

A PREVENTION SCIENCE FRAMEWORK AIMED AT DELINQUENCY

*Tracy W. Harachi, M.S.W., Ph.D.**

For over ten years the U.S. has had the unfortunate and dubious distinction of being a leader in terms of having the highest rates of serious violent crime in comparison to other industrialized nations. It is one of the most violent countries by a factor of four. A census of U.S. prisons showed that there were 1,284,894 people incarcerated at the end of 1999 in our correctional system. The incarceration rate has more than tripled since 1980. Between 1990 and mid-year 1999, the incarcerated population grew an average 5.7% annually. This increase, in part, reflects changes in policies that have sought to reinforce punitive measures. Some states have passed legislation such as the “Three Strikes” effort that stipulates that anyone who commits three felonies will be automatically sentenced to life in prison. Projections suggest that the U.S. prison population will only continue to grow and industries involving prison construction and management are burgeoning.

Are solutions such as “Three Strikes” effective? Greenwood and others at the Rand Corporation (1996) did an analysis of the cost savings associated with different prevention approaches (pre- and post-natal home visits, parent training, graduation incentives, intensive supervision of adjudicated delinquents) and the “Three Strikes” law in California. They compared the costs of each intervention and examined the millions of

dollars that would be averted by the reduction in serious crimes. Costs associated with “Three Strikes” are \$5.5 billion a year in California and are expected to reduce serious crime by about 21%. Reductions in crime are expected to be less with the other preventive approaches, 15% for graduation incentives and 10% for other approaches, however because of their lower cost—approximately \$1 billion annually for graduation incentives and parent training, this study suggested that for one-fifth of the investment—graduation initiatives and parent training can reduce as much crime as the “Three Strikes” initiative. In addition to graduation incentives and parenting training, another preventive strategy, intensive supervision of adjudicated delinquents, also compares favorably in cost effectiveness with the “Three Strikes” law. It’s important to note that the study did not take into account future cost savings that may occur as a result of these preventive efforts.

This is just one illustration that underscores the legitimacy of prevention in the area of crime and delinquency. It’s important to note that prevention efforts are not meant to replace treatment and aftercare efforts, but should be viewed as a viable and legitimate component within a continuum of care model. In 1993, the Institute of Medicine convened a number of experts to examine state of prevention science to reduce the risks for mental disorders. This resulted in a landmark report that described the knowledge base of prevention science and the emergence of a new paradigm (IOM, 1994). Further,

* Social Development Research Group,
School of Social Work,
University of Washington,
Seattle, Washington, USA

it specified a new classification scheme for prevention that illustrates different types of prevention strategies to add to our spectrum of care. These three types are universal, selective and indicated prevention. Universal prevention includes those strategies that should benefit the general population. An example of a universal prevention strategy in the area of dental health is the addition of fluoride into drinking water. Selective prevention strategies target populations at higher risk of developing a disorder. A prenatal programme targeting low income mothers who are higher risk for low birthweight infants is an example of a selective programme. Indicated prevention strategies target populations which already demonstrate early or initial symptoms of the disorder. An example of an indicated strategy includes weekly children's group sessions to enhance social skills for aggressive kindergarten boys. Universal strategies reflect the earliest prevention component in the continuum of care model followed by selective strategies. As one moves beyond the next tier of indicated prevention, one moves into case identification and the treatment of a disorder. Beyond treatment, our continuum of care model includes maintenance components which seek rehabilitation and the reduction of relapse. The IOM report reflects the growing attention that is being focused on prevention science and the increased legitimacy that it is earning.

Prevention science draws in principle from a public health model. A public health framework initially defines the problem and then identifies risk and protective factors associated with the problem. Take for example the problem of cardiovascular disease. Extensive research has been conducted to examine the prevalence and incidence of

cardiovascular disease within various populations, to determine the age in which rates of the disease increase and to understand how the disease develops. Further, decades of research now have identified risk factors such as a family history of heart disease, smoking, and high levels of cholesterol which are associated with an increased risk of cardiovascular problems. Conversely, a healthy diet and exercise have been shown to be protective factors that buffer the negative effects of risk factors. In addition to defining the problem, a public health framework helps us specify interventions to reduce the identified risk factors and to promote protective factors and lastly, to evaluate our efforts.

It's important to acknowledge that the presence of risk factors does not imply that one will develop the disease rather it suggests an increased "likelihood". Each of us may have personal examples of acquaintances whom have multiple risk factors associated with cardiovascular disease yet these individuals appear to grow old without any apparent incidence of the disease. This underscores the need to understand and investigate protective factors. Protective factors mediate or moderate the negative effects of risk factors.

The public health model can be utilized in the area of delinquency prevention and begin by defining the problem. The National Youth Study by Del Elliot shows that the prevalence of violent offenders at age 12, 13, and 14 is low, 10–15%. The prevalence of violent offenders rises during late adolescence to 25–35% by age 17, and then declines back to the 10–15% level by age 21. This age dependent quadratic trend is common across the late adolescent and young adulthood periods for a variety of delinquent activities. We also know from Moffitt's research from

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New Zealand, the U.K. and the U.S. that there are two groups or two types of serious violent offenders. One group begins their violent behavior at ages 15–17 and contributes to the increase in prevalence, but few of these offenders persist in their behavior. On the other hand, another group that begins their violent behavior earlier by age 12 is the most likely to persist in violent behavior, including into adulthood. In terms of general delinquency, we find that among boys, early aggression and shy behavior between ages 4–6 is a significant predictor of later conduct problems and delinquency. Further, we see an escalation of behavior from minor problem behavior at age 7 leads to moderately serious behavior at ages 9–10, serious delinquency by age 12 and initial contact with the juvenile justice system by age 14.

The empirical evidence that describes the problem of delinquency and violence has important implications for prevention. This evidence suggests that there are developmental periods in which the opportunity for preventive efforts is more salient. On the one hand, prevention efforts may seek to target aggressive and shy boys to derail what appears to be a developmental trajectory into delinquency. Another potential target would be delaying the onset of violent behavior in early adolescence to discourage the development of the persistent violent offender.

Over the last two decades, a growing body of research has identified a number of risk factors associated with delinquency, and other adolescent problem behaviors. In order for a trait to be identified by our criteria, there must be published evidence that a factor is *consistently related* to the problem behavior across multiple studies and that

the relationship be demonstrated *longitudinally*. Specifically the study must have measured the risk factor at one point in time and measured the adolescent problem at a later point. This has resulted in a compilation of risk factors associated not only with delinquency and youth violence, but other adolescent problem behaviors such as drug use, school drop-out and teenage pregnancy (see for example Hawkins, Catalano, & Miller, 1992). What's notable is that there is significant overlap in risk factors across problem outcomes.

Risk factors reside in multiple domains ranging from community level, school, family and individual and peer. The community environment in which a child develops can affect their chances of developing a problem through contextual factors such as:

- Firearm and drug availability
- Community laws and norms
- Community disorganization
- Media portrayals of violence
- Transition and mobility
- Low neighborhood attachment
- Economic deprivation

Firearm availability and firearm homicide have increased together since the late 1950s. Laws regulating the sale of firearms have had small effects on violent crime that may diminish after the law has been in effect for multiple years. In addition, laws that include penalties for using a firearm in the commission of a crime have also been related to reductions in the amount of violent crime involving firearms. A number of studies suggest that the small and sometimes diminishing effect of firearm laws is due to two factors, the availability of firearms from other jurisdictions without legal prohibitions on sales or illegal access, and community norms that include a lack of

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proactive monitoring or enforcement of laws.

Neighborhoods with high population density, low levels of attachment to neighborhood, lack of natural surveillance of public places, and high rates of adult crime have high rates of juvenile crime. It's suggested that neighborhood disorganization contribute to deterioration in the ability of socializing units such as churches, schools and families to pass on positive values to children.

There has been a lot of research on the impact of media violence on boys and girls. Leonard Eron and others have shown that short and long-term increases in violence result from media exposure to violence. The strongest evidence is available for boys.

Rates of problem behavior including delinquency, drug use, and dropout increase among adolescents following school and residential changes. Even normal transitions between elementary and middle and middle and high school are followed by increased rates of problem behavior. Further, children in communities characterized by frequent moves and frequent nonscheduled school changes are at higher risk for delinquency, drug use, and school dropout.

Children from extremely economically deprived environments are at four times higher risk of the problem behaviors. In the violence area, children from areas characterized by poverty, poor living conditions, and high unemployment are at increased risk of becoming violent in adolescence and young adulthood. While we don't know the mechanism specifically for violence in poor urban areas, it may be due to exposure to multiple factors

including poverty and poor living conditions, racism and lack of opportunity, that lead to youth developing a fatalistic outlook. Under these conditions, deadly forces may be more likely to be employed to solve problems or settle arguments.

Factors expressed in the school environment include:

- Aggressive behavior
- Achievement
- Commitment to school

There is consistent evidence that identifies boys who are aggressive from about age 5 as being at higher risk for problem behaviors. Additionally, boys with hyperactivity or shyness along with aggressiveness are at an even more elevated risk for delinquency, drug abuse, and violence. Both boys and girls who get involved in antisocial behavior in early adolescence, including school misbehavior, truancy, skipping classes, getting into fights, or involved in delinquent acts are at higher risk for serious frequent involvement in all problem behaviors in adolescence.

Academic failure as a risk factor begins to be operative in middle to late elementary school, and applies to all problem behaviors. It doesn't seem to be lack of academic ability but rather the experience of failure itself that is predictive of adolescent problem behavior. These are the youngsters who feel that school is not important and do not care for school.

Experiences in the family that begin to be salient early in development can also increase the chances of delinquency. These include:

- Family history of criminality

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- Family management problems
- Family conflict
- Family involvement and favorable attitudes toward crime and drug use

Growing up in a family in which parents or siblings have a history of the problem behavior puts a child at risk for that specific problem behavior.

Additionally, children in families with poor management are at higher risk of problem behavior. There are three important characteristics of good family management or good management in general:

1. clear expectations and rationale for behavior—parents have to know what they want and let their child know why;
2. good monitoring and supervision of behavior—if know what you want, watch and see if you get it; and,
3. consistent recognition and consequences—if you see it recognize it and celebrate it, and if you don't see it or if it's not done up to standards, apply moderate consistent consequences. On the other hand, inconsistent discipline and excessively harsh discipline have been associated with higher risk.

Children raised in families characterized by conflict between caregivers or caregiver-child conflict are at increased risk of problem outcomes. Children exposed to parental violence in or outside the home or whose parents condone violent activity are at increased risk of developing aggressive behavior in childhood and violent behavior in adolescence and young adulthood.

Lastly, there are several factors that reside at the peer and individual domain which have been shown to be predictive of

delinquency and other problem outcomes. These include:

- Alienation and rebelliousness
- Friends who engage in the problem behavior
- Favorable attitudes
- Early initiation in the problem behavior
- Constitutional factors such as impulsiveness and sensation seeking

Children who feel they are marginalized or outside of conventional society are at higher risk for problem behaviors. Additionally, rebelliousness is currently being examined as a risk factor for violence.

Association with problem peers is a strong and proximate predictor of problem behavior. Even children who grow up without other risk factors but associate with those who use drugs, are delinquent, are violent, are dropouts, are pregnant are at a higher risk of the specific problem behavior. However, the good news is that those who grow up with fewer risk factors aren't as likely to associate with these types of peers during adolescence, since individuals are typically found in the company of peers with similar behaviors and attitudes.

Favorable attitudes towards the specific behavior enhance the risk of developing that behavior. Additionally, several researchers have found that those who get involved in these behaviors early in life are at higher risk for the frequent occurrences of the specific behavior. Lee Robins and colleagues found that those who tried drugs before age 15 almost doubled their risk of drug abuse compared to those who first tried drugs after 19.

Lastly, constitutional factors due to biological or physiological factors (such as low autonomic nervous system response, Fetal Alcohol Syndrome, prenatal abnormalities or brain trauma) are often indicated by a behavior such as sensation-seeking or low impulse control, and increase the risk of problem behaviors.

Research continues to be conducted to update our knowledge and discovery of other risk factors. Research continues to investigate the extent to which risk factors are salient across, for example, different ethnic and cultural groups or gender. Additionally, research is being conducted to better understand the mechanisms through which the effect of risk on to the problem outcome manifests.

Turning now to protective factors, much of what has been discovered regarding protective factors is derived through research conducted with children exposed to multiple risk factors. Researchers noted that many of these children were able to avoid later problems despite high exposure to risk. Researchers wanted to investigate what keeps children who are exposed to multiple risk factors, protected and motivated to develop healthy lifestyles and not become involved in adolescent problem behaviors. Seminal work has been conducted by Rutter and Werner, and more recently Resnick and Blum, to understand the concept of protective factors. Similar to the criteria used to identify risk factors, their findings have been derived from multiple, longitudinal studies. It's critical to acknowledge that protective factors are not the reverse or opposite of risk factors. Rather these are unique factors that mediate or moderate the effects of risk on to the individual.

Protective factors derived from the empirical literature include supportive relationships and attachment to prosocial adults and environmental reinforcements of appropriate coping strategies. At the individual level, a resilient temperament, accurate processing of cues, appropriate problem solving and sense of self-efficacy have been shown to act as protective mechanisms against risk.

One theoretical framework that incorporates the mechanisms of protective factors is the Social Development Strategy (SDS) (Catalano & Hawkins, 1996). The SDS is a guide for how families, schools, communities and peer groups can build protective environments for children. The SDS posits that by providing prosocial opportunities for involvement, skills for involvement and rewards or recognition for involvement, a child will increase his or her attachment to the corresponding positive socializing unit such as the family or classroom. Bonding to a prosocial entity creates a social control mechanism that discourages behaviors which go against the beliefs of the socializing units. Additionally, healthy standards and clear beliefs increase the likelihood that the child will develop healthy behavior.

There is a great deal of empirical evidence regarding risk and protective factors associated with adolescent problem behaviors that can be applied within the public health framework. We know that risk and protective factors exist in multiple domains ranging from the individual and peer to the larger environmental context of the school, neighborhood, and community. Many common risk factors predict diverse behavior problems. Additionally, research suggests that the more risk factors present, the greater the risk, and the

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greater the likelihood of problem behaviors. Further, risk factors are important or salient at different points in development. This suggests that a developmental continuum of prevention programmes from prenatal through adolescence would be appropriate. We know that protective factors reduce the effects of exposure to risk. The greater the level of protection, the less likelihood of problem behaviors. It is important to involve each socialization institution in enhancing protection as children mature from family, school, and through community.

In summary, communities and programme providers would be well served to develop a logic model that utilizes the public health framework. A logic model becomes a road map to specify the distal target of our efforts, in this instance, the reduction in juvenile delinquency. Additionally, it specifies the proximal targets for our intervention efforts, the risk factors that we seek to reduce and the protective factors that will be enhanced. By focusing on these proximal factors, the logic model guides us to select appropriate preventive intervention programmes which will target initially the proximal targets and in the long run prevent delinquency.

It's clear from the increasing levels of incarceration and high rates of violent crime in the U.S. that simply focusing on the treatment and rehabilitation end of the continuum of care spectrum is insufficient. Borrowing from the field of public health, prevention science as a paradigm has come of age. There now exists a significant body of research that identifies risk and protective factors associated with delinquency and other problem behaviors among adolescents. These factors provide us with modifiable targets for preventive interventions that

compliment treatment, as well as in some cases, these preventive efforts provide both a cost savings and greater efficiency in preventing negative life course trajectories.

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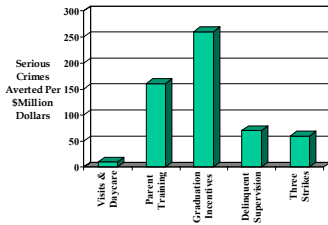
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APPENDIX

Cost-Effectiveness of Early Interventions Compares Favorably with that of Three Strikes



Public Health Approach

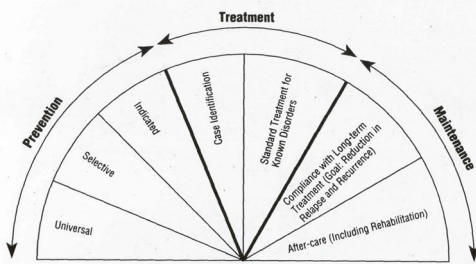
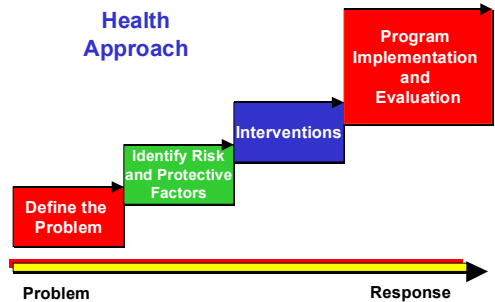


FIGURE 2.1 The mental health intervention spectrum for mental disorders.

Define the Problem

- What is it's prevalence?
- When does it begin?
- How does the problem develop?

Types of Prevention

- Universal
 - Example – Fluoride water treatment
- Selective
 - High risk children
- Indicated
 - Children with initial symptoms

Violent Offenders

- 12-14 years 10-15%
- Age 17 25-35%
- Age 21 10-15%

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Pattern of Delinquency

- Age 4-6 Aggressiveness & shy/withdrawn
- Age 7 Minor Problem Behavior
- Age 9-10 Moderately Serious Behavior
- Age 12 Serious Delinquency
- Age 14 First Contact with Court

Risk Factors Reside in Multiple Domains

- Community
- School
- Family
- Individual / Peer

Risk Factors for Heart Disease

- Example: Family history of heart disease
- Increase likelihood that disease will develop
- Risk factors are *associated* with heart disease
- Not 100% guarantee

What are Protective Factors?

- Buffer the effects of risk exposure
- Demonstrate results in multiple studies
- Demonstrate results in longitudinal studies

Research Base to Identify Risk Factors for Delinquency

- Multiple, longitudinal studies have identified *risk* and *protective* factors that predict delinquency, substance abuse, youth violence, dropout and risky sexual behaviors.

Adolescent Problem Behaviors

	Substance Abuse Delinquency	Teen Pregnancy	School Drop-Out	Violence
Risk Factors				
Community				
Availability of Drugs	☹			☹
Availability of Firearms		☹		☹
Community Laws and Norms Favorable Toward Drug Use, Firearms, and Crime		☹		☹
Media Portrayals of Violence				☹
Transitions and Mobility	☹	☹	☹	
Low Neighborhood Attachment and Community Disorganization				☹
Extreme Economic Deprivation	☹	☹	☹	☹

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Adolescent Problem Behaviors

Risk Factors	Substance Abuse	Delinquency	Teen Pregnancy	School Drop-Out	Violence
School					
Early and Persistent Antisocial Behavior	☐	☐	☐	☐	☐
Academic Failure Beginning in Late Elementary School	☐	☐	☐	☐	☐
Lack of Commitment to School	☐	☐	☐	☐	☐

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Protective Factors

- Family
 - Supportive relationships
 - Attachment to prosocial adults
- Environmental
 - Reinforce and support coping

Adolescent Problem Behaviors

Risk Factors	Substance Abuse	Delinquency	Teen Pregnancy	School Drop-Out	Violence
Family					
Family History of the Problem Behavior	☐	☐	☐	☐	☐
Family Management Problems	☐	☐	☐	☐	☐
Family Conflict	☐	☐	☐	☐	☐
Favorable Parental Attitudes and Involvement in the Problem Behavior	☐	☐	☐	☐	☐

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Protective Factors

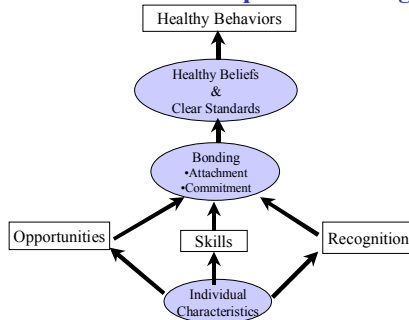
- Individual
 - Resilient temperament
 - Accurate processing of cues
 - Good problem solving
 - Sense of self-efficacy

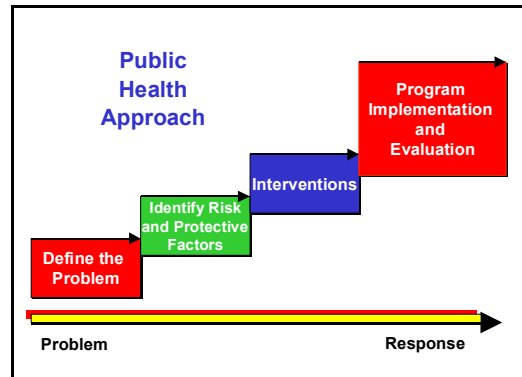
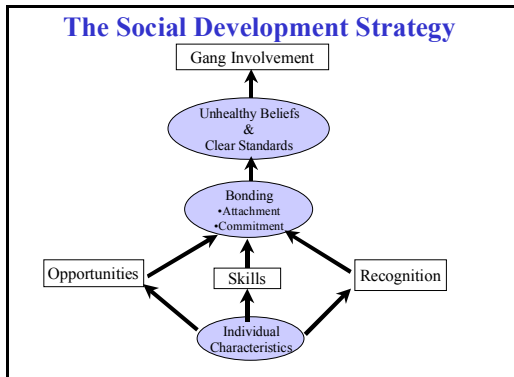
Adolescent Problem Behaviors

Risk Factors	Substance Abuse	Delinquency	Teen Pregnancy	School Drop-Out	Violence
Individual/Peer					
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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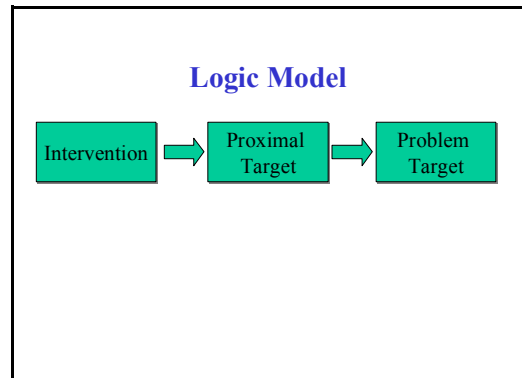
The Social Development Strategy





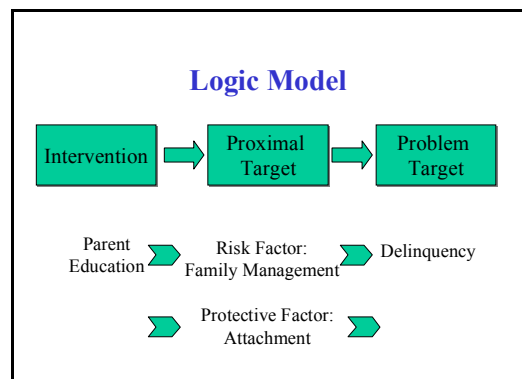
Generalizations About Risk and Protective Factors

- Risk and protective factors are found in multiple domains
- The more risk factors present, the greater the likelihood of problem behaviors
- Protective factors reduce the effects of exposure to risk



Generalizations Continued

- Common risk and protective factors predict diverse behavior problems
- Risk and protective factors show much consistency in effects across different groups
- Risk and protective factors should be used to target preventive action



Prevention Science Principles

- We have empirical evidence of risk and protective factors that should be targeted by our intervention efforts.
- Address risk and protective factors at appropriate developmental stage
- Intervene early