

PEACE SIGNS: A Sustainable Violence Prevention Collaboration Between Managed Care and School Health Programs

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Introduction

The names of once-obscure American towns—Littleton, Colorado; West Paducah, Kentucky; and Santee, California—remind us of the unprecedented tragedies that can occur if angry kids are not redirected. Our children are disproportionately the targets of violence, which has now become the second leading cause of death for children 10 to 19 years of age.¹ The Office of the US Surgeon General and the Centers for Disease Control and Prevention (CDC) have proclaimed violence a major threat to public health.

Localizing the consequences of violence as a public health threat is not difficult. In a 1999 CDC study of at-risk youth, 14% of San Diego County adolescents surveyed stated

that they carried a weapon to school; 34.9% reported being involved in a physical altercation; and 4.8% reported that they required medical attention for injuries sustained in an altercation during the previous year.² Violence in adolescents does not exist in isolation; instead, violence proves to be as-

sociated with school failure,³ drug use, criminal behavior,⁴ and acting out sexually.⁴ In addition, the Adverse Childhood Experiences (ACE) Study carried out at Kaiser Permanente (KP) has established a link between adverse childhood events and adult health status.⁵⁻⁷ This work adds a developmental tra-

jectory to the literature showing a clear connection between pediatric behavioral problems and frequent physician visits⁸⁻¹⁰ as well as between these behavioral problems and high utilization of general community resources.^{11,12} Although various services are directed toward troubled adolescents,

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Table 1. Sponsor-Participants in the San Diego County School Health Improvement Program (SHIP) for research on adolescent violence and maladjustment

Corporate Sponsor-Participant	Representative
Blue Cross of California	Robin Johnson
Community Health Group of California	Martha Jazo-Bajet
Kaiser Foundation Health Plan	Neil Alex John Fontanesi
Sharp Advantage (Medi-Cal)	Tom Stubberud
University of California, San Diego Healthcare	Sherri Gould
University of California, San Diego, Community Pediatrics	Howard Taras
Universal Care (California)	Rosemary Pinpin
Chula Vista Elementary School District	Dale Parent
The City of San Diego Schools	Nancy Donley Barbett Wood
San Diego Kids Health Assurance Network	Elena Quintanar

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these interventions occur after the maladjustments become clinically significant—a time when the likelihood of rehabilitation is uncertain.¹³ In addition, the cost of such intervention is high: During the same period covered by the 1999 CDC Youth Risk Survey, the KP San Diego Service Area spent more than \$2.8 million for psychotropic medication¹⁴ and referred children and adolescents to the Department of Psychiatry at a rate substantially higher than that predicted on the basis of membership growth.¹⁵ Paralleling the KP experience, the San Diego County Department of Mental Health spent more than \$57 million for treating troubled youths during this same period.¹⁶

Both plays model positive conflict resolution, are developmentally targeted, and demonstrate how to clarify intentions of others.

Instead of waiting for these patterns of maladjustment to crystallize, a coalition of health plans and school health personnel operating in San Diego County (the School Health Improvement Program, or SHIP) sought to build on an emerging body of research suggesting that adolescent violence and maladjustment have developmental roots in early childhood experience. SHIP (Table 1) includes many local health plans, school districts, the San Diego County Department of Health Services, and

local members of the American Academy of Pediatrics; all of these groups are directly affected by the rate of adolescent maladjustment in the community.^{17,18} SHIP recognized that implementing a successful violence prevention program required four essential components: 1) a theoretical framework to guide development; 2) a memorable, effective educational format that would provide a rallying point for unifying coalition efforts; 3) a “mapping” of available resources; 4) and a definition of program goals that reflected participants’ needs in a measurable way. Startup funds of \$110,000 were generously provided by the Kaiser Permanente Garfield Foundation.

The theoretical framework chosen was attribution theory, which for aggressive action describes a developmental sequence of emerging violent tendencies in terms that are amenable to change. To explain aggressive actions, attribution theory proposes that some children incorrectly attribute negative or hostile motives to the actions of others. This presumed negative intention affects the child’s perceived response alternatives and creates a negative interaction cycle of rejection and isolation.¹⁹ Early behavioral manifestations include feelings of sadness and isolation,

expressions of aggression, poor academic functioning, and somatic complaints.²² Attribution theory also states that social interaction is learned by “doing” (procedural learning) and not by “listening” (didactic learning) and thus offering a direction for intervention.²³

Research has also shown that a successful program requires a curriculum that teaches use of clarifying statements, provides consistent reinforcement of positive messages, highlights role models, involves parents, and includes peer-mentors.²⁴⁻²⁹ To maximize coalition involvement and to unify the messages delivered to children requires a highly visible, visceral, memorable rallying point, which was accomplished using an interactive theater project produced by the KP Educational Theater Program (ETP). The theater consisted of two productions, Professor Bodywise (for children in grades K-3) and PEACE Signs (for children in the fourth through sixth grades). Both plays model positive conflict resolution, are developmentally targeted, and demonstrate how to clarify intentions of others. The value of interactive theater as a procedural learning tool has been documented by authors such as Pellegrini³⁰ and Fink³¹ and is particularly well described in the *Critical Links* monograph.³² The ETP

productions were so highly valued that they proved a powerful incentive for schools to agree to participate and to devote the resources necessary for the total program. The ETP productions’ interactive modeling of conflict resolution strategies and methods fits the procedural learning format suggested by attribution theory.

Setting

Eighteen elementary schools in the San Diego Unified School District were included in the study. Each of nine control schools was matched with an intervention school with similar socioeconomic characteristics. Each school pair (“cluster”) was administratively anchored to a local high school, was geographically contiguous, and had rapidly escalating populations of culturally diverse, school-aged children, primarily from lower socioeconomic families, living in multifamily housing. Between 75% and 100% of the students in each cluster were eligible for free or reduced-cost lunch.³³ All 18 schools had preexisting violence prevention programs whose curricula was either supplied by the school district or was chosen by the individual school’s administration. The KP Southern California Institutional Review Board approved the protocol. Overall participa-

... violence prevention programs can reduce health care utilization.

Table 2. Key elements of violence prevention programs

Curriculum teaching the use of clarifying statements in conflicts
Consistent reinforcement of positive messages
Highlighting role models
Parent involvement
Peer mentoring program

Table 3. Activities performed by coalition and school personnel

KP Health Plan	Schools
Program coordination	Curriculum
Educational theater group	Peer mediation
Member health education	Parent programs
Community involvement	Staff liaison
Incentives	Student assistance programs
Technical assistance	Student referrals

tion in the project was authorized by joint Memorandums of Understanding between the San Diego Unified School District and participating health plans.

Methods

The coalition evaluated each participating school for presence or absence of key elements identified in violence prevention research (Table 2). In schools where these elements were missing, the coalition program supplied technical assistance, curricula, and incentives. Curricula provided in classrooms were linked with the two interactive theater presentations by using as clarifying messages the same phrases used in the plays. Incentives and promotional material included items such as vests (for children selected by schools to participate in “peace patrols”) and T-

shirts emblazoned with the *PEACE Signs* logo. Technical assistance included helping school staff to initiate peer mediation programs; providing health educators and mental health professionals to attend four “parent nights” to discuss principles of conflict resolution; distribution of resource and referral information for students in need of assistance; and teacher preparation for implementing lessons in conflict resolution. The coalition also prepared newsletter articles released to parents throughout the school year to reinforce and parallel the conflict

resolution messages their students were receiving, Division of labor between schools and nonschool coalition members is listed in Table 3.

Data Collection and Analysis

A pre-post control group design was used to compare each of the nine intervention schools with the nine case-controlled schools. As the largest health plan in San Diego county—its membership includes 103,000 insured school-aged children—and with tight integration between its providers and the Health Plan, KP was able to track on an aggregate basis the health care utilization patterns of its members within the study schools. In addition, data on daily attendance, school nurse utilization, disciplinary efforts, and scores on a State of California competency test were obtained on an aggregate basis for both the intervention and control schools. Confidentiality of each Health Plan member and student was maintained consistently. The two-sided t test was used to compare control and intervention schools in regard to health care

utilization, school attendance, and disciplinary suspensions.

Results

Table 4 shows that the program achieved a high acceptance rate among teachers and parents; and a substantial percentage of both continued to use the thematic messages contained in the program. Table 5 shows outcome measures; a statistical test of the difference between pre-post health care utilization comparing the intervention and control groups was significant at intervention but not at the control sites ($p = .01$).

Discussion

Underscoring the idea that violence is a public health issue, this study found that violence prevention programs can reduce health care utilization. Such utilization by KP Health Plan members in the intervention schools decreased by 19%. School attendance was unaffected by the program, but the cumulative number of days of suspension decreased by 12% in the intervention schools while increasing by 25% in the control schools.

Table 4: Process evaluation results

90% of teachers rated the program either excellent or good
96% of parents rated the program either excellent or good
95% of the students reported that they learned “a lot”
93% of teachers reported that they were using <i>PEACE Signs</i> “messages” for three months after viewing the theater presentations
87% of teachers reported seeing the children using <i>PEACE Signs</i> “messages” on the playground three months after viewing the theater presentations

Table 5: Outcome measures for 632 students at intervention sites and for 508 students at control sites before and after the study

	Intervention sites (n = 9)			Control sites (n = 9)		
	Before	After	Change	Before	After	Change
Total no. of visits to health plan	1249	1013	-19% ^a	1028	1006	-2%
Mean no. of visits per school	138.7	112.5	-19% ^a	114.2	111.7	-3%
Mean no. of visits per member per year	1.9	1.6	-16% ^a	1.9	1.8	-6%
Total no. of days absent	6716	6700	-1%	9667	9682	+1%
Mean no. of absences per school	1074	1075	0%	746	744	0%
Total no. of days of suspension	377	334	-12% ^a	163	205	+25.8%

^a Significant at the 0.05 level comparing before and after within-group data.

Extrapolating the change in mean number of health visits per member for the age cohort targeted by this intervention to the 34,000 KP San Diego Health Plan members in this age category would indicate a net savings of approximately 10,200 health visits per year. The incremental cost of the intervention per child was \$15.10, whereas reducing the number of health visits saved \$22.40 per child. The small sample size precludes any valid societal cost-benefit analysis, but the cumulative effects of the program—decreases in health care utilization and in disciplinary procedures—suggest that the program is fiscally sound and cost-effective. For these reasons—in addition to the power of theater as a teaching tool, demonstrator of social skills, and instrument of acculturation—now is the time to use theater for health promotion. ♦

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References

1. United States. National Center for Injury Prevention and Control. Youth violence. Atlanta (GA): National Center for Injury Prevention and Control; 2003. Available from: www.cdc.gov/ncipc/factsheets/yvfacts.htm (accessed November 4, 2003).
2. Kann L, Kinchen SA, Williams BI, et al. State and Local YRBSS Coordinators. Youth Risk Behavior Surveillance System. Youth risk behavior surveillance—United States, 1999. *MMWR CDC Surveill Summ* 2000 Jun 9;49(5):1-32.
3. Tesiny EP, Lefkowitz MM, Gordon NH. Childhood depression, locus of control, and school achievement. *J Educ Psychol* 1980 Aug;72(4):506-10.
4. Harrington R, Fudge H, Rutter M, Pickles A, Hill J. Adult outcomes of childhood and adolescent depression: II. Links with antisocial disorders. *J Am Acad Child Adolesc Psychiatry* 1991 May;30(3):434-9.
5. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med* 1998 May;14(4):245-58.
6. Felitti VJ. The relation between adverse childhood experiences and adult health: turning gold into lead. *Perm J* 2002 Winter;6(1):44-7.
7. Williamson DF, Thompson TJ, Anda RF, Dietz WH, Felitti V. Body weight and obesity in adults and self-reported abuse in childhood. *Int J Obes Relat Metab Disord* 2002 Aug;26(8):1075-82.
8. Jaquess DL, Finney JW. Previous injuries and behavior problems predict children's injuries. *J Pediatr Psychol* 1994 Feb;19(1):79-89.
9. Katon W, Sullivan M, Walker E. Medical symptoms without identified pathology: relationship to psychiatric disorders, childhood and adult trauma, and personality traits. *Ann Intern Med* 2001 May 1;134(9 Pt 2):917-25.
10. Zuckerman B, Moore KA, Gleit D. Association between child behavior problems and frequent physician visits. *Arch Pediatr Adolesc Med* 1996 Feb;150(2):146-53.
11. Cunningham PJ, Freiman MP. Determinants of ambulatory mental health services use for school-age children and adolescents. *Health Serv Res* 1996 Oct;31(4):409-27.
12. Nader PR, Ray L, Brink S. The new morbidity: use of school and community health care resources for behavioral and social-family problems. *Pediatrics* 1981 Jan;67(1):53-60.
13. Harrington R, Whittaker J, Shoebridge P, Campbell F. Systematic review of efficacy of cognitive behaviour therapies in childhood and adolescent depressive disorder. *BMJ* 1998 May 23;316(7144):1559-63.
14. Kaiser Permanente of California. Pharmacy Analytical Services. Pharmacy data. (accessed on 12/99).
15. Kaiser Permanente of California. Outpatient Appointment Scheduling. (accessed on 12/99).
16. Report from HEARTBEAT, San Diego County Department of Health. Department of Mental Health, 1997 Regional report.
17. Taras H, Nader P, Swiger H, Fontanesi J. The School Health Innovative Programs: integrating school health and managed care in San Diego. *J Sch Health* 1998 Jan;68(1):22-5.
18. Taras HL. Managed health care and school

- health. *American Academy of Pediatrics. Pediatr Ann* 1997 Dec;26(12):733-6.
19. Gladstone TR, Kaslow NJ. Depression and attributions in children and adolescents: a meta-analytic review. *J Abnorm Child Psychol* 1995 Oct;23(5):597-606.
20. Dahlberg LL, Potter LB. Youth violence. Developmental pathways and prevention challenges. *Am J Prev Med* 2001 Jan;20(1 Suppl):3-14.
21. Brame B, Nagin DS, Tremblay RE. Developmental trajectories of physical aggression from school entry to late adolescence. *J Child Psychol Psychiatry* 2001 May;42(4):503-12.
22. Angold A, Weissman MM, John K, et al. Parent and child reports of depressive symptoms in children at low and high risk of depression. *J Child Psychol Psychiatry* 1987 Nov;28(6):901-15.
23. Weiner B. An attributional theory of achievement motivation and emotion. *Psychol Rev* 1985 Oct;92(4):548-73.
24. Resnick HS, Gibbs J. Types of peer program approaches. In: *United States. Alcohol, Drug Abuse, and Mental Health Administration. Adolescent peer pressure: theory, correlates, and program implications for drug abuse prevention.* Rockville (MD): National Institute on Drug Abuse; 1981. (DHHS publication No. (ADA) 81-1152). p 47-89.
25. Cahn MD, Chamberlain B, Cross PO, et al. Forum on youth violence in minority communities. *Interventions in early childhood. Public Health Rep* 1991 May-Jun;106(3):258-63.
26. Hudley C, Graham S. An attributional intervention to reduce peer-directed aggression among African-American boys. *Child Dev* 1993 Feb;64(1):124-38.
27. Embry DD, Flannery DJ, Vazsonyi AT, Powell KE, Atha H. Peacebuilders: a theoretically driven, school-based model for early violence prevention. *Am J Prev Med* 1996 Sep-Oct;12(5 Suppl):91-100.
28. Elias MJ, Gara M, Ubriaco M, Rothbaum PA, Clabby JF, Schuyler T. Impact of a preventive social problem solving intervention on children's coping with middle-school stressors. *Am J Community Psychol* 1986 Jun;14(3):259-75.
29. Cauce AM, Comer JP, Schwartz D. Long term effects of a systems-oriented school prevention program. *Am J Orthopsychiatry* 1987 Jan;57(1):127-31.
30. Pellegrini AD. Identifying causal elements in the thematic-fantasy play paradigm. *American Educational Research Journal* 1984 Fall;21(3):691-701.
31. Fink RS. Role of imaginative play in cognitive development. *Psycholog Rep* 1976;39:895-906.
32. Deasy RJ, editor. *Critical links: learning in the arts and student academic and social development.* Washington (DC): Arts Education Partnership; 2002. Available from: www.aep-arts.org/PDF%20Files/CriticalLinks.pdf (accessed October 24, 2003).
33. San Diego City Schools. *Long range facilities master plan, 1999-2013, for San Diego City Schools.* Prepared by HMC Architects. [San Diego (CA): San Diego City Schools; 1999]. Available from: www.sdcs.k12.ca.us/comm/masterplan/ (accesses November 26, 2003).

Bringing Peace

If we do, indeed, seek to bring peace to the world, we can do it by first bringing peace to ourselves. A person cannot give that which they do not have.

— *Living Synergistically, Thomas D Willhite*