



**DRAFT STATEMENT**  
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**NATIONAL INSTITUTES OF HEALTH**  
**STATE-OF-THE-SCIENCE CONFERENCE STATEMENT**  
Preventing Violence and Related Health-Risking  
Social Behaviors in Adolescents  
October 13–15, 2004

*NIH consensus and state-of-the-science statements are prepared by independent panels of health professionals and public representatives on the basis of (1) the results of a systematic literature review prepared under contract with the Agency for Healthcare Research and Quality (AHRQ), (2) presentations by investigators working in areas relevant to the conference questions during a 2-day public session, (3) questions and statements from conference attendees during open discussion periods that are part of the public session, and (4) closed deliberations by the panel during the remainder of the second day and morning of the third. This statement is an independent report of the panel and is not a policy statement of the NIH or the Federal Government.*

*The statement reflects the panel's assessment of medical knowledge available at the time the statement was written. Thus, it provides a "snapshot in time" of the state of knowledge on the conference topic. When reading the statement, keep in mind that new knowledge is inevitably accumulating through medical research.*

1 **Background**

2           The National Institutes of Health (NIH) convened a State-of-the-Science Conference  
3 on Preventing Violence and Related Health-Risking Social Behaviors in Adolescents on  
4 October 13–15, 2004. The National Institute of Mental Health (NIMH) and the Office of  
5 Medical Applications of Research (OMAR) of the NIH were the primary sponsors of this  
6 meeting. The Agency for Healthcare Research and Quality (AHRQ), the Centers for Disease  
7 Control and Prevention, the National Institute on Alcohol Abuse and Alcoholism, the National  
8 Institute of Child Health and Human Development, the National Institute on Drug Abuse, the  
9 National Institute of Nursing Research, the National Library of Medicine, the Office of  
10 Behavioral and Social Sciences Research, the Substance Abuse and Mental Health Services  
11 Administration, the U.S. Department of Education, and the U.S. Department of Justice were the  
12 cosponsors.

1           AHRQ supported the NIH State-of-the-Science Conference on Preventing Violence and  
2 Related Health-Risking Social Behaviors in Adolescents through its Evidence-based Practice  
3 Center (EPC) program. Under contract to the AHRQ, the Southern California Evidence-based  
4 Practice Center (SC-EPC) and its partner, Childrens Hospital Los Angeles, developed the  
5 systematic review and analysis that served as one of the references for discussion at the  
6 conference. The National Library of Medicine in collaboration with the SC-EPC and its partner,  
7 Childrens Hospital Los Angeles, conducted the literature search for the systematic review.

8           This two-and-a-half-day conference at the NIH examined and assessed the current state  
9 of knowledge regarding adolescent violence and related health-risking social behavior and  
10 identified directions for future research.

11           Experts presented the latest research findings on risk and protective factors involved in  
12 the development of adolescent violence and related behaviors, and on interventions to reduce  
13 those behaviors. After a day and a half of presentations and public discussion, an independent  
14 panel weighed the available evidence and drafted a statement addressing the following key  
15 questions:

- 16           • What are the factors that contribute to violence and associated adverse health  
17 outcomes in childhood and adolescence?
- 18           • What are the patterns of co-occurrence of these factors?
- 19           • What evidence exists on the safety and effectiveness of interventions for violence?

- 1           • Where evidence of safety and effectiveness exists, are there other outcomes beyond  
2           reducing violence? If so, what is known about effectiveness by age, sex, and  
3           race/ethnicity?
  
- 4           • What are the commonalities among interventions that are effective, and those that are  
5           ineffective?
  
- 6           • What are the priorities for future research?

7           On the final day of the conference, the panel chairperson read the draft statement to the  
8           conference audience, and invited comments and questions. A press conference followed to allow  
9           the panel to respond to questions from the media.

## 10    **Introduction**

11           Violence affects all of us at some level and represents an issue of vital national and  
12           international importance. As upsetting as violence in general may be, the notion of our children  
13           engaging in significant violence is particularly distressing. While rates of adolescent violence  
14           have decreased from their peak levels of a decade ago, violent crime rates and consequences  
15           remain high and is substantially higher than in most industrial countries. Thus, adolescent  
16           violence is a public health issue of the highest level of concern with tremendous human and  
17           economic costs.

18           The field of adolescent violence prevention is complicated by the fact that it involves  
19           multiple scientific disciplines as well as a multitude of professional jurisdictions, including  
20           education, public health, medicine, biology, nursing, architecture and civil engineering,  
21           economics, social work, law enforcement, the legislature, anthropology, psychology, sociology,

1 criminology, and the judiciary system. Each of these constituencies has different  
2 conceptualizations of the problem, including different terminologies, different intellectual as  
3 well as financial stakes in its origins and putative solutions, and differing views on approaches to  
4 its resolution. And yet, to effectively address the concern, common perspectives, common  
5 research agendas, and common implementation plans must be developed.

## 6 **A Maturing and Promising Field**

7         The field of adolescence violence prevention has many strengths. The involvement of  
8 many highly productive creative investigators has allowed the field to advance considerably over  
9 the past two decades. Research has suggested distinct trajectories potentially leading toward  
10 violence with different intervention implications. Numerous developmental antecedents of  
11 violent and related behaviors and of risk constructs have been identified; this body of knowledge  
12 potentially informs intervention design and enables researchers to utilize more proximate  
13 outcomes (e.g., conduct disorder) than the more distal ultimate outcome of the presence or  
14 absence of violent behavior.

15         We can today identify a variety of interventions addressing children and youth across  
16 developmental and risk involvement spectrums that have evidence of effectiveness in the face of  
17 stringent criteria established for this designation.

18         In addition, current trends offer the capacity for future gains in this field, including the  
19 establishment of specific, articulated criteria for the categorization of intervention effectiveness  
20 and a system for evaluating and disseminating information on cost effectiveness. Although its  
21 potential has not yet been fully realized, the plethora of fields and disciplines involved in

1 adolescent violence prevention allows for extensive methodological and design cross-  
2 fertilization.

### 3 **Opportunities for Further Advances in the Field**

4           Great advances have already been made within the violence prevention research field;  
5 more substantive advances will be possible when this field successfully integrates advances in  
6 methodology, theory, and conceptualization from other related fields. Theory can be better used,  
7 as it has been in other fields, to develop specific intervention components and corresponding  
8 evaluations of putative determinants of intervention effect. Such efforts enable a progressive  
9 research development process in which one generation of studies informs the next iteration of  
10 intervention efforts. Likewise, as has been recognized in other disciplines, community-based  
11 effectiveness trials may require different experimental paradigms. To date, there has been but  
12 minimal incorporation of new developments in our understanding of the human genome and  
13 human brain development into the field of violence prevention. Much has been learned over the  
14 past decade about understanding behavior and behavioral change in differing ethnic and cultural  
15 groups; currently this growing knowledge base does not appear to be reflected in many violence  
16 prevention efforts. In addition, substantial evidence from other fields and a growing body of  
17 evidence within the field of violence prevention speak to the need to examine possible adverse  
18 effects as well as beneficial effects. Moreover, the violence prevention field, while admirably  
19 struggling with questions of bringing research to wider scale implementation, does not appear to  
20 have fully benefited from the experience of other research fields in this regard. Intervention  
21 efforts in other fields have been able to take advantage of potentially strategic moments such as  
22 might occur for violence prevention in the emergency room or at the police department with

1 victims and/or perpetrators of violence. Efforts to draw upon the research findings from these  
2 disparate fields will be hampered until a common research language has been developed and  
3 agreed upon—and data widely shared.

4 Even within the field of violence prevention, the extent to which the interventions have  
5 been based on significant epidemiologic and behavioral findings within the field remains  
6 opaque. For example, it is not clear whether the existing interventions have adequately  
7 recognized the recognition of differing risk trajectories and how interventions differ depending  
8 on whether youth are exhibiting early-onset violent behaviors that are likely to endure or the  
9 more transient, adolescent-limited violent behaviors.

#### 10 **Organization of the Remainder of This Paper**

11 The panel has responded to the six questions posed to us by the conveners of this  
12 conference. Our responses are intended to highlight the complexities of the field and to indicate  
13 our perceptions of the direction in which future gains can be made. The panel understands and  
14 wishes to state that responding to the directions implied in our comments will require the  
15 development of interdisciplinary investigative methods and innovative transdisciplinary  
16 interventions. Moreover, such a response will require realignment of funding sources for both  
17 research and for implementation of effective programs.

1 **1. What are the factors that contribute to violence and associated adverse health outcomes**  
2 **in childhood and adolescence?**

3 The term adolescent violence is used to encompass a broad spectrum of behaviors  
4 ranging from bullying at school to murder. While our greatest concern is about violent behaviors  
5 like aggravated assault, armed robbery, rape, and homicide, many studies focus on violence  
6 precursors such as delinquency, physical aggression, or antisocial behavior.

7 Identifying risk factors for adolescent violence allows us to better understand which  
8 adolescents are likely to become violent—and to learn how to reduce violence. In this context, a  
9 risk factor is any characteristic or behavior that is associated with an increased chance that a  
10 young person will become violent. Factors that reduce the chance of violence are called  
11 protective factors. Risk factors can be useful in identifying people who are at high risk of  
12 violence. It should be emphasized, however, that having a risk factor does not mean a person  
13 will be violent; it just means that he or she is more likely to be violent than a similar person  
14 without the factor.

15 Some risk factors are causal. That is, the presence of the factor leads directly to violent  
16 behavior. Knowing about causal risk factors helps point to how to intervene. A causal  
17 relationship is suggested if the risk factor precedes the outcome, if the association is strong, and  
18 consistent, and if there is a plausible underlying theory that predicts the relationship. To the  
19 extent that causal factors are modifiable, removing the risk factor will reduce the chance of  
20 violence. For example, it is accepted that cigarette smoking causes lung cancer. Smoking is a  
21 modifiable risk factor for lung cancer; when people stop smoking, their lung cancer risk drops.

1           Finally, risk factors can serve another function. When a risk factor reliably predicts the  
2 outcome of interest, the factor can be thought of as a proxy for the outcome. That is,  
3 interventions that can be shown to reduce the prevalence of the risk factor can be taken to reduce  
4 the chance of the outcome itself. Such proxy outcomes are useful when the outcome of interest is  
5 rare, removed in time, or difficult to measure. Identifying good proxy measures for adolescent  
6 violence would let researchers conduct more reasonably sized studies by focusing on more  
7 common outcomes that are violence precursors, such as physical aggression.

8           Reflecting the importance of the issue, there is a large body of literature regarding  
9 possible risk factors for adolescent violence. Because the studies come from multiple disciplines  
10 and employ a variety of study designs, it is difficult to summarize them succinctly. Moreover,  
11 the field is limited by a lack of consistent language in defining violence and in how putative risk  
12 factors are defined or measured. Further complications arise from the fact that the strength of a  
13 risk factor may change as an individual ages and may be modified by personal experience or  
14 changing social contexts.

15           Nonetheless, drawing on longitudinal studies in the United States and elsewhere,  
16 researchers have sought to identify consistent inferences.

17           A number of analyses have attempted to identify factors that show association with  
18 adolescent violence and related proximate outcomes like delinquency across research studies and  
19 populations using meta-analytic approaches. These analyses rely on data from longitudinal  
20 studies of children as they transition into adolescence and adulthood. The types of risk factors  
21 that have been examined commonly include characteristics of individual children and youth,  
22 their families, their schools, and their communities, reflecting both individual and ecological

1 perspectives. Some specific factors have consistently emerged as antecedent situations or  
2 characteristics that are associated with increased or decreased probabilities of violence. For  
3 example, being male has consistently been identified as a risk factor for violence because male  
4 youth are much more likely to engage in violent behavior than female youth. Analyses of other  
5 factors such as the race/ethnicity or parental socioeconomic status have produced ambiguous  
6 results.

7         There is evidence suggesting that adolescent violence develops along distinct trajectories,  
8 each with different natural histories and sets of risk and protective factors. For example, there  
9 appears to be an early-onset form of violence that seems to persist into adulthood as well as a  
10 later-onset and limited-duration form of adolescent violence. Regardless of the trajectory, risk  
11 and protective factors differ by developmental stage. Examples of individual level risk factors  
12 that are important in early childhood are children's involvement in fighting, crimes or status  
13 offenses, victimization, or substance use in childhood. At the family level, risk factors include  
14 inconsistent or harsh parenting and family conflict. In contrast, poor peer relations, involvement  
15 in gangs, lack of connection to school, and living in a violent neighborhood appear to be more  
16 important risk factors in adolescence.

17         Further research and analysis needs to focus on identifying the causal pathways between  
18 risk and protective factors and adolescent violence using longitudinal studies of representative  
19 samples of children and youth. Oversampling of areas with high prevalence of adolescent  
20 violence will be necessary to ensure adequate numbers of violent behaviors. Collecting  
21 contextual information about the survey respondents' school and neighborhood environments  
22 will greatly improve the utility of the survey. Promising areas for further research are identifying

1 factors associated with the observed decline in the late-onset form of adolescent violence and  
2 examining the possible association of violence in media and video games with behaviors.

3 **2. What are the patterns of co-occurrence of these factors?**

4 In the violence literature, the term co-occurrence often refers to the observation that  
5 adolescents who commit violent acts also tend to engage in other dangerous behaviors (e.g.,  
6 substance abuse, physical aggression, delinquency). These co-occurring behaviors should be  
7 considered comorbidities. In this section, we describe the state of the science on how various risk  
8 factors cluster.

9 In general, the identification of co-occurring predictive risk factors is complex. The  
10 concurrent presence of two or more risk factors as predictors of a particular outcome can be due  
11 to the factors' independent prediction of the outcome. It also may be due to the moderation of the  
12 effect of one risk factor by levels of another (synergism or interaction). For example, an  
13 aggressive child may only become violent in the presence of incompetent parenting skills.  
14 Competent parenting skills, such as monitoring, consistent discipline, and supportiveness, may  
15 reduce the likelihood of the child engaging in more violent antisocial behaviors. Furthermore,  
16 one risk factor may be mediated by the presence of another factor in the causal pathway toward  
17 serious violence. For example, when low socioeconomic status or low family income is studied  
18 alone, it appears to be an important risk factor. However, when other factors are taken into  
19 account in statistical models, socioeconomic status no longer appears important—suggesting that  
20 other factors explain the effect of socioeconomic status on violence.

1           In violence, there is even more complexity. Co-occurring factors can operate at multiple  
2 levels (individual, contextual) and may differ by subgroups of the population (by gender,  
3 ethnicity, urban/rural, cultural groups, developmental stage) and by type and severity of the  
4 violent outcome studied. In addition, identification of the risk factors may vary by the quality of  
5 the measurement and research design. For example, individual child characteristics predictive of  
6 serious violence must be understood in the context of family, peer group, school, and community  
7 contextual risk factors, which vary over developmental stages and in different settings. Analytic  
8 advances in statistical methodology (e.g., structural equation models with latent class variables,  
9 hierarchical linear models) aid the understanding of the complex dynamics of time-varying risk  
10 factor constructs during the life course of youth in studies of developmental trajectories. The  
11 research evidence presented to the panel was not adequate to untangle the dynamics of the co-  
12 occurrence of risk factors or their developmental trajectories. To understand these dynamics, we  
13 need more long-term cohort studies that measure a rich set of risk factors (from the individual to  
14 the contextual level) in diverse populations and that are analyzed using state-of-the-art statistical  
15 methods.

16 **3. What evidence exists on the safety and effectiveness of interventions for violence?**

17           The good news is that there are a number of intervention programs that have been shown  
18 in randomized controlled trials (RCTs) to reduce either arrests or violence precursors. The  
19 Blueprints for Violence Prevention prepared by the University of Colorado Center for the Study  
20 and Prevention of Violence used the following criteria to certify the effectiveness of programs  
21 designed to reduce substance abuse, delinquency, or violence: (a) experimental design (RCT),  
22 (b) statistically significant positive effect, (c) effect sustained for at least 1 year postintervention,

1 (d) at least one external RCT replicating the results, (e) RCTs adequately address threats to  
2 internal validity, and (f) no known health compromising side effects.

3 Two programs reducing arrests for violent crimes or violence precursors met all the  
4 criteria: Functional Family Therapy and Multisystemic Therapy. Functional Family Therapy is a  
5 short-term family-based prevention and intervention program to treat high-risk youth and their  
6 families. Participating youth and families attend 12 1-hour sessions (and up to 30 sessions for  
7 difficult cases) over 3 months. Program evaluations demonstrate reductions in rearrest rates,  
8 violent crime arrests, and out-of-home placements that were sustained over 4 years.  
9 Multisystemic Therapy provides community-based clinical treatment for violent and chronic  
10 juvenile offenders who are at risk for out-of-home placement. The average duration of treatment  
11 is about 4 months, which includes approximately 60 hours of therapist–family contact.  
12 Therapists with low case loads (4–6 families), available 24 hours per day, 7 days per week,  
13 provide the treatment. Program evaluations have demonstrated reductions in long-term rates of  
14 rearrest, violent crime arrest, and out-of-home placements. Positive results were maintained for  
15 nearly 4 years after treatment ended.

16 Six programs addressing arrest or violence precursors were classified as “effective with  
17 reservation;” that is, they only had internal rather than external RCT replications. Those  
18 programs include: Big Brothers Big Sisters (e.g., reduction in hitting); Multidimensional  
19 Treatment Foster Care (e.g., reduction in incarceration); Nurse Family Partnership (e.g.,  
20 reduction in arrests, crime); Project Towards No Drug Abuse (e.g., reduction in weapon  
21 carrying); Promoting Alternative Thinking Strategies (e.g., reduction in peer aggression); and  
22 Brief Strategic Family Therapy (e.g., reduction in conduct disorder, socialized aggression).

1 Safety, however, is much more difficult to assess because the intervention literature does  
2 not report systematically on safety (side effect) issues. Among the safety issues that need to be  
3 considered is one that was the subject of a presentation at this meeting, namely the hazard of  
4 “contagion.” When young people with delinquent proclivities are brought together, the more  
5 sophisticated can instruct the more naïve in precisely the behaviors that the intervener wishes to  
6 prevent. This provides a substantial objection to programs that aggregate violent youth rather  
7 than providing an individualized home and school-based treatment program. Clinicians must  
8 become aware of interactions between their clients on the way to and from program activities as  
9 well as on program premises (e.g., “hanging out” at the clinic, using common public  
10 transportation, creating friendship networks as the result of having met in the treatment  
11 program).

12 “Scare tactics” don’t work and there is some evidence that they may make the problem  
13 worse rather than simply not working. One of the hazards of the juvenile court system is the  
14 impact of having a record on the child’s subsequent life course. Such evidence as there is offers  
15 no reason to believe that group detention centers, boot camps, and other “get tough” programs do  
16 anything more than provide an opportunity for delinquent youth to amplify negative effects on  
17 each other. The Centers for Disease Control and Prevention has reviewed evidence that indicates  
18 that laws increasing the ease of transferring juveniles to the adult judicial system are  
19 counterproductive and lead to greater violence in the juveniles moving through the adult systems  
20 without deterring juveniles in the general population from violent crime.

1           In other fields, it has been shown that identifying children as being at risk has its own  
2 hazards. Labeling a child may lead to a self-fulfilling prophecy. Researchers must be certain that  
3 similar problems do not happen here.

4           Ineffective programs may not harm the participants directly (although some do) but they  
5 may have an important toxic effect nonetheless; namely the “opportunity cost” of funds misspent  
6 on an unsuitable program that might have been spent on an effective one.

7           There is insufficient attention to secular effects and ecological change and their  
8 consequences for life trajectories. What is the impact of an intervening economic recession, of  
9 the dismantling of a housing project, of gentrification of the neighborhood? Because secular  
10 change is so significant in modern life, this becomes a significant problem for longitudinal  
11 studies. That is, the life circumstances when youngsters enter a study may have changed so  
12 greatly by the time they enter the age of risk that the findings no longer apply to the new  
13 generation of youngsters. This is an argument for employing accelerated longitudinal designs in  
14 epidemiologic studies; that is, entering cohorts of different age (e.g., 1 year, 4 years, 7 years) at  
15 the beginning of the study so that after a follow through of 4 years, one can have a sample  
16 extending from 1 to 21 (instead of waiting 21 years).

17           The difficulty of doing sophisticated meta-analytic studies of intervention outcomes is  
18 compounded by the failure to collect similar data and to report them in a standard fashion.  
19 Indeed, no meta-analysis of individual-level data has ever been done in the field of violence. We  
20 strongly recommend that the Federal agencies concerned with violence (U.S. Department of  
21 Health and Human Services, U.S. Department of Labor, U.S. Department of Justice, and U.S.  
22 Department of Education) jointly convene a meeting of leading investigators with the hope of

1 achieving consensus on common data elements to make such comparisons possible. Investigators  
2 would obviously be free to collect additional data but all studies would collect at least these  
3 elements. Furthermore, all data sets ought to be deposited at a common site, established, for  
4 example, by the National Library of Medicine, so that the data can be re-examined through  
5 pooling of data by all investigators (with proper controls for protecting privacy and for  
6 guaranteeing the rights of the individual investigator). In addition, a national adolescent violence  
7 registry modeled on the National Cancer Institute's Surveillance, Epidemiology, and End Results  
8 (SEER) program should be considered. (SEER is a population-based registry of cancer  
9 incidence, treatment, and outcomes.)

10 To promote the translation of research studies in the service settings, there is a need for  
11 additional economic research on cost effectiveness. One such project has been undertaken by the  
12 Washington State Institute for Public Policy. This economic analysis attempts to make available  
13 data on the cost savings produced by an intervention in comparison to the cost of the intervention  
14 itself. This makes it possible both to discard ineffective services and costly services that bring  
15 only a small benefit and, in principle, to redirect the amiable funds toward cost-effective  
16 interventions. Many effective programs never reach the community. There needs to be more  
17 emphasis on the implementation and dissemination of these programs.

18 In both theory-based research and bringing programs to scale, it is necessary to  
19 emphasize the [fidelity] in program implementation and insist on program accountability by the  
20 groups carrying out the intervention. Successful programs require repeated review and careful  
21 supervision to maintain the fidelity of the intervention and the enthusiasm of the interveners.  
22 Indeed, we believe that continuing education, supervision, and technical assistance for staff, as

1 well as periodic surveys of outcomes to be fed back to staff, are important to maintain program  
2 morale.

3         Because of the nature of the problem studied, diversity among researchers and  
4 implementers is of particular importance. Federal agencies, universities, and funders must  
5 develop programs to increase diversity among investigators and service-delivering personnel.  
6 This is not an equal opportunities employment maneuver to create jobs, but is essential to the  
7 intellectual integrity of the field itself. A more diverse group of researchers (especially a group  
8 more reflective of the populations that need service) will more likely take into account cultural  
9 factors that characterize those diverse populations and may gain easier entree into those  
10 communities. That is, a more diverse set of investigators will lead to higher quality research.

11         The evidence presented makes clear the role of neighborhood and community (in  
12 addition to individual and family factors) in protecting against or generating antisocial behavior.  
13 What is missing is a substantial body of research directed at changing neighborhoods to enhance  
14 their role in protecting young people. We have in mind the notion of “collective efficacy” as a  
15 constructive factor in economically deprived neighborhoods that reduces delinquent acts in  
16 contrast to similarly deprived neighborhoods without a similar sense of efficacy. For example,  
17 when adults intervene to separate children in a fight or to stop someone painting graffiti or to ask  
18 a child why he is out of school during school hours, this identifies an effective neighborhood that  
19 also demands trash collection, police services, and street repair—and has less youth crime. We  
20 were struck by the evidence that moving children out of high-risk neighborhoods is associated  
21 with a reduction in delinquent behavior. How often does this work? How feasible is it as a public

1 policy measure? Are there negative side effects for the child or family? What is the response of  
2 the receiving neighborhood? These questions merit closer examination.

3         There is a long history of research attempting to identify the effects of violence in the  
4 media. Because television is but one variable in a complex set of life circumstances, it has been  
5 difficult to demonstrate long-term as opposed to short-term effects. There is even more reason  
6 for concern now that violent video games and music videos that exalt macho lifestyles have been  
7 added to the steady diet of violence on television. The relationship between media and violence  
8 is a critical area for investigation.

9         The barriers to implementing clearly effective programs inevitably include the resistance  
10 of the individuals operating ineffective programs to have their institutions closed and their jobs  
11 abolished. Furthermore, despite the evidence for intensive multisystem therapy, communities are  
12 probably apprehensive at having delinquent youngsters treated in their midst as opposed to  
13 segregating them in detention centers that have the appearance of being safer and keep the  
14 children invisible.

15         A member of the audience working in a trauma center suggested that such settings  
16 provide opportunities for intervention in an escalating war of violence. Typically, trauma centers  
17 deal with the emergency itself and have no staff or spaces for providing ongoing care once the  
18 immediate crisis has been resolved. Federal agencies might encourage research on patients  
19 identified at trauma centers and systems for providing services to the youth, the family, and the  
20 perpetrators on a rapid response time basis.

1 **4. Where evidence of safety and effectiveness exists, are there other outcomes beyond**  
2 **reducing violence? If so, what is known about effectiveness by age, sex, and**  
3 **race/ethnicity?**

4 Successful prevention programs influence other types of outcomes besides the reduction  
5 of violence. Interventions that aim to reduce violence invariably have other outcomes on the way  
6 to that terminal objective, e.g., reducing physical aggression. Interventions that seek to decrease  
7 problematic behavior and violence typically set out to do so by reinforcing elements thought to  
8 strengthen subsequent positive behaviors. These include: parenting effectiveness (e.g.,  
9 communication style, behavior management, goal setting, problem solving, and monitoring);  
10 individual coping on the part of the child/adolescent (e.g., impulse control, anger management,  
11 decreased risk taking, and communication skills); academic achievement (e.g., school readiness,  
12 organization skills, good learning habits, and reading); peer relations (e.g., conversational and  
13 other social skills); and the social climate of schools (e.g., classroom and playground  
14 management, parent–teacher collaboration). As a whole, prevention programs have had the most  
15 impact when addressing conduct problems and reducing risk behaviors (e.g., alcohol/drug use,  
16 smoking, and delayed sexual initiation). More research on prevention programs by race/ethnicity  
17 and gender is indicated.

18 Age has demonstrated importance in shaping prevention strategies. Effective programs  
19 conceptualize interventions and the outcome measures in terms of specific and appropriate  
20 developmental stages. Indeed, some studies deliberately focus on developmentally important  
21 transitions, e.g., entry into first grade or the moves to middle school and high school. Age and  
22 developmental stage are important in predicting serious delinquency or violence. Predictors of

1 eventual delinquency in younger children may not be the same as predictors of delinquency in  
2 older children. Developmentally appropriate family management will vary from primary school  
3 through middle and high school. Direct supervision is possible in the younger grades, but  
4 monitoring when the adolescent has a driver's license is more likely to take the form of teen  
5 check-ins. Age has regularly been equated with developmental stage, but that association cannot  
6 be assumed to hold if the child/adolescent is substantially developmentally challenged.

7         A number of effective interventions have been sensitive to how circumstances vary by  
8 race/ethnicity, e.g., Nurse Family Partnership and Multisystemic Therapy. More attention needs  
9 to be paid to adapting intervention protocols for diverse communities. Given the demographic  
10 changes in many neighborhoods across the Nation, there is a compelling need to implement and  
11 conduct intervention research in different racial and ethnic communities. Over the past three  
12 decades, the United States has witnessed a radical change in its racial and ethnic profile—much  
13 of it due to immigration of people from Latin and Asian countries. Since racial and ethnic groups  
14 may differ in the cultural meanings they ascribe to various facets of life, there is a compelling  
15 need for prevention science to incorporate mechanisms that make program elements responsive  
16 and appropriate for diverse communities. For example, while parenting style may be an  
17 important construct that helps prevent violence across groups, parents and children from some  
18 families may derive different meanings from specific behaviors (e.g., eye contact). Without  
19 attending to these cultural differences, inappropriate assessments will be made about the  
20 behavior. Moreover, more intervention research in diverse communities may focus on different  
21 targets of intervention. Gangs, for example, are responsible for a significant proportion of violent  
22 behavior. Since racial and ethnic minorities comprise a large segment of the gang population, it  
23 seems likely that more programmatic research is needed to intervene with gangs to prevent

1 violence. We are in urgent need of population-based studies that deal with culture and  
2 race/ethnicity in the detail they demand. That is, children are not “Hispanic American” but  
3 Puerto Rican, Cuban, Dominican, Mexican American, etc. The label Asian American is a generic  
4 term that conceals as much as it reveals about Japanese Americans, Chinese Americans, Korean  
5 Americans, and Vietnamese Americans. In a similar way, within each of these groups, the  
6 children of concern are not “immigrants” as a generic category, but first-, second-, or third-  
7 generation immigrants.

8 Gender is a strong predictor for violence in that males are more likely to commit serious  
9 violence as they age; however, this variable is one that underscores the need to continue to ask  
10 questions about whether findings in one decade hold in other times, as societal norms change.  
11 There is evidence that the ratio of male to female violence has changed in the last couple of  
12 decades, with the gap in gendered violence rates closing by half. The rarely studied social  
13 construction of gender roles is likely to be important in understanding the dynamics of youth  
14 violence, particularly in fleshing out why being male is a risk factor and females are increasingly  
15 juvenile offenders.

16 **5. What are the commonalities among interventions that are effective, and those that are**  
17 **ineffective?**

18 At one time there was a suspicion that when it came to developing programs to prevent  
19 violence, nothing worked. Today we know that efficacious programs exist. The task is to identify  
20 those efficacious programs, to separate them from programs that do not work or even harm, and  
21 to discover the mechanisms that underlie those treatments that are successful in preventing  
22 violence. That is, the task is to identify common features and components of effective versus

1 ineffective programs. In the panel’s opinion, the violence research field has not yet organized  
2 specific research efforts (i.e., across program component analyses) sufficient to do this.

3 A good start, however, has been made. The materials prepared for the panel in advance  
4 and presentations made to the panel reveal that successful interventions tend to share a  
5 constellation of characteristics. In particular, the information available allows us to identify the  
6 following common characteristics of successful programs.

- 7 • They are derived from sound theoretical rationales.
- 8 • They address strong risk factors.
- 9 • They involve long-term treatments, usually lasting a year and sometimes much  
10 longer.
- 11 • They work intensively with those targeted for treatment and often use a clinical  
12 approach.
- 13 • They follow a cognitive/behavioral strategy.
- 14 • They are multimodal and multicontextual.
- 15 • They focus on improving social competency and other skill development strategies  
16 for targeted youth and/or their families.
- 17 • They are developmentally appropriate.
- 18 • They are not delivered in coercive institutional settings.

- 1 • They have the capacity for delivery with fidelity.

2 There are other interventions (for which this list is not as appropriate) that also appear to  
3 reduce subsequent problem behavior. The most prominent, perhaps, is dramatically changing  
4 neighborhood environments, as in the Moving to Opportunity intervention. In addition, any  
5 program that increases educational attainment and decreases school dropout rates is likely to  
6 have the side payoff of reducing violence among those who are helped.

7 We should note that currently, few of the interventions that appear effective in reducing  
8 violence (Head Start-type programs being the notable exception) have been brought to scale (i.e.,  
9 moved from demonstration programs to widespread implementation). Ultimately, a capacity to  
10 scale will be necessary for any program to have a substantial long-term impact on reducing  
11 adolescent violence. This too will require research and experimentation, although there is a body  
12 of knowledge on bringing health and other initiatives to scale that researchers in violence  
13 prevention can and should draw on.

14 Turning to programs that do not work, there are many flaws in both theory and execution  
15 that can cause an intervention to fail. We have been presented with evidence that identifies some  
16 characteristics of programs that have been shown to be unsuccessful, as well as factors that make  
17 prospects for success poor. Some are [the obverse] of factors that lead to success, such as the  
18 failure to address strong risk factors, limited duration, and developmentally inappropriate  
19 interventions. Others include:

- 20 • Programs that aggregate high-risk youth in ways that facilitate contagion (These are  
21 most likely to have harmful, iatrogenic effects.)

- 1 • Implementation protocols that are not clearly articulated
- 2 • Staff who are not well supervised or held accountable for outcomes
- 3 • Programs limited to scare tactics (e.g., Scared Straight)
- 4 • Programs limited to toughness strategies (e.g., classic boot camps)
- 5 • Programs that consist largely of adults lecturing at youth (e.g., classic D.A.R.E.)

6 In addition to these findings that appear to be supported by good evidence, there are  
7 aspects of interventions that have been little studied but that may be important contributors to the  
8 effectiveness or ineffectiveness of programs. One dimension that merits more attention is the  
9 cultural appropriateness of programs and the cultural competency of the interveners. Another is  
10 greater involvement of relevant communities in establishing goals for, and contributing to, the  
11 design of interventions. There also is traditional punishment in juvenile facilities. We did not  
12 review this area in depth, but there appears to be little evidence of strong deterrence, and there is  
13 some evidence that youth with records of incarceration, or indeed juvenile court involvement,  
14 are later handicapped in finding employment with possible criminogenic consequences. At the  
15 same time, there may be crime-reducing benefits from incapacitation through incarceration, but  
16 as with deterrence this is not an area we have delved into deeply.

17 In searching for commonalities among programs that work and flaws in those that do not,  
18 one must bear in mind that the effectiveness of treatments can be highly context dependent.  
19 Thus, a set of common characteristics that predict intervention effectiveness in one context (e.g.,  
20 among adolescents or with respect to primary interventions) may not predict effectiveness in

1 another context (e.g., among first-graders or with respect to tertiary interventions). It may, of  
2 course, also be the case that context itself is a factor that predicts intervention effectiveness. This  
3 has several important implications. First, there is unlikely to be a universal set of necessary or  
4 sufficient factors for successful treatment. Rather, what is necessary or sufficient will vary by the  
5 context in which treatments are administered, the group targeted, and the aims of the treatment.  
6 Second, research must proceed in different contexts to be sure that what works in one setting will  
7 work in others. Third, time itself is a context, and as time brings changes (e.g., proliferation of  
8 HIV, the destruction of high-rise public housing developments, the introduction of violent video  
9 games, or the spread of cell phones), programs that have worked may need to be adjusted. Thus,  
10 monitoring of program effectiveness must be ongoing. Finally, interventions cost money. Even if  
11 a program works, it may not be the most cost-effective way to achieve results. In particular,  
12 some aspects of a program may be important to its success while others are not. Even successful  
13 programs can be improved or made more cost effective as we come to better understand what  
14 ingredients are essential to their success and what are peripheral.

## 15 **6. What are the priorities for future research?**

- 16 • A research agenda needs to be developed that shows whether reductions in proxy  
17 measures (e.g., physical aggression, delinquency) reliably translate into reductions in  
18 actual violence.
- 19 • Federal agencies concerned with violence (U.S. Department of Health and Human  
20 Services, U.S. Department of Labor, U.S. Department of Justice, and U.S.  
21 Department of Education) should jointly convene a meeting of leading investigators  
22 with the aim of achieving consensus regarding a taxonomy for violent behavior and a

- 1 minimal common data set to make possible the collection and reporting of  
2 standardized data.
- 3 • The Federal Government should establish a population-based registry of adolescent  
4 violence modeled on the National Cancer Institute’s Surveillance, Epidemiology, and  
5 End Results (SEER) program.
  - 6 • In order to broaden and widen the horizons of research, Federal agencies, private  
7 foundations, and universities should increase the diversity of students in research  
8 training programs.
  - 9 • Given the role of neighborhood and community in protecting against or generating  
10 antisocial behavior, there is an urgent need for research directed at changing  
11 neighborhoods to enhance their role in protecting young people.
  - 12 • More long-term cohort studies that measure a rich set of risk factors (from the  
13 individual to the contextual level) in diverse populations and that are analyzed using  
14 state-of-the-art qualitative and statistical methods are needed to untangle the  
15 dynamics of the co-occurrences of risk factors. Potential biologic markers also should  
16 be explored.
  - 17 • Systematic procedures for adapting established intervention protocols need to be  
18 developed for diverse communities with special attention to race, ethnicity, culture,  
19 and immigrant status (e.g., language issues).

- 1       • Across-program component analysis should be carried out to develop a more rigorous  
2       understanding of the mechanisms that underlie successful and unsuccessful  
3       interventions.
  
- 4       • More research on the gendered aspect of violence is needed. In particular, we need  
5       research targeting women, given the growing percentage of women in violence.
  
- 6       • Programs should be evaluated in different contexts to be sure that aspects of  
7       successful demonstration programs have external validity.
  
- 8       • More dissemination research is needed so that programs that work can be  
9       implemented more effectively in community settings. Successful programs need to be  
10      monitored in an ongoing fashion to ensure their effects are maintained as  
11      circumstances change over time.

## 12    Conclusions

13       In conclusion, we highlight the following findings and recommendations:

- 14      • Violence affects all of us at some level and represents an issue of vital national and  
15      international importance.
  
- 16      • Some interventions have been shown by rigorous research to reduce violence  
17      precursors, violence, and arrest. However, many interventions aimed at reducing  
18      violence have not been sufficiently evaluated or proven effective, and a few widely  
19      implemented programs have been shown to be ineffective and perhaps harmful.

- 1           • Programs that seek to prevent violence through fear and tough treatment do not work.  
2           Intensive programs that aim at developing skills and competencies can work.
- 3           • Interventions to reduce violence may be context dependent. Research must proceed in  
4           varying contexts and take account of local culture.
- 5           • There is a need for greater diversity among investigators involved in violence  
6           prevention research. Universities and funding agencies should make improving the  
7           situation a priority.
- 8           • We encourage funding sufficient to promote the dissemination of violence prevention  
9           programs that have been shown to be effective through rigorous RTC research.  
10          Funding must include support for research, and monitoring must continue as these  
11          programs are more widely implemented.

12

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