beliefs and Clear Standards

…in families, schools, and peer groups

Build…

Bonding Attachment Commitment

…to families, schools, and peer groups

By providing…

Opportunities Skills Recognition

…in families, schools, and peer groups

Be aware of…

Individual Characteristics

36 Years of Research Advances

We now have prevention programs that work
Effective Prevention
NRC & IOM (2009)

Controlled trials focused on reducing risk and strengthening protective factors have identified over 65 effective policies and programs proven to prevent behavioral health problems.

- **Effective programs**: [www.blueprintsprograms.com](http://www.blueprintsprograms.com)


- **Effective prevention saves money**: [www.wsipp.wa.gov](http://www.wsipp.wa.gov)


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**Effective Prevention Programs**

Examples:

Good Behavior Game, Life Skills Training, Positive Action, Project Northland, Raising Healthy Children, Incredible Years, Achievement Mentoring- Middle school, ATLAS, BASICS, Coping Power, Keep Safe, Familias Unidas, Strengthening Families 10-14, Strong African-American Families, Guiding Good Choices, MST, Functional Family Therapy...
Effective Prevention *Policies*

Examples:

- Graduated Driver Licensing
- Night Driving Restrictions
- Social Host Liability
- Increased Taxes - Alcohol & Tobacco
- Minimum Legal Drinking Age – Age of Tobacco Possession
- Tobacco Clean Air Restrictions - Smoking Bans
- Alcohol & Tobacco Sales Restrictions (outlet density regulations, single cigarette & vending machine prohibitions)

Some programs prevent multiple behavioral health problems

<table>
<thead>
<tr>
<th>Program</th>
<th>Drug use</th>
<th>Delinquency</th>
<th>Violence</th>
<th>School</th>
<th>Risky Sex</th>
<th>Mental health</th>
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</thead>
<tbody>
<tr>
<td>Life Skills Training</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>High Scope Preschool</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Strong African American Families</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<td></td>
</tr>
<tr>
<td>MST (Multisystemic Therapy)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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</tr>
<tr>
<td>Good Behavior Game</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
</tr>
</tbody>
</table>
Example: Botvin’s Life Skills Training

- Middle/JHS School
- Year 1: 15 sessions
- Year 2: 10 sessions
- Year 3: 5 sessions
- Interactive methods
- Provider Training
- Technical Assistance

Effectiveness

- 32 published studies
- Randomized Trials
- Short and long-term
- SA and violence
- Diverse populations
- Different providers
- Multiple replications
Life Skills Training Benefit-cost results (WSIPP)

<table>
<thead>
<tr>
<th>Benefit-Cost Summary Statistics Per Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits to:</td>
</tr>
<tr>
<td>Taxpayers</td>
</tr>
<tr>
<td>Participants</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
<td>Indirect</td>
</tr>
<tr>
<td>Total benefits</td>
</tr>
<tr>
<td>Net program cost</td>
</tr>
<tr>
<td>Benefits minus cost</td>
</tr>
</tbody>
</table>

Benefits minus costs: $1,607
Benefit to cost ratio: $17.25
Chance the program will produce benefits greater than the costs: 66%

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Example:
**Strengthening Families 10-14 Program**
Strengthening Families 10-14 Program

- Objectives
  - Enhance family protective factors
  - Reduce family based risk factors for child problem behaviors
- Program Length
  - 7 weekly two-hour sessions
  - Children and parents attend all sessions
  - Six sessions include one hour for separate parent and child training and one hour for family training

Outcomes of Strengthening Families 10-14 at 10 Years Past Baseline

- Significant effects on young adult drunkenness, cigarette use, illicit drug use, offending behavior, health risky sexual behavior
- Examples:

<table>
<thead>
<tr>
<th></th>
<th>Drunkenness</th>
<th>Illicit Use</th>
<th>Offending</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF 10 14</td>
<td>20.2%</td>
<td>14.8%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Control</td>
<td>29.5%</td>
<td>18.2%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Relative reduction</td>
<td>22.0%</td>
<td>19.0%</td>
<td>50.0%</td>
</tr>
</tbody>
</table>

Outcomes of Strengthening Families 10-14 at Ages 21 and 25.
Lifetime Prescription Drug Misuse

Both outcomes at both time points are statistically and practically significant.

Notes: General=Misuse of narcotics or CNS depressants or stimulants.

Strengthening Families 10-14 Benefit-cost

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.
Preventing Teen Opioid Misuse
Source: NIDA Notes (December 2015)

Example: Raising Healthy Children

Tested in the Seattle Social Development Project

- PI's: JD Hawkins, KG Hill, R Kosterman
- In 1981, experimental intervention initiated with all 1st graders in 8 Seattle public schools in high-crime neighborhoods
- In 1985, study expanded to 18 schools in all, adding other conditions and additional controls
- 808 (77%) 5th grade students and their parents consented to the longitudinal study; they constitute the study sample
Raising Healthy Children

Guiding Theory:
The Social Development Strategy

Hypothesis:

• By providing children with better opportunities, skills, and recognition...

• We can build stronger bonds to family and school

• And... change developmental trajectories leading to healthier lives

Intervention: Raising Healthy Children

Three Core Components

• Teacher staff development in classroom instruction and management
  o to enhance children’s opportunities and recognition

• Parent workshops in behavior management and academic support
  o to enhance children’s opportunities and recognition

• Child curriculum in social, emotional and cognitive competencies
  o to enhance children’s skills
Three Core Components

Teacher Staff Development

Proactive Classroom Management (grades 1-6)
- Establish consistent expectations
- Give clear instructions for behavior
- Recognize good behavior
- Control minor disruptions

Interactive Teaching (grades 1-6)
- Activate foundation knowledge
- Explicit learning objectives
- Model skills to be learned
- Monitor student comprehension
- Re-teach material when necessary

Cooperative Learning (grades 1-6)
- Involve small, diverse teams
- Recognize teams for improvement

Parent Workshops

Catch ‘em Being Good (grades 1-2)
- Pinpoint child behaviors
- Teach expectations for behaviors
- Reinforce desirable behavior
- Consequences for undesirable behavior

Supporting School Success (grades 2-3)
- Talk with teachers about learning
- Help reading and math skills
- Create home environment for learning

Guiding Good Choices (grades 5-6)
- Establish family policy on drug use
- Practice refusal skills with children
- Use skills to reduce family conflict
- Create opportunities for children to contribute

Child Competencies

I Can Problem Solve (grade 1)
- Perspective-taking
- Alternative solution thinking
- Consequential thinking

Refusal Skills (grades 5-6)
- Ask questions
- Name the trouble
- Identify the consequences
- Suggest an alternative
- Move it, sell it, leave but leave the door open

Effects of Raising Healthy Children Program

At the end of the 2nd grade, Full Intervention group
- girls were less self-destructive
- boys were less aggressive (Hawkins et al., 1991)

By the start of 5th grade
- less initiation of alcohol
- less initiation of delinquency
- better family management
- better family communication
- higher attachment to family
- higher school rewards
- higher school bonding (Hawkins et al., 1992)

By age 21
- better emotional and mental health
- better functioning at school or work
- more likely to be high school graduate
- more likely to be attending college
- less likely to have criminal record (Hawkins et al., 2005)

By age 27
- more educational attainment
- more economic attainment
- more civic engagement
- better mental health (Hawkins et al., 2008)

By age 30
- less heavy alcohol use
- less lifetime violence
- less lifetime sexual activity
- fewer lifetime sex partners
- higher school bonding
- higher school achievement
- less school misbehavior (Hawkins et al., 1999)

By age 33
- higher educational attainment
- higher economic attainment
- more civic engagement
- better mental health (Hawkins et al., 2008)

By age 35
- higher educational attainment
- higher economic attainment
- more civic engagement
- better mental health (Hawkins et al., 2008)

By age 39
- more educational attainment
- more economic attainment
- more civic engagement
- better mental health (Hawkins et al., 2008)

By age 41
- more educational attainment
- more economic attainment
- more civic engagement
- better mental health (Hawkins et al., 2008)

By age 43
- more educational attainment
- more economic attainment
- more civic engagement
- better mental health (Hawkins et al., 2008)
Fewer Pregnancies and Births among Teenage Girls

Among Females At age 21

Control Full

Grade

Age

Lifetime Pregnancy

Lifetime Birth

REduced Mental Disorders- Ages 24 & 27

Proportion in 3 Conditions Who Met Criteria for General Anxiety Disorder, Major Depressive Episode, or Post Traumatic Stress Disorder Diagnosis

Prevalence

Age 24 Age 27

Control Late Full

Social Development Research Group
University of Washington
School of Social Work
Fewer with sexually transmitted infection onset through age 30

Raising Healthy Children Eliminated Racial Disparity in Sexually Transmitted Infections

Sig. effect on STI hazard rate, $p < 0.019$

Sig. Tx X Ethnicity Interaction on STI onset, $p < 0.0401$
RHC affected children’s development into adulthood. Did it have positive effects on their own children’s development once they were parents?

The Intergenerational Project: TIP
Studying Children of the Children in the Seattle Social Development Project

Investigators Karl G. Hill (PI)
Jennifer A. Bailey (PI)
Rick Kosterman
J. David Hawkins
Richard F. Catalano
Marina Epstein
Christine Steeger
Robert D. Abbott
SSDP & TIP: two linked longitudinal studies

Ongoing SSDP Panel Study

<table>
<thead>
<tr>
<th>Year</th>
<th>'85 through '99</th>
<th>'02</th>
<th>'03</th>
<th>'04</th>
<th>'05</th>
<th>'08</th>
<th>'09</th>
<th>'10</th>
<th>'11</th>
<th>'14</th>
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<tbody>
<tr>
<td>Parent age</td>
<td>10 through 24</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>33</td>
<td>35</td>
<td>39</td>
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</table>

The Intergenerational Project

7 waves studying SSDP panel’s first born children

Good self-regulation  Good cognitive functioning  Good Social Functioning

G3 Child Functioning

Major capabilities that, if mastered, get children started along adaptive pathways.

(Neurons to Neighborhoods: Shonkoff & Phillips, 2000)
Effects on SSDP Participants

G2 Reduced Risk Behavior, more Prosocial Outcomes

Improved G3 Child Functioning

Family School Peer

G2 Reduced Environmental Risk & Enhanced Protection

Good self-regulation Good cognitive functioning Good Social Functioning

Improved G2 Child Functioning

Family School Peer

RHC Preventive Intervention

Reduced Environmental Risk & Enhanced Protection

Family School Peer

G1 Did RHC affect their children?

Good self-regulation Good cognitive functioning Good Social Functioning

Improved G3 Child Functioning

Family Neighborhood School Peer

G2 Reduced Environmental Risk & Enhanced Protection

Good self-regulation Good cognitive functioning Good Social Functioning

Improved G2 Child Functioning

Family Neighborhood School Peer

G1 Reduced Environmental Risk & Enhanced Protection

Good self-regulation Good cognitive functioning Good Social Functioning

RHC Preventive Intervention

Family Neighborhood School Peer
Outcomes Examined in G3
27 outcomes across 4 classes of functioning:

- Interviewer/Parent Assessed Developmental Delays Ages 1-5 (Ages and Stages Questionnaire)
- Teacher Rated Behavior Problems Ages 6-18 (Achenbach CBCL)
- Teacher Rated Academic Skills and Performance Ages 6-18 years
- Child Self Reported Risk Behavior Ages 6-18

Parents who were in the RHC classrooms in childhood grew up to have children with:

...fewer developmental delays in the first five years of life.

% of children with no developmental delay averaged across waves

FDR corrected significance level to address multiple testing.
Parents who were in RHC classrooms in childhood grew up to have children with:

...fewer teacher-rated child behavior problems ages 6-18 years.

Standardized problem behavior score averaged across 7 waves

FDR corrected significance level to address multiple testing.

Parents who were in RHC classrooms in childhood grew up to have children with:

...higher teacher-rated academic skills and performance ages 6-18 years.

Academic Skills and Performance Averaged Across 7 Waves

FDR corrected significance level to address multiple testing.
Parents who were in RHC classrooms in childhood grew up to have children with...

...lower youth self-reported alcohol and drug onset ages 6-18 years.

% of children reporting the behavior across 7 waves

- 12% control vs. 6% treatment for early sex
- 30% control vs. 16% treatment for ever alcohol
- 21% control vs. 12% treatment for ever cig
- 24% control vs. 17% treatment for ever marijuana
- 37% control vs. 16% treatment for ever any drug

FDR corrected significance level to address multiple testing.

+ p < .10
* p < .05
** p < .01

• Raising Healthy Children reduced developmental delays, improved cognitive and social functioning, and reduced drug use initiation among the first born children of children who received the RHC preventive intervention during the elementary grades.

A TWO GENERATION EFFECT
All these behavioral health problems of young people have been prevented in controlled trials

- Anxiety
- Depression
- Autistic behaviors
- Alcohol, tobacco, other drug use
- Risky driving
- Aggressive behavior and conduct problems
- Delinquent behavior
- Violence
- Self-inflicted injury
- Risky sexual behavior
- School dropout

www.blueprintsprograms.com

Implications

- Effective Prevention is within our Reach
  - Choose and Implement Programs and Policies Proven to Work
- Leverage that Power
  - Combine EBPs Shown to Prevent Multiple Behavioral Health Problems for Greater Effects
Summary: Advances of Prevention Science

1. Risk and Protection Focus
2. Social Development Strategy
3. Tested and Effective Programs/Policies

Think, Pair, Share

What did I hear worth remembering?

What questions do I have for David?
Analysis summary

- all analyses were run in Mplus 7.3 using maximum likelihood estimation with robust standard errors (MLR)
- Compared **Control** to **Full Intervention** (grades 1-6)
- Control for age of mom at birth of child and cohort cluster
- False Discovery Rate (Benjamini and Hochberg, 1995) corrected significance level to address multiple testing.
Tests for Potential Threats to Internal Validity

No significant differences between control and intervention on

- Parent gender
- Parent race
- Parent childhood low income status
- Parent childhood neighborhood disorganization
- Parent raised in a single parent household
- Parent mobility (years lived in Seattle)
- Grandparent education

- % located for TIP
- Eligibility for TIP
- % ever participated in TIP
- Retention and proportion of waves participated in TIP

Risk Factors for Behavioral Health Problems

- Community
  - Availability of Drugs
  - Availability of Firearms
  - Community Laws and Norms Favorable Toward Drugs, Alcohol, and Crime
  - Media Exposures
  - Transitions and Mobility
  - Low neighborhood attachment and community disorganization
  - Extreme Economic Deprivation

- Family
  - Family History of the Problem Behavior
  - Family Management Problems
  - Family Conflict
  - Favorable Parental Attitudes and Involvement in the Problem Behavior

- School
  - Academic Failure Beginning in Late Elementary School
  - Lack of Commitment to School

- Individual/Peer
  - Early and Persistent Antisocial Behavior
  - Attention and Relativism
  - Friends Who Engage in the Problem Behavior
  - Favorable Attitudes Toward the Problem Behavior
  - Early Initiation of the Problem Behavior
  - Constitutional Factors

- Ethnicity of G3 child
- Gender of G3 child