Global Application of Prevention Science

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40 Years of Prevention Science Research Advances

**Etiology/Epidemiology of Problem Behaviors**
- Identify risk and protective factors that predict problem behaviors and describe their distribution in populations.

**Efficacy Trials**
- Design and test preventive interventions to interrupt causal processes that lead to youth problems.
### Risk Factors for Adolescent Problems

#### Community
- Availability of Drugs
- Availability of Firearms
- Community Laws and Norms Favorable Toward Drug Use, Firearms, and Crime
- Media Portrayals
- 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
- Alienation and Rebelliousness
- Friends Who Engage in the Problem Behavior
- Favorable Attitudes Toward the Problem Behavior
- Early Initiation of the Problem Behavior
- Constitutional Factors

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<thead>
<tr>
<th>Risk Factors</th>
<th>Substance Abuse</th>
<th>Teen Pregnancy</th>
<th>School Dropout</th>
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Protective Factors

Individual Characteristics
- High Intelligence
- Resilient Temperament
- Competencies and Skills

In each social domain (family, school, peer group and neighborhood)
- Prosocial Opportunities
- Reinforcement for Prosocial Involvement
- Bonding
- Healthy Beliefs and Clear Standards
Risk and Protective Factors: Shaping Early Developmental Trajectories without Protection

Positive Substance Use Norms and Models of Problem Behavior without Protection

Snowball: Risk Accumulates through Early Developmental Challenges without Protection

Snowstorm: Extended Exposure to Positive Substance Use Norms and Models of Problem Behavior without Protection

Toumbourou and Catalano, 2005
A Place Based Approach is Needed Because Communities Vary in Type and Amount of Risk Exposure

John A. Pollard, Ph.D. Developmental Research and Programs
Prevention interventions should target malleable risk and protective factors

(Coie et al., 1994; Mrazek and Haggerty, 1984; Woolf, 2008; O’Connell, Boat & Warner, 2009)
Wide Ranging Approaches Have Been Found To Be Efficacious

<table>
<thead>
<tr>
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<th>Drug Use</th>
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Criteria for Selection of Illustrative Programs

- Randomized or quasi-experimental designs
- Statistically significant effect on problem behaviors during adolescence at least one year post intervention
- Operate during childhood or adolescence
- Examples address both snowball and snowstorm risk patterns
- Some diversity in global context
Illustrative Efficacious Prevention Programs: Snowball Pattern of Risk Age 0-11

- **Nurse Family Partnership** (Olds et al., 1988; 1998; 2002; 2004)

- **Early Childhood Education** (Schweinhart et al., 1993; Campbell et al., 2002; Reynolds et al., 2001; 2007)

- **Seattle Social Development Project** (Hawkins et al., 1999; 2005; 2008; Lonczak et al., 2002)
Illustrative Efficacious Prevention Programs: Snowball Pattern of Risk Age 12-18

- New Beginnings Parent and Child Program (Wolchick, Sandler et al., 2002)
- Functional Family Therapy (Klein, Alexander & Parsons, 1977)
Illustrative Efficacious Prevention Programs: Snowstorm Pattern of Risk School and Family Programs

Age 12-14

- Life Skills Training (Botvin et al., 2006)
- Unplugged (Faggiano et al., 2010)
- Project PATHS (Shek & Ma, 2011; Shek & Yu, 2011)
- Gatehouse Project (Bond et al., 2004; Patton et al., 2006)
- Strengthening Families Program 10-14 (Spoth et al., 2001; 2004; 2008)
- Self Administered Youth and Parent Computer Based Instruction (Schinke et al., 2004)
Illustrative Efficacious Prevention Programs: Snowstorm Pattern of Risk Age 15-18

- Stepping Stones (Jewkes et al., 2008)
- Sistering, Informing, Healing, and Empowering (DiClemente et al., 2004)
- Conditional Cash Transfer (Baird et al., 2010; Duflo et al., 2006)
Illustrative Efficacious Prevention Policies
Age 12-18

- Adolescent Access to Contraceptives (Brindis et al., 2003; Foster et al., 2006; Boonstra et al., 2010; Guldi, 2008; Zavodny, 2004; Kearney & Levine, 2009)

- Graduated Driver Licensing (Shope, 2007)

- Increased Taxes on Alcohol (Wagenaar et al., 2009; Elder et al., 2010)

- Minimum Legal Drinking Age 21 (Wagenaar & Toomey, 2002)
<table>
<thead>
<tr>
<th>Program</th>
<th>Benefit</th>
<th>Cost¹</th>
<th>Benefit Minus Cost</th>
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¹Cost estimates are per participant, based on 2003 U.S. dollars for SFP 10-14;¹⁹ 2007 U.S. dollars for the Chicago Child-Parent Centers;¹¹⁵ and 2010 U.S. dollars for all other interventions¹¹⁴
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Despite the Efficacy of Prevention...

Prevention approaches that do not work or have not been evaluated have been more widely used than those shown to be effective.

The Global Challenge

How can we increase use of tested, efficacious prevention policies and programs globally...

while recognizing that communities and nations are different from one another and need to decide locally what policies and programs they use?
Recommendations for Global Action

- Include prevention in service systems
- Educate government, professionals and public in the research base for prevention science
- Create database of efficacious prevention policies and programs
- Shift 10% of funds spent on children to efficacious prevention policies and programs
- Increase translational research on adaptation and fidelity, going to scale & sustainability
Recommendations for Global Action

Build capacity of communities to:

- Build prevention coalitions
- Assess and prioritize risk, protection, and behavior problems (Create database of surveys, indicators to assess local risk, protection, and behavior problems)
- Match priorities to efficacious preventive interventions
- Support/sustain quality implementation of efficacious preventive interventions to all those targeted
Why Community Coalitions to Prevent Adolescent Problems?

- Risk/protective factors are located in community, family, school, peer and individual
- Risk/protection vary by neighborhood
- Community coalitions representing multiple sectors of influence can coordinate multiple resources and actions
- Multiple sector involvement more likely to reach all children and youth and may have population wide effect

**However, not all approaches are effective**
Communities that Care
A Proven Example

- Provides skills and tools,
- To build community capacity to change youth outcomes
- Through choosing proven prevention programs matched to locally prioritized risk and protective factors and,
- Implementing them with fidelity
CTC Effects on Problem Behavior Initiation in a 24 Community Randomized Trial

In a panel of 4407 youth followed from grade 5, by grade 8 youth in CTC communities were:

- 33% less likely* to start Smoking Cigarettes
- 32% less likely* to start Drinking
- 25% less likely* to start engaging in Delinquent Behavior

...than those from control communities

Effects sustained in 10th grade

*Relative Risk Reduction
Benefits of CTC Compared to Costs

Net Benefit Per Child in CTC Community

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Benefit-Cost Ratio

\[
\frac{\text{Benefit}}{\text{Cost}} = \frac{5,893}{1,112} = 5.30
\]

$1.00 invested in CTC yields $5.30 in benefits

(Kuklinski et al., 2012)
Conclusions

- Behavior problems are implicated in adolescent and adult burden of disease
- Risk and protective factors are potential targets for preventive intervention
- Controlled trials suggest that preventive interventions can improve adolescent health and well being
- Adolescent health promotion should include a combination of locally prioritized and chosen efficacious preventive policies and programs
- Global health priorities should shift to preventing adolescent risky behavior
Global Application of Prevention Science

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Communities That Care

Get Started

Implement and Evaluate

Get Organized

Create a Plan

Develop a Profile

Creating Communities That Care
Communities That Care

Get Started

Implement and Evaluate

Create a Plan

Develop a Profile

Creating Communities That Care

- Collect risk/protective factor and outcome data.
- Construct a community profile from the data.
The CTC Youth Survey

- Identifies levels of 21 risk and 9 protective factors and academic and behavioral outcomes reliable and valid across age, gender, ethnicity (Arthur et al., 2002; Glaser et al., 2005)

- Guides planners to select tested, effective actions

- Monitors the effects of chosen actions

The CTC Youth Survey is in the public domain

www.communitiesthatcare.net
Communities That Care

Creating Communities That Care

Get Started

Get Organized

Develop a Profile

Create a Plan

Implement and Evaluate

• Prioritize risk and protective factors and outcomes to be targeted.
• Review and match tested, effective interventions to priorities.
• Create action and evaluation plan.
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Classroom Curricula for Social and Emotional Competence Promotion
Middle and High School

- The Life Skills Training Program (Botvin et al., 1995)
- Project Alert Drug Prevention Curriculum (Ellickson et al., 1993; Ellickson and Bell, 1990)
- Alcohol Misuse Prevention (Maggs et al., 1998)
- Towards No Drug Use (Sussman et al. 2003; 2003)
Communities That Care Process and Timeline

**Process**

- Assess readiness, Mobilize the community
- Assess risk, protection and resources,
- Develop strategic plan

**Evaluation**

- Increase in priority protection factors
- Increase in positive youth development
- Decrease in priority risk factors
- Reduction in problem behaviors

**Measurable Outcomes**

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<th>6-9 mos.</th>
<th>1 year</th>
<th>2-5 yrs.</th>
<th>3-10 yrs.</th>
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<td><strong>Vision for a healthy community</strong></td>
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Effects of CTC on Onset of Drug Use and Delinquency at Grade 8 and 10*

Compared with controls by 8th grade (RRR):

- 33% less likely to start smoking cigarettes
- 32% less likely to start drinking alcohol
- 25% less likely to start delinquent behavior

Results maintained through 10th grade one year post intervention

*Among 5th grade students who had not yet initiated. Significant at p<.05

Hawkins et al., 2009; 2012
Effects of CTC on Current Substance Use and Delinquency in the Panel at Grade 8

8th Grade (RRR):
- 23% less likely to drink alcohol than controls
- 37% less likely to “binge” (5 or more drinks in a row) than controls
- Committed 31% fewer different delinquent acts in past year than controls,

- significant at p<.05

Hawkins et al., 2009
In the panel, compared to controls 10th grade students in the panel from CTC communities had significantly:

- Lower levels of targeted risk factors.
- Less initiation of delinquent behavior, alcohol use, and cigarette use.
- Lower prevalence of past-month cigarette use.
- Lower prevalence of past-year delinquency
- Lower prevalence of past-year violence.

Hawkins et al., 2012
Global Shift in Mortality from Infectious to Non-communicable Diseases and Conditions

- Behavior problems are implicated in shift (motor vehicle fatalities, violence, mental health, risky sex, alcohol, tobacco, and other drugs, and obesity)
- Behavior problems cause harm in adolescence
- Behavior problems established in adolescence cause harm into adulthood
- Preventing these behavior problems during adolescence can reduce mortality and morbidity worldwide
Public Health Framework

Problem

Define the Problem

Identify Risk and Protective Factors

Interventions

Program Implementation and Evaluation

Response
Prevalence of 30 Day Alcohol Use by Number of Risk and Protective Factors

Six State Student Survey of 6th-12th Graders, Public School Students

Number of Risk Factors vs. Prevalence

- 0 to 1
- 2 to 3
- 4 to 5
- 6 to 7
- 8 to 9
- 10+

Number of Protective Factors
Prevalence of “Attacked to Hurt”
By Number of Risk and Protective Factors

![Graph showing the prevalence of "Attacked to Hurt" by number of risk and protective factors.](image-url)
Prevalence of Mental and Social Problems by Number of Risk Factors

Bond, Thomas, Toumbourou, Patton, and Catalano, 2000
Number of School Building Risk Factors and Probability of Meeting WASL Standard (10th Grade Students)

Arthur and Brown, 2006
Number of School Building Protective Factors and Probability of Meeting WASL Standard (10th grade students)

Arthur and Brown, 2006
Prevention Policy Example
Raising the Minimum Legal Drinking Age

Problem: Traffic Crashes, Risky Alcohol Use
Response: Raise Min. Legal Drinking Age

Wagenaar and Toomey, 2002
Prevention Program Example
Nurse Family Partnership

Problem: Poor Birth And Early Childhood Outcomes

Risk: Poor Diet And Drug Use
Prot.: Parenting Competence And Bonding

Protocol for Nurse Visits During Pregnancy And 2 yrs. Post Birth

Response: Mom: Less welfare, More employment, Fewer Arrests and Subsequent Births, <Interval Between births
Child: Less Child Abuse/Neglect, Less Arrests at 15

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Olds et al., 2002
Evidence of Effectiveness of CTC from Community Youth Development Study
A 24 Community Randomized Trial

PI: J. David Hawkins
Co-PI: Richard F. Catalano
Funded by:
National Institute on Drug Abuse
Center for Substance Abuse Prevention
National Cancer Institute
National Institute on Child Health and Development
National Institute on Mental Health
National Institute on Alcohol Abuse and Alcoholism
Communities That Care
Theory of Change

CTC Training and Technical Assistance

- Adoption of Science-based Prevention Framework
  - (Brown et al., 2007)
- Collaboration Regarding Prevention Issues
  - (Quinby et al., 2008; Fagan et al., 2008)
- Appropriate Choice and Implementation of Tested, Effective Prevention Programs

Decreased Risk and Enhanced Protection
  - (Hawkins et al., 2008; 2011)

Positive Youth Outcomes
  - (Hawkins et al., 2009; 2011)