

TREASURY	JUSTICE			INTERIOR	AGRICULTURE
	BJA	OJJDP	OJJDP & Other		
•Gang Resistance Education and Training (GREAT) •Project Outreach	•Pulling America's Communities Together (Project PACT) •Comprehensive Communities Program •Operation Weed and Seed •Safe Havens •Community Policing •National Citizens' Crime Prevention Campaign •National Crime and Drug Prevention Campaign •Drug Abuse Resistance Education •Communities in Action to Prevent Drug Abuse •Boys & Girls Clubs of America •Non-Violent Dispute Resolution •Children at Risk •Violence Against Women Demonstration Program •Comprehensive Gang Initiative •Bryne Memorial Grant •Formula Grant •Interagency Demonstration on Youth Firearms & Violence •Interstate Firearms Trafficking Program •US Attorney's Antiviolence Initiative •National Funding Collaborative •Model Youth Handgun Legislation •Violence in Public Housing •Model Handgun Implementation •Gang OCN Violence Enforcement •Drug Courts Program •Prison Gang Tracking System •Community-Based Alternatives •Community Prosecution •NIC Training for Juvenile Corrections •Day Treatment Services •Tribal Strategies Against Violence •Community Mobilization •Truancy Project •Neighborhood Mobilization •Home Visitation •Court-Based Child Care •Youth & Gangs •Illegal Aliens •Rural Domestic Violence & Child Abuse Enforcement Program •Violent Offender Incarceration & Truth in Sentencing Programs •Certain Punishment for Young Offenders Grant Program •Model Intensive Grant Program •Local Crime Prevention Block Grant •Family Unity Demonstration Project •Residential Substance Abuse Treatment for State Prisoners •State Criminal Alien Assistance Program	•Mental Health Mobile Outreach Unit for Children and Youth in the Juvenile Justice System •Innovative Approaches in Law-Related Education •Law-Related Education •Replication of the Youth Power Program in Oakland, CA (Just Say No International) •Comprehensive Youth Development and Delinquency Prevention •Youth Crime Watch of America (YWCA) •The PARENT Project: Parents Anonymous Replication Network •Law-Related Education in Juvenile Justice Settings •The Congress of National Black Churches: National Anti-Drug Program •Federal Interagency Partnership •Targeted Outreach: Gang Prevention and Intervention III •Satellite Prep-School Program •Teens, Crimes and the Community: Teens in Action in the 90's •Race Against Drugs •Permanency Planning for Abused and Neglected Children •National Network of Children's Advocacy Centers •Professional Development for Youth Workers •National School Safety Center •Pulling America's Communities Together (PACT) •Child Centered Community Oriented Policing •Comprehensive Community-Wide Approach to Gang-Free Schools and Communities •Gangs and Delinquency Research •Gangs, Groups, Individuals, and Violence •Field Initiated Gang Research Program •National Juvenile Justice and Delinquency Prevention Training and Technical Assistance Center •Non-Violent Dispute Resolution •Delinquency Prevention Training and Technical Assistance •Children at Risk •Violence Study - Causes and Correlates •Juvenile Mentoring Program •Title V - Delinquency Prevention Program •Safe Futures: Partnerships to Reduce Youth Violence and Delinquency •Model Multidisciplinary Crisis Intervention Program •Enhancing Enforcement Strategies for Juvenile Impaired Driving Due to Drug and Alcohol Abuse •Community Anti-Drug Abuse Technical Assistance Voucher Project •Pathways to Success •Hate Crime Prevention: A Juvenile Justice Approach •Boot Camps •Inner City Ganes •After Care Project •SHOCAP •Youth Corps	FBI •Community Relations Program NIJ •Prevention of Youth, Firearms, and Violence: A Research, Demonstration, and Evaluation Program •Child Abuse and Neglect Research Program •School Safety Research Program •"Girl Scouts Behind Bars" •Children at Risk (CAR) •Partnerships Against Crime Network (PAVNET) •SMART •Gun Tracking •Response to Violent Offenders •Substance Abuse & Criminal Behavior •Law Enforcement Program Studies •Developing Community-Based Crime Prevention Partnerships •Location-Specific Crime Prevention Partnerships •Drug Enforcement OVC - no submissions •Assessing Victims' Needs •Children's Justice Act •Immediate Response OJJDP (continued) •Serious Violent & Chronic Offenders •M/CAP •State Formula Grants •DMC Wysinger Grants •Infosharing DEO/COPS •Law Enforcement •Family Strengthening •Cities in Schools •Intensive Community-Based After Care •Police Youth •Missing Children •Female Juvenile Offenders •Innovative Firearms Program •Risk-Focused Prevention Program •Assistance for Delinquent & At-Risk Youth •Juvenile Firearms Prevention Demonstration program	•Pacific Regional Anti-Substance Abuse Program (PIRAAP) •Drug Abuse Resistance Education (DARE) •Gang Resistance Education and Training (GREAT) •None for the Road •Urban Park & Recreation Recovery Program •Urban Recreation & At-Risk Youth Program JUSTICE (continued) DEA •Support of Community Coalitions •Training of Law Enforcement Personnel •Education to Counter Drug Legalization Efforts •Sports Drug Awareness •Drugs in the Workplace Program •Youth Programs •COPS •BJS Statistics •Drug Courts Program •Rural Drug Enforcement Assistance •Victim Restitution Program •Comprehensive Drug Treatment After Care Programs	No submissions •Development Grants •Intermediary Relending Program •Water to Waste Loans •Community Facility •Extension Service -- Youth At-Risk OTHER National Performance Review •Oregon Project Corporation for National Community Service •AmeriCorps USA •AmeriCorps VISTA •National Senior Volunteer Corps •Learn & Serve •AmeriCorps NCCC Transportation •National Highway Traffic Safety Administration Programs

LABOR	HHS	HUD	EDUCATION	ONDCP
• <i>Job Corps</i> • <i>Summer Youth Employment and Training Program - Title IIB</i> • <i>Youth Fair Chance</i> • <i>Year Round Program for Youth - Title II-C</i> • AmeriCorps - School to Work • School to Work High Poverty Grants • Youth Training Program • Adult Training • OneStop Career Centers • Job Training Partnership Act Programs <u>HHS (continued)</u> • Rural Health Technical Assistance • Hard Core Substance Abuse Treatment • Substance Abuse Prevention Demonstration • Childhood Lead Poisoning Prevention Projects • Community Initiatives Program • Adolescent Females • Head Start • AOD-Related Violence Among High-Risk Youth • Community Schools & Youth Services & Supervision Grant Program (under FACES) • Substance Abuse Prevention & Treatment Block Grant Programs • Abandoned Infants Assistance Program • Temporary Child Care & Crisis Nurseries • Cooperative Agreements for Addiction Training Centers • Comprehensive Community Treatment Programs • Cooperative Agreements for SA Treatment & Recovery Systems for Rural, Remote & Culturally Distinct Populations • Cooperative Agreements for CMHS/CSAT Collaboration Demonstration Program for Homeless Individuals • Job Corps Drug Treatment Enrichment Program • Cooperative Agreements for Managed Care Demonstration Models for SSI Beneficiaries Disabled due to Addiction to Alcohol & other Drugs • Metro Area Treatment Enhancement System Project • Domestic Violence Hotline	<u>Center for Substance Abuse Prevention (CSAP)</u> • Community Partnership Demonstration Program • High Risk Youth Demonstration <u>Center for Substance Abuse Treatment (CSAT)</u> • Linking Community-Based Primary Care, Substance Abuse, HIV/AIDS, and Mental Health Treatment Services Demonstration Program • Model Comprehensive Drug Treatment for Criminal Justice Populations • Model Comprehensive Drug Treatment for Critical Populations • Community-Based Comprehensive HIV/STD/TB Outreach Services for High Risk Substance Abusers Demonstration Program • Services Grant Program for Residential Treatment Program for Pregnant and Postpartum Women • Demonstration Grant Program for Residential Treatment for Women and Their Children • Target Cities <u>Division of National Health Service Corps</u> • Junior National Health Service Corps <u>Family and Youth Services Bureau</u> • Drug Education and Prevention for Runaway and Homeless Youth • Basic Centers for Runaway and Homeless Youth • Education and Prevention to Reduce Sexual Abuse of Runaway, Homeless and Street Youth • Transitional Living Program • Youth Gang Drug Prevention Program • Family Preservation & Support <u>Maternal and Child Health Bureau</u> • Community Integrated Service System (CISS) • Healthy Start • Special Projects of Regional and National Significance (SPRANS) • Early Head Start <u>National Center on Child Abuse and Neglect (NCCAN)</u> • Child Abuse and Neglect Discretionary Activities <u>National Center for Chronic Disease Prevention and Health Promotion</u> • Comprehensive School Health Programs • School Health Education to Prevent the Spread of HIV <u>National Center on Injury Prevention and Control (NCIPC)</u> • Community Programs on Domestic Violence • CDC's Program to Prevent Violence Against Women • Youth Violence <u>Office of Community Services</u> • Family Violence Prevention and Services • Youth Education and Domestic Violence • Job Opportunities for Low-Income Individuals (JOLI) Program <u>Office of Population Affairs (OPA)</u> • Adolescent Family Life Demonstration Project	• <i>Public Housing Drug Elimination Program</i> • <i>Youth Sports Program</i> • <i>Youthbuild</i> • Operation Safe Home • Hope6 • Empowerment Zones • Community Development Block Grant • Heinz Neighborhood Development Program • Early Child Care Program • Sect. 8 Loan Guarantee • Sect. 8 Economic Revitalization Grants • Family Investment Centers • Homeless Programs • Supportive Housing Program • Emergency Shelter Grants • Title V - Surplus Federal Property to Assist the Homeless • McKinney Act Job Training for the Homeless • Home Investment Partnerships • Rental Assistance Certificates • Multifamily Insurance Processing • Service coordinator Program • SF Housing Counseling Grants • SF Program Outreach • Flexible Subsidy Program • Hope 3 Homeownership of Single Family Homes • Multifamily Housing • Local Partnership Act Programs	• <i>Safe and Drug-Free Schools and Communities Federal Activities</i> • <i>Safe and Drug-Free Schools and Communities Grants to LEAs</i> • <i>Family and Community Endeavor Schools Grant Program</i> • <i>State Grants for Drug and Violence Prevention Programs</i> • <i>Title I, Part A of the Elementary and Secondary Education Act, Improving Basic Programs Operated by Local Educational Agencies</i> • <i>Training in Early Childhood Education and Violence Counseling</i> • <i>Education for Homeless Children and Youth State and Local Grants Program</i> • Urban Community Service Program • Early Childhood Education • School to Work Transition • Improving America's Schools Act • Javits Gifted & Talented Students Education Program • National Workplace Literacy Program • Rehabilitation Act Special Demonstration Project • Charter Schools • Bilingual Education • Women's Educational Equity • Parent Training (Disabilities) • Even Start • Shelter Plus Care • Single Room Occupancy for Homeless Individuals • Vocational Rehabilitation State Grant Program • Grants for Infants & Families • Special Education: Special Purpose Funds Program • Upward Bound	No Submissions • High Intensity Drug Trafficking Areas Program

PREVENTION PROGRAMS CHART BACKGROUND

NOTE:

- Programs in ***bold italics*** were received in response to previous catalog request.
- Programs in plain text were pulled from other sources listed below.

Programs from submissions we received following the February catalog request.

Criterion for these submissions were narrow:

- violence/crime prevention
- serving youth 10 - 18 years old
- discretionary only, no block/formula grants
- no technical assistance or research/evaluation programs
- FY 95 mostly, some '96

Not all the relevant agencies received the February requests:

- Office of National Drug Control Policy
- Corporation for National Community Service

However, we are interested in including their programs in the Prevention Council 'catalog'.

To date, not all of the agencies/departments have submitted the requested program information:

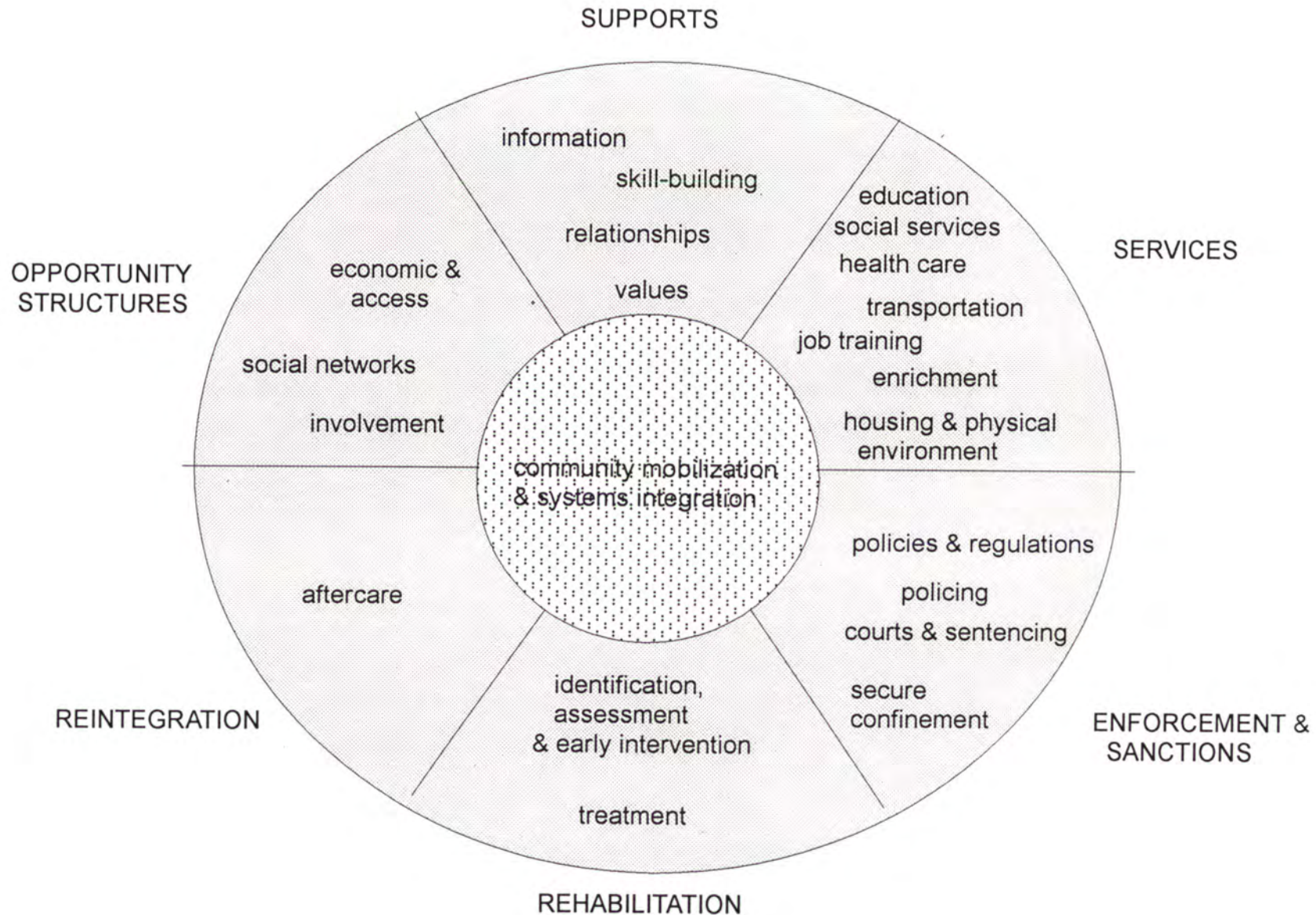
- Agriculture
- Office of Victims of Crime & Federal Bureau of Investigation, DOJ

In order to include programs aimed at children under 10, as well as families, communities, and institutions, nondiscretionary grants, and programs which emphasize local and federal collaboration, we pulled program information from the following list of documents that you have recommended to us:

1. National Youth Violence Initiative -- OJJDP/DOJ, 1995
2. Safe Futures Matrix Update -- JJRC/DOJ, 1995
3. Building Communities Together, Community Enterprise Board -- USDA/HUD, 1994
4. Responding to Drug Use & Violence -- ONDCP, 1995
5. NIJ Program Plan -- NIJ/DOJ, '94-'95
6. Hope Six Fact Sheet -- HUD, 1995
7. Executive Summary, FY96 Budget -- HUD, 1995
8. Partners Against Violence (PAVNET) -- USDA/DOJ/DOL/HHS/HUD/ED 199
9. Prevention '93-'94, Federal Programs & Progress -- HHS, 1993
10. 1994 Crime Act Briefing Book -- DOJ, 1994 (Includes some FY '96 programs)
11. Reducing Youth Gun Violence: A Summary of Programs & Initiatives -- OJJDP/DOJ 1995
12. Submissions from February Catalog Request -- P. C. Prevention Council, 1995

Crime Prevention Strategies

an integrated approach



TESTIMONY

OF

KAREN J. PITTMAN

DIRECTOR

OUNCE OF PREVENTION COUNCIL

BEFORE

THE HOUSE APPROPRIATIONS SUBCOMMITTEE FOR

DEPARTMENTS OF COMMERCE, JUSTICE, STATE, THE JUDICIARY,

AND RELATED AGENCIES

March 28, 1995

Good morning Mr. Chairman and Members of the Appropriations Subcommittee. I appreciate the opportunity to discuss the FY 1996 budget for the Ounce of Prevention Council with you today.

The Ounce of Prevention Council was established with broad bi-partisan support in September 1994 as a part of the Violent Crime Control and Law Enforcement Act. It stands as the primary vehicle for ensuring a coordinated federal approach to promoting comprehensive, community-based crime prevention efforts.

As authorized by statute, and consistent with his efforts to ensure good government and support community empowerment, the President has named the Vice President to serve on the Council and act as its Chair. Through this action, the President has sent a clear signal about the importance of the goal -- crime prevention -- and the strategy -- streamlining federal efforts to promote flexible, outcome-driven responses in states and localities.

The Council was designed to be a lean, effective government entity consistent with the principles of the National Performance Review. Accordingly, the proposed budget for the Council is quite modest. As authorized by Congress, the President is requesting \$14.7 million in FY 1996, with an estimated \$13.2 million of those funds dedicated to grants to localities committed to strengthening their efforts to ensure that children and youth are safe, educated, and secure in their sense of self and future. Fully staffed, the FY 1996 operating budget request is only \$1.5 million, with an FTE of 12 staff. The expected impact of the Council, however, is sizeable.

I have been in my position for only one month, but, I have been a public advocate for the functions the Council will play for more than a decade. Having worked with programs and communities across the country that are trying to craft responses to crime, drugs, gangs, violence, and the closely related issues of unemployment, poor education, and teenage pregnancy, I know that there is a broad-based commitment to prevention, and a desire to link the often numerous programs into a comprehensive prevention strategy.

I also know that, as strong as the commitment to integration is, bringing together the often numerous programs, initiatives, coalitions, funding sources, and agencies that each have a piece of the puzzle is a difficult task.

As the former director of a national research and technical assistance organization that focused on helping local leaders create and implement a shared vision for their youth, I have a good understanding of what it takes to make the mantras of coordination, collaboration, and consolidation a reality. Success, in my experience, requires the creation of a neutral table to which the players come, a strong leader whom the players respect, a dedicated staff with no competing responsibilities, a small pot of dollars to encourage risk-taking, and the identification of an issue that can generate sustained commitments from policy makers, service providers, and the public. The Council has all of these elements.

Let me start with the issue -- crime prevention.

As you know, crime, specifically violent crime, is a national problem in America. Consistently, it is an issue that ranks high in public opinion polls. There can be some comfort taken in the fact that rates of violent crime have not increased as much as the public perceives. According to the Justice Department, the nation's overall violent and nonviolent crime victimization rates have actually fallen over the last 20 years, and the victimization rates for the violent crimes of rape, robbery and assault are all below those reported 10 years ago.

But taking comfort in these figures would be ill-advised. Safety, in the end, is a perception, and the American public feels less safe than it has in decades in large part because violent crime has become both more random and more fatal and because both the victims and the perpetrators of violent and fatal crimes, all too often, are family members or children.

Consider the following data:

- One in ten homicides are the result of either child abuse or violence against women.

- Childhood death at the hands of parents or guardians is much more prevalent than children being killed by other children. Estimates indicate that perhaps as many as 5,000 children die each year as a result of mistreatment and abuse from parents or guardians, and over 165,000 children are seriously harmed.
- In 1992, the total number of children killed by firearms was 3,336 -- up 144 percent from 1986.

But as you are also well aware, there are no magic solutions for crime prevention. Reducing the opportunities to commit crimes -- e.g., by removing law breakers and offenders; increasing supervision, security measures, beat officers, neighborhood watches; and reducing access to guns, unattended buildings and lots -- is one method. Reducing the reasons to commit crimes -- e.g., by encouraging economic development; increasing access to education, exploration, skill-building, and employment; supporting families in their efforts to reinforce discipline and instill values; and providing preventive and intervention services -- is another. Effective crime prevention strategies address both.

For example, crime dropped 60 percent in two troubled neighborhoods in Lansing, Michigan when police officers, school teachers, and social service providers pulled together to launch an extensive youth development program including the opening of a neighborhood network center. By working together, professionals at key points on the punishment to preparation continuum developed a shared definition of what was needed that not only filled a service void, but a coordination void. Lansing's success must be attributed to both the establishment of a new neighborhood network center and a new set of networking relationships among key actors in crime prevention.

It is examples like Lansing that led the President and the Vice President to commit so strongly to crafting a balanced approach to crime in this country. The bi-partisan 1994 Crime Act stands as a comprehensive crime fighting strategy because it balances strong

policing and stiff, sure punishment with sound prevention efforts. It is dedicated to prisons, police and prevention.

Every piece of the 1994 Violent Crime Control Act is designed to reduce the incidence of violent crimes. Tougher sentences and more prisons keep criminals off the streets. The banning of the manufacture and sale of assault weapons keeps dangerous weapons off the streets. The Community Oriented Policing Program puts 100,000 police officers on the streets. The prevention programs, such as the Community Schools program, give communities flexible funding to bring community-based organizations and schools together to keep youth active, learning and off the streets. And, the Council keeps communities involved in local prevention strategies.

Let me turn now to the specific functions of the Council and our accomplishments to date.

The Council is neither a new program nor a new bureaucracy. It is an integral part of this Administration's commitment to reinvent government. It is a model of the type of coordinating entity that can be put in place to push beyond surface coordination to streamline and integrate programs. During the Congressional debate last year over the Violent Crime Control Act, opponents often talked about the redundancy of Federal prevention programs that cut across several separate Departments and agencies. The Council is the response to these criticisms and to the criticisms and frustrations of people in communities who are trying to make a difference.

The Council, as structured, is a high-level decision-making body. With the Vice President as the Chair, recommended cross-agency changes in program planning and administration will be acted on. There are other coordinating bodies, formal and informal, within the agencies. But recognizing the importance of the provision of the Crime Bill, the President asked the Vice President to chair the Council, giving the issues of crime prevention and federal coordination the attention they deserve.

The Council is a research and evaluating body. With a non-agency-based, single-purpose staff and the commitments of the President, Vice President, and high-level delegates from the departments, the Council can generate the in-depth work needed to streamline funding and devolve decision-making without jeopardizing outcomes and accountability.

The Council is a linking body. It is the link between the pivotal components of a sound crime and violence prevention strategy that includes getting criminals off the streets, getting more police officers on the streets, getting guns out of circulation, getting violence out of homes, and sending youth clear and consistent messages about opportunities and responsibilities.

The Council is a customer service/community-oriented body. Its focus inward to coordinate departmental efforts is equalled by its commitment to focus outward. It is the link between community organizations and local leaders and the federal government. It will produce, annually, a comprehensive catalogue of prevention strategies, collect and disseminate information on what is working, and, in essence, act as a mechanism for public education and intelligent debate. With a commitment to learn from and share with communities information about both programs and process, the Council, can model how states and localities can reduce duplication, sharpen goals, and assess outcomes.

By the end of FY 1995, the Council will have

- developed shared definitions of key terms and concepts that will be used by Federal agencies to define standards, outcomes, and evaluation;
- proposed consolidating or eliminating redundant or overlapping programs and coordinating those that remain so that the rationales and procedures are clear;
- established or linked regular mechanisms for getting information to and from localities, states, and community organizations including, but not limited to,

convening national and local forums (in Washington and around the country) and disseminating information on plans, principles, and practices in use across the country; and

- given grants to localities and communities that are ready to assess programs, consolidate funding and delivery, and offer the range of parallel responses needed to address crime prevention.

One month into being operational, the Council has already taken significant steps toward these ends. It has

- established bi-weekly meetings with delegates from the Federal agencies that are members of the Council who have both access to the Secretaries and knowledge of the relevant Federal programs and resources being discussed. This group has already begun to do joint planning on key issues such as youth violence and comprehensive services and to develop recommendations on Council grants and comprehensive community initiatives;
- met with representatives of over 40 national organizations representing law enforcement, municipalities, prevention, youth services, and community development to share information and discuss how the Council can be most useful and begin to identify communities across the country where there is strong public-private, cross-issue commitment to preventing crime, addressing the problem of youth violence, substance abuse, and promoting youth and community capacity; and
- begun to compile a comprehensive catalogue on crime prevention that will offer a definition of crime prevention that is jointly shared by the Federal departments; describe the key strategies for reducing crime in communities; offer examples of these strategies and of community-wide efforts to establish sustained, multifaceted

approaches to crime prevention; and document the major federal grant programs available to support community crime prevention efforts.

The Ounce of Prevention Council Budget

The Council's 1996 budget of \$14.7 million reflects the goals and priorities outlined in the 1994 Violent Crime Act. As authorized by the legislation, the majority of these funds (\$13.2 million) will be dedicated to grants to localities and communities.

The Grants Program.

Let me talk first about the Grants Program.

In the Crime Act, Congress authorized the Council to make grants to communities. The grants, while not the major responsibility of the Council, are an important part of the overall Federal effort to support local, community-wide efforts to coordinate

- a. summer and after-school education and recreation programs;
- b. programs that provide mentoring, tutoring, and other participation by adult role models (e.g., DARE America);
- c. programs assisting and promoting employability and job placement; and
- d. prevention and treatment programs to reduce substance abuse, child abuse, and adolescent pregnancy, including outreach programs for at-risk families.

For FY 1996, the Council is authorized to administer grants to municipalities, school boards, nonprofit entities, community organizations, or coalitions. As specified in the legislation, grant applicants must

- show that a planning process has occurred that has involved organizations, institutions, and residents of target areas, including young people; and that there has

been cooperation among neighborhood-based entities, municipality-wide bodies, and local private-sector representatives;

- demonstrate substantial involvement of neighborhood-based entities in carrying out the proposed activities and a broad base of collaboration and coordination involving youth serving organizations, schools, health and social service providers, employers, law enforcement professionals, local government, and residents;
- be geographically based in particular neighborhoods or sections of municipalities or rural areas; and
- demonstrate how substantial proportions of children and youth in the target areas will be served.

In addition, the legislation mandates that priority be given to broad-based coalitions and organizations with a coordinated approach to reduce gang membership and substance abuse and to provide alternatives to at-risk youth.

Given the Council's overall mission of reducing program duplication, it is reasonable, in fact imperative, that the logic of creating another grants program be challenged. The Council, therefore, is considering efforts to complement rather than duplicate existing grant programs for prevention established by the VCCA and elsewhere and focus its grant funds to

- 1) highlight communities that have developed coordinated approaches to reducing youth violence, gang membership and providing positive alternatives to youth;
- 2) give priority to communities requesting funds for coordinated public education, planning, assessment, and program integration;

- 3) give priority to communities that have multiple federal grants to build an evidence base of how federal programs can be coordinated at the local level to contribute to comprehensive approaches to crime prevention;
- 4) require clear definitions of outcomes, strategies, settings and target populations and justifications for how these are prioritized; and
- 5) require participation in an overall effort to document what exists, evaluate quality and reach, and evaluate impact.

In an effort to balance attention on communities with multiple federal grants with attention to communities with no federal prevention dollars, it has been recommended that the remainder of the funds be used to spark crime prevention efforts by supporting community coalitions or groups that have not currently or recently received federal funds for prevention.

For FY 1996 to FY 2000, the grant dollars are \$13 to 15 million annually.

Operating Budget

\$1,500,000 is requested for Council operations, including 12 FTE. The resources for operations requested reflect the same funding as FY 1995.

The FTE provided in 1995 and 1996 respond to the requirements placed on the Council to coordinate planning and programs across the agencies, catalogue crime prevention efforts, offer assistance to communities and community organizations, proactively streamline and simplify the grants process across agencies, and administer and evaluate grants made by the Council.

The travel, printing, and reception budgets for the Council reflect the Council's commitment to learn from and assist communities. Funds have been budgeted to allow for visits to communities by Council members and staff and visits to Washington by community leaders to learn what is working, share what is known, and learn what communities want and need from the Federal government. Similarly, funds have been budgeted to allow for the printing of the prevention catalogue and for the production or reproduction of other materials.

As you know, the FY 1995 supplemental appropriation requests a Gift Account for the Ounce of Prevention Council. The Council sees this as an additional way that it can fulfill its mandate to assist communities. There is enormous interest in the work of the Council not only within government but among philanthropic organizations that have invested heavily in prevention programs, community-wide efforts, and multi-site initiatives. Gift authority reduces the burden on the Federal government, capitalizes on the momentum that is building across the country to increase national interest and investment in crime prevention, and gives the Council the flexibility to explore public/private partnerships to get a greater understanding (e.g. through polls and surveys) of how crime and prevention are viewed by communities, deepen assistance to communities, evaluate the benefits of different crime prevention strategies, and communicate lessons learned.

In closing, let me re-emphasize that the proposed work of the Council reflects the Congress' and the Administration's commitment to

- streamline, coordinate, and integrate the related crime prevention responsibilities, programs, and functions of the various departments;
- provide greater support and flexibility to states, localities, and communities as they craft and implement locally-tailored efforts to reduce crime and increase the sense of safety and well-being in communities; and

- establish clear performance standards and evaluation requirements for federal programs.

Promoting strong, community responses to crime is a challenge that requires both conceptual and programmatic integration. The Crime Act was clear in its message that crime prevention requires reductions in the threat of crime and increases in our sense of safety, security, and quality of life.

Congress, the Administration, and the public have been equally clear in their message that what are needed are not new programs, but tighter connections between plans, programs, and proposed outcomes. The Ounce of Prevention Council and the Council's grants program are a simple but powerful response to this dual challenge. They build on the best of what is known.

There is room to debate prevention strategies. But there is no question that this country must make a complete and sustained commitment to crime prevention. Once a crime has occurred there are simply no good solutions -- the public and private costs are too great. I hope that we can all agree that while there are individual prevention programs that are duplicative or ineffective, there is a solid body of evidence that suggests that without a reasoned, focused, and sustained effort on prevention that targets individuals, families, and neighborhoods, there is no way to reduce the incidence of crime and restore community well-being.

INCREASE OPPORTUNITIES & INCENTIVES FOR RESPONSIBLE BEHAVIOR

	OPPORTUNITY STRUCTURES			SUPPORTS				SERVICES						
	Economic & Access	Social Networks	Participation & Involvement	Information	Skill Building	Relationships	Values	Education	Social Services	Health Care	Housing & Phys Env	Transportation	Job Training	Enrichment
DECREASE RISKS	•enforce civil rights laws	•stabilize target neighborhoods •improve community ability to provide prevention & treatment services more effectively	•youth crafting & implementing crime prevention	•extent of use •effects on individual, family, community •increase perceptions of risk e.g. scare tactics •raise awareness •high risk to understand vulnerability •debunk myths •public information & education campaigns •safety education •issues through drama •crime prevention/law related education •hotlines •use forums & meetings •key actor training •speakers	•remediation/repair the child •understand thought processes that rationalize negative behavior •firearm training •conflict resolution & social skill training •resistance skills •empathy training •controlling impulse, managing hostility, coping with authority	•reeducation/replace family myths with normative info •reduce/eliminate negative role models & peer support for negative attitudes and behavior •individual outreach •gang streetworkers •stop domestic violence	•change attitudes & beliefs about use & acceptability of behavior •embed initiatives in ethnic communities •values clarification	•basic & remedial education •residential education •immersion schools •"time out" schools •reduce class size K & 1st grade •safe schools •metal detectors •alternative settings for disruptive students •removal of students	•improve dependency court system •intensive counseling •case management •home visits •increased availability of social services in targeted neighborhoods	•services for illicit drug use to youth in rural areas •treatment for maternal substance abuse •reality therapy •counseling to prevent or reduce drug use •therapeutic services to children who witness violence •peer counseling programs	•safe haven •milieu management •improvement in housing project services •make risk areas visible •increase use •limit access •reduce supply of AODS through communitywide campaigns	•safe passages	•positive alternative activities •drug-free activities	

INCREASE OPPORTUNITIES & INCENTIVES FOR RESPONSIBLE BEHAVIOR

	OPPORTUNITY STRUCTURES			SUPPORTS				SERVICES						
	Economic & Access	Social Networks	Participation & Involvement	Information	Skill Building	Relationships	Values	Education	Social Services	Health Care	Housing & Phys Env	Transportation	Job Training	Enrichment
INCREASE OPPORTUNITIES	•sponsors for schools/scholarships	•linkage between youth programs and planning councils	•community•wide partnerships, coalitions	•teach heritage	•involve students in setting & enforcing policy	•enhance parenting skills	•take responsibility for neighborhood	•link curriculum with school policies	•parenting centers	•home visitation	•create sense of ownership		•basic skills training	•structured leisure time
	•promote physical & human development	•celebration of common history, environment , art	•youth as resources (technology)	•use technology computers	•classroom management program	•build trusting relationships	•inspire political action and involvement	•develop appropriate curricula & instructional techniques	•help parents achieve educational and occupational goals	•parent training	•attractive public places		•residential job training	•out•of•school activities
	•job search assistance	•support core social institutions	•community service	•celebrate what works	•role playing & self monitoring	•family management training	•accept individual responsibility	•arts part of basic ed		•prenatal care			•job training w/educational component	•recreation
	•support services	•neighborhood restoration	•voluntary youth agencies; e.g. Conservation Corps	•responsible media	•self expression and self•confidence through art	•appropriate rewards and punishments	•emotional & spiritual support	•educational enrichment		•immunizations				•outdoor education
	•employment/jobs	•saturation of wide array of services	•overcoming adversity & experiencing success	•sense of control	•manhood development curriculum	•monitoring behavior	•build character & social responsibility	•preschool		•state health care reform				•arts/music
	•entrepreneurial programs			•positive lifestyles	•experiential/adventure based curriculum	•make family time	•recognize accomplishments	•early education and language development in child care						
	•develop creative/business skills through arts guild				•developing individualized plans for future	•adult mentoring	•firm, fair, consistently applied student behavior standards	•forge link between schools and community through curriculum						
	•economic development				•competency development	•facilitate bonds of affection and mutual respect	•change community policies & norms	•community schools						
	•neighborhood revitalization				•social & cognitive education	•developing juveniles and guardian		•effective schools						
					•decision making	•youth big siblings		•school development and management						

DECREASE OPPORTUNITIES & INCENTIVES FOR CRIMINAL BEHAVIOR

	SANCTIONS & ENFORCEMENT				REHABILITATION		REINTEGRATION
	<u>Policies & Regulations</u>	<u>Policing</u>	Courts & Sentencing	Secure Confinement	<u>Identification, assessment & early intervention</u>	<u>Treatment</u>	<u>Aftercare</u>
DECREASE RISKS	•regulate use of/access to weapons •restrictions on sale & transfer of guns •uniform nat'l/federal gun laws •regulate use of/access to alcohol •tougher drug/alcohol policy •control drug use •control sanctions for drug use •appropriate incentives, rewards, punishment •curfews •link child support enforcement with training & employment services •appropriate punishment in schools, dress codes	•field interrogations •increase police •target high crime areas for more community policing •use expertise to develop solutions •supply reductoin •keep drug pushers away from certain areas (e.g. schools) •weapons confiscation •develop information and communication network •increase interaction between police and community •increase police visibility •policing on school campuses •citizen patrol •community coalitions against drugs •neighborhood watches •mobilize volunteers	•immediate & intermediate sanctions •stop further penetration into system •drug courts •graduated sanctins •alternative sentencing •combine accountability with increasingly intensive treatment and rehab •mandatory sentencing •tougher sentences for serious juvenile offenders •longer sentences •accountability •transfers to adult court •victim restitution	•community confinement •intensive probation	•identify and contol small, chronic segments of population •focus on populations exposed to multiple risk factors •methods to i.d. youth with invisible barriers •management information systems •search for biological markers for AOD •problem i.d. and referral •link prevention and treatment services through providers (e.g., medical) •formalize links between criminal ustice and treatment	•sex offender treatment •motivate recalcitrant youth and force to confront fears •frequent, timely feedback for positive and negative behaviors •opportunities to discuss family and early experiences •structured family therapy •vary sequence for exposure to program components on individual basis •psychotherapy •improve treatment capacity •community•based alternatives	•address underlying conditions of crime •reduce relapse factors •community reintegration •cooperative learning teams/ •provision of mutual aid •address factors in social/physical environment (see physical environment & social networks)
INCREASE OPPORTUNITIES	•attention to victims						

INCREASE OPPORTUNITIES & INCENTIVES FOR RESPONSIBLE BEHAVIOR

	OPPORTUNITY STRUCTURES			SUPPORTS				SERVICES						
	Economic & Access	Social Networks	Involvement	Information	Skill Building	Relationships	Values	Education	Social Services	Health Care	Housing & Phys Env	Transportation	Job Training	Enrichment
Individual Youth	•enforce civil rights laws •sponsors for schools & scholarships •job search assistance •support services •employment & jobs •entrepreneurial programs •develop creative & business skills through arts guild	•linkage between youth programs & planning councils	•youth crafting & implementing crime prevention •youth as resources (technology) •community service •voluntary youth agencies; e.g. Conservation Corps •overcoming adversity & experiencing success	•extent of use •effects on individual, family, community •increase perceptions of risk e.g. scare tactics •high risk to understand vulnerability •safety education •issues through drama •crime prevention & law related education •hotlines •key actor training •speakers •teach heritage •use technology computers •sense of control •positive lifestyles	•remediation & repair the child •understand thought processes that rationalize negative behavior •firearm training •conflict resolution & social skill training •resistance skills •empathy training •controlling impulse, managing hostility, coping with authority •role playing & self monitoring •self expression & self confidence through art •manhood development curriculum •experiential & adventure based curriculum •developing individualized plans for future •competency development •social & cognitive education •decision making •critical analysis & judgemental abilities •problem solving •task oriented skills •interpersonal skills •goal setting •service to others	•reduce & eliminate negative role models & peer support for negative attitudes & behavior •gang streetworkers •build trusting relationships •appropriate rewards & punishments •monitoring behavior •adult mentoring •facilitate bonds of affection & mutual respect between juveniles & guardian •youth big siblings •healthy peer network development •positive peer oriented activities •develop ties to social & community organizations •promote involvement in conventional family activities •school attachment •role modeling •use of speakers •change the change agents	•change attitudes & beliefs about use & acceptability of behavior •embed initiatives in ethnic communities •values clarification •recognize accomplishments •inspire political action & involvement •accept individual responsibility •emotional & spiritual support •build character & social responsibility	•basic & remedial education •residential education •immersion schools •"time out" schools •reduce class size K & 1st grade •safe schools •metal detectors •alternative settings for disruptive students •removal of students •instructional improvement training •link curriculum with school policies •develop appropriate curricula & instructional techniques •arts part of basic ed •educational enrichment •preschool •early education & language development in child care •link between schools & community through curriculum •community schools •effective schools	•intensive counseling •case management •home visits	•services for illicit drug use to youth in rural areas •reality therapy •counseling to prevent or reduce drug use •therapeutic services to children who witness violence •peer counseling programs	•safe haven •make risk areas visible •increase use •limit access •create sense of ownership	•safe passages	•basic skills training •residential job training •job training w & educational component	•positive alternative activities •drug free activities •structured leisure time •out of school activities •recreation •outdoor education •arts & music

INCREASE OPPORTUNITIES & INCENTIVES FOR RESPONSIBLE BEHAVIOR

	OPPORTUNITY STRUCTURES			SUPPORTS				SERVICES						
	Economic & Access	Social Networks	Involvement	Information	Skill Building	Relationships	Values	Education	Social Services	Health Care	Housing & Phys Env	Transportation	Job Training	Enrichment
Families				•information & education campaigns	•enhance parenting skills •family management training •make family time	•reeducation & replace family myths with normative info •stop domestic violence •healthy family participation (in treatment) •promote infant health & early child bonding •strengthen families			•improve dependency court system •intensive counseling •case management •home visits •intensive family preservation services •marital therapy •parenting centers •help parents achieve educational & occupational goals	•treatment for maternal substance abuse •home visitation •parent training •prenatal care & infant health •immunizations				
Groups				•extent of use	•involve students in setting & enforcing policy •classroom management program	•peer education •peer facilitators •peer leader training •gang streetworkers	•change attitudes & beliefs about use & acceptability of behavior •firm, fair, consistently applied student behavior standards	•immersion schools •reduce class size K & 1st grade •safe schools •alternative settings for disruptive students •link curriculum with school policies						•provide camaraderie & community through activities

INCREASE OPPORTUNITIES & INCENTIVES FOR RESPONSIBLE BEHAVIOR

[illegible]

DECREASE OPPORTUNITIES & INCENTIVES FOR CRIMINAL

	SANCTIONS & ENFORCEMENT				REHABILITATION		REINTEGRATION
	<u>Policies & Regulations</u>	<u>Policing</u>	Courts & Sentencing	Secure Confinement	<u>Identification, assessment & early intervention</u>	<u>Treatment</u>	<u>Aftercare</u>
Individual Youth	•regulate use of & access to weapons •restrictions on sale & transfer of guns •uniform nat'l & federal gun laws •regulate use of & access to alcohol •tougher drug & alcohol policy •control drug use •control sanctions for drug use •appropriate incentives, rewards, punishment •curfews •appropriate punishment in schools, dress codes •attention to victims	•field interrogations •increase police •target high crime areas for more community policing •use expertise to develop solutions •supply reductoin •keep drug pushers away from certain areas (e.g. schools) •weapons confiscation •develop information & communication network •increase police visibility •policing on school campuses •citizen patrol •community coalitions against drugs •neighborhood watches •mobilize volunteers	•immediate & intermediate sanctions & secure corrections •stop further penetration into system •drug courts •graduated sanctins •alternative sentencing •combine accountability with increasingly intensive treatment & rehab •mandatory sentencing •tougher sentences for serious juvenile offenders •longer sentences •accountability •transfers to adult court •victim restitution	•community confinement •intensive probation	•identify & contol small, chronic segments of population •focus on populations exposed to multiple risk factors •methods to i.d. youth with invisible barriers •management information systems •search for biological markers for AOD •problem i.d. & referral •link prevention & treatment services through providers (e.g., medical) •formalize links between criminal justice & treatment	•sex offender treatment •motivate recalcitrant youth & force to confront fears •frequent, timely feedback for positive & negative behaviors •opportunities to discuss family & early experiences •vary sequence for exposure to program components on individual basis •psychotherapy •improve treatment capacity •community•based alternatives	•address underlying conditions of crime •reduce relapse factors •community reintegration •cooperative learning teams & provision of mutual aid •address factors in social & physical environment (see physical environment & social networks)
Family							
Groups	•appropriate punishment in schools, dress codes	•policing on school campuses				•milieu management	•cooperative learning teams & provision of mutual aid
Community	•regulate use of & access to weapons •restrictions on sale & transfer of guns •uniform nat'l & federal gun laws •regulate use of & access to alcohol •tougher drug & alcohol policy •control drug use •control sanctions for drug use •appropriate incentives, rewards, punishment •curfews	(see individual) •increase interaction between police & community	(see individual strategies)				
Institutions & Systems	•link child support enforcement with training & employment services	create a bridge between police & law enforcement & prevention address underlying conditions of crime	(see individual strategies)		(see individual strategies) integrate juvenile justice system into overall national agenda for children	:optimized resource allocation	

Prevention-related programs in the 1994 Violent Crime Control and Law Enforcement Act

PROGRAM	FUNDS	POPULATION	PURPOSE	ELIGIBILITY	REQUIREMENTS
for youth					
Community Schools	\$582.9m FY95-00	youth at-risk of delinquency & poverty	provide supervised after-school, weekend & summer programs	non-profits operated by consortium of service providers	\$ allocated proportionate to impoverished children
FACES	\$254m FY95-00	children in high poverty & violent communities	improve overall development through school-based services	local educational agencies & community based	To Be Determined (TBD)
Crime Prevention Council Grant Program	\$89.5m FY95-00	youth	summer & after-school care, mentoring, job training, prevention of substance abuse	localities, tribal govts, schools, universities, pvt. non-profits or consortia	TBD
GREAT	\$45m FY95-00	3/4th graders, 7/8th graders at risk of gang involvement	uniformed officers teach gang resistance in school	Fed, state & local law enforcement, at least 50 projects at least \$800K each	TBD
Urban Rec for At-Risk Youth	\$4.5m FY96-00	youth in high-crime neighborhoods	recreation programs	local govt	TBD
Reduce Sexual Abuse of Runaway, Homeless Youth	\$30m FY96-00	runaway, homeless, street youth at risk of sexual abuse	treatment, counseling, information & referral	private, non profit agencies	street-based outreach & education

PROGRAM	FUNDS	POPULATION	PURPOSE	ELIGIBILITY	REQUIREMENTS
Youth Education and Domestic Violence	\$400K FY96	young people	implement & evaluate 4 model programs re: domestic violence & intimate partners	TBD	4 different audiences -- primary, middle, secondary & higher education
Delinquent & At-Risk Youth	\$36m FY96-00	11-19yrs, dropouts or contact w/ justice system	improve academic, vocational & decision making skills	public, private non profits	residential service
for women					
Violence Against Women	\$1b FY95-00	women at risk	develop & strengthen enforcement, develop victims services	states, localities, non-profit non-govt services, tribal govts	TBD
Battered Women's Shelters	\$325m FY96-00	family violence victims	immediate shelter & assistance	states & Indian tribes	TBD
Demonstration Grants for Communities	\$10m FY96-97	communities	coordinated plans for intervening & preventing domestic violence	non-profits	TBD
Nat'l Domestic Violence Hotline	\$3m FY95-00	domestic violence victims	info & assistance to victims	private, non-profits	TBD
Reduce Sexual Assaults Against Women	\$205m FY96-00	women at-risk of sexual abuse	hotlines, training to increase awareness & prevent abuse	rape crisis centers, similar non-govt, non-profit entities	TBD

PROGRAM	FUNDS	POPULATION	PURPOSE	ELIGIBILITY	REQUIREMENTS
for communities					
Prevent Crime in Public Parks	\$15m FY96-00	users of urban parks & rec areas	increase safety	states	TBD
Crime Prevention Block Grants	\$377m FY96-00	at risk communities	intervention & treatment initiatives	local govts	1 public hearing on use of funds
Model Intensive Grant Program	\$625.5m FY96-00	chronic high crime areas	address lack of programs, facilities, safety & treatment	local govt	comprehensive, collaborative, community based
Local Partnership Act	\$1.62b FY96-00	TBD	supports education, jobs & substance abuse treatment	local govt according to complex formula	revenue sharing
law enforcement					
COPS	\$8.8b FY95-00	states & localities	hire & train officers to increase community policing	states, localities, tribal govts -- half above 150K, half below 150K population	85% funds for hiring/rehiring, must demonstrate increase in officers on streets
Residential Substance Abuse Treatment	\$270m FY96-00	correctional & detention facilities	residential substance abuse treatment programs	states	must drug test enrollees & provide aftercare
Boot Camps	\$7.92b FY95-00	non-violent offenders	develop, improve correctional facilities	states, multi-state compacts	FY95 for planning FY96-2000 50% to Truth in Sentencing
Drug Courts	\$1b FY95-00	non-violent offenders w/ rehab potential	continued judicial supervision	states, state courts, local govt, local courts, tribal	only non violent offenders

SOURCE DOCUMENTS FOR STRATEGIES CHART

CDC:

- Brief Overview of CDC's Violence Prevention Projects
- 3 Papers on Violence Prevention Strategies and Minority Youth
- Violence Prevention and Public Health: The CDC Approach (written in Atlantic Medicine)

DOE:

- A Guide to Safe, Disciplined & Drug-Free Schools
- Executive Summary

DOJ:

- Operation Weed and Seed Implementation Manual

DOL:

- Memo for the Vice President which lists the DOL's crime prevention programs

HHS:

- Community Schools and Faces Vision Statement

HHS Administration on Developmental Disabilities & Children, Youth and Families:

- Report of the Task Force Serving Youth with Developmental Disabilities (June 1994)

HHS Family and Youth Services Bureau:

- Drug Abuse Prevention Program for Runaway and Homeless Youth
- A Guide to Enhancing the Cultural Competence of Runaway and Homeless Youth Programs

HUD & DOA:

- Building Communities Together: Empowerment Zones and Enterprise Communities

Interdepartmental Working Group on Violence:

- Report to the President and Domestic Policy Council

OJJDP:

- Juvenile Intensive Supervision: Planning Guide
- What Works: Promising Interventions in Juvenile Justice
- Delinquency Prevention
- Comprehensive Strategy for Serious, Violent and Chronic Juvenile Offenders
- National Juvenile Justice Action Plan
- One More Chance: The Pursuit of Promising Intervention Strategies for Chronic Juvenile Offenders
- Guide for Implementing the Comprehensive Strategy for Serious, Violent and Chronic Juvenile Offenders (March 1995)

ONDCP:

- ONDCP White Paper
- Substance Abuse Prevention: What Works and Why
- National Drug Control Strategy

OSAP:

- The Future by Design: A Community Framework for Preventing Alcohol and Other Drug Problems Through a Systems Approach
- National Substance Abuse Prevention System (SAMHSA/CSAP)
- Prevention Monograph #1 and #2 (#2 is more theoretical)

Public Health Service:

- PHS Violence Prevention Strategy Briefing for Agency Head Meeting (March 1995)

NCPC:

- Preventing Crime: Effective Local Approaches and Strategies

Unknown

- Part of the Solution: Creative Alternatives for Youth



DEPARTMENT OF HEALTH & HUMAN SERVICES

Vice: Melanne

Public Health Service

file youth violence

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

November 7, 1996
770-488-4696 Telephone
770-404-488-4422 Facsimile

Ms. Pam Cicetti
Office of the First Lady
2nd Floor West Wing
The White House
Washington, D.C. 20502

Dear Ms. Cecetti:

I am responding to the request from Jennifer Kline to send you some information on the topic of "tipping" that was the subject of Malcolm Gladwell's recent New Yorker Article (enclosed).

At the National Center for Injury Prevention and Control - part of the Centers for Disease Control and Prevention - we have applied the science of epidemiology -- looking for patterns by examining large numbers of cases -- to the prevention of youth violence, family violence and suicide.

We have found some amazing applications of the notions of contagion and tipping such as the following:

- 1) Suicide clusters occur among young people in a way that suggests the death of one person can trigger suicides among other susceptible youth. Understanding the patterns can help communities and schools prevent clusters.
- 2) The most marked increase in youth violence occurred in youth homicides. Young people have not been fighting a lot more, but now they fight with guns and the outcomes are more likely to be fatal. Access by youth to guns and their decision to use them reflect many possible aspects of contagion -- and these suggest ways to intervene.
- 3) Social norms among young men contribute to the frequency of firearm carrying and use. Programs that aim at changing social norms as well as individual behavior are probably more effective than efforts focused solely on educating individuals at risk.

Location
Koger Office Park
Vanderbilt Building
2939 Flowers Road, South
Atlanta, GA 30341

Postal Address
4770 Buford Highway K02
Atlanta GA 30341-3724

Federal Express UPS Overnight
2939 Flowers Road, South
Atlanta, GA 30341



Page two - Ms. Cecetti

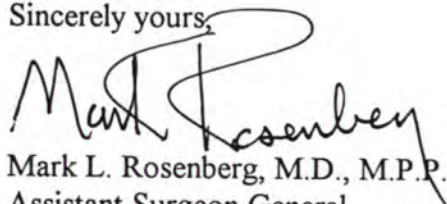
Ironically, however, almost all of our violence prevention efforts have focused only on changing individual knowledge, attitudes, beliefs and behavior.

- 4) There is a cycle of violence that begins with exposure by children to violence in the home -- usually a mother being beaten by a male or a child being abused -- that plays out later in the streets as youth violence or dating violence and then it's brought back into the home as domestic violence, perfected in time to perpetuate the cycle in a new generation.

Our efforts here have focused on looking at these problems with science and a public health approach. We have worked closely with Janet Reno and the Department of Justice in collaborative efforts that are extremely productive.

We would be delighted to discuss our approaches and some of the exciting findings.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Mark L. Rosenberg". The signature is fluid and cursive, with the first name "Mark" and last name "Rosenberg" clearly distinguishable.

Mark L. Rosenberg, M.D., M.P.P.
Assistant Surgeon General

Director, National Center for Injury Prevention and Control

Enclosures

VIOLENCE --- PREVENTION

Selected Items from the
National Center for Injury Prevention and Control for

Hillary Rodham Clinton

November 11, 1996



U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

CDC
CENTERS FOR DISEASE CONTROL
AND PREVENTION

Violence Prevention

David Satcher, MD, PhD

Director

Centers for Disease Control and Prevention

Mark L. Rosenberg, MD, MPP

Director

National Center for Injury Prevention and Control

W. Rodney Hammond, PhD

Director

Division of Violence Prevention

James A. Mercy, PhD

Special Assistant to the Director

Division of Violence Prevention

Denise Johnson, MS

Acting Team Leader

Family and Intimate Violence Prevention Team

Lloyd Potter, PhD

Team Leader

Youth Violence Prevention



U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Injury Prevention and Control



Goal

The goal of the injury control program at CDC is to improve the health of Americans by preventing premature death and disability caused by nonoccupational injuries and to reduce the human suffering and medical costs caused by such injuries.

NCIPC's program includes:

- The prevention of all injuries not related to work.
- Applied research and evaluation in the acute care and rehabilitation of injured persons.

To reach this goal, NCIPC

- Provides leadership in developing and executing a national program for injury prevention and control with public and private agencies and organizations.
- Conduct research to develop and evaluate strategies to prevent and control injuries, including research in biomechanics, epidemiology and prevention, and the treatment and rehabilitation of the injured. NCIPC also shares research findings with public and private organizations, both national and international.

- Conducts surveillance to monitor national trends in deaths, disability, and costs associated with injuries.
- Implements and evaluates demonstration programs in states and communities to prevent and control injuries.
- Help states and localities develop the ability to develop effective injury prevention programs.

In carrying out these and other functions, NCIPC collaborates with CDC Centers, Public Health Service Agencies, the National Highway Traffic Safety Administration, the Consumer Product Safety Commission, other federal departments and agencies, state and local agencies, and private and voluntary organizations.

Ten Leading Causes of Death by Age Group - 1994

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 6,854	Unintentional Injuries 2,517	Unintentional Injuries 1,595	Unintentional Injuries 1,913	Unintentional Injuries 13,898	Unintentional Injuries 13,452	HIV 18,359	Malignant Neoplasms 43,588	Malignant Neoplasms 89,251	Heart Disease 610,330	Heart Disease 732,409
2	Short Gestation 4,254	Congenital Anomalies 714	Malignant Neoplasms 543	Malignant Neoplasms 510	Homicide 8,116	HIV 12,117	Malignant Neoplasms 16,843	Heart Disease 33,621	Heart Disease 69,335	Malignant Neoplasms 376,186	Malignant Neoplasms 534,310
3	SIDS 4,073	Malignant Neoplasms 518	Congenital Anomalies 241	Homicide 416	Suicide 4,956	Homicide 6,888	Unintentional Injuries 13,560	Unintentional Injuries 8,768	Bronchitis Emphysema Asthma 10,335	Cerebro-vascular 134,340	Cerebro-vascular 153,306
4	Respiratory Distress Synd. 1,567	Homicide 473	Homicide 156	Suicide 318	Malignant Neoplasms 1,740	Suicide 6,354	Heart Disease 13,243	HIV 7,636	Cerebro-vascular 9,577	Bronchitis Emphysema Asthma 87,048	Bronchitis Emphysema Asthma 101,628
5	Maternal Complications 1,296	Heart Disease 285	Heart Disease 129	Heart Disease 198	Heart Disease 992	Malignant Neoplasms 5,056	Suicide 6,375	Cerebro-vascular 5,355	Diabetes 7,784	Pneumonia & Influenza 72,762	Unintentional Injuries 91,437
6	Placenta Cord Membranes 948	HIV 199	HIV 110	Congenital Anomalies 193	HIV 641	Heart Disease 3,520	Homicide 4,531	Liver Disease 5,043	Unintentional Injuries 6,432	Diabetes 42,600	Pneumonia & Influenza 81,473
7	Unintentional Injuries 889	Pneumonia & Influenza 178	Pneumonia & Influenza 57	Bronchitis Emphysema Asthma 86	Congenital Anomalies 463	Cerebro-vascular 802	Liver Disease 3,698	Suicide 4,296	Liver Disease 5,530	Unintentional Injuries 28,314	Diabetes 56,692
8	Perinatal Infections 828	Perinatal Period 114	Benign Neoplasms 54	HIV 72	Bronchitis Emphysema Asthma 232	Liver Disease 733	Cerebro-vascular 2,717	Diabetes 3,689	Pneumonia & Influenza 3,505	Nephritis 19,666	HIV 42,114
9	Pneumonia & Influenza 559	Septicemia 91	Bronchitis Emphysema Asthma 41	Benign Neoplasms 47	Pneumonia & Influenza 221	Diabetes 682	Diabetes 1,785	Bronchitis Emphysema Asthma 2,676	Suicide 2,812	Septicemia 16,439	Suicide 31,142
10	Intrauterine Hypoxia 537	Benign Neoplasms 79	Anemias 38	2 Tied	Cerebro-vascular 183	Pneumonia & Influenza 647	Pneumonia & Influenza 1,508	Pneumonia & Influenza 1,985	HIV 2,186	Atherosclerosis 16,330	Liver Disease 25,406

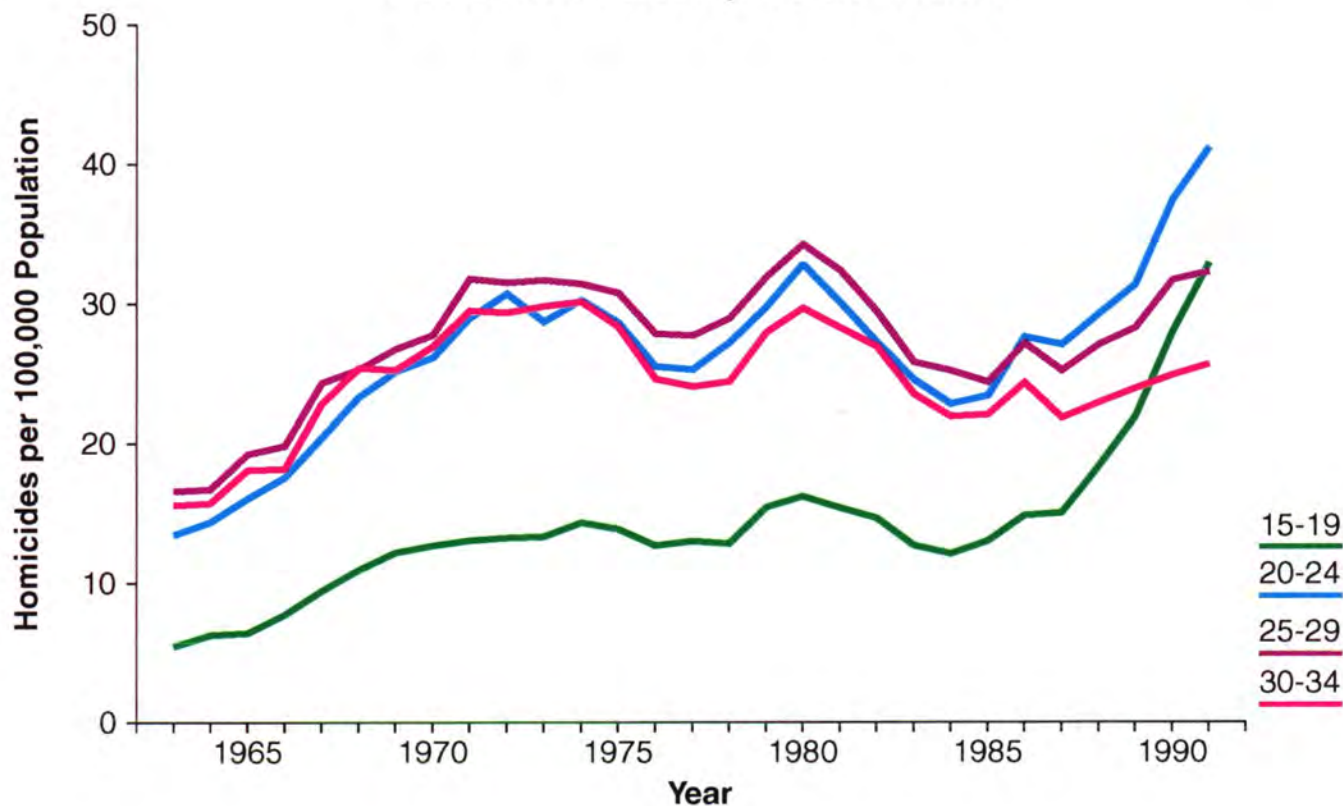


Summary Points

- CDC emphasizes looking at "what works" to prevent violence. Evaluations of school-based and community-based violence prevention programs funded by CDC are an important step in finding out what works.
- CDC plays a key leadership role in working with other agencies and departments. There are new important opportunities for collaboration among federal agencies and organizations.
- Community involvement is a principal component of violence prevention. CDC works closely with communities to find solutions.

Homicide Rates for Young Males by Age Group

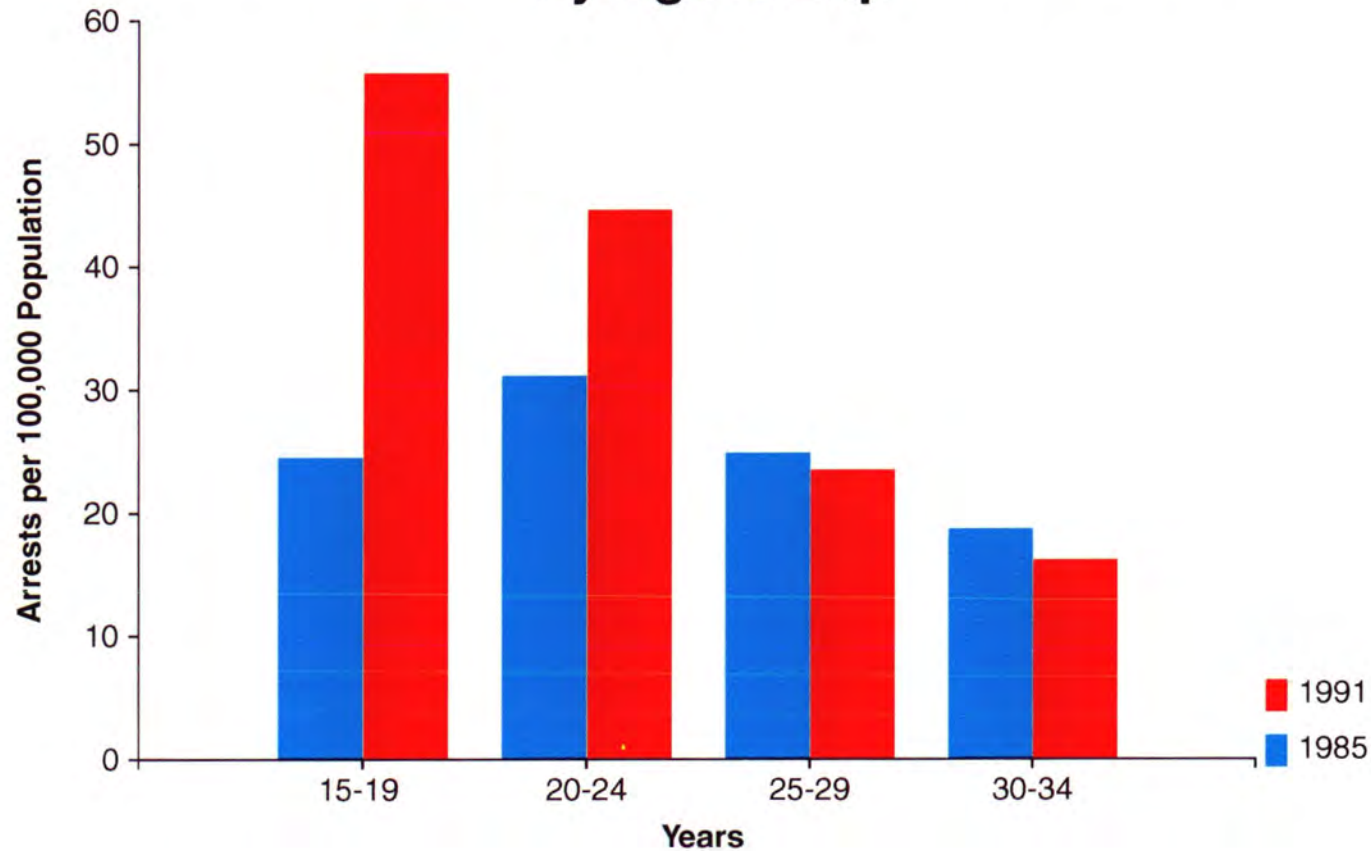
United States, 1963-1991



Homicide victimization rates have risen and are continuing to rise dramatically for 15-19 year old young men

Comparison of Arrest Rates, 1985 and 1991

Murder and Nonnegligent Manslaughter by Age Group



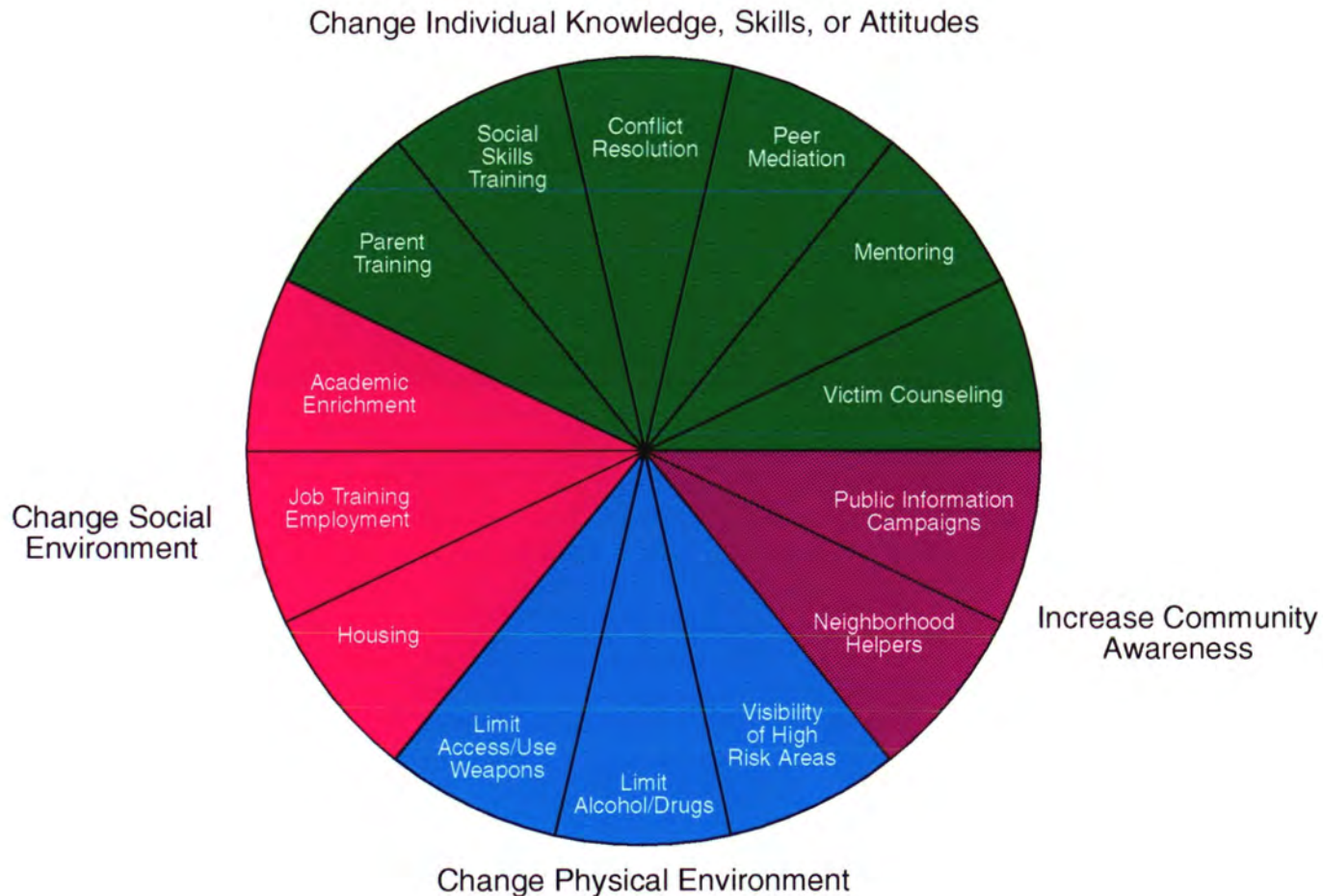


Youth Violence Prevention Projects

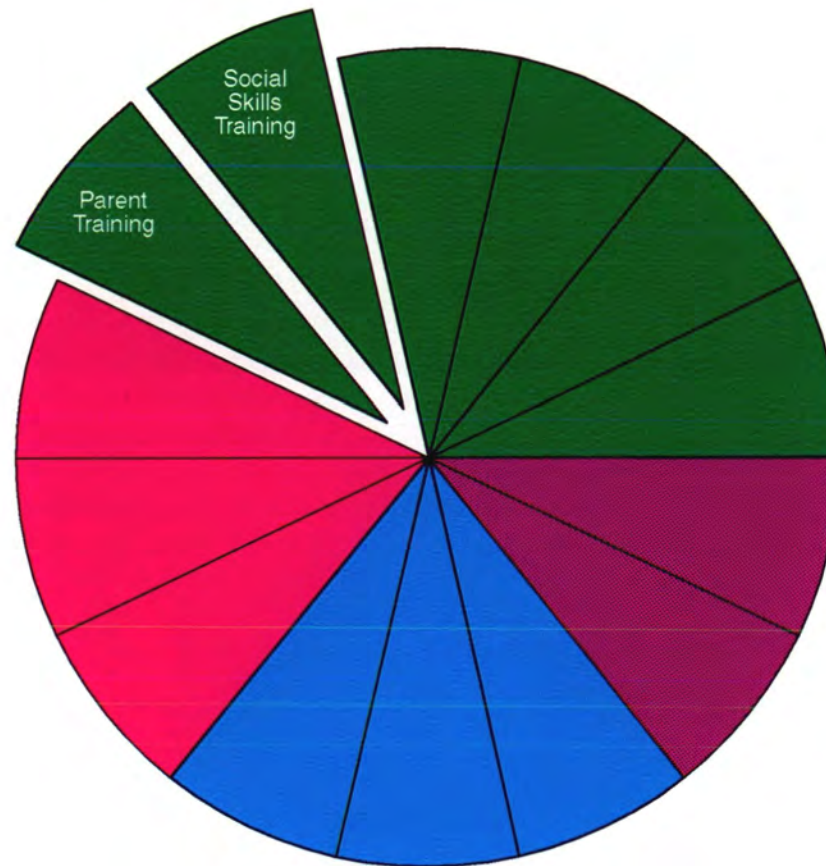
Goals:

- Determine what works
- Bring together health departments, community-based organizations and academic institutions to deliver interventions
- Document the process and measure the outcomes

Strategies to Prevent Youth Violence



Early Intervention Projects



Setting

School

Sites

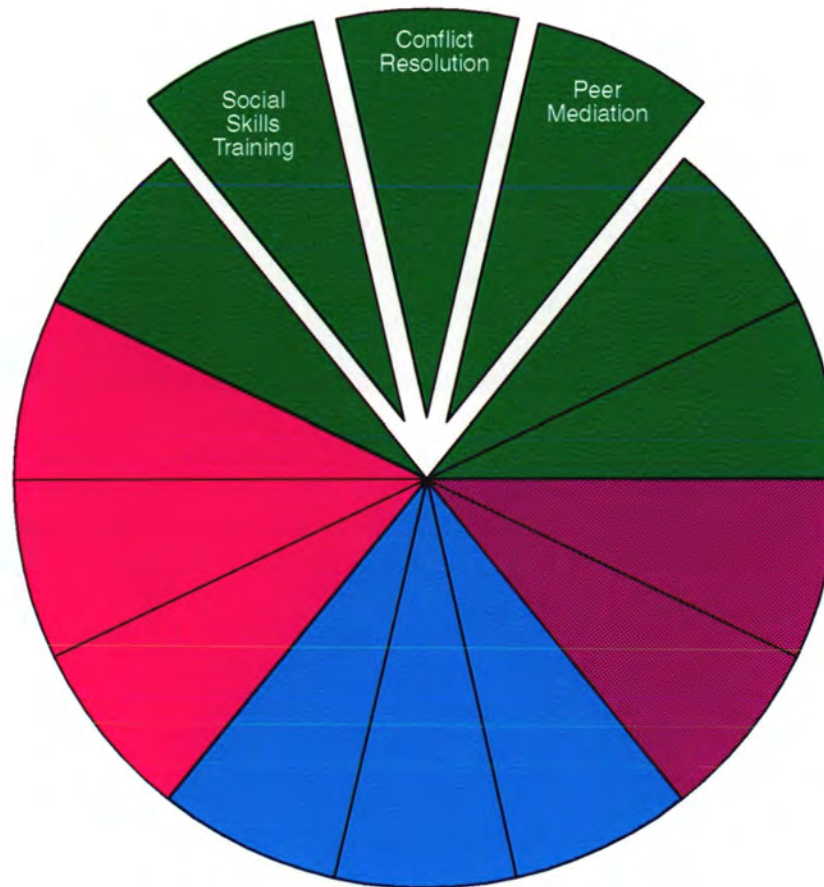
Chicago, IL

Los Angeles, CA

New York City, NY

Tucson, AZ

Middle School Intervention Projects



Setting

School

Sites

Detroit, MI

Houston, TX

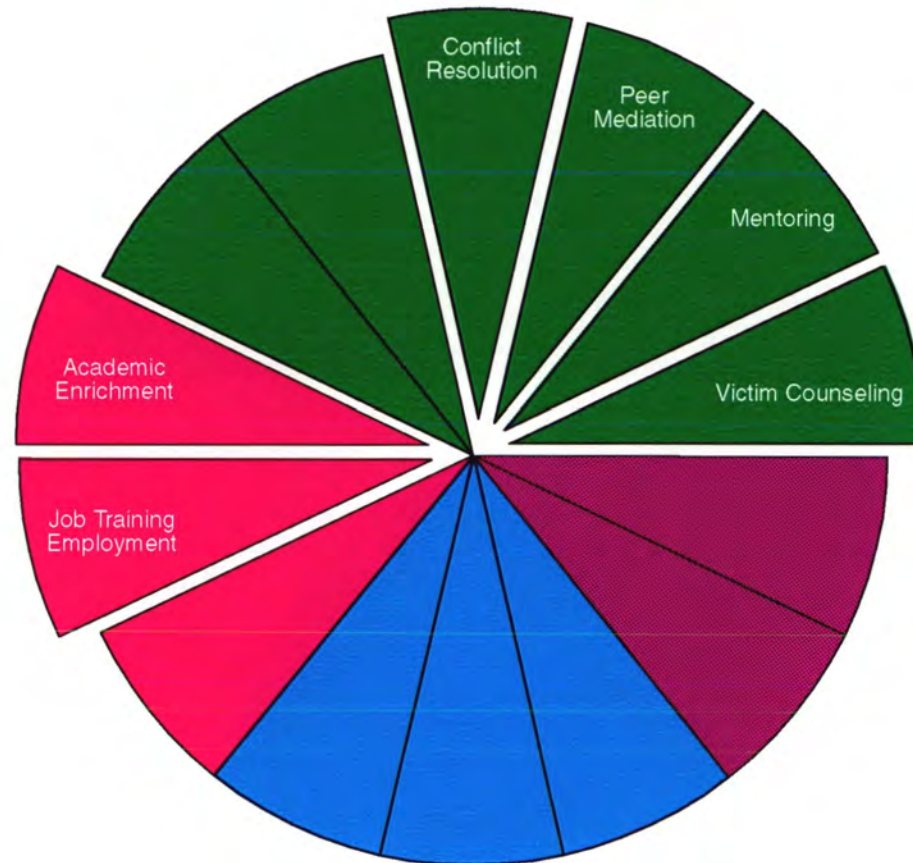
Indianapolis, IN

New York City, NY

Portland, OR

Richmond, VA

Older Youth (14-19 Years)



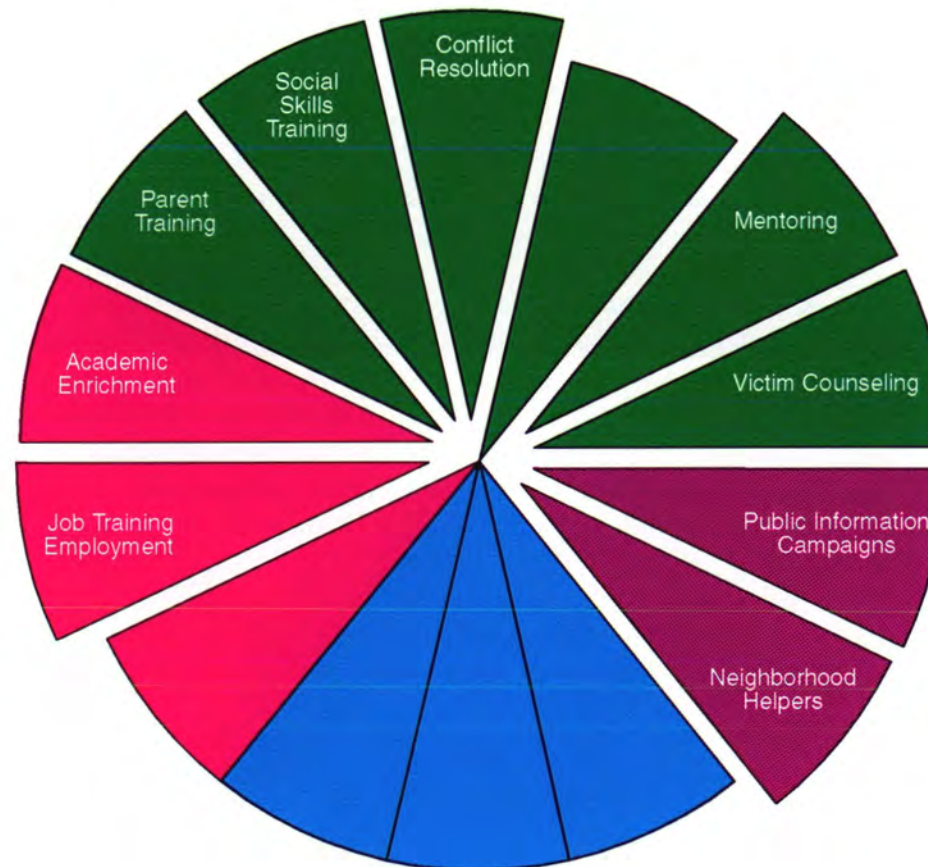
Setting

School
Hospital
Housing Development
Juvenile Offender Facility

Sites

Atlanta, GA
Boston, MA
Chicago, IL
New York City, NY

Community Demonstration Projects



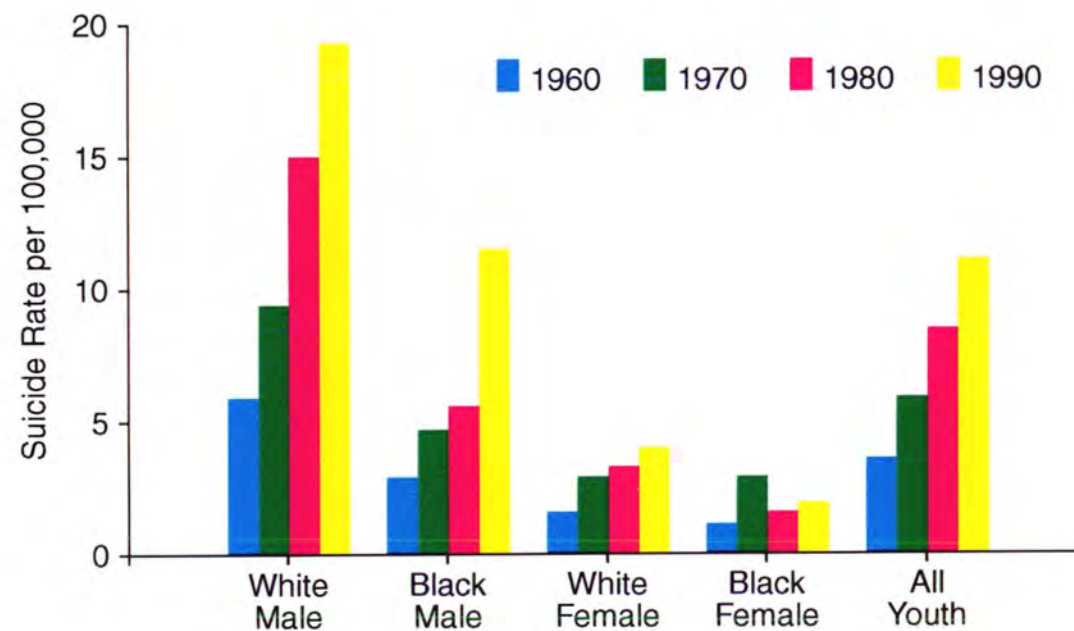
Setting

School
Community

Sites

Brooklyn, NY
Durham, NC
Houston, TX

Suicide Rates for Youth Aged 15-19 Years By Race and Sex, United States, 1960-90





Almost 5,000 Women Died as a Result of Homicide in the U.S. (1994)

- 6 of 10 female victims were murdered by someone they knew
- Of these, about half were murdered by spouse or intimate partner
- Firearms, usually handguns, weapon most commonly used to kill women

**99.9% of assaults on women
are not fatal, but often result in
physical injury or emotional distress**

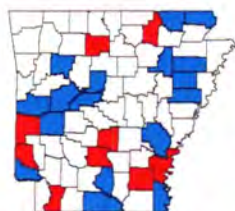
- More than 1.8 million women assaulted by male partners or cohabitants (1985)
- Battered women are at increased risk of attempting suicide, abusing alcohol and other drugs, and depression



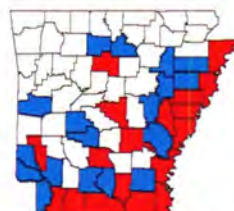
A National Program to Prevent Family and Intimate Violence

- 1.* Describing/tracking the problem
- 2.* Increasing our knowledge of causes and consequences
- 3.* Demonstrating/evaluating ways to prevent family and intimate violence
- 4.* Translating and disseminating information on family and intimate violence
- 5.* Fostering professional education and training

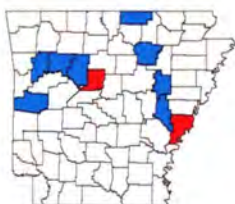
Arkansas 1984-1992



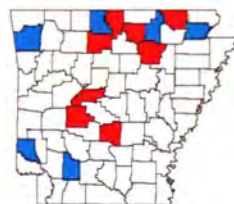
Motor Vehicle
623 Deaths/Year
 U.S. 18.5
 AR 26.5
 Excess Deaths/Year **188**



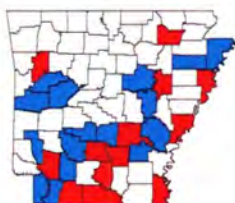
Homicides
244 Deaths/Year
 U.S. 9.2
 AR 10.8
 Excess Deaths/Year **38**



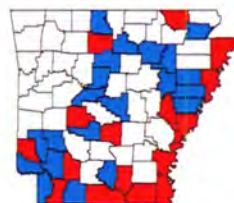
Falls
119 Deaths/Year
 U.S. 2.7
 AR 2.4



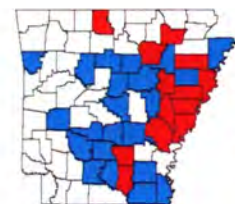
Suicides
300 Deaths/Year
 U.S. 11.5
 AR 11.8
 Excess Deaths/Year **7**



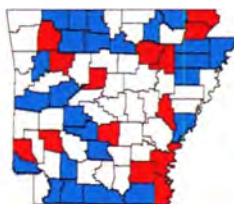
Fires/Burns
94 Deaths/Year
 U.S. 2.1
 AR 3.6
 Excess Deaths/Year **35**



Firearms
443 Deaths/Year
 U.S. 13.7
 AR 18.4
 Excess Deaths/Year **110**



Drownings
74 Deaths/Year
 U.S. 2.0
 AR 3.3
 Excess Deaths/Year **31**



Traumatic Brain Injury
690 Deaths/Year
 U.S. 20.5
 AR 29.5
 Excess Deaths/Year **212**



Poisonings
36 Deaths/Year
 U.S. 2.3
 AR 1.4

Legend

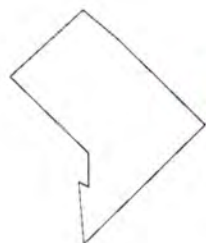


At or above the 90th NATIONAL percentile



At or above the 75th but less than the 90th NATIONAL percentile

District of Columbia 1984-1992



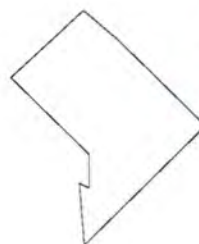
Motor Vehicle
70 Deaths/Year
U.S. 18.5
DC 10.6



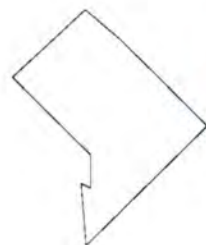
Homicides
279 Deaths/Year
U.S. 9.2
DC 43.2
Excess Deaths/Year **212**



Falls
44 Deaths/Year
U.S. 2.7
DC 4.5
Excess Deaths/Year **11**



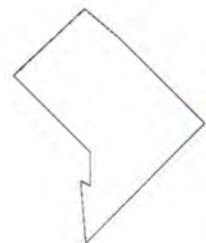
Suicides
46 Deaths/Year
U.S. 11.5
DC 6.5



Fires/Burns
16 Deaths/Year
U.S. 2.1
DC 2.3
Excess Deaths/Year **1**



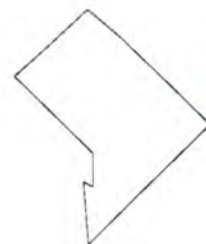
Firearms
224 Deaths/Year
U.S. 13.7
DC 34.5
Excess Deaths/Year **130**



Drownings
8 Deaths/Year
U.S. 2.0
DC 1.2



Traumatic Brain Injury
199 Deaths/Year
U.S. 20.5
DC 30.5
Excess Deaths/Year **61**



Poisonings
9 Deaths/Year
U.S. 2.3
DC 1.1

Legend

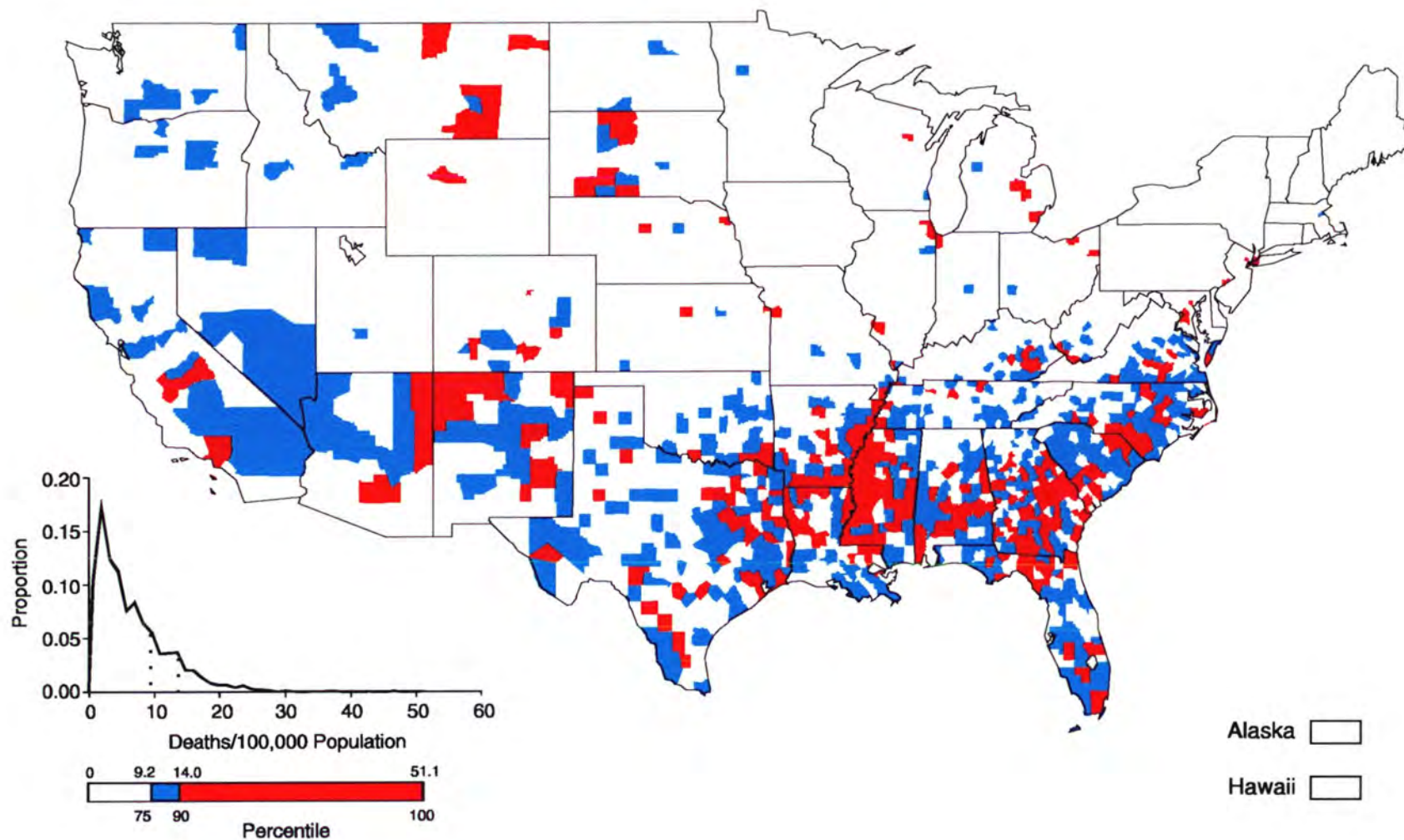


At or above the 90th NATIONAL percentile

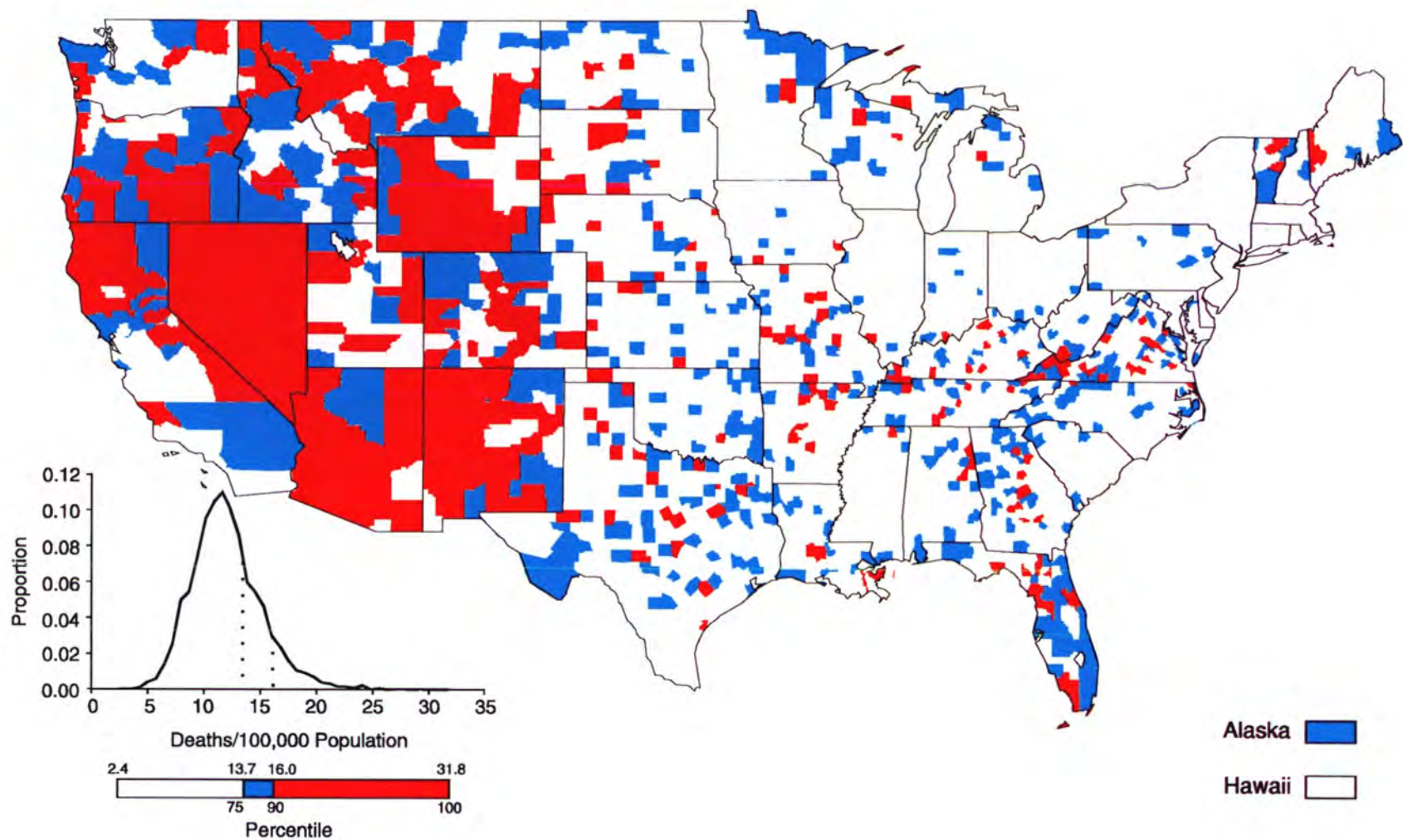


At or above the 75th but less than the 90th NATIONAL percentile

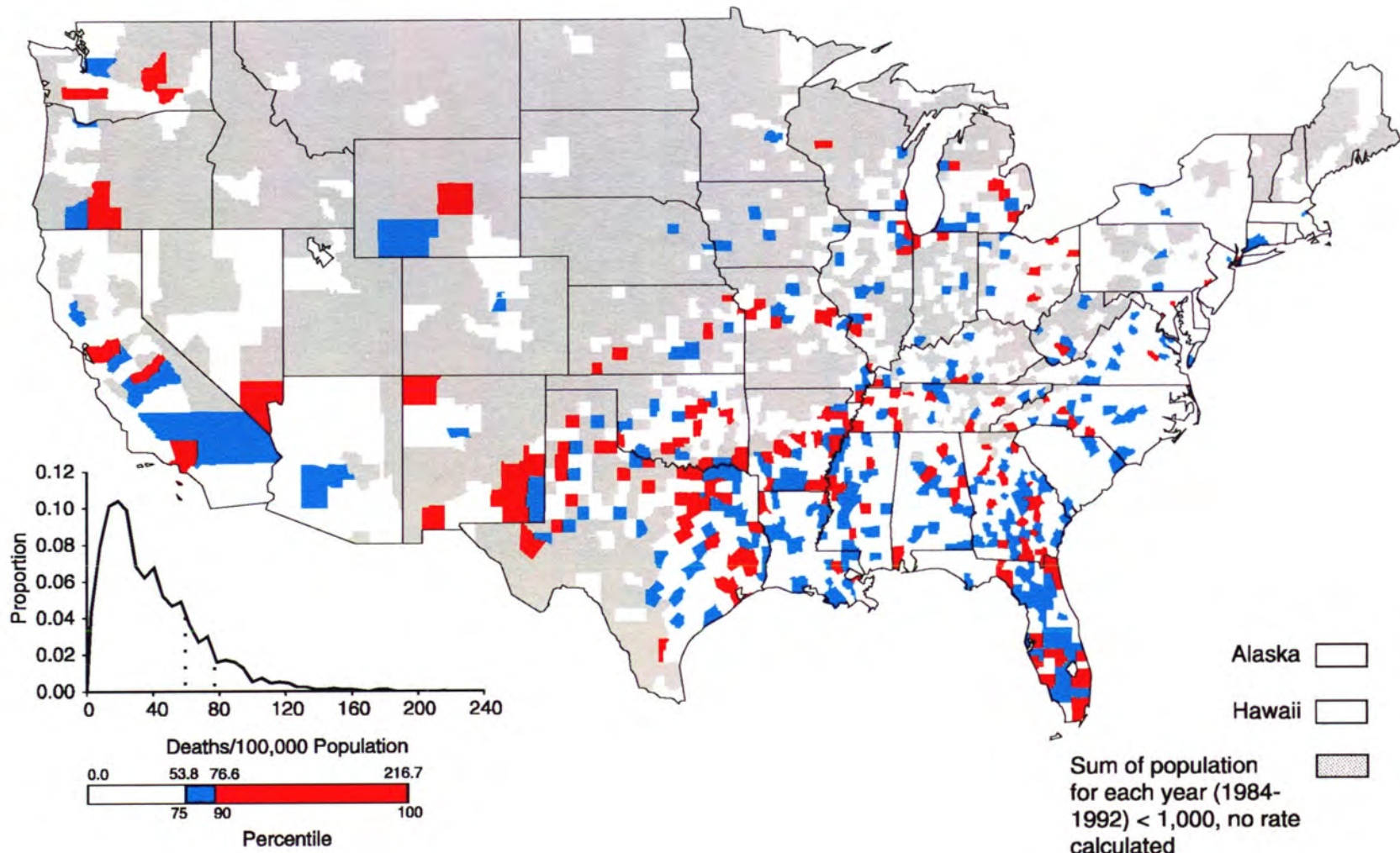
Homicides per 100,000 Population 1984-1992



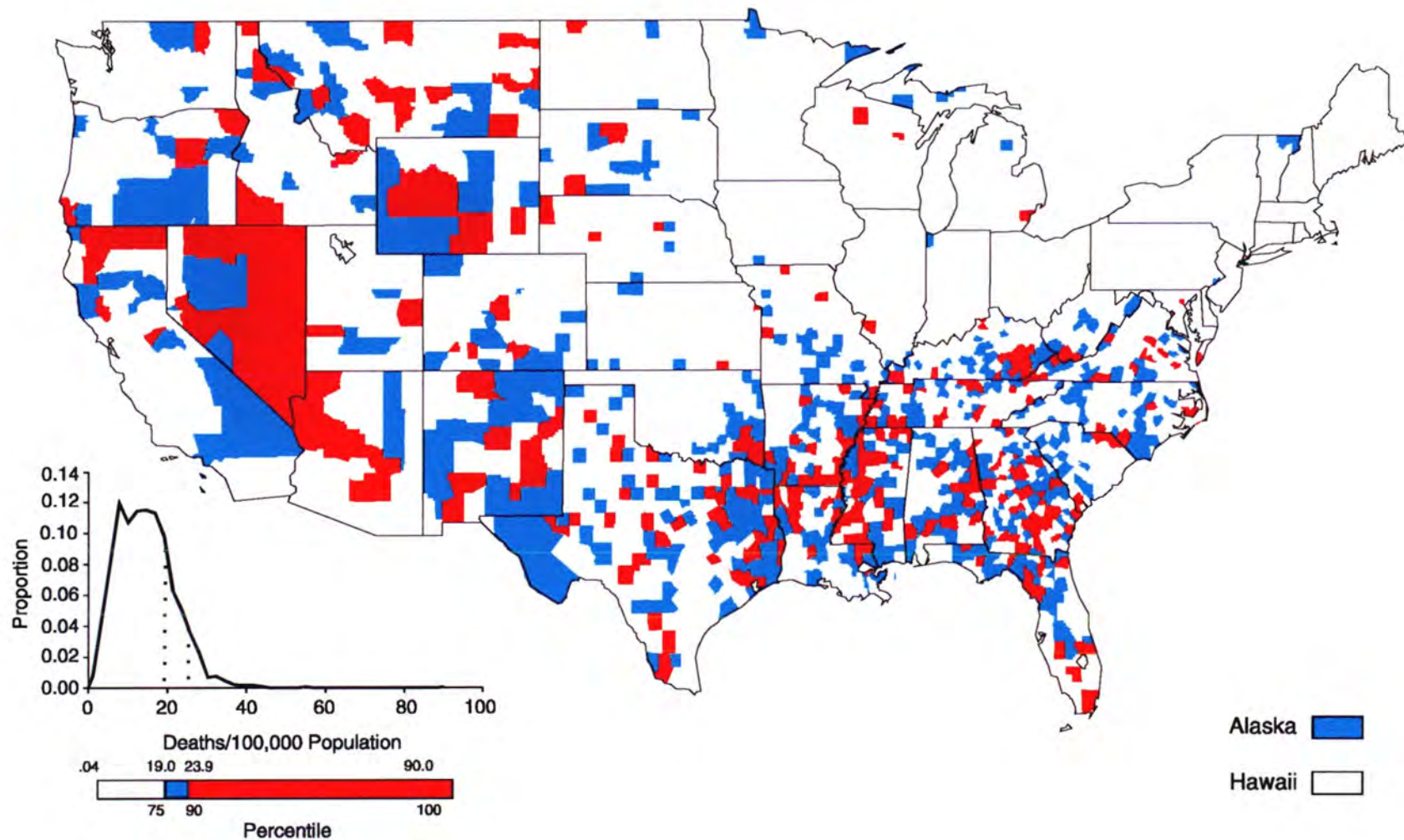
Suicides per 100,000 Population 1984-1992



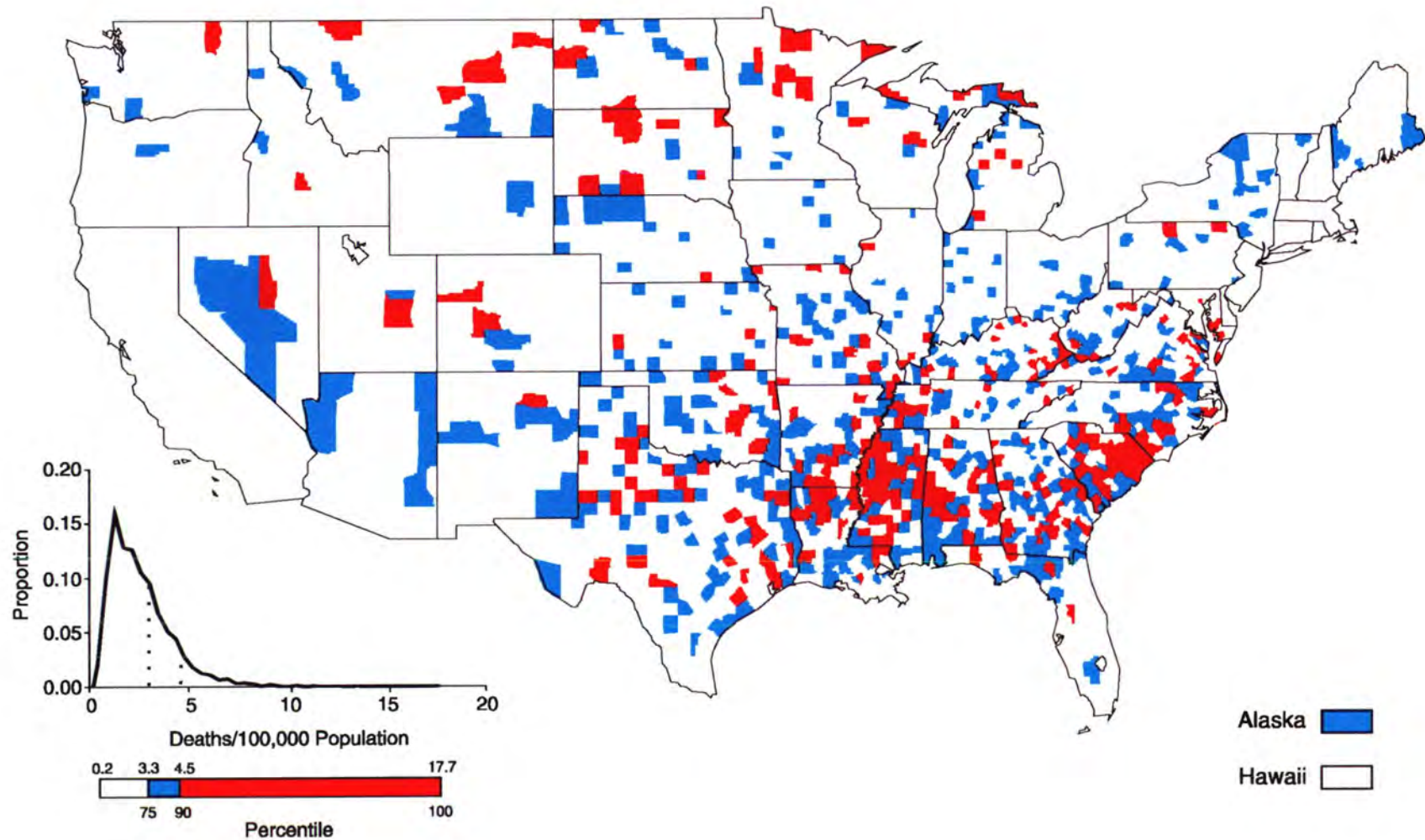
Homicides per 100,000 Population Black Males, 1984-1992



Firearm-Related Deaths per 100,000 Population 1984-1992



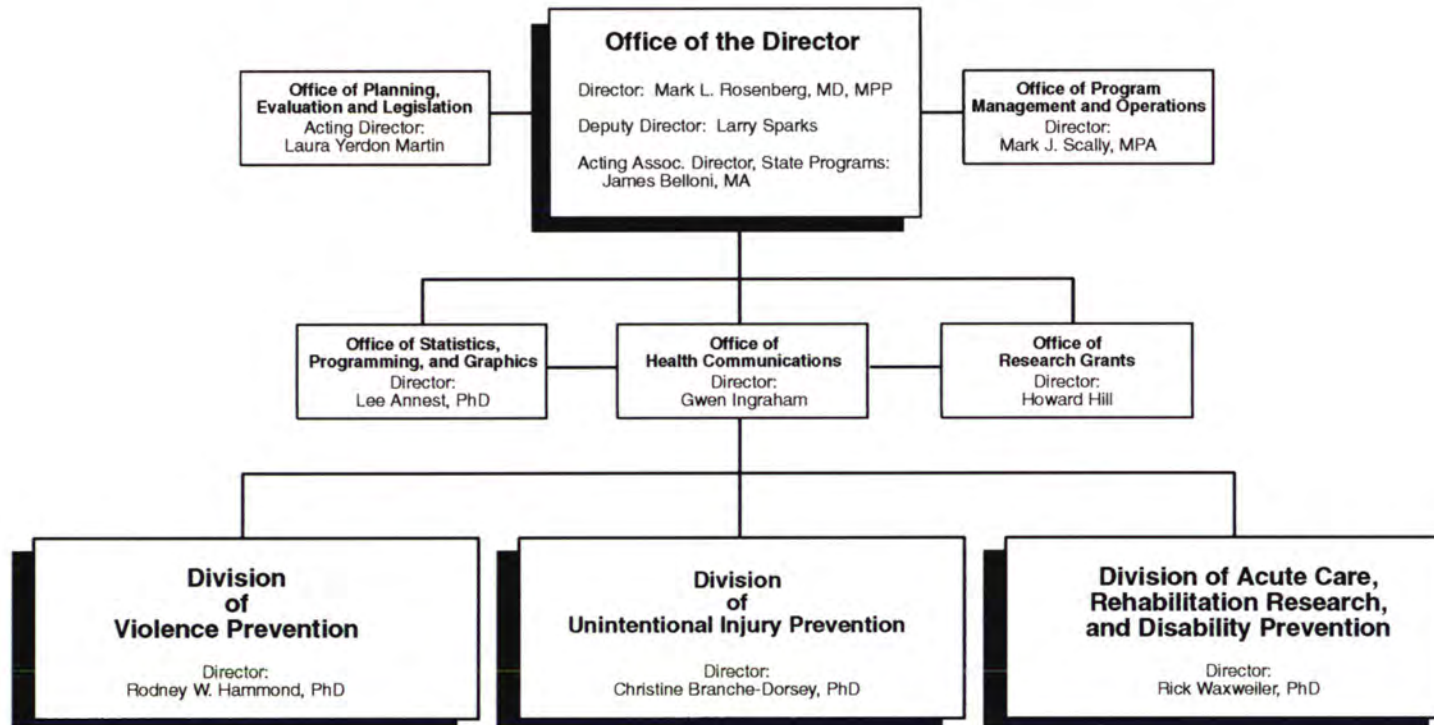
Fire and Burn-Related Deaths per 100,000 Population 1984-1992



National Center for Injury Prevention and Control, CDC Youth Violence Intervention Projects



NCIPC Organization Chart



Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a publication.

Publications have not been scanned in their entirety for the purpose of digitization. To see the full publication please search online or visit the Clinton Presidential Library's Research Room.

Centers for Disease Control [CDC] MMWR
[Morbidity and Mortality Weekly Report] Supplement
August 19, 1988/Vol. 37/No. S-6

15

"CDC Recommendations for a Community Plan for
the Prevention and Containment of Suicide Clusters"



Supplement

MORBIDITY AND MORTALITY WEEKLY REPORT

CDC Recommendations for a Community Plan for the Prevention and Containment of Suicide Clusters

Division of Injury Epidemiology and Control

Center for Environmental Health and Injury Control

Centers for Disease Control

Atlanta, Georgia 30333

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a publication.

Publications have not been scanned in their entirety for the purpose of digitization. To see the full publication please search online or visit the Clinton Presidential Library's Research Room.

"Programs for the Prevention of Suicide Among Adolescents
and Young Adults, Suicide Contagion and the Reporting of
Suicide: Recommendations from a National Workshop"



*Recommendations
and
Reports*

MORBIDITY AND MORTALITY WEEKLY REPORT

**Programs for the Prevention
of Suicide Among Adolescents
and Young Adults**

**Suicide Contagion and the
Reporting of Suicide:
Recommendations from
a National Workshop**

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
and Prevention (CDC)
Atlanta, Georgia 30333



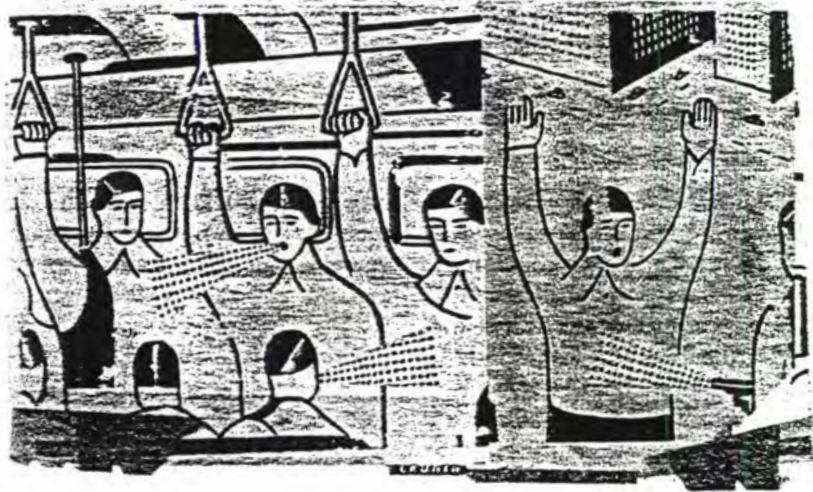
THE TIPPING POINT

Why is the city suddenly so much safer—could it be that crime really is an epidemic?

BY MALCOLM GLADWELL

As you drive east on Atlantic Avenue, through the part of New York City that the Police Department refers to as Brooklyn North, the neighborhoods slowly start to empty out: the genteel brownstones of the western part of Brooklyn give way to sprawling housing projects and vacant lots. Bedford-

strange and unprecedented transformation. According to the preliminary crime statistics released by the F.B.I. earlier this month, New York has a citywide violent-crime rate that now ranks it a hundred and thirty-sixth among major American cities, on a par with Boise, Idaho. Car thefts have fallen to seventy-one thou-



Catching violence: one of the hottest ideas in criminal research today.

Stuyvesant is followed by Bushwick, then by Brownsville, and, finally, by East New York, home of the Seventy-fifth Precinct, a 5.6-square-mile tract where some of the poorest people in the city live. East New York is not a place of office buildings or parks and banks, just graffiti-covered bodegas and hair salons and auto shops. It is an economically desperate community destined, by most accounts, to get more desperate in the years ahead—which makes what has happened there over the past two and a half years all the more miraculous. In 1993, there were a hundred and twenty-six homicides in the Seven-Five, as the police call it. Last year, there were forty-four. There is probably no other place in the country where violent crime has declined so far, so fast.

Once the symbol of urban violence, New York City is in the midst of a

sand, down from a hundred and fifty thousand as recently as six years ago. Burglaries have fallen from more than two hundred thousand in the early nineteen-eighties to just under seventy-five thousand in 1995. Homicides are now at the level of the early seventies, nearly half of what they were in 1990. Over the past two and a half years, every precinct in the city has recorded double-digit decreases in violent crime. Nowhere, however, have the decreases been sharper than Brooklyn North, in neighborhoods that not long ago were all but written off to drugs and violence. On the streets of the Seven-Five today, it is possible to see signs of everyday life that would have been unthinkable in the early nineties. There are now ordinary people on the streets at dusk—small children riding their bicycles, old people on benches and stoops, people coming out of the subways alone. "There

DEAN CRONIN

was a time when it wasn't uncommon to hear rapid fire, like you would hear somewhere in the jungle in Vietnam," Inspector Edward A. Mezzadri, who commands the Seventy-fifth Precinct, told me. "You would hear that in Bed-Stuy and Brownsville and, particularly, East New York all the time. I don't hear the gunfire anymore. I've been at this job one year and twelve days. The other night when I was going to the garage to get my car, I heard my first volley. That was my first time."

But what accounts for the drop in crime rates? William J. Bratton—who as the New York City Police Commissioner presided over much of the decline from the fall of 1994 until his resignation, this spring—argues that his new policing strategies made the difference: he cites more coordination between divisions of the N.Y.P.D., more accountability from precinct commanders, more arrests for gun possession, more sophisticated computer-aided analysis of crime patterns, more aggressive crime prevention. In the Seven-Five, Mezzadri has a team of officers who go around and break up the groups of young men who congregate on street corners, drinking, getting high, and playing dice—and so remove what was once a frequent source of violent confrontations. He says that he has stepped up random "safety checks" on the streets, looking for drunk drivers or stolen cars. And he says that streamlined internal procedures mean that he can now move against drug-selling sites in a matter of days, where it used to take weeks. "It's aggressive policing," he says. "It's a no-nonsense attitude. Persistence is not just a word, it's a way of life."

Alth these changes make good sense. But how does breaking up dice games and streamlining bureaucracy cut murder rates by two-thirds? Many criminologists have taken a broader view, arguing that changes in crime reflect fundamental demographic and social trends—for example, the decline and stabilization of the crack trade, the aging of the population, and longer prison sentences, which have kept hard-core offenders off the streets. Yet these trends are neither particularly new nor unique to New York City; they don't account for why the crime rate has dropped so suddenly here and now. Furthermore, whatever good they have done is surely offset, at least in part, by the economic devastation visited on places like

Brownsville and East New York in recent years by successive rounds of federal, state, and city social-spending cuts.

It's not that there is any shortage of explanations, then, for what has happened in New York City. It's that there is a puzzling gap between the scale of the demographic and policing changes that are supposed to have affected places like the Seven-Five and, on the other hand, the scale of the decrease in crime there. The size of that gap suggests that violent crime doesn't behave the way we expect it to behave. It suggests that we need a new way of thinking about crime, which is why it may be time to turn to an idea that has begun to attract serious attention in the social sciences: the idea that social problems behave like infectious agents. It may sound odd to talk about the things people do as analogous to the diseases they catch. And yet the idea has all kinds of fascinating implications. What if homicide, which we often casually refer to as an epidemic, actually is an epidemic, and moves through populations the way the flu bug does? Would that explain the rise and sudden decline of homicide in Brooklyn North?

WHEN social scientists talk about epidemics, they mean something very specific. Epidemics have their own set of rules. Suppose, for example, that one summer a thousand tourists come to Manhattan from Canada carrying an untreatable strain of twenty-four-hour flu. The virus has a two-percent infection rate, which is to say that one out of every fifty people who come into close contact with someone carrying it catches the bug himself. Let's say that fifty is also exactly the number of people the average Manhattanite—in the course of riding the subways and mingling with colleagues at work—comes into contact with every day. What we have, then, given the recovery rate, is a disease in equilibrium. Every day, each carrier passes on the virus to a new person. And the next day those thousand newly infected people pass on the virus to another thousand people, so that throughout the rest of the summer and the fall the flu chugs along at a steady but spectacular clip.

But then comes the Christmas season. The subways and buses get more crowded with tourists and shoppers, and instead of running into an even fifty peo-

BIRTHDREAM

This time I had given birth
to a child with a dark, remarkable tail.
Part animal, part girl.
I wanted no one to see her,
not even the father. I wanted my privacy
to put her back inside me,
back through the glop of the birth neck,
into the bluish glue my body had made
for her for seven months. It was not time,
she must wait, come back
when the animal had been outgrown. I held her briefly
in my arms, stroked her tail before
we parted, her eyes
nursing the dark moons.

She was never my daughter, and yet
she brought
her own wild light
into the room so that when I opened my eyes
at daybreak
the first thing I saw was snow
spinning small
shoulders in the windows.

The last I saw of her.

—LAURIE KUTCHINS

ple a day, the average Manhattanite now has close contact with, say, fifty-five people a day. That may not sound like much of a difference, but for our flu bug it is critical. All of a sudden, one out of every ten people with the virus will pass it on not just to one new person but to two. The thousand carriers run into fifty-five thousand people now, and at a two-percent infection rate that translates into eleven hundred new cases the following day. Some of those eleven hundred will also pass on the virus to more than one person, so that by Day Three there are twelve hundred and ten Manhattanites with the flu and by Day Four thirteen hundred and thirty-one, and by the end of the week there are nearly two thousand, and so on up, the figure getting higher every day, until Manhattan has a full-blown flu epidemic on its hands by Christmas Day.

In the language of epidemiologists, fifty is the "tipping point" in this epidemic, the point at which an ordinary and stable phenomenon—a low-level flu outbreak—can turn into a public-health crisis. Every epidemic has its tipping point,

and to fight an epidemic you need to understand what that point is. Take AIDS, for example. Since the late eighties, the number of people in the United States who die of AIDS every year has been steady at forty thousand, which is exactly the same as the number of people who are estimated to become infected with H.I.V. every year. In other words, AIDS is in the same self-perpetuating phase that our Canadian flu was in, early on; on the average, each person who dies of AIDS infects, in the course of his or her lifetime, one new person.

That puts us at a critical juncture. If the number of new infections increases just a bit—if the average H.I.V. carrier passes on the virus to slightly more than one person—then the epidemic can tip upward just as dramatically as our flu did when the number of exposed people went from fifty to fifty-five. On the other hand, even a small decrease in new infections can cause the epidemic to nose-dive. It would be as if the number of people exposed to our flu were cut from fifty to forty-five a day—a change that within a week would push the number of

DEPT. OF DISPUTATION

flu victims down to four hundred and seventy-eight.

Nobody really knows what the tipping point for reducing AIDS may be. Donald Des Jarlais, an epidemiologist at Beth Israel Hospital, in Manhattan, estimates that halving new infections to twenty thousand a year would be ideal. Even cutting it to thirty thousand, he says, would probably be enough. The point is that it's not some completely unattainable number. "I think people think that to beat AIDS everybody has to either be sexually abstinent or use a clean needle or a condom all the time," Des Jarlais said. "But you don't really need to completely eliminate risk. If over time you can just cut the number of people capable of transmitting the virus, then our present behavior-change programs could potentially eradicate the disease in this country."

That's the surprising thing about epidemics. They don't behave the way we think they will behave. Suppose, for example, that the number of new H.I.V. infections each year was a hundred thousand, and by some heroic AIDS-education effort you managed to cut that in half. You would expect the size of the epidemic to also be cut in half, right? This is what scientists call a linear assumption—the expectation that every extra increment of effort will produce a corresponding improvement in result. But epidemics aren't linear. Improvement does not correspond directly to effort. All that matters is the tipping point, and because fifty thousand is still above that point, all these heroics will come to naught. The epidemic would still rise. This is the fundamental lesson of non-linearity. When it comes to fighting epidemics, small changes—like bringing new infections down to thirty thousand from forty thousand—can have huge effects. And large changes—like reducing new infections to fifty thousand from a hundred thousand—can have small effects. It all depends on when and how the changes are made.

The reason this seems surprising is that human beings prefer to think in linear terms. Many expectant mothers, for example, stop drinking entirely, because they've heard that heavy alcohol use carries a high risk of damaging the fetus. They make the perfectly understandable linear assumption that if high doses of alcohol carry a high risk, then low doses

must carry a low—but still unacceptable—risk. The problem is that fetal-alcohol syndrome isn't linear. According to one study, none of the sixteen problems associated with fetal-alcohol syndrome show up until a pregnant woman starts regularly consuming more than three drinks a day. But try telling that to a neurotic nineties couple.

I can remember struggling with these same theoretical questions as a child, when I tried to pour ketchup on my dinner. Like all children encountering this problem for the first time, I assumed that the solution was linear: that steadily increasing hits on the base of the bottle would yield steadily increasing amounts of ketchup out the other end. Not so, my father said, and he recited a ditty that, for me, remains the most concise statement of the fundamental nonlinearity of everyday life:

Tomato ketchup in a bottle—
None will come and then the lot'll.

WHAT does this have to do with the murder rate in Brooklyn? Quite a bit, as it turns out, because in recent years social scientists have started to apply the theory of epidemics to human behavior. The foundational work in this field was done in the early seventies by the economist Thomas Schelling, then at Harvard University, who argued that "white flight" was a tipping-point phenomenon. Since that time, sociologists

have actually gone to specific neighborhoods and figured out what the local tipping point is. A racist white neighborhood, for example, might empty out when blacks reach five per cent of the population. A liberal white neighborhood, on the other hand, might not tip until blacks make up forty or fifty per cent. George Galster, of the Urban Institute, in Washington, argues that the same patterns hold for attempts by governments or developers to turn a bad neighborhood around. "You get nothing until you reach the threshold," he says, "then you get boom."

Another researcher, David Rowe, a psychologist at the University of Arizona, uses epidemic theory to explain things like rates of sexual intercourse among teenagers. If you take a group of thirteen-year-old virgins and follow them throughout their teen-age years, Rowe says, the pattern in which they first have sex will look like an epidemic curve. Non-virginity starts out at a low level, and then, at a certain point, it spreads from the precocious to the others as if it were a virus.

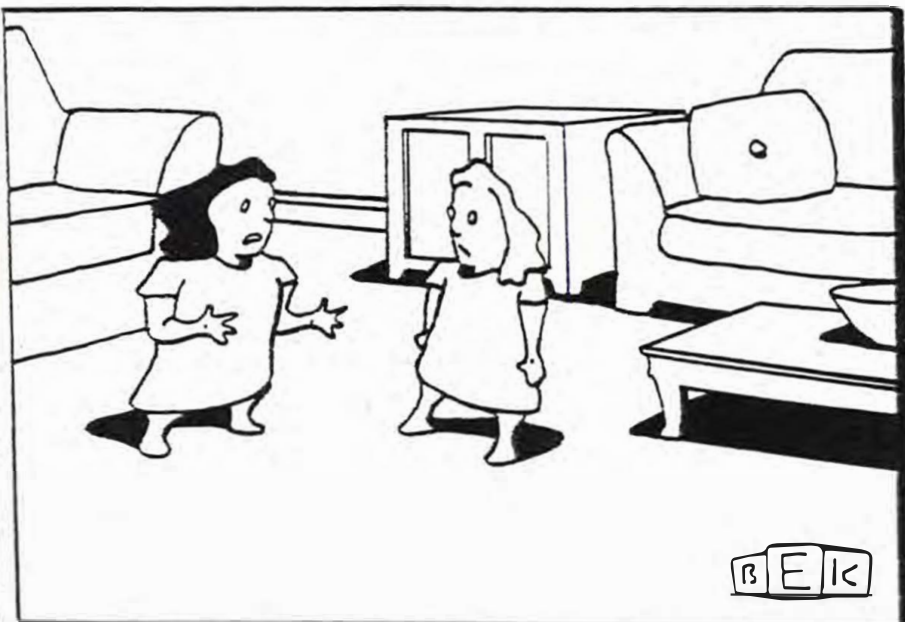
Some of the most fascinating work, however, comes from Jonathan Crane, a sociologist at the University of Illinois. In a 1991 study in the *American Journal of Sociology*, Crane looked at the effect the number of role models in a community—the professionals, managers, teachers whom the Census Bureau has defined as "high status"—has on the lives of teen-

agers in the same neighborhood. His answer was surprising. He found little difference in teen-pregnancy rates or school-dropout rates in neighborhoods with between forty and five per cent of high-status workers. But when the number of professionals dropped below five per cent, the problems exploded. For black school kids, for example, as the percentage of high-status workers falls just 2.2 percentage points—from 5.6 per cent to 3.4 per cent—dropout rates more than double. At the same tipping point, the rates of child-bearing for teen-age girls—which barely move at all up to that point—nearly double as well.

The point made by both Crane and Rowe is not simply that social problems are contagious—that non-virgins spread sex to virgins and that when neighborhoods decline good kids become infected by the attitudes of dropouts and teen-age mothers. Their point is that teen-age sex and dropping out of school are contagious in the same way that an infectious disease is contagious. Crane's study essentially means that at the five-per-cent tipping point neighborhoods go from relatively functional to wildly dysfunctional virtually overnight. There is no steady decline: a little change has a huge effect. The neighborhoods below the tipping point look like they've been hit by the Ebola virus.

It is possible to read in these case studies a lesson about the fate of modern liberalism. Liberals have been powerless in recent years to counter the argument that their policy prescriptions don't work. A program that spends, say, an extra thousand dollars to educate inner-city kids gets cut by Congress because it doesn't raise reading scores. But if reading problems are nonlinear the failure of the program doesn't mean—as conservatives might argue—that spending extra money on inner-city kids is wasted. It may mean that we need to spend even more money on these kids so that we can hit their tipping point. Hence liberalism's crisis. Can you imagine explaining the link between tipping points and big government to Newt Gingrich? Epidemic theory, George Galster says, "greatly complicates the execution of public policy. . . . You work, and you work, and you work, and if you haven't quite reached the threshold you don't seem to get any payoff. That's a very tough situation to sustain politically."

At the same time, tipping points give the lie to conservative policies of benign



"All he did was stick gum in my hair, and now
I have to put up with all this innuendo."

36

neglect. In New York City, for example, one round of cuts in, say, subway maintenance is justified with the observation that the previous round of cuts didn't seem to have any adverse consequences. But that's small comfort. With epidemic problems, as with ketchup, nothing comes and then the lot'll.

EPIDEMIC theory, in other words, should change the way we think about whether and why social programs work. Now for the critical question: Should it change the way we think about violent crime as well? This is what a few epidemiologists at the Centers for Disease Control, in Atlanta, suggested thirteen years ago, and at the time no one took them particularly seriously. "There was just a small group of us in an old converted bathroom in the sub-basement of Building Three at C.D.C.," Mark L. Rosenberg, who heads the Centers' violence group today, says. "Even within C.D.C., we were viewed as a fringe group. We had seven people and our budget was two hundred thousand dollars. People were very skeptical." But that was before Rosenberg's group began looking at things like suicide and gunshot wounds in ways that had never quite occurred to anyone else. Today, bringing epidemiological techniques to bear on violence is one of the hottest ideas in criminal research. "We've got a hundred and ten people and a budget of twenty-two million dollars," Rosenberg says. "There is interest in this all around the world now."

The public-health approach to crime doesn't hold that all crime acts like infectious disease. Clearly, there are neighborhoods where crime is simply endemic—where the appropriate medical analogy for homicide is not something as volatile as AIDS but cancer, a disease that singles out its victims steadily and implacably. There are, however, times and places where the epidemic model seems to make perfect sense. In the United States between the early sixties and the early seventies, the homicide rate doubled. In Stockholm between 1950 and 1970, rape went up three hundred per cent, murder and attempted murder went up six hundred per cent, and robberies a thousand per cent. That's not cancer, that's AIDS.

An even better example is the way that gangs spread guns and violence. "Once crime reaches a certain level, a lot of the

gang violence we see is reciprocal," Robert Sampson, a sociologist at the University of Chicago, says. "Acts of violence lead to further acts of violence. You get defensive gun ownership. You get retaliation. There is a nonlinear phenomenon. With a gang shooting, you have a particular act, then a counter-response. It's sort of like an arms race. It can blow up very quickly."

How quickly? Between 1982 and 1992, the number of gang-related homicides in Los Angeles County handled by the L.A.P.D. and the County Sheriff's Department went from a hundred and fifty-eight to six hundred and eighteen. A more interesting number, however, is the proportion of those murders which resulted from drive-by shootings. Between 1979 and 1986, that number fluctuated, according to no particular pattern, between twenty-two and fifty-one: the phenomenon, an epidemiologist would say, was in equilibrium. Then, in 1987, the death toll from drive-bys climbed to fifty-seven, the next year to seventy-one, and the year after that to a hundred and ten; by 1992, it had reached two hundred and eleven. At somewhere between fifty and seventy homicides, the idea of drive-by shootings in L.A. had become epidemic. It tipped. When these results were published last fall in the *Journal of the American Medical Association*, the paper was entitled "The Epidemic of Gang-Related Homicides in Los Angeles County from 1979 Through 1994." The choice of the word "epidemic" was not metaphorical. "If this were a disease," H. Range Hutson, the physician who was the leading author on the study, says, "you would see the government rushing down here to assess what infectious organism is causing all these injuries and deaths."

Some of the best new ideas in preventing violence borrow heavily from the principles of epidemic theory. Take, for example, the so-called "broken window" hypothesis that has been used around the country as the justification for cracking down on "quality of life" crimes like public urination and drinking. In a famous experiment conducted twenty-seven years

ago by the Stanford University psychologist Philip Zimbardo, a car was parked on a street in Palo Alto, where it sat untouched for a week. At the same time, Zimbardo had an identical car parked in a roughly comparable neighborhood in the Bronx, only in this case the license plates were removed and the hood was propped open. Within a day, it was stripped. Then, in a final twist, Zimbardo smashed one of the Palo Alto car's windows with a sledgehammer. Within a few hours, that car, too, was destroyed. Zimbardo's point was that disorder invites even more disorder—that a small deviation from the norm can set into motion a cascade of vandalism and criminality. The broken window was the tipping point.

The broken-window hypothesis was the inspiration for the cleanup of the subway system conducted by the New York City Transit Authority in the late eighties and early nineties. Why was the Transit Authority so intent on removing graffiti from every car and cracking down on the people who leaped over turnstiles without paying? Because those two "trivial" problems were thought to be tipping points—broken windows—that invited far more serious crimes. It is worth noting that not only did this strategy seem to work—since 1990, felonies have fallen more than fifty per cent—but one of its architects was the then chief of the Transit Police, William Bratton, who was later to take his ideas about preventing crime to the city as a whole when he became head of the New York Police Department.

Which brings us to North Brooklyn and the Seventy-fifth Precinct. In the Seven-Five, there are now slightly more officers than before. They stop more cars. They confiscate more guns. They chase away more street-corner loiterers. They shut down more drug markets. They have made a series of what seem, when measured against the extraordinary decline in murders, to be small changes. But it is the nature of nonlinear phenomena that sometimes the most modest of changes can bring about enormous effects. What happened to the murder rate may not be such a mystery in the end. Perhaps what William Bratton and Inspector Mezzadri have done is the equivalent of repairing the broken window or preventing that critical ten or fifteen thousand new H.I.V. infections. Perhaps Brooklyn—and with it New York City—has tipped. ♦



STAINLESS STEEL/BAMBOO • 5-PIECE PLACE SETTING • \$65 • 1-800-289-4438



GUMP'S
SAN FRANCISCO



THE NEW YORKER

JUNE 3, 1996

COMMENT Children's Crusade	Betty Friedan	5
Transcending the limits of "identity politics."		
IN THE MAIL		8
GOINGS ON ABOUT TOWN		12
THE TALK OF THE TOWN		29
The General's prescription; non-stop Philip Johnson; etc.		
DEPARTMENTS		
Dept. of Disputation The Tipping Point.	Malcolm Gladwell	32
What if crime really is an epidemic?		
Paris Journal Elvis of the Élysée	Adam Gopnik	40
Mitterrand lives on, just as he planned to.		
BACKSTAGE NOTES Death Defying Director	Michael Blakemore	48
Could anything be better than working with Woody Allen, Elaine May, and David Mamet—all at the same time?		
POSTSCRIPT Richard Clurman	Christopher Buckley	56
A REPORTER AT LARGE Diary of a Murder	Melanie Thornstrom	62
Last year, two female students died at Harvard. The killer's journal has just been obtained. Does the story of her life make sense of her death?		
SKETCHBOOK Bob Dole's Kansas Kasuals	Bruce McCall	69
TONY PORTFOLIO Broadway Bravos	Chris Callis, John Lahr	72
FICTION "Who Knows Why"	Julie Hecht	76
Stain or varnish? The metaphysics of house renovation.		
THE CRITICS		
Mixed Media David Letterman's funk	James Wolcott	82
The Current Cinema "Mission: Impossible"	Terrence Rafferty	85
Books Victor Davis Hanson's "Fields Without Dreams"	Jane Smiley	88
W. S. Merwin's "The Vixen"	J. D. McClatchy	92
Briefly Noted		93
POEMS		
"Birthdream"	Laurie Rutchins	34
"The Imaginary Picnic"	Elizabeth Macklin	52
SHOUTS & MURMURS God, Help Me!	Rich Cohen	94
COVER	Altered States, by M. Scott Miller	
DRAWINGS	Lee Lorenz, Tom Cheney, Bruce Eric Kaplan, Michael Crawford, Edward Koren, Michael Maslin, Mike Twohy, Charles Barsotti, Victoria Roberts, Leo Cullum, Arnie Levin, J. B. Handelsman, Robert Weber, Danny Shanahan, Donald Reilly, Robert Mankoff	

THE NEW YORKER (ISSN 0028-792X), published weekly (except for six combined issues: the last week of February and the first week of March, the last week of April and the first week of May, the last week of June and the first week of July, the last week of August and the first week of September, the last two weeks of October, and the last two weeks of December) by The New Yorker Magazine, Inc., 20 W. 43rd St., N.Y., N.Y. 10036. Vol. LXXII, No. 14, June 3, 1996. Periodical postage paid at New York, N.Y., and at additional mailing offices. Authorized as second-class mail by the Post Office Department, Ottawa, Canada, and for payment of postage in cash. Canadian Publication Mail Sales Product Agreement No.190969. Canadian goods-and-services-tax registration number R123242885. Registered as a newspaper at the British Post Office. Subscription rates: In U.S. and possessions, one year, \$39.95; two years, \$72.00. In Canada, one year, \$83.00 (includes G.S.T.). In Germany, one year, DM290. Mail orders to: IP Internationale Presse, Distribution & Marketing GmbH, Waldstr. 70, D-63128 Dietzenbach, Germany. Other foreign subscriptions, one year, \$91.00, payable in advance.

POSTMASTER: Send address changes to The New Yorker, Box 56447, Boulder, Colorado 80322. PRINTED IN U.S.A.

June 3, 1996

THE

Price \$2.95

NEW YORKER



36340

Volume 2:
Risk Factors for
Youth Suicide

Report of the Secretary's Task Force on **Youth Suicide**

Edited by:
Lucy Davidson, M.D.
Markku Linnoila, M.D.

COMMISSIONED PAPER NO. 5: CONTAGION AS A RISK FACTOR FOR YOUTH SUICIDE
(LUCY DAVIDSON, MADELYN GOULD)

January 1989

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

CONTAGION AS A RISK FACTOR FOR YOUTH SUICIDE

Lucy Davidson, M.D., Ed.S., Medical Epidemiologist, Division of Injury Epidemiology and Control, Center for Environmental Health and Injury Control, Centers for Disease Control, and, Clinical Assistant Professor in Psychiatry, Emory University School of Medicine, Atlanta, Georgia

Madelyn S. Gould, Ph.D., M.P.H., Assistant Professor of Clinical Social Sciences, in Psychiatry and Public Health (Epidemiology), Columbia University, College of Physicians and Surgeons, and Research Scientist, New York State Psychiatric Institute, New York, New York

INTRODUCTION

"The sole approach to the youth suicide problem lies in recognizing beforehand the susceptible individuals and in their proper management." Harry Bakwin reached this conclusion in his seminal article entitled, "Suicide in Children and Adolescents" in 1957 (1). In 1987, we are still struggling with these tasks and, during the intervening three decades, our task has expanded enormously. Suicide has become the third leading cause of death for persons in this country aged 15 to 24 (2) and reducing youth suicide is a priority objective for the Department of Health and Human Services (3). We are still working to clarify risk factors for youth suicide in order to identify "susceptible individuals" and develop effective suicide prevention programs. In this paper we focus on the processes by which one suicide becomes a compelling model for successive suicides or facilitates other suicides. We review two bodies of literature: (1) reports of suicide epidemics or clusters for evidence of contagion and possible mechanisms and (2) research on the effects of suicide stories in the mass media. The term "suicide contagion" has been used to describe this pattern.

Until recently, contagion as a risk factor for youth suicide had not stimulated much public awareness or research interest. However, widely publicized clusters of youth suicides in places such as Plano, Texas; Westchester County, New York; and Omaha, Nebraska, have focused attention on the possible role of contagion in suicides that occur close together in time and space.

Suicide contagion is a hybrid term that appends to suicide the medical meaning of contagion as the transmission of a disease through direct or indirect contact. Although suicide is not a disease, per se, applying the infectious disease model to suicide contagion can clarify for whom and through what sorts of contact the likelihood of suicide is increased. Components of the infectious disease model that illustrate analogous factors in suicide contagion are host susceptibility, modes of transmission, degree of virulence, and dose dependency.

Host susceptibility measures an individual's intrinsic ability to ward off or resist an illness. For example, an immunized child would not be very susceptible to measles, even if exposed to an outbreak of measles at school.

For adolescents, host susceptibility to suicide is multidetermined. Genetics play a part—we know that depression is a common antecedent to suicide and that some forms of depression have a strong genetic component. Good baseline emotional health might be like an effective immune system in being highly capable of warding off challenges. Finally, the cognitive and affective ability to identify and speak about feelings may make an individual less susceptible to suicide.

Infectious agents have different modes of transmission. We can classify routes as direct (person-to-person) or indirect. Person-to-person spread may be implicated in subsequent teen deaths following the suicide of another member of the same social network. The suicide of someone famous, such as Marilyn Monroe, may be an indirect exposure to suicide for millions of people. Thus, various suicide contagion pathways may exist: direct contact or friendship with a victim, word-of-mouth knowledge, and indirect propagation through the media.

Infective agents differ in their degree of virulence. Beta-hemolytic streptococci are more virulent than other types of streptococci. Similarly, for youth suicide, the virulence of the agent may be greater when the first death in a potential cluster is that of a highly esteemed role model, such as the class president, rather than a loner who was always perceived as odd or disturbed.

The likelihood of an infection is dose dependent. Not all persons who consume salad contaminated with staphylococci will get food poisoning, but those who had two helpings are much more likely to become ill than the ones who only tasted the salad. The risk to an individual youth for suicide may increase as the number of suicides increases in his or her peer group or in the community. The seventh youth suicide in a widely publicized series of seven is likely to have been more exposed to suicide than his predecessors and, in effect, to have received a higher dose.

Infectious processes, though, can result in a wide variety of clinical effects ranging from

inapparent infection to severe clinical illness or death (4). Persons susceptible to suicide contagion may have an "inapparent infection" and not be registered among suicides or suicide attempters. The consequences of suicide contagion may be inapparent, either because the illness was arrested before the appearance of effects (suicides or suicide attempts) or because the apparent effect was unobserved, ignored, misclassified or unreported (an actual suicide recorded on the death certificate as an accident). Inapparent infections are not available for study and their absence may result in an understatement of the significance of contagion as a risk factor for youth suicide.

Evidence of Suicide Epidemics or Clusters

If contagion does play a role in suicidal behavior, one might expect clusters of suicides to occur. That is, an excessive number of suicides would occur in close temporal and geographic proximity. Evidence for suicide contagion has been reported in accounts of epidemic suicides from ancient times through the 20th century. In England in 665, distraught persons crowded to the seaside cliffs and threw themselves over. They preferred a speedy death to the lingering torture from the plague which was rampant at that time. In 1190 in York, over 500 Jews committed suicide to avoid religious persecution. In 1928, an epidemic of 150 suicidal drownings in the Danube occurred during 2 months. The epidemic was finally controlled by establishing a "suicidal flotilla," a boat squadron to patrol the river (1). Youth have not been immune to epidemic suicide. Between May 1908 and October 1910, 70 children in one school district in Moscow killed themselves (5).

More detailed accounts of epidemic or cluster suicides can be examined for characteristics that suggest that suicide contagion may be part of the etiology. Table 1 summarizes the reports that we have compiled from the literature, newspaper accounts, and our personal knowledge. There is no sys-

tematic surveillance or reporting system for suicide clusters. These accounts have selection biases that affect their representativeness. They are merely descriptive studies. No comparison groups or statistical analyses are included. Furthermore, most of these studies describe suicides among adults. Youth may be differentially exposed and susceptible to the characteristics of suicide contagion presented in these reports.

A number of studies highlight the choice of identical methods among suicides in a cluster (6-12). Most striking is Walton's report of an unintentional death by antifreeze poisoning, which was headlined in the evening paper. Five suicides from antifreeze poisoning ensued. One decedent was found on the bed next to the newspaper featuring the article; another told her husband before her death that she drank the antifreeze because she read about it in the paper (6). Seiden described five cases of suicide by jumping that occurred within a month on a college campus. Each successive case was given extensive news coverage (7). In these two series, as in a report of suicides in Great Britain by burning (9), decedents were not acquaintances, and the route of contagion was presumed to be indirect via the mass media or word-of-mouth.

Subsequent suicides in clusters in which the victims use flamboyant methods automatically access a degree of celebrity. This notoriety may convey the illusion of immortality in a way that counteracts the potential suicide's more realistic appreciation of the finality of death. Nalin has described the "aura" that a particular method of suicide may assume. In Guyana, suicide by malathion insecticide poisoning became associated, through press reports, with unrequited love. Suicides, in this case, were making a publicly recognizable statement through their choice of method. The potential suicide attempter also may have imagined that attendant newspaper publicity would manipulate others (12).

In reviewing epidemic suicide, Forbes Winslow observed that "all human actions

are under the influence and power of example more than precept." He attributed the outbreak of suicides to "the force of imitation being so great and acting prejudicially on weak-minded persons or on those predisposed to mental disorders" (13). Another 19th century writer who considered the role of the potential suicide's intrinsic vulnerability and the impact of outside events said that "...it is difficult to determine how much was due to the psychopathic tendencies of the actors ... and how much to the external circumstances which probably served only as the spark applied to the inflammable material" (11). Contemporary researchers have also considered the impact of poor baseline emotional functioning on susceptibility to suicide in a cluster (6,9,14-16). Emotional well-being, then, could lessen and emotional disability increase host susceptibility. However, the proportion of non-cluster suicides with psychiatric problems (17) may not differ from proportions reported in case series of cluster suicides.

The mechanisms most often associated with epidemic suicides among those who are susceptible are imitation and identification (15, 18-22). Imitation represents the action derived from an identification with another person's needs, the identification being conscious or unconscious (23). Ward and Fox studied a suicide epidemic on an Indian reserve, during which 8 adolescents and young adults died from among the 37 families in that community. The researchers examined the way that one suicidal youth can serve as a role model to be imitated: "The stimulus of one suicide could suggest to others a similar mode of escaping an intolerable life situation" (14). The role model also may be an unintentional death, as in the series of antifreeze suicides reported by Walton (6). Sacks and Eth explored the idea of pathological identification in a cluster of suicides among hospitalized patients. They held that these pathological identifications were "fostered by the individual's past history that may contain many points of common experience" (19).

Although imitation and identification may be powerful mechanisms, emphasizing these components exclusively, as in the term "copy-cat suicides," trivializes the many other factors contributing to suicide. The simplistic notion that one person merely copied another's suicide does not explain why the suicide was copied by that particular individual and not by hundreds of others who were similarly exposed. Suicides remain multidetermined events even when they occur in clusters. Explaining cluster suicides by imitation alone does not take each decedent's susceptibility and stresses into account.

Some researchers have considered the social environment and the ways in which disruptions in that environment or negative social expectations within the milieu may foster cluster suicides. Rubenstein looks at rapid sociocultural change as an environmental setting that fostered clusters of youth suicides (20). Cluster suicides in hospital settings have been attributed to social disruption creating anomie or a sense of hopelessness (24-26). Hankoff felt that the prospect of secondary gain (i.e., reassignment or relocation) was the major environmental influence for a cluster of suicide attempts among Marines. The environmental response to the first attempt provided significant secondary gain; this became the harbinger of other attempts, which were finally averted by minimizing the secondary gains (8).

These accounts of epidemic suicides indicate that temporal and geographic clustering of suicide does occur. Cluster suicides appear to be multidetermined, as are noncluster suicides, but imitation and identification are factors hypothesized to increase the likelihood of cluster suicides. Among those susceptible, the route of exposure to the model may be direct or indirect. The nature of existing research, however, limits conclusions that might be drawn, and also suggests areas for further clarification.

The absence of a standard operational definition for the time and space parameters of a suicide cluster limits our ability to compare

results. Without a clear and replicable definition for suicide clusters, we cannot undertake surveillance. Surveillance could determine what proportion of youth suicides appear to occur in clusters and how representative these case-series findings may be. Suicide clusters are more commonly reported now, but without comprehensive surveillance, we cannot be certain that these episodes occur any more frequently than would be expected by chance variation. Without reference to a comparison group, descriptions of the demographic and psychological characteristics of suicides that occur within the context of a cluster are speculative. What may appear to be a ubiquitous characteristic of cluster suicides may not differentiate them from noncluster suicides or nonsuicides and, therefore, may be of limited value in preventing this particular type of death.

Studies In Progress

Researchers are currently attempting to address the problems identified in the previous section. Field studies are using a psychological autopsy protocol with several cluster outbreaks and including comparison groups and detailed analyses of the relationships between the suicides in an attempt to identify possible mechanisms of contagion. The Centers for Disease Control (CDC) and the New York Psychiatric Institute are conducting two such studies using the psychological autopsy--a procedure that involves reconstruction of the life style and circumstances of the victim, together with details of behaviors and events that led to the death of that individual" (27). Data collection and analysis are still in progress for these studies. Additional suicide clusters have been reported to the CDC. Some recent known clusters are highlighted in Table 2.

These recent clusters indicate that it is not necessary for the decedents to have had direct contact with each other. In the Westchester County outbreak, indirect knowledge of the suicides appears to have been obtained through the news media.

Other clusters had a mixture of members from one social network and individuals who were unknown to each other directly. Among those who knew another decedent, the degree of acquaintance varied—from closest friends to those in the same school or church who knew of each other but had little direct personal contact.

Methods may be similar for most deaths within a cluster, indicating a possible underlying imitative mechanism. The clearest imitation of method is seen in a cluster of suicides by jumping from an expressway overpass in Seattle. Jumping from overpasses had previously been extremely rare in that community. Identical methods, however, may not always reflect direct imitation of another decedent in the cluster. Although all of the Wind River suicides were by hanging, cultural factors may have predominated in that choice of method. Hanging has been the method favored by most native American suicides in that community.

Time-space cluster analysis is another type of ongoing study in which epidemiological techniques are used to detect and statistically assess temporal and geographic clustering of suicides (Gould MS, Shaffer D: A study of time-space clustering of suicide. RFP #200-85-0834 (P), Centers for Disease Control, 10-85-4/87). Several epidemiologic techniques had been developed to examine the occurrence and significance of time-space clusters of diseases (28-30). These methods are being adapted to establish clustering. They can demonstrate an excess frequency of suicide in certain times and places or show a significant relationship between the time and space distances between pairs of suicides. These techniques are being applied to U.S. mortality data on suicides occurring during the two 5-year periods 1978 to 1982 and 1955 to 1959, and also to data from a consecutive series of adolescent suicides in the Greater New York Metropolitan area in 1984. The principal aims of the study are to determine whether outbreaks of suicide are real; that is, (1) whether clusters are occurring more frequently than by chance alone; (2) what

proportion of suicides occur in clusters; (3) whether clustering of suicides is predominantly a phenomenon of youth; and (4) whether the proportion of cluster outbreaks is increasing. The analyses will also provide guidelines on the time and space parameters that should define a suicide cluster.

A limitation of statistical time-space cluster analyses is that they cannot indicate whether clusters are due to the influence of a model suicide, or whether the model merely happened to be the first individual who committed suicide in response to conditions that then led others to die. Field studies are better suited to identifying the mechanisms of the clusters. A goal of the time-space cluster analytic study is to identify a representative sample of clusters for future complementary field investigations.

Media Influence

Most of the research on imitative suicide has focused on the impact of suicide reporting in the mass media. This research strategy examines the possibility of contagion being transmitted indirectly through the media, in contrast to direct, person-to-person propagation. Phelps conducted a prototypic ecological study of media influences on suicide in 1911 and concluded:

The practically universal increase in the mortality of suicides of late years, however, can be demonstrated by official figures of at least comparative accuracy; and as this increase historically parallels that in the number and percentage of sensational, crime-inciting books and newspapers, at least a semblance of positive evidence of the relations of the two is thereby afforded—though not for a moment, of course, can the open-minded student of the painfully complex problem of the increase in suicide forget the fact that the suggestion of printers' ink is but one of the many factors involved (32).

More current studies of the impact of nonfictional suicide reporting will be reviewed

(Table 3A) as well as the impact of fictional suicide stories (Table 3B).

Nonfictional Suicide Stories

Phillips and his colleagues have provided increasing evidence suggesting that imitative behavior follows media coverage of nonfictional suicides (33-37). They reported that prominent newspaper coverage of a suicide has the effect of increasing suicidal behavior within the readership area of the newspaper. The magnitude of the increase is related to the "attractiveness" of the individual whose death is being reported and the amount of publicity given to the story. This finding has been replicated with data from the United States (38) and from The Netherlands (39). In addition, Wasserman found that a significant rise in the national suicide rate occurred only after celebrity suicides were covered on the front page of the New York Times (40).

Sex- and age-specific imitative effects have been noted by Barraclough, Shepherd, and Jennings (41), who found an association between reports of suicide inquests in a local paper and the subsequent suicide of men under 45 years of age. Further support for a sex- and age-specific effect was reported by Motto (42), who found a reduction in suicides among women younger than 35 years of age during a newspaper strike in Detroit. This specific reduction was replicated in another city (43).

Although these investigations support the role of imitative behavior in suicides following nonfictional suicide stories, results of a number of studies have demonstrated no effect (44-47). Baron and Reiss reported that the findings of Bollen and Phillips indicating a significant imitative effect of nonfictional television news stories, were due to statistical artifact and the timing of media events (44). Upon reanalyzing Phillips' data, they reported that the media events had their effects only during periods when suicides were already high; the variables measuring the purported effects of the media events were actually capturing regularities in the distribu-

tion of suicides. Bollen and Phillips did report, however, an excess in suicides that could not be predicted by any day-of-the-week, month, year, or holiday effect and confirmed the excess with two analytic strategies (38).

Stack found no relationship between the monthly national suicide rate and the amount of television coverage per month on suicide stories (46). This lack of a relationship, however, may have been an artifact of the methodology used in the study. Monthly rates of suicide may not be sensitive enough to detect imitative influences, since a contagion effect of the media has been reported not to extend beyond 10 days (35,38). Methodological artifacts may also account for Littmann's not finding a relationship between suicide-related newspaper reports and the occurrence of subway suicides in Toronto. Littman reported that there was no significant excess of newspaper reports before subway suicides in both epidemic and non-epidemic years (47). There were overlaps, however, in the "before" time periods for one suicide with the "after" time periods for another suicide, making independent examination of the "before" period impossible. The examination was limited to subway suicides. An examination of all suicides might have yielded a different result.

The core independent variable in Stack's study was the number of seconds of television coverage of suicide stories included in the 6 o'clock news. There is evidence that it is not only the amount of coverage, but also the type of story that has an impact on subsequent suicides (37,40,45). Articles, reports, features, and editorials are likely to have differential effects. In another study, Stack commented on the tenor of news reporting that may offset imitative effects (45). He found no increase in U.S. suicide rates after widespread coverage of the Jonestown mass suicides. He attributed the lack of imitation to the labeling of decedents as cultists, the presentation of many deaths there as involuntary, and the horror conveyed by postmortem photos.

Differential susceptibility to the imitative effects of the media may also reflect selective coverage in even routine reports. Shepherd and Barraclough analyzed reports of suicides appearing in the Portsmouth News between 1970 and 1972. They found that longer reports were written on violent suicides than on less violent suicides and that violent suicides were more likely to stimulate multiple reports ($p < .001$). Suicides of the very young or very old were more often reported than suicides of other-aged persons. They regarded this distortion of the news as a publishing commitment to entertainment and to the belief that violence is intrinsically newsworthy (48).

Fictional Suicide Stories

Very little research has been carried out on the impact of fictional representations of suicide. In the context of an epidemiological study of childhood suicide, Shaffer implicated this mechanism as a precipitant in one of the 30 consecutive suicidal deaths he studied (49). A teenage victim was found dead with copy of Graham Greene's novel *Brighton Rock*, in which the young, central character commits suicide. There have been anecdotal reports of suicide rates increasing in response to the publication and popularity of other novels and poems. Publication of Goethe's *The Sorrows of Young Werther* in 1774 launched a fad among young men of wearing blue tailcoats and yellow waistcoats like Werther and, in many cases, imitating his suicide (50,51).

Results of recent studies that focus on the effects of media coverage of fictional suicide stories are controversial. Kessler and Stripp (52) failed to replicate Phillips' (37) finding that fictional television suicide stories on daytime television serials--or "soap operas"--triggered imitative deaths. They attributed the discrepancy to Phillips' misspecification of the dates of 8 of the 13 television suicide stories, invalidating Phillips' one attempt to examine the impact of fictional suicide stories.

Holding (53,54) examined the impact of an

11-episode weekly series that was presented by the BBC in Edinburgh to dramatize the suicide prevention work of the Samaritans. The series resulted in a significant increase in new client referrals to the Samaritans in the 4 weeks following the programs. If the series had produced a preventive effect, the rise in referrals should have been associated with a fall in completed suicides. To the contrary, suicides did not decrease during the 10-week period following the series. Moreover, this period did not show the decline that was evidenced in corresponding weeks in comparison years. These results suggest a deleterious effect of fictional suicide stories in the media.

Gould and Shaffer (55) examined the variation in youth suicide and attempted suicide before and after four fictional television films that were broadcast in the fall and winter of 1984/1985. They reported that the observed number of attempted suicides after the broadcasts was significantly greater than expected and that there was significant excess of completed suicides after three broadcasts. Their findings are consistent with an imitation mechanism.

Critique of Methods

The major limitation of the studies in which investigators examined the impact of media coverage of suicides is that all have employed aggregate data (see Tables 3A and 3B). A major constraint of such a design is that it cannot demonstrate whether the suicide victims were actually exposed to the media events. There is always the danger of an ecological fallacy, therefore, which involves making spurious individual-level inferences from aggregate relationships.

As early as 1911, Hemenway outlined a study to determine the effects of newspapers on suicides. He proposed using coroners to collect data in such a way as to avoid making conclusions from aggregate relationships. Coroners would obtain the following information:

- 1) Dates of prominent publication of

details of suicides, with the method selected by the unfortunates. 2) Dates of subsequent suicides with special references to the grouping of cases according to methods. 3) Direct evidence, by asking at inquests for information as to the possible relationship of the suicide being investigated as to previous cases either read about or known of (56).

As Table 3 indicates, Hemenway's proposals have not been acted upon.

Despite the limitation imposed by the use of aggregate data, the investigators in the studies taken as a whole, have employed rigorous statistics, comparison periods, and control variables. Their findings meet a number of criteria that assist judgments about the causal significance of associations. Five criteria for judging causal relationships are time sequence of variables, consistency of associations on replication, strength of association, specificity of association, and coherent explanation (57).

Results of several studies (33,34,36,39,40) established the time sequence of the variables, for instance, that the increase in mortality occurred only after the media events. The suicide stories, it was shown, did not occur during a "suicide wave," but before it.

Consistent findings in support of an imitation hypothesis were reported by the most investigators, despite their differences in method, location, and types of variables. A number of investigators examined an excess of deaths following the appearance of suicide stories (33,34,36,38,40,41,55). Others examined the decrease in deaths during the cessation of newspaper stories (42,43). Different types of control periods were employed, varying from control periods immediately before the suicide story (36), to control periods in different years (34,42), and indirect control periods used in time-series analyses (40). Both quasi-experimental designs (33) and regression analytic strategies (36) were employed. Despite the consistency in the findings, however, the possibility of confounding variables cannot be entirely ruled

out.

The strength of the association is indicated by the reports that suicide stories had larger effects on suicide rates than did day of the week, month, or holidays, which are variables known to affect the suicide rate (38). Furthermore, reports of suicides by celebrities resulted in a large increase in suicides (40).

The final criterion suggested for judging a causal association is whether it is coherent or consistent with existing knowledge. Media coverage of suicides is associated with an increase in subsequent suicides. This increase in suicides relates to the amount of publicity and is restricted to the area in which the stories are publicized. This is consistent with the consensus of laboratory findings that mass media violence can elicit aggression (58). The association is also consistent with a number of mechanisms of contagion, such as imitation and familiarity with the idea of suicide. These mechanisms will be discussed in a subsequent section.

In summary, growing evidence forcefully supports the contention that imitative suicides follow media coverage of nonfictional suicides. The effect extends to both newspaper and television coverage. Some of the inconsistencies that exist among studies could have arisen as a result of significant methodological differences among them. Although there is some evidence that fictional suicide stories have an impact, little information is available and the results of available studies are contradictory.

Mechanisms of Suicide Contagion

Mechanisms underlying the phenomenon of contagion have not been studied in the context of cluster suicides. In social-learning theory, however, behavioral scientists have constructed a foundation on which many aspects of suicide contagion may build. According to this theory, most human behavior is learned through observation and modeling (59). People learn from example. Imitative learning is influenced by a number of factors, including the characteristics of the model and

the consequences or rewards associated with the observed behavior (59). Models who possess engaging qualities or who have high status are more likely to be imitated. Behaviors depicted as resulting in gains, including notoriety, are more effective in prompting imitation.

Consistent with these principles, Phillips and his colleagues have reported that the magnitude of the increase in suicide behavior after prominent newspaper coverage is related to two factors: (1) the "attractiveness" of the individual whose death is being reported, and (2) the amount of publicity given to the story. Likewise, Wasserman found that the national suicide rate rose significantly after suicides of celebrities were reported on the front page of the *New York Times* but not after less prominent suicides (40).

People cannot learn much by observation unless they attend to the modeled behavior (59). A number of factors, some involving the observers' characteristics, regulate the amount of attention to witnessed or reported behavior. Research thus far has only roughly sketched the host characteristics that may yield a greater susceptibility to imitating suicide. Sacks and Eth proposed as one such characteristic a history of similar past experiences that lead to "pathological identification" with the victim (19).

In addition to imitative effects, the occurrence of suicides in the community or in the media may produce a familiarity with, and acceptance of, the idea of suicide. Rubinstein postulated this mechanism in his study of a suicide epidemic among Micronesian adolescents. Familiarity with suicide may eliminate the "taboo" of suicide. It may also lower the threshold point at which the behavior is manifested and may introduce suicide as an acceptable alternative response or option to life stresses (20).

CONCLUSIONS

A review of (1) reports of suicide epidemics, of ongoing studies of suicide clusters, and of

investigations of the news media and their relationship to suicide and (2) work in the behavioral sciences indicates four conclusions:

- Time-space clusters of suicide occur, have been reported among various age groups, and are not a new phenomenon.
- Nonfictional media coverage of suicides is associated with an increase in the observed number of suicides over the number expected. The increase may not be uniform for all age-sex groups.
- Susceptible individuals may be affected by direct or indirect exposures to suicide.
- Imitative learning is fostered if the model is held in high regard and if rewards are expected for the behavior.

Remaining questions are legion. Only substantial research will resolve them. Some of the questions for future research follow:

- What proportion of suicides occur in clusters? Are clusters more common in certain age groups, geographic locations, or times? Is the proportion of cluster outbreaks increasing?
- In comparison with other age groups, in what ways are young people exposed to and susceptible to suicide contagion?
- Which characteristics of model suicides are most likely to cause an increase in suicides?
- Which combination of host susceptibility and contagion factors are most lethal?
- What sorts of prevention and intervention efforts could most effectively avert cluster suicides?
- Does media coverage create new suicides or accelerate suicides that would have occurred anyway?

Youth suicide clusters are a particularly grievous loss of life and are potentially more preventable than single suicides. Interim recommendations are needed even though our knowledge base has sobering gaps. Five basic recommendations follow:

- News media representatives should be encouraged to avoid romanticizing suicide, emphasizing violent aspects, and making celebrities of persons who die by suicide.
- News media representatives should be invited to collaborate in studies to identify the destructive and constructive components of fictional accounts of suicide. Before a decision is made to broadcast such a story, these components should be identified and assessed, and a warning that the program might adversely affect some persons should precede any such broadcast.
- In research studies, variables should be operationally defined, comparison groups used, and individual rather than aggregate- only exposures assessed.
- Surveillance for potential suicide clusters should be established so that potential clusters could be averted and existing clusters kept from spreading. Surveillance would alert researchers to suicide clusters which might be more thoroughly investigated.
- Intervention efforts should be directed toward those who are most exposed (either directly or indirectly) to the "model" suicide and toward those who are most susceptible, for example, those whose emotional health is poor and those who strongly identify with the person who has taken his or her life.

REFERENCES

1. Bakwin H: Suicide in children and adolescents. *J Pediatr* 1957; 50:749-69.
2. Centers for Disease Control: Violent deaths among persons 15-24 years of age—United States, 1970-1978. *MMWR* 1983; 32:453-7.
3. Public Health Service: Promoting health/preventing disease: Objectives for the nation. Washington, D.C.: U.S. Government Printing Office, 1980.
4. Hackett TP, Cassen NH: (eds). *Massachusetts General Hospital handbook of general hospital psychiatry*, 2nd edition. Littleton, Mass.: PSG Publishing Co., Inc., 1987.
5. Popow NM: The present epidemic of school suicides in Russia. *Nevrol Nestnik (Kazan)*, 1911; 18:312-55, 592-646.
6. Walton EW: An epidemic of antifreeze poisoning. *Med Sci Law* 1978; 18:231-7.
7. Seiden RH: Suicidal behavior contagion on a college campus. In: Farberow, NL (ed.), *Proceedings of fourth international conference for suicide prevention*, 1967; 360-5.
8. Hankoff LD: An epidemic of attempted suicide. *Comprehensive Psychiatry* 1961; 2:294-8.
9. Ashton VR, Donnan S: Suicide by burning as an epidemic phenomenon: An analysis of 82 deaths and inquests in England and Wales in 1978-9. *Psychol Med* 1981; 11:735-9.
10. Crawford JP, Willis JH: Double suicide in psychiatric hospital patients. *Br J Psychiatry* 1966; 112:1231-5.
11. Rovinsky A: Epidemic suicides. *Boston Medical and Surgical Journal* 1898; 138:238-9.
12. Nalin DR: Epidemic of suicide by malathion poisoning in Guyana. *Tropical & Geographical Medicine* 1973; 25:8-14.
13. Winslow F: Suicide considered as a mental epidemic. *Bulletin of the Medico-Legal Congress*. New York, 1895, 334-51.
14. Ward JA, Fox J: A suicide epidemic on an Indian reserve. *Can Psychiatr Assoc J* 1977; 22:423-6.
15. Niemi T: The time-space distances of suicides committed in the lock-up in Finland in 1963-1967. *Israel Annals of Psychiatry and Related Disciplines* 1978; 16:39-45.
16. Robbins D, Conroy RC: A cluster of adolescent suicide attempts: Is suicide contagious? *J Adolesc Health Care* 1983; 3:253-5.
17. Robins E: *The final months*. New York: Oxford University Press, 1981.
18. Rosenbaum M: Crime and punishment—the suicide pact. *Arch Gen Psychiatry* 1983; 40:979-82.
19. Sacks M, Eth S: Pathological identification as a cause of suicide on an inpatient unit. *Hosp & Community Psychiatry* 1981; 32:36-40.
20. Rubinstein DH: Epidemic suicide among Micronesian adolescents. *Soc Sci Med* 1983; 17:657-65.
21. Bunch J, Barraclough B: The influence of parental death anniversaries upon suicide dates. *Br J Psychiatry* 1971; 118:621-26.
22. Crawford JP, Willis JH: Double suicide in psychiatric hospital patients. *Br J Psychiatry* 1966; 112:1231-5.
23. Hinsel LE, Campbell RJ: *Psychiatric dictionary* 4th edition. New York: Oxford University Press, 1970.
24. Kahne MJ: Suicide among patients in mental hospitals. *Psychiatry* 1968; 31:32-43.
25. Anonymous: A suicide epidemic in a psychiatric hospital. *Diseases of the Nervous System* 1977; 38:327-31.
26. Kobler AL, Stotland E: *The end of hope: A social-clinical study of suicide*. London: The Free Press of Glencoe, 1964.
27. Farberow NL, Neuringer C: The social scientist as coroner's deputy. *J of Forensic Sci* 1971; 16:15-39.
28. Ederer F, Myers MH, Mantel N: A statistical problem in space and time: Do leukemia cases come in clusters? *Biometrics* 1964; Sept.:626-38.
29. Knox G: The detection of space-time interactions. *Applied Statistics* 1964; 13:25-29.
30. Mantel N: The detection of disease clustering and a generalized regression approach. *Cancer Res* 1967; 27:209-20.
31. Wallenstein S: A test for detection of clustering over time. *Am J Epidemiology* 1980; 111:367-73.
32. Phelps EB: *Neurotic books and newspapers as*

factors in the mortality of suicide and crime. *Bulletin of the American Academy of Medicine* 1911; 12:264-306.

33. Phillips D: The influence of suggestion on suicide: Substantive and theoretical implication of the Werther effect. *Am Sociological Review* 1974; 39:340-54.

34. Phillips DP: Suicide, motor vehicle fatalities, and the mass media: Evidence toward a theory of suggestion. *Am J Sociology* 1979; 84:1150-74.

35. Phillips DP: Airplane accidents, murder, and the mass media: Towards a theory of imitation and suggestion. *Social Forces* 1980; 58:1001-24.

36. Bollen KA, Phillips DP: Suicidal motor vehicle fatalities in Detroit: A replication. *Am J Sociology* 1981; 87:404-12.

37. Phillips DP: The impact of fictional television stories on U.S. adult fatalities: New evidence on the effect of the mass media on violence. *Am J Sociology* 1982; 87:1340-59.

38. Bollen KA, Phillips DP: Imitative suicides: A national study of the effects of television news stories. *Am Sociological Review* 1982; 47:802-9.

39. Ganzeboom HBG, de Haan D: Gepubliceerde zelfmoorden en verhoging van sterfte door zelfmoord en ongelukken in Nederland 1972-1980. *Mens en Maatschappij* 1982; 57:55-69.

40. Wasserman IM: Imitation and suicide: A reexamination of the Werther effect. *Am Sociological Review* 1984; 49:427-36.

41. Barraclough B, Shepherd D, Jennings C: Do newspaper reports of coroners' inquests incite people to commit suicide? *Br J Psychiatry* 1977; 131:529-32.

42. Motto JA: Newspaper influence on suicide. *Arch Gen Psychiatry* 1970; 23:143-8.

43. Blumenthal S, Bergner L: Suicide and newspapers: A replicated study. *Am J Psychiatry* 1973; 130:468-71.

44. Baron JN, Reiss PC: Reply to Phillips and Bollen. *Am Sociological Review* 1985; 50:372-6.

45. Stack S: The effect of Jonestown on the suicide rate. *J Soc Psychol* 1983; 119:145-6.

46. Stack S: The effect of suggestion on suicide: A reassessment. Paper read at the Annual Meetings of the American Sociological Association, San Antonio, Texas, 1984.

47. Littmann SK: Suicide epidemics and newspaper reporting. *Suicide and Life-Threatening Behavior* 1985; 15:43-50.

48. Shepherd D, Barraclough BM: Suicide reporting: Information or entertainment? *Brit J Psychiat* 1978; 132:283-87.

49. Shaffer D: Suicide in childhood and early adolescence. *J Child Psychol Psychiatry* 1974; 15:275-91.

50. Spender S: Foreword to JS Goethe: The sorrows of young Werther. New York: New American Library, 1962.

51. Goethe JS: Reflections on Werther. New York: New American Library, 1962.

52. Kessler RC, Stipp H: The impact of fictional television suicide stories on U.S. fatalities: A replication. *Am J Sociology* 1984; 90:151-67.

53. Holding TA: The B.B.C. "Befrienders" series and its effects. *Brit J Psychiatry* 1974; 124:470-2.

54. Holding TA: Suicide and "The Befrienders." *British Medical Journal* 1975; 3:751-753.

55. Gould MS, Shaffer D: The impact of suicide in television movies: Evidence of imitation. *N Engl J Med* 1985; 315:690-4.

56. Hemenway HB: To what extent are suicide and other crimes against the person due to suggestion from the press? *Bulletin of the American Academy of Medicine*

1911; 12:253-63.

57. Susser M: Causal thinking in the health sciences: Concepts and strategies in epidemiology. New York: Oxford University Press, 1973.

58. Comstock B: Television and human behavior: The key studies. Santa Monica, CA: Rand, 1975.

59. Bandura A: Social learning theory. New Jersey: Prentice-Hall, 1977.

60. Motto JA: Suicide and suggestibility—the role of the press. *Am J Psychiatry* 1967; 124:252-6.

Descriptive Studies of Epidemic or Cluster Suicide

Reference	Data Source	Population Studied	Description/Findings	Proposed Mechanism
Anonymous, 1977 (25)	Case histories	Psychiatric inpatient suicides	— 3 suicides on 1 ward occurred within 8 months and no others in 10 years in that psychiatric hospital.	— 'Fragmented leadership, faulty supervision, and staff demoralization and anomie may contribute to poor psychiatric care and to epidemics of suicide in psychiatric hospitals.'
Ashton and Donnan, 1961 (9)	Coroner's reports and death certificates	82 suicides by self-immolation, 1976-79 in England and Wales	— Between 10/76 and 9/79, there were 82 suicides by burning compared with a yearly average of 23 between 1963 and 1976. — Most of the suicides were known to be psychiatrically ill and were predominately young men or older married women.	— Imitation, 'mediated by news coverage.'
Crawford and Willis, 1966 (10)	Psychiatric hospital records	24 inpatient suicides at Stone House Hospital, England, between 1876 and 1965 from which 'similar' suicides occurring within 12 months were identified	— 3 pairs of similar suicides were identified plus 1 suicide that imitated that of a patient from another psychiatric hospital whose body was found on the hospital grounds. — Each of the 4 pairs used the same method: cut throat, hanging (2 pairs), jumping. — 1 pair were close friends. — 2 pairs used identical locations.	— The second patients were 'infected' by the success of the first. — Suicide as an effort to join a deceased friend. — Imitation.
Hankoff, 1961 (8)	Case histories	12,000 U.S. Marine Corps troops stationed in a remote, isolated place	— 16 suicide attempts and 1 suicide occurred in 12 months. — 7 of the attempts occurred in July and August and were knife wounds. The suicide occurred during this span.	— The suicide attempts represented infectious acting-out, the epidemic being 'an emergent event of a shared group process...' — Choice of method seemed 'more a matter of suggestion or conformity than of specific motivational significance.' — July-August attempts were 'inaugurated by an attempt which attained 'maximum' secondary gains (no hospitalization).'
Kahne, 1966 (24)	Questionnaires and interviews	Psychiatric inpatients	— An 'epidemic' of 8 suicides occurred.	— 'all eight suicide cases occurred during a period of marked social disorganization within the hospital, a period which is most appropriately described as anomic.'
Kobler and Stotland, 1964 (26)	Hospital records, interviews	Psychiatric inpatients, average census - 20	— 1 patient attempted suicide 12/23/59 and 3 others committed suicide between 1/1 and 1/18/60. Another suicide occurred 6/60.	— Social expectations among hospital staff of helplessness and hopelessness were communicated to patients as an implicit or explicit expectation of suicide.
Nalin, 1973 (12)	Hospital records, and case reports	Suicides and suicide attempts by malathion poisoning in Guyana	— Malathion was introduced to Guyana between 1960-62, and malathion poisoning cases increased from 16 in 1962 to 100 in 1964. — From hospital records the malathion suicide attempt rate was 31 per 100,000 and increasing.	— 'Retroflected rage, impulsively expressed and without obvious depression' — Uncontrolled availability of malathion. — 'Widespread press publicity exploiting the dramatic aspects of cases in which rejected love is the motivation for poisoning has helped to give malathion an aura of lethality.' — Attempters may expect newspaper publicity of their act to affect their families.
Niemel, 1978 (13)	Questionnaires sent to police districts	Suicides in jail in Finland, 1963-1967. N=28	— 'The number of suicides committed in the lock-up within 24 and 48 hours counted from the previous suicide in the lock-up was significantly greater than expected'	— Identification and a 'mental state of readiness'

Table 1.

Descriptive Studies of Epidemic or Cluster Suicide

Reference	Data Source	Population Studied	Description/Findings	Proposed Mechanism
Robbins and Conroy, 1963 (16)	Case reports of patients seen at a psychiatric hospital	Chappaqua high-school students, New York, who presented with suicide attempt or ideation	—After 2 suicides in a high school population, 5 students attempted and 1 was admitted with severe suicidal ideation within 7 weeks. The first attempter was visited during his hospitalization by the other 5. They comprised a peer group at school.	—“suicide attempts may cluster among groups of young people with risk factors for self-destructive behavior.”
Rovinsky, 1966 (11)	Interviews	“Epidemic” suicides near Odessa, Russia	—Members of a religious sect committed suicide by being buried alive. —Deaths occurred in groups on 4 occasions during a 3-month period. —N = 9, 5, unknown, 5.	—The sect leader convinced followers that death from the Anti-Christians was imminent and unavoidable and that it was preferable to “die for Christ” voluntarily by suicide. —Influence of the charismatic leader on “psychopathic tendencies” of the members—“the spark applied to the inflammable material.”
Rubinstein, 1963 (20)	Hospital and medical records, all death certificates, police records, church records; and 250 semi-structured interviews with suicide attempters and friends and relatives of suicide victims	Micronesia (the U.S. Trust Territory of the Pacific Islands)	—Over 12 years, 25 suicides occurred in clusters of 3 or 4 in several months, then none for a year or so. —8-fold increase in suicide rates since 1900 among 15- to 24-year-old males.	—“as suicide grows more frequent in these communities, the idea itself acquires a certain familiarity if not fascination to young men, and the lethality of the act seems to be trivialized.” —Prominence of role model a factor. —“suicides have acquired subcultural significance among male youth, giving rise to fad-like and imitative acts.” —“The significance of the act acquires an aspect of collective identification and familiarity, making it less aversive to troubled youth.”
Sacks and Eih, 1961 (19)	Case histories	Psychiatric inpatients	—1 patient's suicide precipitated another's suicide attempt and suicidal preoccupation in another. —The suicide attempter used the same method as the suicide (jumping). Patient with suicidal preoccupation had made a previous attempt by this method and had visited the attempter in ICU after his fall.	—Risk is high in “those who have formed pathological identifications with the victim as the result of a history of similar past experience, especially that of a suicidal or abandoning parent.” —The schizophrenic's impaired object relations and reality testing may increase vulnerability to the partial and bizarre identifications that might have contributed to their suicidal preoccupation and behavior.”
Seldan, 1967 (7)	Hospital records, police reports, coroner's reports, newspapers, interviews	Suicides on a college campus	—5 male suicides by jumping occurred on the University of California, Berkeley campus during 1 month in 1967. —Subjects had histories of chronic and severe mental disorders.	—Hypothesis of symbolic location rather than behavioral contagion. —“particular locations maybe highly valued and perhaps even necessary for the commission of suicide.”
Walton, 1978 (8)	Case reports	Accidental poisonings, suicides and suicide attempts by antifreeze in England	—After a widely publicized unintentional death from antifreeze, 5 suicides and 6 attempts occurred by that method. —All of the suicides had preexisting psychiatric illness.	—“There is little doubt that the publicity attached to the first unfortunate accident resulted in five imitative suicidal deaths.”
Ward and Fox, 1977 (14)	Interviews with family, neighbors, police & coroner's reports, hospital records	Native Americans in Ontario	—Eight suicides occurred within 12 months in a small rural community of 3,000.	—“The stimulus of one suicide could suggest to others a similar mode of escaping an intolerable life situation.” —Contagion among vulnerable persons.

Table 1 concluded.

CHARACTERISTICS OF RECENT SUICIDE CLUSTERS

Location	Number of Suicides	Sex	Age Range	First Date of Death	Last Date of Death	Methods	Social Relation to Another in Cluster
Palo, Texas	8	7M 1F	14-18	2/23/83	5/8/84	4 Gunshot 4 Carbon monoxide	Some
Westchester and Putnam Counties, New York	8*	8M	13-19	2/4/84	3/13/84	3 Hanging 1 Gunshot 1 Carbon monoxide	None
Clear Lake, Texas	6	6M 1F	14-19	8/9/84	10/11/84	3 Gunshot 2 Hanging 1 Carbon monoxide	Some
Seattle, Washington	3	3M	20's-42	7/8/85	7/14/85	3 Jumping from expressway overpass	Unknown
Wind River, Wyoming	8†	9M	14-25	8/10/85	10/1/85	8 Hanging	Some
Omaha, Nebraska	3	2M 1F	15-18	2/3/86	2/7/86	1 Gunshot 2 Overdose	Some

* An unintentional hanging also occurred

† 4 other suicides of tribal members ages 17-34 occurred between 1/2/85 and 10/18/85. All were by hanging.

Table 2.

STUDIES EXAMINING MEDIA INFLUENCES ON SUBSEQUENT IMITATIVE SUICIDES*

A. Nonfictional Suicide Stories

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Statistics	Support of Imitation
Baron, and Reiss, 1984 (44)	Daily U.S. suicides for 1972-1978 (also examined homicides for 1973-1978—only the portion pertaining to the suicides is presented here).	Employed a list of publicized suicide stories carried on network news programs, a list originally used by Bollen & Phillips (1982). A different set of publicized stories was used also (details of added stories not given). The study was designed to extend the earlier study by Bollen & Phillips. Regression analytic design. Ecological design.	Indirect control periods through the use of regression analysis.	Suicide stories only had their effects during periods when suicides were already high. Explained the discrepancy between this finding and Bollen & Phillips' earlier finding by the fact that the earlier regression model did not include a term to represent an interaction between the day of the week and holidays and suicide story. However, Bollen & Phillips did control for main effects of day, week and holidays in their regression model.	Time series regression analysis. Most coefficients of story by day variable were not significant.	No
Barracklough, Shepherd, and Jennings, 1977 (41)	Suicides and undetermined deaths in Portsmouth, England, between 3-year period—1/1/70 to 12/31/72. There were 76 deaths (54 suicides and 22 undetermined).	Newspaper reports about suicide inquests were identified in the local daily newspaper in the area (128 reports were identified). They determined the number of days that had been preceded within 2, 4, and 7 days by one or more reports to derive an 'expected' distribution. They compared this to the 'observed' distribution of the number of days on which a suicide occurred that had been preceded by a report. Four age/sex groups (aged 44 and younger; 45 and older) were independently tested. Ecological study—cannot determine whether suicides need the newspaper.	Observed-to-expected distribution of days—preceded by a newspaper report.	Association between newspaper reports of suicide inquests and men under 45, but not for other age and sex groups. Characteristics of the suicides did not correspond to the reports.	Chi-square goodness of fit test for binomial test, if the expected frequency was < 5). 2 days before: binomial $p < .03$. 4 days before: $X^2 = 7.30$ $p < .01$. 7 days before: $X^2 = 5.03$ $p < .05$.	Yes. Sex- and age-specific
Blumenthal and Beroner, 1973 (43)	Period of major newspaper strike in NYC: 4/26/68 to 9/1/68 (140 days) 3/8 newspapers on strike.	The age, sex and method of each suicide during the strike period was determined and suicide rates per 100,000 were calculated. The same data were obtained for each of the preceding 3 years. Designed as replication of Motto (1970) study. Ecological study.	Period of strike was compared with identical periods in preceding 3 years. 2 later years also examined.	The overall rate during the period was significantly lower than the mean rate for the preceding 3 years. However, for women aged 15-24 and 25-34 the suicide rates during the blackout were the lowest in the 6 years studied.	Wilcoxon matched pairs signed rank test. Male and females considered separately and each age group was used to form matching pairs (3-year mean rate vs. rate during strike). Actual statistics not given.	Yes. Age- and sex-specific

Table 3.

STUDIES EXAMINING MEDIA INFLUENCES ON SUBSEQUENT IMITATIVE SUICIDES*

A. Nonfictional Suicide Stories

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Statistics	Support of Imitation
Bollen and Phillips, 1981 (38)	Daily Detroit mortality statistics for 1973-1978. Motor vehicle fatalities considered covert suicides.	Compiled a list of all suicide stories appearing on the front pages of the 2 largest daily newspapers in Detroit (9 suicide stories identified). Examined relationship between publicized suicides and motor vehicle fatalities (MVF). Designed as replication of Phillips (1978) study. Quasi-experimental analysis similar to Phillips' study and regression analysis. Ecological study.	In quasi-experimental analysis the experimental period was the third day after the publicized suicide. The control period was 1 week before.	Motor vehicle fatalities increased significantly on the third day after a suicide was publicized in the newspaper. Third day corresponds to peak found in Phillips' (1978) study.	T-test for matched pairs: $t = 2.77$, 8df, $p = .012$. In regression analysis, variables representing the day of week, month, year, and national holidays were included as explanatory variables. Lagged variables from 0 to 8 days were included to estimate duration of the effect. Controlling for daily, monthly, and yearly effects, increase of 1.83 (regression coefficient, $t = 2.26$) in MVF 3 days after story.	Yes
Bollen and Phillips, 1983 (38)	U.S. daily mortality statistics (suicides), 1972-1978.	The Vanderbilt Television News Index was searched for all stories about specific individual suicides carried on 2 or more network news programs (presented by ABC, CBS, and NBC). Several publicized suicides identified. Examined the relationship between publicized TV suicides and subsequent suicides. Quasi-experimental design as well as regression analysis. Ecological study.	In quasi-experimental analysis the experimental period was the entire week after the publicized suicide. The control period was the week before the experimental period.	Suicides generally increased in the week after publicized suicide story. The effect did not extend beyond 10 days.	T-test for matched pairs: $t = 1.725$, 8df, tailed, $p = .088$. In regression analysis controlled for day of week, month, year, holidays. Regression coefficients representing effect on the same day and 1, 6, and 7 days after were statistically significant. The suicide stories had larger effects than the other variables considered. There was no statistically significant increment in explained variance beyond a lag of 10 days. To test for spuriousness of results, examined effects before story—no significant increase before story.	Yes

Table 3 continued.

STUDIES EXAMINING MEDIA INFLUENCES ON SUBSEQUENT IMITATIVE SUICIDES*

A. Nonfictional Suicide Stories

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Statistics	Support of Imitation
Littmann, 1985 (47)	Toronto subway suicides, 1968-1977. Epidemic of subway suicides in 1971 (N = 98 subway suicides).	Examined the temporal relationship between subway suicides and all suicide-related reports (reports, articles, features and editorials) in Toronto Star newspaper. Ecological study.	Before and after periods (ranging from 1 to 21 days) for each subway suicide. An annual before and after average was calculated for each interval.	No significant difference between the number of suicide-related newspaper reports before and after subway suicides. However, as author reports, there were overlaps of before periods of some suicides with the after periods of other suicides.	No specifics given	No
Motto, 1987 (58)	Suicide rates in 7 cities that had complete cessation of newspaper publication during strikes (Baltimore: 48 days in 1965; New York: 109 days in 1963; Detroit: 135 days in 1963; Portland: 25 days in 1949; Seattle: 58 days in 1945; Honolulu: 83 days in 1963). Ecological study.	Compared incidence of suicide during newspaper blackout to incidence during the same months of the 5 years before the newspaper blackout. An imitation hypothesis would predict the reduction of suicides during a newspaper blackout.	Blackout period compared with same months in 5 prior years (Use of prior 5 years as comparison period introduces possible confounding of secular trends.)	No significant difference between the incidence during the blackout and the mean of the prior 5 years. However, there was a trend for the incidence to be lower during the blackout in 5 cities. In Detroit, the previous rising trend of suicide attempts appeared to be interrupted by the blackout. Attempts were examined only in this city.	Wilcoxon matched pairs signed ranks test not significant.	No (although trends in data give some support)
Motto, 1970 (42)	Period of newspaper blackout in Detroit, 11/17/67 through 8/10/68 (268 days).	The age, sex, and method of suicides during the newspaper blackout were determined and the suicide rates of age and sex specific groups were calculated. The same data were obtained for the same period of the preceding 4 years, and the year after the blackout year. Ecological study.	Blackout period compared with same period in 4 prior years and 1 subsequent year.	80% drop in incidence during blackout from women's prior mean. Specific age groups showed consistent decline in incidence during blackout with exception of 55 to 64 year group. Women aged 15 to 24 and 25 to 35 showed the most marked decline.	Wilcoxon matched pairs signed ranks test performed separately for men and women (4-yr. mean compared with blackout mean)—significant difference for women at .01 level.	Yes age- and sex-specific
Phillips, 1974 (33)	Monthly U.S. suicide statistics for 1947 to 1967.	Compiled a list of suicide stories appearing on the front page of the New York Times. The New York Daily News, Chicago Tribune, and London Daily Mirror were used to examine the effect of the amount of publicity. 35 front page suicide stories were identified; 3 pairs shared same dates. Quasi-experimental design. Ecological study.	In quasi-experimental analysis the experimental period was the month of the suicide story. The control period was the average of the same months in the prior and subsequent years. For suicide stories late in a month (after the 23rd), the experimental period was the month after the story. The 23rd was an arbitrary cutoff; however, results were consistent when other cutoffs were used.	Suicides increased after 25 front-page stories. Excess suicides occurred only after stories, not before stories. The more publicity, the larger the rise in subsequent suicides. The rise is restricted to the area of publication. Bereavement, effect of prior conditions, and misclassification were ruled out as explanations.	Probability of increase after 26 of 33 front page stories is .00088 (binomial test, $p = .5$, $n = 33$); rank order of suicide stories according to amount of publicity (0 to 4 days) in precise predicted order ($p = .0083$ [1/120]); Wilcoxon matched pairs signed rank test on rise in publicized area vs. other area significant (.005).	Yes

Table 3 continued.

STUDIES EXAMINING MEDIA INFLUENCES ON SUBSEQUENT IMITATIVE SUICIDES*

A. Nonfictional Suicide Stories

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Statistics	Support of Imitation
Phillips, 1979 (34)	Daily motor vehicle fatalities in California 1966-73.	Compiled list of front-page suicide stories from the Los Angeles Times and San Francisco Chronicle. 23 front page suicides identified; 2 and 2 suicides occurred within 1 week of each other and therefore each group treated as 1 story. To examine the effect of publicity, the 5 largest papers in California were examined. Ecological study.	The experimental period was the week after the story. The control period was the same period in remaining (prior and subsequent) years of study. A regression line was fitted to the number of MVF in the control periods to estimate the expected number of deaths in the period. For the analysis of the duration of the effect, the periods varied from 2 days before to 11 days after the story.	The number of MVF increased an average of 8% in the week after each suicide story. The greatest increase occurred 3 days after story (31%). The more publicity, the greater increase in MVF. The age of the drivers was correlated to the age of the person described in the story. Single car accidents increased more than other types. Fatalities more frequent in area where story was publicized. Last, crashes after suicide stories were more lethal than crashes at other times, as indicated by time between crash and death.	Walsh test, $p = .010$ 1 tailed (used for examination of increase). Pearson correlation between amount of publicity and change in MVF = $-.59$, $p < .005$. Ratio of death from single vehicle accidents to other types of death is $.88$ for experimental period and $.43$ for control period. The difference between the 2 ratios is significant at $.0213$ (hypergeometric, 1 tail). Correlation between age of publicized suicide and age of driver is $.46$ ($p = .02$, t -test, 1 tailed, 18df).	Yes
Stack, 1983 (45)	Monthly U.S. suicide rates for Jan. 1977-June 1980 and unemployment rates.	Two months of media coverage were set at a score of 1 to be a dummy variable.	Pre- and post-exposure time periods were compared.	There was no relationship between reporting of the Jonestown suicides and U.S. suicide rates. The greater the unemployment rate, though, the greater the suicide rate.	Cochrane-Orcutt time series techniques: beta = $-.179$, $F = 1.45$, $p > .05$ for Jonestown event, and beta = $.327$, $F = 4.83$, $p < .05$ for unemployment rate.	No
Stack, 1984 (46)	Monthly U.S. suicide statistics for 1972 through 1980.	Two indices of television of suicide events were developed. The first index represented the number of events per month on the evening news (ABC, NEC, CBS). The second index was the seconds of coverage per month. The data were taken from the Vanderbilt Television News Archives. Time series analysis to examine the relationship between TV coverage and monthly suicide rate. Additional variables in multi-variate model were monthly divorce rate, unemployment rate, and duration of employment. Ecological study.	Indirect control periods through the use of regression analysis.	Amount of television coverage was unrelated to monthly suicide rate. Duration of unemployment and springtime were related to increase in suicide rate.	Cochrane-Orcutt procedure, a form of generalized least-squares estimation (multivariate time series analysis). Standardized coefficient for index representing number of seconds of TV news coverage was $-.01$.	No.

Table 3 continued.

STUDIES EXAMINING MEDIA INFLUENCES ON SUBSEQUENT IMITATIVE SUICIDES*

A. Nonfictional Suicide Stories

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Statistics	Support of Imitation
Wasserman, 1984 (40)	Monthly U.S. suicide rates for 1947 through 1977.	Extended Phillips' (1974) list of front page suicides in the New York Times (N=46 cases). Also indicated whether the suicides were rational celebrities. Quasi-experimental design as well as multivariate time series analysis. Used months as the unit of analysis. Included duration of unemployment as another explanatory variable, controlling for seasonal effects and wars. Ecological study.	For quasi-experimental analysis the experimental period was the month after the suicide story; the control period was the same month in prior and subsequent years. Indirect control periods time-series analysis.	There was a rise in suicides after 34 of the 46 cases. The increase was due to the celebrity suicides. There was a mean rise of 133.6 suicides after the suicides of entertainment celebrities, a rise of 98 for rational celebrities, and a rise of 35.8 after the suicide of an international celebrity.	Probability of increase after 34 of 46 cases is .00027 (binomial test). In time series analysis, the slope coefficient representing the celebrity story was .47 ($t = 3.66$, $p < .01$).	Yes

*A few studies on 'covert suicides' are included (Bollen & Phillips, 1981; Phillips, 1979). A study that examined the impact of murder-suicide stories on subsequent airplane crashes (Phillips, 1980) was not included. The findings from the 1980 study do support a theory of imitation and suggestion.

Table 3 continued.

STUDIES EXAMINING MEDIA INFLUENCES ON SUBSEQUENT IMITATIVE SUICIDES

B. Fictional Suicide Stories

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Statistics	Support of Imitation
Gould and Shaffer, 1988 (53)	Adolescent suicides and attempted suicides aged 10 years and younger during the period 9/16/84 through 3/6/85 in the Greater New York Metropolitan Area.	The variation in suicide and attempted suicide before and after 4 made-for-television movies broadcast in the fall of 1984 and winter of 1985 was examined. Ecological study.	2-week periods before and after each movie were compared. In addition, observed numbers of suicides and attempts during the 'after' periods were compared with expected numbers derived from the average of all weeks.	The observed number of attempted suicides following the television movies was significantly greater than expected, and a significant excess of completed suicides was found after 3 broadcasts. Referral bias, sensitization of medical examiners, or hospital personnel were unlikely to account for the increase in attempted and completed suicides.	The mean number of attempts after the broadcasts (22, $sd = 4.2$) was significantly greater than the mean before the broadcasts (14, $sd = 3.6$) ($t = 2.81$, $df = 5$, $p.05$). The observed proportion of attempted suicides to occur during the 4 2-week periods after the movies, 40% ($n = 88$), was significantly greater than expected (32%, $n = 70$) ($p = .007$, based on the binomial distribution). The mean number of completed suicides after 3 broadcasts (4.33, $sd = .58$) was significantly greater than the mean before the 3 broadcasts (1, $sd = 1$) ($t = 4.99$, $df = 4$, $p.01$). The observed number of completed suicides (13) after the 3 broadcasts was significantly greater than the expected number (7.44) ($p = .02$, based on the binomial distribution).	Yes
Holding, 1974, 1975 (59,60)	Completed suicides and undetermined deaths in Edinburgh during the same 30-week period in 1969-1973.	The variation in deaths before, during, and after 'The Beltranders,' an 11-episode weekly series on BBC in 1972 was examined. As described in Holding (1974), the series dramatized the suicide prevention work of the Samaritans. Corresponding weeks in comparison years (1969-1971, and 1973) were examined. Ecological study.	The 4 weeks before the series broadcast date each year were used as the baseline. Numbers of referrals and suicide attempts during and after the series dates were compared with baseline numbers for each year.	Average weekly suicide attempt admissions increased by 13% during the 'Beltranders' series and by 22% during the following 4 weeks. Samaritan new client referrals increased by 112% during the series and 140% in the next 4 weeks.	None	Yes

Table 3 continued.

STUDIES EXAMINING MEDIA INFLUENCES ON SUBSEQUENT IMITATIVE SUICIDES

B. Fictional Suicide Stories

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Statistics	Support of Imitation
Kessler and Stripp, 1984 (52)	Same as Phillips (1982).	Designed as a replication and extension of Phillips' (1982) work. Used additional sources of soap opera summaries and found 3 additional suicide stories overlooked by Phillips. A story used in Phillips's work was deleted here because it involved only a discussion of a past suicide attempt. Most noteworthy was the use of the exact date of the story. Phillips' earlier study, by employing weekly summaries, inadvertently misspecified the dates of 8 of the 13 stories. In the present study, the corrected data were reanalyzed with a quasi-experimental analysis and a time-series regression analysis.	In quasi-experimental design, the experimental period was the 4 days including and after the story. The control period was the closest time interval preceding the story that contained the same days of the week as the experimental period and did not contain any holidays, real-life celebrity suicides, or soap-opera suicide stories. In the regression analysis, the control variables were days of the week, months of the year, and 2 celebrity deaths.	Soap-opera suicides had no significant effect on real suicides.	The mean difference (3.55) between the experimental and control periods was not significant ($t = .4$, 10df). None of the story coefficients in the time-series equations were significant. Separate time-series equations estimated for subgroups defined by sex and urban-rural location yielded no significant story effects.	No

Table 3 continued.

STUDIES EXAMINING MEDIA INFLUENCES ON SUBSEQUENT IMITATIVE SUICIDES

B. Fictional Suicide Stories

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Statistics	Support of Imitation
Phillips, 1982 (37)	U.S. suicides and motor vehicle deaths for 1977. Restricted to persons described as 'white' on their death certificates.	Compiled a list of television soap-opera episodes in which a suicide or suicide attempt occurred. The list was derived from a newspaper column, "The Soaps," published in the Los Angeles Times. The plot summaries identified the week in which a soap-opera suicide occurred, but not the specific day. Examined whether suicide and motor vehicle deaths increased after these episodes. 13 soap opera suicide stories were identified. Quasi-experimental design. Ecological study.	A 1-week experimental period was used; this was defined as the week, Monday-Sunday, in which the TV soap-opera suicide episode occurred. The control period was 1 week before the experimental period. If an experimental period of a particular episode overlapped with a major holiday, it was deleted from the sample. If the control period overlapped with a major holiday, it was replaced by the nearest available control period that occurred before the holiday. To compensate for a possible linear trend in deaths, the control periods, which by design always preceded the experimental periods, were given an adjustment to reflect the slope of the regression line ... fit the ...	White suicides increased significantly on and just after the dates of soap-opera suicide stories. Single-vehicle crash deaths also increased after the suicide stories, whereas multiple-vehicle deaths did not increase. This provides additional support for the belief that single-vehicle crash deaths may be 'cover' suicides.	T-test for matched pairs = 2.449, 8df, 1 tailed test, $p < .02$. Same results for analysis that did not correct for linear trends.	Inconclusive because an inaccurate and nonexhaustive index of TV suicide stories was used. See Kessler and Stripp (1984).

Table 3 concluded.

Public health and violence prevention

William H. Foege, MD, MPH,
Mark L. Rosenberg, MD, MPP,
and James A. Mercy, PhD

The Carter Center, the National Center for Injury Prevention, and Centers for Disease Control and Prevention, United States Public Health Service, Atlanta, Georgia, USA

Current Issues in Public Health 1995, 1:2-9

The daily news, especially since the advent of television, has made us aware of both the extent of violence in our society and our tremendous tolerance for violence. Daily bulletins on homicides, suicides, torture, spouse abuse, and child abuse in our country are interspersed with news on paroxysms of human slaughter in Rwanda or Somalia, 30 other current conflicts worldwide that have already inflicted more than 1000 battlefield deaths, and some 90 "lesser" conflicts, where the body counts are measured in scores or hundreds.

The phenomenon is not new. History is a bloody record from which pages drawn at random describe events that rival the recent horror in Rwanda. What is new is a sense that we do not have to accept this condition as inevitable; we do not have to be fatalists. If, as public health workers, we believe that diligent study will elucidate causes, suggest interventions, and lead to changes in outcomes, then we can apply these principles to the problem of violence.

The recent public health focus on violence has helped to define the problem in measurable terms. The current definition of violence is "the threatened or actual use of physical force or power against another person, against oneself, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, or deprivation" [1]. The resulting injuries may be either physical or psychological. Violence includes suicide or attempted suicide as well as interpersonal violence such as rape, domestic and child abuse, elder abuse, or assaults. Fatal violence results in suicides or homicides [2] (Fig. 1).

The continuity of violence throughout history is not a sign of its inevitability. Violence and infectious disease together have accounted for much of the world's premature mortality, yet two of the most devastating diseases, smallpox and polio, have yielded to public health intervention in our lifetime. Interventions can also be developed to interrupt the continuity of violence. Since Henry Kempe's eye-opening description of battered children [3], we are beginning to understand the links between physical and psychological violence connecting the pain and suffering of the abused, the social patterns of abused and abusers, the connection between generations, and the risk factors involved [4].

Another link, only now receiving attention, is the connection between violence involving individuals or families and violence involving cultures, societies, and nations. Is it possible that the 130 ethnic or religious conflicts now afflicting the world could be studied and understood in the same way that individual acts of violence are studied? Could these "epidemics" yield to scientific analysis, quantification, and logical interventions? In the future, just as it now seems possible to identify persons at risk of being either abused or abusers, might it be possible to anticipate societal conflict and implement preventive measures through rational social actions? This paper briefly examines the rationale for public health involvement in solving the problem of violence, explains the public health approach, describes the problem of violence in the United States, and provides a summary of the steps we must take in this country if we are to reduce violence.

VIOLENCE IS A PUBLIC HEALTH PROBLEM

Violence must be considered a significant public health problem, first, because of the extraordinary toll it takes on our society. Injuries took over 149,000 lives in 1991 and resulted in the loss of more years of potential life than heart disease, cancer, and stroke combined. Violence accounts for about 38% of all fatal injuries: every year, over 25,000 people die from homicide and 30,000 die from suicide [5]. Homicide is the second leading cause of death for young people aged 15 to 24 years and the leading cause of death for both black men and women 15 to 24 years of age (Table 1). The suicide rate among young people 15 to 24 years of age has more than tripled in the past 30 years.

In the past, the size of the injury and violence problem has been difficult to determine in the past. However, Disability Adjusted Life Years (DALYs), a new method of measurement developed by the World Bank in 1993 [6], represents a major step forward in rationally quan-

Abbreviation

DALY—Disability Adjusted Life Year

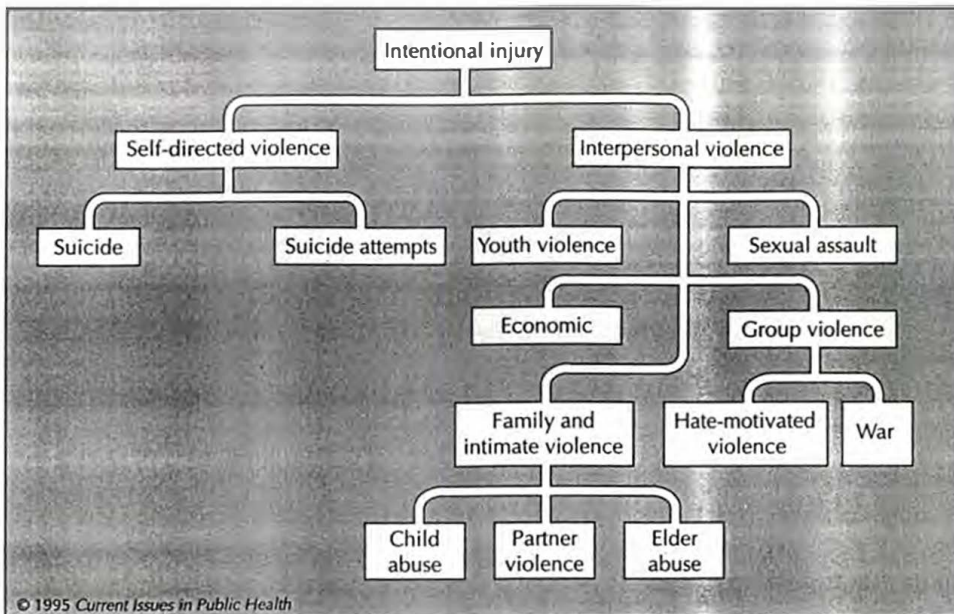


Fig. 1. Interrelationships of various types of violence.

tifying suffering and death. This approach combines the number of years of life lost from premature death due to a single cause or group of health problems in a given year with the corresponding loss of health from disability in that year, the latter expressed as a percentage of years lost from death. For example, the total burden of disease in 1990 was calculated to be 1.4 billion DALYs, or 259 DALYs/1000 population. This method now provides a rational way to compare the burden of different conditions, to compare different population groups, and to compare a disease problem in different periods. Two dozen conditions each accounted for more than 1% (14 million DALYs lost), of the total burden for 1990. Three of these conditions were due to violence: suicide (17.5 million DALYs), homicide (18.3 million DALYs), and war (14.3 million DALYs). These three intentional violence categories cause more suffering than AIDS, malaria, tuberculosis, or ischemic heart disease. As surveillance of violence improves, this percentage will undoubtedly grow.

Disability Adjusted Life Years provide many useful insights into the impact of violence. For example, it is significant that DALYs attributable to suicide and homicide taken together and individually are greater than those attributable to war. Although the impact of war on human suffering is well understood, the health burden of the acts of self-directed and interpersonal violence that occur in the context of "normal" human interaction is often ignored and underappreciated. Violence also accounts for approximately 3% of our total health care expenditure, suggesting that effective violence prevention and control could create major savings in health care costs [7].

In the United States, violence among young people is currently an epidemic out of control, and in most parts of the country, it is probably youth-related violence that accounts for increased public concern with and fear of violence. Over the past 10 years, the perpetra-

tors and the victims of violence have become younger and younger. In fact, the most rapid increases in homicide victimization rates have occurred among young men 15 to 24 years of age [8]. Young people aged 12 to 24 years of age murdered more than 48,000 people in the United States during the 1980s and were the perpetrators of almost 3.2 million, or about 50%, of the nonfatal violent crimes committed in 1991 [9,10].

Adolescents and young adults face an extremely high risk of violent death and injury. For Americans aged 15 to 34 years, homicide is the second leading cause of death, and for young African Americans, 15 to 24 years, homicide is the leading cause of death [11]. The homicide rates for young men in the United States are so much higher than rates for other industrialized countries that US rates would not even fit on a graph scaled to represent the homicide rates of other countries [12,13] (Fig. 2). The United States has never before experienced an epidemic of children killing children. It is not clear that there has ever been such an epidemic anywhere on earth.

Violence should also be considered in the purview of public health because public health complements the criminal justice approach to the problem. Where criminal justice emphasizes punishment, deterrence, and incapacitation, public health focuses on primary prevention. Public health also balances law enforcement, judicial, and penal personnel with the people, resources, and organization of the physical and mental health care systems. Asserting that violence is a public health problem does not mean, however, that public health can solve the problem alone. The criminal justice sector is absolutely essential to solving this problem, but public health also has something to offer.

It is important to note the difference between saying that violence is a public health problem and that violence is a medical problem. Violence is certainly a

Table 1. Ten leading causes of death by age group in 1991*

Rank	Age groups, y										Total†
	<1	1–4	5–9	10–14	15–24	25–34	35–44	45–54	55–64	65+	
1	Congenital anomalies 7685	Unintentional injuries 2665	Unintentional injuries 1739	Unintentional injuries 1921	Unintentional injuries 15,278	Unintentional injuries 14,774	Malignant neoplasms 16,909	Malignant neoplasms 39,922	Malignant neoplasms 94,195	Heart disease 597,267	Heart disease 720,862
2	SIDS 5349	Congenital anomalies 871	Malignant neoplasms 580	Malignant neoplasms 526	Homicide 8159	HIV 9488	Heart disease 12,397	Heart disease 30,374	Heart disease 74,985	Malignant neoplasms 354,768	Malignant neoplasms 514,657
3	Short gestation 4139	Malignant neoplasms 526	Congenital anomalies 279	Homicide 381	Suicide 4751	Homicide 7801	HIV 12,259	Unintentional injuries 7137	Bronchitis, emphysema, and asthma 10,432	Cerebrovascular disease 125,139	Cerebrovascular disease 143,481
4	Respiratory distress syndrome 2569	Homicide 428	Homicide 138	Suicide 265	Malignant neoplasms 1814	Suicide 6514	Unintentional injuries 11,752	HIV 4728	Cerebrovascular disease 9744	Bronchitis, emphysema, and asthma 76,412	Bronchitis, emphysema, and asthma 90,650
5	Maternal complications 1536	Heart disease 332	Heart disease 128	Congenital anomalies 208	Heart disease 990	Malignant neoplasms 5319	Suicide 5767	Cerebrovascular disease 4720	Diabetes 7011	Pneumonia and influenza 68,962	Unintentional injuries 89,347
6	Placenta cord membranes 962	Pneumonia and influenza 207	HIV 69	Heart disease 153	HIV 613	Heart disease 3425	Homicide 4571	Liver disease 4450	Unintentional injuries 6556	Diabetes 36,528	Pneumonia and influenza 77,860
7	Unintentional injuries 961	HIV 155	Pneumonia and influenza 68	Bronchitis, emphysema, and asthma 78	Congenital anomalies 449	Liver disease 858	Liver disease 3591	Suicide 3983	Liver disease 6047	Unintentional injuries 26,444	Diabetes 48,951
8	Perinatal infections 881	Perinatal period 140	Bronchitis, emphysema, and asthma 44	Pneumonia and influenza 67	Pneumonia and influenza 256	Cerebrovascular disease 813	Cerebrovascular disease 2530	Diabetes 3034	Pneumonia and influenza 3738	Nephritis 17,963	Suicide 30,810
9	Pneumonia and influenza 607	Septicemia 91	Benign neoplasms 39	Cerebrovascular disease 52	Cerebrovascular disease 219	Pneumonia and influenza 759	Diabetes 1553	Bronchitis, emphysema, and asthma 2337	Suicide 3241	Atherosclerosis 16,568	HIV 29,555
10	Intrauterine hypoxia 599	Benign neoplasms 76	Cerebrovascular disease 34	HIV 35	Bronchitis, emphysema, and asthma 209	Diabetes 658	Pneumonia and influenza 1444	Homicide 2112	Nephritis 1695	Septicemia 15,888	Homicide 26,513

*Data from National Center for Health Statistics, National Vital Statistics System [5].

†Total represents the 10 leading causes of death for the entire US population.

SIDS—sudden infant death syndrome.

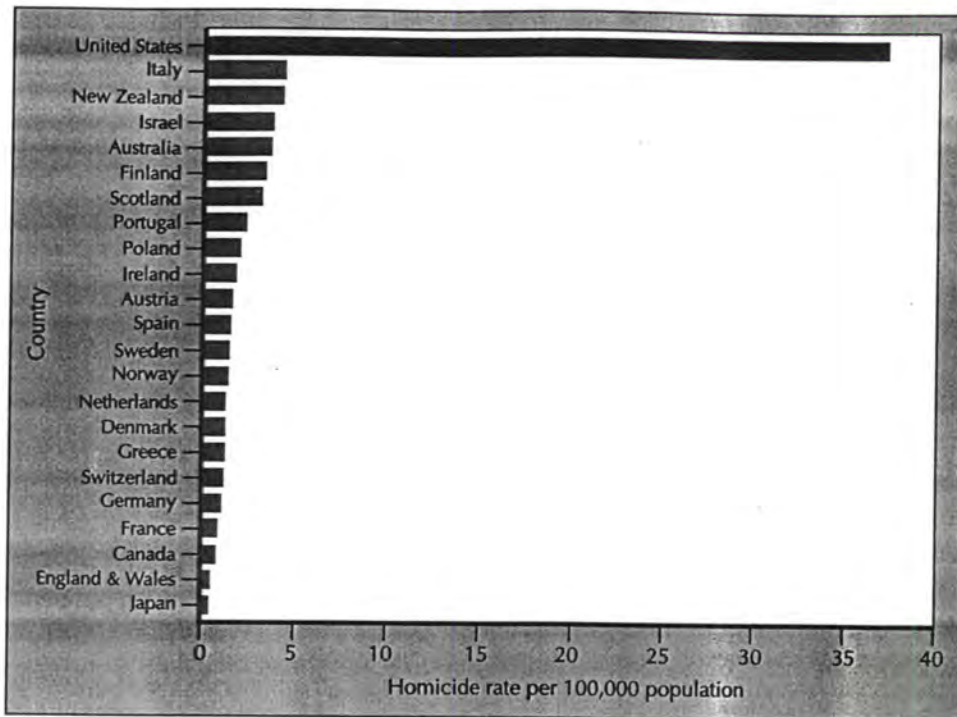


Fig. 2. International homicide rates in males 15 to 24 years of age from 1988 to 1991. (Data from National Center for Health Statistics 1990, and World Health Organization Statistics Annuals, 1990 and 1991 [12,13].)

problem to which the medical community must respond, but the origin of most violence is not based in biologic or medical conditions. The most important causes of violence are social and economic, and the search for solutions must focus on these factors rather than on purely medical and physiologic factors.

CONTRIBUTIONS OF THE PUBLIC HEALTH APPROACH

First, the public health approach to violence focuses on prevention rather than treatment. Although we must be ready to provide care for those persons who are injured by violence, we must find ways to prevent violent injuries from occurring in the first place. Our prisons have never before been so filled with young people, yet we now have the highest youth homicide rates we have seen in our country's history. We need to look harder for ways to break the cycle of violence and stop a pattern that often begins in infancy and childhood and carries over into adulthood. To move beyond locking up perpetrators of violence and patching up their victims will require a radical shift in the way we think about violence in our society. We should not be surprised if this simple idea—the importance of prevention—takes a long time to take hold.

Second, the public health approach uses the data-based, clear, common sense that is at the heart of science to understand the problems underlying violence and identify solutions that work. Four simple scientific steps characterize this approach. In the first step, we ask the question, "What is the problem?" and answer it by using epidemiologic analysis of large numbers of cases to look for the underlying patterns (who, when,

and where) that help to characterize the problem. In the second step, we ask, "What is the cause of the problem?" and proceed to answer by looking for causes and risk factors, answering the questions of why and how. For the third step, we ask, "What works to prevent this problem?" and try, by combining what we have learned about the patterns and causes, to identify and evaluate interventions that could prevent the problem. The fourth step asks, "How do we do it?" and proceeds to place interventions that work in community, state, and national prevention programs and measure their effectiveness. This simple, four-step approach has led to dramatic successes, from smallpox eradication to the prevention of motor vehicle injuries and the reduction in cigarette smoking and its serious health consequences. It can have an equally impressive impact in preventing injuries and deaths from violence.

Third, the public health approach stresses the importance of bridging many different disciplines, different parts of government, the private and public sectors, practitioners and researchers, racial and ethnic groups, and conservative and liberal ideas. The prevention of violence will require input from a broad array of disciplines within medicine and medical care institutions and beyond, including education, sociology, criminology, psychology, law, economics, and engineering. In addition, effective solutions will have to bring together academics and practitioners and bridge the gap that exists between those researchers who want to study the problem first to find out what works, and those community members and practitioners who sense the urgency to do something now. One way to bridge this gap is to start some programs now and evaluate them intensively, adopting a learn-as-we-go approach. Effective prevention programs will also have to be

community based, because the success of a program may be as much a function of how well that program is connected to the community as of how well it is designed. Perhaps the toughest integration is to bring together the best ideas of liberals and conservatives so that all good intervention strategies might be tested and the best of both camps—those interventions that science actually shows to work—can be selected and implemented. Public health professionals have traditionally joined together and coordinated these types of team efforts.

THE FUTURE

Shaping the future begins with the ability to envision it. The experience of recent decades provides hope for a future with much lower violence levels. The country is beginning to apply public health principles in the areas of law enforcement, the judicial system, education, religion, and elsewhere for a long-term approach to social change [14]. What are some of the elements of this long-term approach?

Use science to guide action

Effective solutions to the problems of violence will be forthcoming when we start to understand the problems more clearly, define risks, determine what works, and find out how to implement effectively those programs that work to prevent violence. Describing the problem must begin with clear definitions, placing boundaries on what is included in a problem. We also need better ways to quantify violence. DALYs provide an avenue to quantification that needs to be exploited in order to compare various types of violence, to compare violence to other health problems, to compare societies, and to measure the impact of interventions.

Find out what works

Violence prevention programs must ultimately be evaluated. Unlike many other public health problem areas, we know little about what works in violence prevention. A scientifically grounded approach will more clearly establish the potential effectiveness of interventions in reducing violence-related morbidity and mortality. We must acknowledge the importance of finding out how communities can participate most effectively in implementing violence prevention programs as well as the importance of finding out which interventions or combinations of interventions are most effective [15]. Finally, we must avoid the temptation to start with a program so big that we can't recognize our successes or learn from our mistakes.

Adopt a learn-as-we-go approach

The pressure for quick responses to the violence quandary and the desire to spend all resources on response could result in unscientific evaluations or

even the absence of any evaluation. In order to prevent violence, we must act. However, because we know so little about what works in preventing violence, it is very important that we rigorously evaluate these actions. We must develop programs that acknowledge both the importance of doing something now so that we can deal with the urgency of the problem, as well as the importance of measuring the impact of the program as it is implemented so that we will know whether it had its desired effect.

Invest in primary prevention

Special emphasis should be placed on primary prevention, which aims to prevent violence from occurring in the first place, rather than to focus only on perpetrators or victims after violence has occurred. This approach broadens the target audience beyond those groups whose high-risk status is already demonstrated. Primary prevention aims to save the lives of potential perpetrators as well as potential victims. Primary prevention efforts might include adult mentoring of youth, social skills education, and programs aimed at educating and supporting parents in raising children.

Address economic and social causes of violence including societal as well as individual factors

Sociologists and criminologists have long been telling us that structural or large-scale social and economic factors like poverty; racial and sexual discrimination; unequal access to the education, health care, and criminal justice systems; and lack of jobs or training opportunities for jobs contribute significantly to violence. For at least 11 years public health researchers have acknowledged the important role these social and economic factors play, even though the development of public health interventions initially focused on *individual* behavioral determinants and changes in the physical environment.

It is now clear that these fundamental societal issues must be addressed, as well as understood by public health, and they can only be addressed at the societal level. The broader public health community has important contributions to make to understanding and addressing these issues. Public health can incorporate indicators of social and economic status into surveillance systems and research studies designed to collect information on violent behavior, injury, or death. Public health can also develop further understanding of the impact on violent behavior of social and economic inequities and can identify and evaluate the effectiveness of policies, programs, or interventions in reducing that impact. Finally, we can develop strategies for communicating violence prevention information to populations affected by social and economic disparities (Roberts and Mercy, Personal communication.)

Address the cultural acceptance of violence and change the social norm

The cultural climate *is* changing. The reduction of unintentional injuries on our highways is a refreshing example of what can be done to control unintentional injury and it may be an indication of the public's growing intolerance for violence. The public health community must add to this hope the belief that *it is possible* to change. Public health continues to change the definition of what is acceptable by defining problems, intervening, and reducing those problems. We must now show that the reduction of violence will be inevitable if we can understand the patterns, causes, vectors, interactions, interventions, successes, failures, and possibilities of a complex adaptive system. Public health workers need to be activists for the possible and believers that differences in violence rates are not the random results of chance.

Focus on firearms

Preventing firearm injuries is central to preventing the injuries that result from interpersonal violence. For one thing, firearms are involved in a high proportion of homicides (65% of the more than 24,000 homicides that occurred in 1990) and have played a key role in increasing rates of violent death among youth [16]. Firearms are also associated with a substantial number of nonfatal injuries and, in some communities, gunshot wounds are an important cause of disability resulting from spinal cord injuries (Graham PM and Weingarden SI, Paper presented at the 14th Annual Scientific Meeting of the American Spinal Cord Injury Association, San Diego, CA, 1988). In addition, it has been firmly established that guns are more lethal than other weapons and recent studies have indicated that access to firearms poses significant health risks to owners and their families [17–19]. For these reasons community violence prevention programs should give explicit attention to addressing the role of firearms in violence. Communities might, for example, undertake campaigns to educate residents about the safe storage of firearms and promote legislative efforts to limit access to or acquisition of firearms by children.

Firearm homicides and firearm suicides have been responsible for almost all of the recent increases in youth violence, but it is exciting to look at the many opportunities we have for really turning this problem around. There is great potential for preventing firearm injuries by applying the scientific public health method to this field. First, we need better information about firearm injuries, especially nonfatal injuries. We need to establish the risks and benefits of firearm ownership and access, not only the risks of having firearms in the hands of "criminals," but the risks of firearms in the hands of law-abiding citizens, in the hands of children, in our communities, and in our homes. Recent studies have shown, for example, that the risks of suicide and homicide to a household member increases almost fivefold and threefold, respectively, when a firearm is

kept in the home [17,18]; when a couple fights and a gun is used, the risk of death to one of them, when compared with the risk with the use of any other weapon, rises 12 times [19]; and for every time a firearm kept in the home is used to kill an intruder, it is used 43 times to commit suicide, criminal homicide, or unintentional homicide [20]. When we have this information, we can document the significant health risks that firearms pose to our children, and concerned parents and communities can take steps to protect their health and reduce those risks.

A scientific approach can be used to identify and evaluate a wide array of strategies and interventions to prevent firearm injuries, focusing both on changing the ways we resolve conflict and on changing the ways we use firearms. There are four strategies focusing on firearms: we can affect how guns are used or stored; we can affect who has guns; we can reduce the lethality of guns; and we can affect how many guns there are [21]. Within each of these strategies there are many interventions, only a few of which—like Washington DC's restrictive licensing law—have been rigorously evaluated and proven effective [22]. Many of the interventions being advocated today—like gun buy-backs, metal detectors, or waiting periods—have not yet been evaluated.

Finally we need to reframe the public discussion about firearm injuries, from a political or philosophical debate on "gun control" as an all-or-none binary intervention to a discussion based on scientifically documented risks and benefits of firearm access and rigorously evaluated policy options. We need to let people know that progress in preventing firearm injuries will come just as the great progress we made in reducing motor vehicle deaths came not by banning cars, but by building safer cars and safer roads, getting drunk drivers off the roads, and enforcing licensing requirements. This same multifaceted approach holds great potential for preventing firearm injuries [23]. We must build consensus and support for this public health approach, and we need to realize that no matter what one's political philosophy, there are very few people who would argue that children should have access to guns.

Integrate our efforts and emphasize coordinated action

The complexity of violent behavior defies a single, simple solution. Multiple complementary activities are required to prevent violence effectively, and they will demand the involvement of a broad spectrum of participants, including local citizens, officials, businesses, grass-roots organizations, and a variety of governmental agencies, including justice, education, and health. Communities that can effectively coordinate their diverse resources and perspectives will have a great advantage in addressing this problem. One advantage will be their ability to better focus their efforts, which

should be done in several ways. First, we should attempt to simultaneously understand all the factors leading to violent environments. Second, we should integrate all interventions and concentrate resources on those specific actions that may yield the highest dividends. For example, other public health work teaches the value of attention to surveillance. Finding ways to collect relevant information to define the problem is a powerful precursor to appropriate political action.

Improving surveillance for specific risk factors, such as the understanding of firearm injuries, provides a mechanism for taking specific action to reduce the risks of certain kinds of firearms or to identify individuals who constitute unacceptable risks to society. Are there environmental conditions that are especially hazardous? What is the role of alcohol and other drugs?

Everyone agrees that the shooting death of a child is totally unacceptable. Is it possible to focus our attention by developing sentinel surveillance systems that would investigate every such death, much as maternal mortality committees investigated every maternal death in the past? This would not be a criminal investigation but a public health investigation, done with the help of community groups, local community leaders, faith groups, and education leaders, all seeking to identify steps that could be taken to avoid a similar tragedy in the future [24].

Intervene early

In the long run, interventions that focus on very young children and those individuals who can influence these children may be the most effective preventive approaches. Programs that help to shape attitudes, knowledge, and behaviors while children are still open to positive influences may be felt over the course of a life-time and passed on to successive generations. Because children grow and develop under the influence of parents, teachers, and the media, early intervention programs focused on children should include components that address these important influences as well (Farrington D, Paper presented at the Fourth European Conference on Law and Psychology, Barcelona, Spain, April 1994).

Make the prevention of violence against women an important priority

We need to address the problem of both physical and sexual assaults against women by partners and acquaintances. Most of these assaults result in severe

emotional distress and nonfatal physical injury, but many of these assaults are also fatal. Attempted suicide, alcohol and drug abuse, depression, and child abuse are also frequent consequences. We need to identify effective measures for reducing the threat that women face of being physically abused or sexually assaulted by partners, acquaintances, and strangers. We need to change the way people think about the prevention of violence against women by shifting from an approach limited to interventions designed to identify and assist victims to one that also addresses the societal norms and factors contributing to the occurrence of violence. We also need to develop a stronger scientific basis for preventing violence against women by using the public health model of monitoring, epidemiologic analysis, intervention design, implementation, and evaluation.

Understand the global significance

Violence is a global problem, with interpersonal violence, ethnic violence, and national conflict being interrelated. The solutions are also interrelated, not only from the standpoint of the issues, such as health, economic development, education, enfranchisement, and democracy, but also from the standpoint of our approach. A global approach to the problem of violence is far more likely to change the social climate, the political interest, and the likelihood of identifying solutions.

CONCLUSIONS

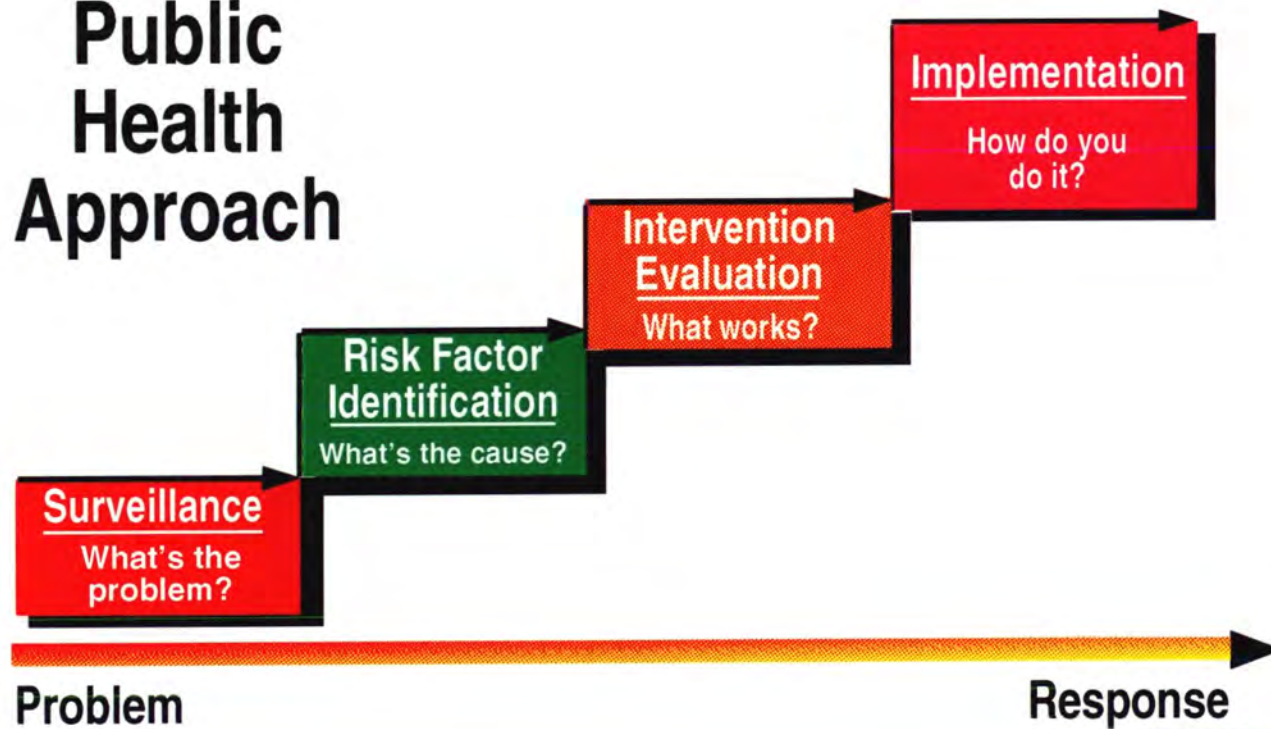
Creating the future that we desire will require tenacious advocates who are willing to commit themselves and their resources for the long term. This is not a program that will be completed in 1 year or a decade, but a goal that will yield slowly to a lifetime of effort. International health leaders of the 1960s expected to see few changes in health in their lifetimes [18]. They believed they would start changes that would provide a foundation for the next generation. They were surprised to see major improvements in health indices within decades. Workers in violence can hope for major changes in a decade but should not be discouraged if it takes longer to change patterns of behavior that are ancient in origin but accentuated by modern conditions. A less violent world is a legacy within our grasp.

William H. Foege, MD, Executive Director, The Task Force for Child Survival and Development, The Carter Center, One Copenhill Avenue, Atlanta, GA 30307, USA.

REFERENCES

1. Mercy JA, Rosenberg ML, Powell KE, Broome CV, Roper WL: Public health policy for preventing violence: new vision for prevention. *Health Aff (Millwood)* 1993, 12:7-29.
2. Rosenberg ML, Fenley MA, eds.: *Violence in America: A Public Health Approach*. New York: Oxford University Press; 1990.
3. Kempe CH, Silverman FN, Steele B, Droengmueller W, Silver HR: The battered child syndrome. *JAMA* 1962, 181:17-24.
4. Widom CS: Does violence beget violence: a critical examination of the literature. *Psychol Bull* 1989, 106:3-28.
5. National Center for Health Statistics, National Vital Statistics System, 1991.
6. The World Bank: *World Development Report 1993: Investing in Health World Development Indicators*. New York: Oxford University Press; 1993.
7. Miller TR, Cohen MA, Rossman SB: Victim costs of violent crime and resulting injuries. *Health Aff (Millwood)* 1993, 12:187-198.
8. Centers for Disease Control and Prevention: Homicides among 15-19-year-old males—United States, 1963-1991. *Morbidity and Mortality Weekly Report MMWR* 1994, 43:725-727.
9. Federal Bureau of Investigation, Supplemental Homicide Report data tapes, 1980-1989.
10. US Department of Justice: *Criminal Victimization in the United States*, 1991. Washington, DC: Bureau of Justice Statistics (NCJ-139563), 1992.
11. Hammett M, Powell KE, O'Carroll PW, Clantor ST: Homicide surveillance, 1979-1988. *MMWR CDC Surveill Summ* 1992, 41(SS-3):1-33.
12. National Center for Health Statistics, Vital Statistics, 1990.
13. World Health Organization Statistics Annuals, 1990 and 1991.
14. National Center for Injury Prevention and Control: *The Prevention of Youth Violence: A Framework for Community Action*. Atlanta: Centers for Disease Control and Prevention, 1993.
15. Tolan P, Guerra N: *What Works in Reducing Adolescent Violence: An Empirical Review of the Field*. Boulder, CO: Center for the Study and Prevention of Violence, Institute for Behavioral Sciences, University of Colorado, 1994.
16. Centers for Disease Control and Prevention: Firearm-related years of potential life lost before age 65 years—United States, 1980-1991. *Morbidity and Mortality Weekly Report MMWR* 1994, 43:609-611.
17. Kellerman AL, Rivara FP, Somes G, Reay DT, Francisco J, Banton JG, Prodzinski J, Fligner C, Hackman BB: Suicide in the home in relation to gun ownership. *N Engl J Med* 1992, 327:213-216.
18. Kellerman AL, Rivara FP, Rushforth NB: Gun ownership as a risk factor for homicide in the home. *N Engl J Med* 1993, 329:1084-1091.
19. Saltzman LE, Mercy JA, O'Carroll PW, Rosenberg ML, Rhodes PH: Weapon involvement and injury outcomes in family and intimate assaults. *JAMA* 1992, 267:3043-3047.
20. Kellerman AL, Reay DT: Protection or peril? An analysis of firearm-related deaths in the home. *N Engl J Med* 1986, 314:1557-1560.
21. Reiss AJ Jr, Roth JA, eds: *Understanding and Preventing Violence*. Washington, DC: National Academy Press, 1993:42-97.
22. Loftin C, McDowall P, Wiresma B, Cottey TJ: Effects of restrictive licensing of handguns on homicide and suicide in the District of Columbia. *N England J Med* 1991, 325:1615-1620.
23. Centers for Disease Control and Prevention: Deaths resulting from firearm- and motor-vehicle-related injuries—United States 1968-1991. *Morbidity and Mortality Weekly Report MMWR* 1994, 43:37-42.
24. Farrington D, Interfaith Religious Group: *Not Even One: A Report on the Crisis of Children and Firearms*. Atlanta, GA: The Carter Center, 1994.

Public Health Approach





National Center for Injury Prevention and Control

Suicide in the United States

The Problem

- Suicide took the lives of 30,484 Americans in 1992 (11.1 per 100,000 population).¹
- More people die from suicide than from homicide in the United States.
- On an average day, 84 people die from suicide and an estimated 1,900 adults attempt suicide.
- Males are at least four times more likely to die from suicide than are females. However, females are more likely to attempt suicide than are males.
- In 1992, white males accounted for 73% of all suicides. Together, white males and white females account for almost 91% of all suicides. Suicide rates are higher than the national average for some groups of Asian and Native Americans.
- Suicide rates are generally higher than the national average in the western states and lower in the eastern and midwestern states.
- Nearly 60% of all suicides are committed with a firearm.

Suicide Among the Elderly

- Suicide rates increase with age and are highest among Americans aged 65 years and older. The ten-year period, 1980-1990, was the first decade since the 1940s that the suicide rate for older residents rose instead of declined.
- Men accounted for 81% of suicides among persons aged 65 years and older. From 1980-1992, the rate for men in this age group increased 10% (from 34.8 per 100,000 to 38.4). The rate for women was unchanged (6.0).
- From 1980-1992, the largest relative increases in suicide rates occurred among those 80-84

¹ Suicidal data were obtained from vital statistics on the underlying causes of death prepared annually by the National Center for Health Statistics at the Centers for Disease Control and Prevention.

years of age. The rate for men in this age group increased 35% (from 43.5 per 100,000 to 58.6).

- Firearms were the most common method of suicide used by both men (74%) and women (31%).
- Suicide rates among the elderly are highest for those who are divorced or widowed. In 1992, the rate for divorced or widowed men in this age group was 2.7 times that for married men, 1.4 times that for never-married men, and over 17 times that for married women. The rate for divorced or widowed women was 1.8 times that for married women and 1.4 times that for never-married women.
- Risk factors for suicide among older persons differ from those among the young. Older persons have a higher prevalence of alcohol abuse, depression, a greater use of highly lethal methods, and social isolation. They also make fewer attempts per completed suicide, have a higher male-to-female ratio than other groups, have often visited a health-care provider before their suicide, and have more physical illnesses.

Suicide Among the Young

- Persons under age 25 years accounted for 16.4% of all suicides in 1992. From 1952-1992, the incidence of suicide among adolescents and young adults nearly tripled. From 1980-1992, the rate of suicide among persons aged 15-19 years increased by 28.3% and among persons aged 10-14 years by 120%. For African American males aged 15-19, the rate increased 165.3%.
- For young people 15 to 24 years old, suicide is the third leading cause of death, behind unintentional injury and homicide. In 1992 more teenagers and young adults died from suicide than died from cancer, heart disease, AIDS, birth defects, stroke, pneumonia and influenza, and chronic lung disease *combined*.
- Among persons aged 15-19 years, firearm-related suicides accounted for 81% of the increase in the overall rate of suicide from 1980-1992.
- People living in a household where a firearm is kept are almost five times more likely to die by suicide than people who live in gun-free homes. (Ref: Kellerman et al, Suicide in the home in relation to gun ownership. *New England Journal of Medicine* 1992;327:467-72)
- The risk for suicide among young people is greatest among young white males; however, from 1980 through 1992, suicide rates increased most rapidly among young black males. Although suicide among children is a rare event, the dramatic increase in the rate among persons aged 10-14 years underscores the urgent need for intensifying efforts to prevent suicide among persons in this age group.

CDC's Program in Suicide Prevention

The National Center for Injury Prevention and Control (NCIPC) is working to raise awareness of suicide as a serious public health problem and of science-based prevention strategy as an effective means of reducing injuries and deaths due to suicide. NCIPC conducts surveillance and research, including a study of environmental factors influencing suicide attempts among persons age 13-34 years, developing ways to screen and identify youth at risk of suicide, evaluating prevention programs in Native American communities, developing guidelines for spokespersons and news media to describe and report suicides responsibly, and making information available to communities interested in carrying out prevention programs (*Youth Suicide Prevention Programs: A Resource Guide*, 1992).

Suicide prevention resource materials available from CDC :

Kachur SP, Potter LB, James SP, Powell KE. Suicide in the United States, 1980-1992. Atlanta: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 1995. Violence Surveillance Summary, No.1.

CDC. Suicide among Children, Adolescents, and Young Adults--United States, 1980-1992. MMWR 1995; 44 (No.15); 289-291.

Centers for Disease Control and Prevention. Suicide Surveillance Summary Report, 1980-1990. Atlanta, GA: Centers for Disease Control and Prevention, 1994.

Centers for Disease Control and Prevention. Programs for the prevention of suicide among adolescents and young adults; and Suicide contagion and the reporting of suicide: recommendations from a national workshop. MMWR 1994; 43 (No.RR-6).

Kellerman AL, Rivara FP, Somes G., Reay DT, Francisco J, Banton JG, Prodzinski J, Fligner C, Hackman BB. Suicide in the home in relation to gun ownership. New England Journal of Medicine 1992;327:467-72.

Centers for Disease Control. Youth Suicide Prevention Programs: A Resource Guide. Atlanta: Centers for Disease Control, 1992.

Potter LB, Powell KP, Kachur SP. Suicide prevention from a public health perspective. Suicide and Life-Threatening Behavior. 1995; 25(1):82-91.

For more information, write or call: 770-488-4362

National Center for Injury Prevention and Control
Division of Violence Prevention
Centers for Disease Control and Prevention
Mailstop K60
4770 Buford Highway
Atlanta, Georgia 30341-3724



National Center for Injury Prevention and Control

Youth Violence in the United States

Youth as Victims

- In 1993, 8,424 young people 15-24 years old were victims of homicide. This amounts to an average of 23 youth homicide victims per day in the United States.
- Of all homicide victims in 1993, 38% were younger than 24 years old.
- Homicide is the second leading cause of death for persons 15-24 years of age and is the leading cause of death for African-American and Hispanic youth in this age-group.
- The homicide rate among males, 15-24 years old, in the United States is 10 times higher than in Canada, 15 times higher than in Australia and 28 times higher than the same rate in France or in Germany.

Youth and Firearms

- Annual rates of firearm homicide for youth 15-19 years of age increased 158% between 1987 and 1993.
- In each year since 1987, more than 80% of homicide victims 15 to 19 years of age were shot to death.
- In 1990, 4.1% or 1 in 24 students in a national survey reported carrying a firearm for fighting or self-defense at least once in the previous 30 days. In 1993, this was true of 8% or 1 in 12 students.

Youth as Perpetrators

- Arrest rates for homicide, rape, robbery, and aggravated assault are consistently and substantially higher for young people 15-34 years of age than for all other age groups.
- The number of arrests for murder among youth under 18 years of age increased 51% between 1988 and 1992, compared to 9% for adults.
- Nearly 20% of all violent crime arrests in 1992 involved a juvenile under 18 years of age.

The Public Health Approach

- Violence is a public health problem because of its tremendous impact on the health and well-being of our youth. Over the last 15 years, CDC has used science to understand the problem of violence in America and to determine what works to prevent it.

- The public health approach, which identifies patterns and risk factors and implements interventions and evaluates effectiveness, has worked with many health problems and will also work with violence.
- Poverty, discrimination, and lack of opportunities for education and employment are important risk factors for violence and must be addressed as part of any comprehensive solution to youth violence. Strategies for reducing violence should also begin early in life, before young people adopt violent beliefs and behavioral patterns.
- The public health approach is multidisciplinary and enlists many strategies and approaches that are necessary in dealing with such a complex issue as violence.

CDC's Program to Prevent Youth Violence

- As the lead agency in injury control, CDC plays a key role in coordinating activities and programs in the Public Health Service to prevent youth violence.
- The central focus of CDC's activities is on intervention and evaluation research. Fourteen evaluation projects are currently underway in eleven cities in the United States. The primary goal of these projects is to determine which interventions are effective in preventing and reducing aggressive and violent behavior. The majority of the projects emphasize primary prevention and are cooperative efforts between schools, health departments and community partners.
- CDC is also supporting the development of surveillance systems in seven states to monitor firearm injuries and related risk behaviors (e.g., safe storage, carrying weapons). The information generated from these surveillance systems will help states to assess the magnitude of the firearm injury problem and evaluate programs and policies designed to prevent firearm injuries.
- Other CDC activities include:

Data collection and analysis, including the preparation of surveillance summaries on homicide, suicide, and firearm injury and mortality in the United States; research on risk and protective factors; training; and developing public awareness of the problem and solutions.

Extramural research on injury topics including violence

The Prevention of Youth Violence: A Framework for Community Action: a manual for community organizations on organizing activities to prevent youth violence.

For more information, call (770) 488-4362



National Center for Injury Prevention and Control



Firearm Injuries and Fatalities

The Problem

- In 1993 there were 39,595 firearm-related deaths. These included:
 - over 18,500 firearm-related homicides
 - over 18,900 firearm-related suicides
 - over 1,500 unintentional deaths related to firearms
- In 1992-93, there were about 100,000 nonfatal firearm injuries treated in hospital emergency departments in the United States.
- In 1990, firearm injuries cost over \$20.4 billion in direct costs for hospital and other medical care and in indirect costs for long-term disability and premature death.
- At least 80% of the economic costs of treating firearm injuries are paid for by taxpayer dollars.

Homicide

- More than 60% of homicides are committed with a firearm.
- Since the mid-1980s, homicide rates have increased by 41% in Americans 15 to 24 years of age. Over 90% of the increased number of homicides was committed with firearms.
- Firearm assaults on family members and other intimate acquaintances are 12 times more likely to result in death than are assaults using other weapons.
- In 1992, 5,373 women were murdered. Firearms, usually handguns, were the weapon most commonly used.

Firearms and Adolescents and Young Adults

- In 1992, firearm injuries were the second leading cause of death for young people, 10 to 24 years of age and the third leading cause of death for persons aged 25 to 34.

- Firearm injuries are responsible for more deaths to U.S. teenagers than all natural diseases combined.
- Since 1985, the risk of dying from a firearm injury has increased at least 77% for teenagers 15 to 19 years of age.
- The 1990 CDC Youth Risk Behavior Survey showed that 4.1%, or 1 in 24 students, carried a firearm for fighting or self-defense during the 30 days preceding the survey. In the 1991 survey, this percentage increased to 5.5%, or 1 in 18 students. In 1993, the percentage of students reporting they had carried a gun went up to 8%, or 1 in 12.
- Over 25% of those who died from firearm injuries in 1990 were 15 to 24 years old.

Suicide

- People living in households in which guns are kept have a risk of suicide that is 5 times greater than people living in households without guns.
- In 1992, 3,073 persons aged 15-24 committed suicide using a firearm, representing almost 17% of all suicides by firearm that year.

Unintentional Firearm Injuries

- In 1992, there were 779 unintended firearm deaths among persons aged 10 to 29, accounting for 55% of all unintentional firearm deaths in the nation that year. Unintentional firearm deaths are those that occur when the person firing the gun does not intend to harm another.

For more information, write or call:

National Center for Injury Prevention and Control
 Division of Violence Prevention
 Centers for Disease Control and Prevention
 Mailstop K60
 4770 Buford Highway
 Atlanta, Georgia 30341-3724

770-488-4362

You might even want to live there

Sometimes it's hard to cope with good news. In New York, the crime rate has been falling faster than anyone ever hoped or dreamed, but city residents are having trouble digesting the news. Andrew Karmen, a sociologist at John Jay College who studies crime, says some of his students are from Brownsville, one of the roughest neighborhoods in Brooklyn. When he tells them how far the crime rate has fallen, they are astonished.

Amazingly, the numbers are down in every precinct of every borough. In 1990, 2,245 people were murdered in the city. This year the total may be 1,000 or less. Rates of assault, robbery and rape are plummeting, too. "It's a totally different city," says journalist Pete Hamill. "It's like a siege has been lifted."

Hamill says he now sees women coming out of the subway in Brooklyn carrying Macy's shopping bags. Until recently, he says, no Brooklyn woman reasonably could expect to make it home from Manhattan on the subway still in possession of her packages. But now the subways are safe and clean. Almost all the derelicts and panhandlers are gone. Graffiti, too. No train is allowed to leave the yards if it has a single graffiti mark on it. To get an idea of what the subways were like in the 1950s, drop a token and take a ride now. Crime is falling in other cities: Los Angeles, Houston, Wichita. But no city has New York's dramatic numbers. Richard Brown, the district attorney in Queens, says he has never seen anything as extraordinary as this in his 40 years in government.

What is going on? Answer: Nobody really knows. Criminologists talk about "simultaneity"—many things are happening at once, and it's hard to sort them out. Prison building is paying off, taking the most dangerous criminals off the streets. The crack epidemic may be fading, partly because kids have seen what it did to their parents. Turf wars among drug dealers are declining—most of the losers have already been shot, so killing is down. The police department has been shaken up, beefed up, decentralized and modernized. And a terrific wave of immigration, particularly Asian, has breathed new life and hope into the city, solidifying many dicey neighborhoods and reclaiming some decaying ones.

Changed behavior. Whatever the reasons, the falling crime rate is a severe blow to the "root causes" theory of crime—that crime won't fall until we erase poverty and despair. No root cause has changed since 1990. Demographics and the city economy haven't changed much in five or six years either. It's behavior that's changed.

Police say fewer people are packing guns now. In 1993, one out of every 438 fare beaters jumping the subway

turnstiles was arrested for carrying a loaded gun. By early 1995, transit police had to search 1,034 fare beaters to find one loaded gun. More than half the guns seem to have vanished in less than two years. Why? Police have stop-and-frisk powers they lacked a few years ago. But attitudes on guns are changing, too.

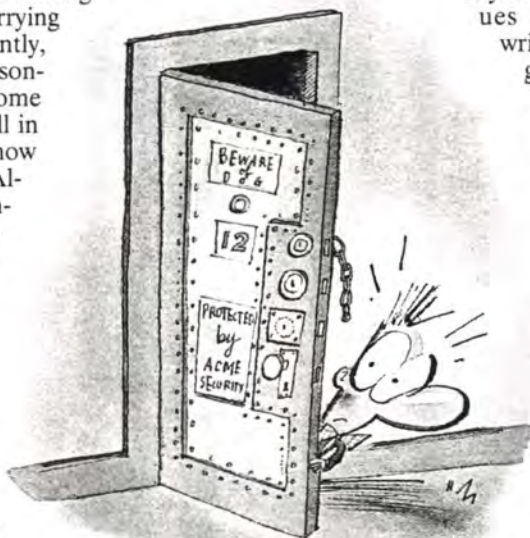
This shows up in a surprising statistic on youth murders. Nationally, violence by adults over age 25 has been dropping, at least since the start of the 1980s, while violence by the under-25s has soared. But New York is different. The number of murders committed by youngsters 16 to 24 has declined steadily since 1991. A report on city murder rates by Andrew Karmen suggests that gun-

slinging is no longer hip and cool among city kids. "As this subcultural shift in values spreads among youngsters," he writes, "it brings about a decline in gun toting, which in turn contributes to a drop in the murder rate."

But the largest factor in New York's new climate appears to be the triumph of the "broken windows" theory. That theory was announced by political scientist James Q. Wilson and criminologist George Kelling in a famous 1982 *Atlantic Monthly* article. It says that the best way to fight serious crime is to fight the disorder that precedes it and weakens a neighborhood—panhandling, graffiti, drunks sleeping on the sidewalks, wrecked cars that remain untowed, a street population taking over a park.

The transit authority turned the subways around by bringing in Kelling as an adviser in 1989, and William Bratton as transit police chief in 1990. They installed zero-tolerance policies for graffiti and panhandling. Many thousands of turnstile jumpers were arrested in vast sweeps. With symbols of social control returning, riders began to trust the subways again, and crime rates fell.

The same theory was applied to parks. Bryant Park, an open-air drug den near Grand Central Station, was converted into a derelict-free jewel of a space with fresh flowers placed each day on the sinks of immaculate rest rooms. Most of all, "quality of life" issues have been part of the police shake-up. The old image of police as a reactive warrior caste waiting in police cars for word of new felons to chase is fading. In the new view, the core function of police is the prevention of crime by maintaining order. The broken-windows theory is ascendant over Manhattan's traditional liberal culture of root causes and of untrumpable individual rights for troubled street people. This is happening in other cities too, and it's very good news for us all. ■



A GUIDE TO THIS BOOK

8

“Violence is the leading cause of lost life in this country today. If it’s not a public health problem, why are all those people dying from it?”

*Dr. David Satcher, director,
U.S. Centers for Disease Control
and Prevention, 1994*

In 1977, a group of physicians in the U.S. Public Health Service met to draw up a list of the 12 most important steps to prevent deaths in the United States. Instead of looking only at the leading causes of death, they considered the leading causes of premature death, before age 65. At that time the top five included injuries, homicide and suicide. The research also revealed that the rate of violence was rising rapidly, particularly among the young.

United States 1992	Years of potential life lost before age 65 per 100,000 population under 65 years of age	
1	cancer	835.5
2	heart disease	625.3
3	motor vehicle crashes	509.8
4	human immunodeficiency virus	386.0
5	homicide	378.8
6	other unintentional injuries	355.9
7	suicide	301.2
8	stroke	107.3
9	chronic liver disease	97.9
10	pneumonia and flu	73.7
11	diabetes	69.4
12	pulmonary diseases	59.5

Centers for Disease Control and Prevention, National Center for Health Statistics: Vital Statistics of the United States, Vol. II, Mortality. Table 32: Years of potential life lost before age 65 for selected causes of death, according to sex and race: United States, selected years 1970-1992.

Out of this meeting emerged a new development: a medical and scientific specialty that tracks violence as an epidemic, which is defined as anything that affects great numbers of people. These specialists put violence in the same category and apply the same scientific tools as those that are being used to reduce and control other epidemics, such as lung cancer and motor vehicle crashes. They use a public health model that studies the interaction among the host or person who is injured or killed, the agent of injury or death, and the environment in which that injury or death takes place. They define risk factors, then develop and evaluate methods to prevent violent incidents.

Few would argue that violence in the United States is epidemic. The country ranks first among industrialized nations in its rate of violent deaths. Already, more children die from violence than from disease. Homicide and suicide account for more than one-third of the country's 145,000 annual violent deaths, which include car crashes and other incidents. If firearm death rates continue on their present course, more Americans will die from gunshots than car crashes within 10 years. Already, it is the case in California, the District of Columbia and six other states.

Violence-prevention proponents note that the challenge to change attitudes toward violence — to convince Americans that violence is predictable and preventable — is no different from the attitudes public health experts faced when they suggested in the 1950s that lung cancer could be avoided by not smoking, and in the 1960s that automobile deaths and injuries could be reduced by, among other things, wearing seat belts and not drinking alcohol.

For example, until the 1960s, traffic deaths and injuries were typically blamed on "the nut behind the wheel." Prevention approaches were limited to admonitions to drive safely. Then, public health experts, law enforcement agencies, transportation departments, injury control scientists, consumer advocates, public policy makers and vehicle manufacturers began looking at auto deaths and injuries as a public health issue. Instead of studying only how the human factor contributed to crashes, they also investigated the vehicle itself and the environment. In 19xx Congress authorized the National Highway Traffic Safety Administration, which accumulated data through its Fatal Accident Reporting System (FARS). FARS uses police records and death certificates to accumulate data on the driver (age, sex, blood alcohol level and fault), the vehicle (vehicle identification number that reveals make, manufacturer and product characteristics), and the environment (weather, location, and roadway conditions). Researchers used FARS data to identify unsafe conditions in driver behavior, vehicles, and the environment to recommend specific safety improvements.

As a result, over the last 30 years, often amid great controversy, car manufacturers added to their vehicles collapsible steering columns, seat belts, shoulder harnesses, roll bars, padded dashboards, anti-lock braking systems, airbags, and safety glass. States passed laws requiring seat belts and car seats for children. Stiff penalties were created for people driving under the influence of alcohol. Highway engineers improved the safety of roadways and intersections. If the death rate from auto crashes remained the same as it was 30 years ago, instead of 40,000 people killed every year, an estimated 80,000 would be dying annually on the nation's highways.

When public health researchers began identifying the risk factors that contributed to auto crashes, journalists began reporting breaking news of traffic injuries and fatalities differently. They began including the type of car and its manufacturer, whether people were driving drunk or wearing seat belts, the conditions of the road or intersection and whether stop lights were functioning or stop signs were in place. Feature articles focused on issues of automobile safety design, laws to prevent drinking and driving, recalls to correct safety problems and court cases that addressed auto safety issues.

Similarly, since the 1980s, a silent stampede of violence prevention research and programs have been instituted on a national, state and local level. Physicians, public health experts, epidemiologists and social scientists are using the public health model to study violence. They analyze the relationship among the person who is killed or injured, the weapon, and the physical, economic and social environments in which violence occurs. In 1983, the Centers for Disease Control and Prevention initiated a program to study the causes of violence, and founded the Center for Injury Control and Prevention. In 1984, U.S. Surgeon General C. Everett Koop declared that violence was as much a public-health issue for today's physicians as smallpox was for previous generations. In 1988, Deborah Prothrow-Stith, now an assistant dean at the Harvard School of Public Health, established in Massachusetts the first office of violence prevention in a state department of public health. Schools of public health at universities across the nation are pursuing epidemiological research into risk factors such as firearm and alcohol use.

Identifying the risk factors of violence is a complex undertaking. There are many different types of violence — violence against women in their homes, child abuse, youth violence, violence against men, violence by spouses, violence by acquaintances, violence by strangers, etc. Risk factors vary with different types of violence, and often, from community to community. Some of the risk factors that have been identified as contributing to high levels of the many types of violence include: poverty, racial segregation and discrimination, unemployment, the ready availability of alcohol, the ready availability of handguns, media violence, being male, being young, a lack of education in child rearing, childhood exposure to lead, abuse as a child, witnessing violent acts in the home or neighborhood, the belief in masculine dominance over females, and isolation of the nuclear family.

Violence is a difficult epidemic to understand and control because no one factor — elimination or redesign of guns, decrease in availability of alcohol, or reduction of media violence — will prevent all violence. Each type of violence in a particular community comprises a unique combination of social, cultural, biological, and economic risk factors. Therefore prevention approaches must involve a unique combination of people who attempt to solve the problem: doctors, researchers, community organizers, lawmakers, police, judges, social workers, teachers, parents, and citizens.

Traditionally, journalists have reported violent incidents as only a law enforcement and criminal justice issue. But now that an epidemiological approach to violence has been established, the media can expand their reporting of violence, in breaking news and features to identify factors that contribute to violence.

Breaking news of violent incidents, which ordinarily includes information about the victim, the alleged assailant, the weapon, and the immediate circumstances of the incident can also now expand upon or include information about an identified risk factor. Were the people involved drinking alcohol? How many alcohol outlets exist in that community? What is the relationship of the people involved — are they friends, family, acquaintances or strangers? Do the people involved have jobs? If a gun was involved, what type is it? Who is the manufacturer? Where was it obtained? How much did it cost? In addition, the consequences and costs to families and society of this violent incident can be identified. Does the victim have health insurance? How much does hospitalization cost and who pays for it? Did the children of the victim or perpetrator witness the violent incident, and if so, are they receiving counseling? What happens to the families and the homes of the people involved as a result of this incident? And, with the ready availability of data, violent incidents can be put into perspective to answer the following question: how common is this crime in this community?

Feature articles can focus on types of violence in the community, and what community groups are doing — or not doing — to decrease the incidence. If community groups are not doing anything, reporters can find a similar community that is incorporating prevention strategies to reduce violent incidents. There are thousands of organizations across the United States that have taken actions to reduce all types of violence in their towns and cities, with varying degrees of success.

This briefing book comprises four sections. The first presents newspaper articles exemplifying the traditional way of reporting incidents of violence, and rewrites of those articles that incorporate information based on current data and research as well as the consequences of the violent incidents. The second section highlights different types of violence, provides basic information and primary resources to obtain updates and further information. These data are designed to be used in articles as needed. Attribution to this publication is not necessary. The third section offers several case studies in which communities have applied prevention strategies. The last section lists resources for basic data, research and advocacy groups.

This briefing book is not a blueprint, but a guide. It does not provide a complete list of resources, but it does provide a new and necessary perspective on reporting violent incidents. Although national and state figures provide an overall perspective of trends of violent incidents, each community has its own unique problems, and it is the responsibility of journalists in each community to identify problems of violence and strategies that people in that community are taking to prevent violent incidents.

I developed this approach over several years of thinking and reporting about violence. It is my belief that with the current wealth of available epidemiological data and prevention strategies that are being offered and implemented on a daily basis in this country, our traditional methods of reporting violence are now archaic, and, more important, irresponsible to our readers, who derive their picture of the world from

what we present to them. The old way provides only enough information to increase fear of violence and a fatalistic attitude toward preventing violence. We owe it to our readers to point out the identified factors that contribute to violence, to help them make informed decisions.

This new method of reporting violent incidents and issues helps put violence in perspective, so that people in our communities have enough information to know whether they want to make changes in their behavior, in the behavior of manufacturers or sellers of products, or in how their local governments respond to issues related to violence.

Jane Ellen Stevens
Davis, California 1996

TIME-SPACE CLUSTERING OF TEENAGE SUICIDE

MADELYN S. GOULD,^{1,2,3} SYLVAN WALLENSTEIN,² AND
MARJORIE KLEINMAN³

Gould M. S. (Div. of Child Psychiatry, College of Physicians & Surgeons, Columbia U., New York, NY 10032), S. Wallenstein, and M. Kleinman. Time-space clustering of teenage suicide. *Am J Epidemiol* 1990;131:71-8.

The occurrence of time-space clusters was examined in national mortality data on suicide among adolescents aged 15-19 years obtained from the National Center for Health Statistics Mortality Detail Files for 1978-1984. The analyses indicated that overall significant time-space clustering occurred among 15-19 year olds. The authors thus believe that they have documented for the first time that outbreaks of suicide occur more frequently than expected by chance alone. The occurrence of suicide clusters among teenagers appeared to vary considerably by state and year of investigation. There is some indication that there has been an increase in teenage clusters in more recent years.

adolescence; disease outbreaks; space-time clustering; suicide

Suicidal behavior in adolescents is a major public health problem. Approximately 2,000 persons under age 20 years killed themselves in 1985 in the United States, representing a rate of 10 per 100,000 of the adolescent population (1). The suicide rate among teenagers has increased approximately 200 percent since 1960, moving suicide from the fifth leading cause of death

among those aged 15-19 years to the second leading cause of death in 1985. Increasing concern about the problem of teenage suicide has also been associated with a number of highly publicized suicide outbreaks in teenagers (2-4).

Accounts of suicide epidemics, referring to unusually high numbers of suicides occurring in a small area within a limited time period, have been reported from ancient times to the 20th century (5-7). Diverse populations, including psychiatric inpatients (8-12), high school and college students (13, 14), community samples (15-18), Native Americans (19), marine troops (20), prison inmates (21), and religious sects (22) have been the focus of reports of cluster suicides. It has been suggested that psychiatric problems increase susceptibility to commit suicide in a cluster (13, 15, 18, 19, 21); however, the proportion of sporadic noncluster suicides with psychiatric problems may not differ from proportions reported in the case series of cluster suicides.

The reports of suicide outbreaks are difficult to interpret. There is no systematic surveillance or reporting system of suicide

Received for publication January 23, 1989, and in final form June 5, 1989.

¹ Department of Psychiatry, College of Physicians & Surgeons, Columbia University, New York, NY.

² School of Public Health, College of Physicians & Surgeons, Columbia University, New York, NY.

³ New York State Psychiatric Institute, New York, NY.

Reprint requests to Dr. Madelyn S. Gould, Division of Child Psychiatry, College of Physicians & Surgeons, Columbia University, 722 West 168th Street, New York, NY 10032.

This work was supported by research contract 200-85-0834(P) from the Centers for Disease Control and a Faculty Scholars Award from the William T. Grant Foundation.

Portions of this paper were presented at the annual meeting of the American Academy of Child and Adolescent Psychiatry, Washington, DC, October 1987.

The authors thank Patrick O'Carroll and James Mercy of the Centers for Disease Control for their advice and comments on the research project.

clusters. Therefore, these case series have selection biases that may affect their representativeness. In such descriptive studies, no comparison groups or statistical analyses have been included. Without reference to a comparison group, descriptions of the demographic and psychologic characteristics of suicides that occur within the context of a cluster are speculative. What may appear to be a ubiquitous characteristic of cluster suicides may not differentiate those suicides from sporadic noncluster suicides and, therefore, knowledge of this characteristic may be of limited value in understanding and preventing this particular type of death. Moreover, to the authors' knowledge, there has been no research that has applied statistical techniques for the detection of clusters of suicides in time and space, although a substantial number of studies have examined temporal clustering after suicide stories (see references 7 and 23 for reviews). Few studies have examined temporal fluctuations in general (24-27) or spatial patterns (27). It is suicide clusters occurring in temporal and geographic proximity that most closely approximate the concept of an outbreak in a particular community. However, some clustering of suicide is bound to occur by chance alone even if suicides occur essentially at random. What is necessary to determine is whether or not outbreaks are occurring to an extent greater than would be expected by chance variation. The extent to which such time-space clustering occurs among adolescents is the focus of the present paper.

MATERIALS AND METHODS

Data sources

Vital Statistics Mortality Detail Tapes for 1978-1984 from the National Center for Health Statistics were employed in the time-space cluster analysis of suicide among those aged 15-19 years. (Five years of data, 1978 through 1982, were originally contracted for study by the Centers for Disease Control (28). During the course of

the study, data for 1983 and 1984 became available and were included in the analyses.) Information on the place of occurrence and residence on the Mortality Detail Tapes from the National Center for Health Statistics is available at the state and county level and for city of residence for cities of 100,000 persons or more. Mortality data for 1978-1985 was also requested from state vital statistics offices from 12 states, representing at least one state within each of the nine regions of the United States (Colorado, Connecticut, Illinois, Massachusetts, Missouri, Nebraska, New York, North Carolina, Ohio, Tennessee, Texas, and Washington State) because information on the town of occurrence and residence was available from the states' vital statistics data.

A suicide was defined as any person whose cause of death had been listed as codes E950-959 of the Ninth Revision of the *International Classification of Diseases* (ICD-9). The late effects of a self-inflicted injury (E959) were included in the analyses because the timing of the death, in addition to the initial suicidal act, may influence a subsequent suicide. However, this classification of death only accounted for up to 0.1 percent of the total number of suicides and, therefore, it is unlikely that it had an impact on the analyses.

Statistical methods

Several statistical methods have been devised to detect and statistically assess time-space clustering, or outbreaks, of disease (29-33). The three most commonly used techniques are the methods of Ederer et al. (29), Knox (30), and Mantel (31). These techniques have been applied to the study of clustering of leukemia, Hodgkin's disease, Burkitt's tumor, and other lymphomas (32). Chen et al. (34) have found little difference between the methods of Knox, Ederer et al. and Mantel; however, they also reported that the methods were weak in detecting clustering in their simulated data on Hodgkin's disease. The

Mantel procedure, based on actual distances in space and time between all pairs of cases, was not suitable for the present analyses because of the nature of the available data (e.g., discrete units of geographic areas). The Ederer-Myers-Mantel method, as usually applied, is based on the maximum number of cases within a given geographic area in a calendar year. The standard time parameter of one year did not seem appropriate for a model of suicide outbreaks. Moreover, the Ederer-Myers-Mantel method is sensitive to temporal clustering as well as time-space clustering (31). Therefore, the Knox procedure was employed in the present analysis.

The Knox procedure considers all possible pairs of cases and the time and space distances between them. It seeks to establish clustering by demonstrating a positive relation between the time and space distances of a pair. The Knox method requires the specification of critical values for time and space to define closeness. In the original formulation of the Knox procedure, the precise time and place of occurrence of each case was employed. The procedure was modified (32) so that cases were regarded as close in space if they had occurred within the same geographic area (defined in a subsequent section). The test statistic involves a comparison of the observed number of pairs close in time and space with the expected number, which is the product of the proportion of pairs that are close in time with the number of pairs close in space. The variance of the statistic was based on the method of David and Barton (35) and the significance of the statistic was evaluated using the ratio,

$$Z = (O - E) / \sqrt{\text{variance}},$$

which approximately follows a normal distribution.

Definition of cluster: critical values in time and space

There are no explicit definitions of a suicide cluster in the literature. Therefore,

initial operational definitions and limits for time and space parameters were examined in an exploratory analysis of National Center for Health Statistics data for 1978 and mortality data for 1978 through 1985 provided by state vital statistics offices from the 12 states previously noted.

Two space units, county of residence and occurrence, were compared in the National Center for Health Statistics data. County is the smallest unit of space that is available on the total population of deaths recorded in the National Center for Health Statistics data. The analyses indicated extensive overlap between the residence at the time of death and the place of occurrence for teenage suicides (85 percent concordance in the 1978 National Center for Health Statistics data). To assess whether county units of space were as adequate as smaller units of space, such as town units, four space units were compared in the state data—the county of residence and occurrence and town of residence and occurrence. The exploratory time-space cluster analyses of the state vital statistics data indicated that county of residence yielded a more sensitive space unit to define a cluster (28).

Five critical time units to define closeness between pairs of cases were examined—3, 7, 14, 30, and 60 days—covering a broad range of values that correspond to common units of time (i.e., 1 week, 2 weeks, 1 month, and 2 months). There was little difference between the five time units in the exploratory examination. Therefore, the analyses of the National Center for Health Statistics data are here reported for 7, 14, and 30 days.

Attributable risk

It is of value to determine the proportion of all suicides that occur in clusters because the practical significance of clusters should be taken into account along with the statistical significance. A precise method to estimate this proportion is not available. However, an approximation is given as fol-

lows. The Knox method identifies the number of observed and expected pairs within a given county and "contagious" time period (e.g., the critical time units). The expected and observed numbers of pairs (not cases), E and O , respectively, are calculated routinely in the Knox method. If there was no overlap among pairs, the number of cases would be simply twice the number of pairs. However, for time units of 7 through 30 days it is likely that there would be some overlap among the pairs, in other words, the same person could be close in time and space to two different people. Therefore, the number of individuals would be less than twice the number of pairs. A listing of the close-close pairs was examined to determine the number of unique cases among the pairs. The ratio of the number of observed cases within a contagious period to the maximum number of cases (twice the number of pairs) will be called Q . Q can be employed to translate the excess number of pairs into the number of excess individual suicides, using $2Q(O - E)$. Thus, an index of the proportion of cluster suicides, accounting for chance, is

$$I = 2Q(O - E)/N,$$

where N is the total number of teenage suicides. Negative values indicate that the observed number of close-close pairs is less than the expected number. The value of 100 percent is unattainable in this framework. This index must be interpreted with caution because the magnitude of the index might vary depending on the sampling unit. Moreover, while the approximation is suitable for this data set, the assumptions underlying the utilization of the index may not be applicable when $(O - E)/N$ is large.

RESULTS

For purposes of strict data analysis (no contamination of results with exploratory 1978 analysis), the Knox procedure was applied to the National Center for Health Statistics mortality data for 1979-1984 combined (see table 1). (The analyses re-

mained essentially unchanged by the inclusion of 1978.) The analyses indicated that overall significant time-space clustering occurred among adolescents aged 15-19 years. The analysis represents the total extent to which suicides cluster in time and space, i.e., both simultaneous suicides that occurred on the same day and sequential suicides that occurred at least 1 day apart within the critical time period are included. The simultaneous suicides may represent suicide pacts. Several anecdotal reports of clusters indicate that suicide pacts have occurred as part of a cluster of suicides (reference 6 and James Mercy, Centers for Disease Control, personal communication, 1988). A pact can both precipitate a subsequent cluster and, likewise, have been influenced by an earlier suicide. Nevertheless, suicide pacts do occur outside the context of an outbreak, and it is of interest to attempt to separate the significance of sequential time-space clustering from simultaneous time-space clustering. The Knox procedure was applied to the National Center for Health Statistics data redefining the critical time periods so that close suicides occurred at least 1 day apart. The significance and effect size, as measured by the observed/expected number of close-close pairs, remained largely unchanged. Both analyses indicated significance in two out of three window sizes (see table 1). Although the analyses relating to the 14-day time unit were not significant at the 0.05 level, the pattern of results is qualitatively similar.

Each year was examined separately to identify any differential pattern per year and to determine whether clustering of suicides has increased (see table 2). The attributable risk percent statistic showed a tendency to increase in the later years in the analyses of the 14- and 30-day time units. The largest deviations from the expected number of close-close pairs of suicide, indicative of the most substantial clustering, occurred in 1984; noticeable, though smaller, deviations also occurred in 1983.

TABLE 1
Results of Knox procedure on 1979-1984 National Center for Health Statistics Mortality Detail File

Critical time	Close-close pairs			p value
	Expected	Observed	Variance	
Simultaneous and sequential suicides*				
7 days	1,121.4	1,196	1,121.5	0.012
14 days	2,323.0	2,399	2,321.2	0.057
30 days	5,048.7	5,220	5,060.3	0.008
Sequential suicides only				
7 days	1,033.4	1,094	1,033.6	0.029
14 days	2,235.0	2,297	2,233.7	0.094
30 days	4,960.7	5,118	4,973.7	0.012

* "Simultaneous" suicides occurred on the same day. Sequential suicides occurred at least 1 day apart (see text).

TABLE 2
Number of expected and observed "close-close" pairs and percentage of "cluster" suicides within counties, accounting for chance (attributable risk percent (AR%)): National Center for Health Statistics Mortality Detail File, 1979-1984

Year	Critical time								
	7 days			14 days			30 days		
	Close-close pairs		AR%	Close-close pairs		AR%	Close-close pairs		AR%
	Expected	Observed		Expected	Observed		Expected	Observed	
1979	223.5	228	0.2	461.1	456	-0.3*	985.5	998	0.1
1980	208.3	193	0	422.6	400	0	894.2	883	0.2
1981	174.5	194	1.8	354.3	365	0.6	751.6	752	-0.4*
1982	207.6	225	1.3	423.4	434	0.5	902.7	914	0.3
1983	173.2	185	1.0	352.9	375	1.1	754.5	803	2.0
1984	147.5	169	1.9	304.6	350	3.3	639.2	702	3.7

* Negative values indicate that the observed number of "close-close" pairs is less than the expected number.

The percentage of all suicides that occurred in clusters, an approximation of the attributable risk percentage, was estimated using National Center for Health Statistics data (table 2) and state vital statistics data (table 3). The magnitude of this index might vary depending on the sampling unit; therefore, the estimates were determined for clusters defined by a county unit of space using National Center for Health Statistics data and for clusters defined by town of residence using the state vital statistics data. Based on an average of the national data for all the years, the percentage of suicides that occurred in clusters within counties appears to be approximately 1 percent, but in 1984 the percentage varied between 1.9 and 3.7 percent. From the state data, the percentage of clusters within towns averaged 2.3 percent,

with estimates ranging from less than 1 percent to 13 percent. Estimates for individual states based on expected values of less than five close-close pairs should be interpreted with caution. The 11 states employed in the latter analysis are not necessarily representative of the United States as a whole and are presented merely to give an indication of the variability by state and to provide an estimate for clusters defined by town of residence in addition to those defined by a county unit of space.

DISCUSSION

Clustering of teenage suicides is occurring to an extent that is significantly greater than would be expected by chance variation. There is no clear-cut pattern, but it appears that teenage clusters are more common in recent years. The extent to

TABLE 3

Number of expected and observed "close-close" pairs and percentage of "cluster" suicides within towns of residence, accounting for chance (attributable risk percent (AR%)): state vital statistics data*, 1978-1985

State	Critical time								
	7 days			14 days			30 days		
	Close-close pairs		AR%	Close-close pairs		AR%	Close-close pairs		AR%
	Expected	Observed		Expected	Observed		Expected	Observed	
Colorado	3.8	4	0.2	8.4	10	1.8	18.9	20	1.0
Connecticut	0.5	1	0.7	1.0	1	0.0	2.1	3	0.8
Illinois	34.8	40	1.3	73.1	78	0.9	157.3	162	0.6
Massachusetts	1.1	5	3.3	2.6	5	2.0	5.6	9	2.9
Missouri	3.2	4	0.5	7.2	7	-0.1†	17.2	19	1.2
Nebraska	1.1	1	-0.3†	2.2	4	5.8	4.1	10	13.4
North Carolina	1.9	4	2.8	3.8	6	3.1	8.8	14	4.8
Ohio	13.6	19	2.1	29.3	33	1.5	63.4	68	1.9
Tennessee	5.7	8	2.7	11.6	12	0.5	26.9	26	-1.1†
Texas	78.3	79	0.1	161.2	154	-1.2†	348.7	335	-1.4†
Washington	3.5	9	6.7	6.6	10	4.3	12.4	16	11.6

* New York State is not included because town of residence was not available in the New York State vital statistics data set.

† Negative values indicate that the observed number of "close-close" pairs is less than the expected number.

which clustering of suicides occurs among other age groups is the focus of another report by the investigators (41). The percentage of teen suicides that occurred within a cluster period, accounting for chance, was approximately 1 to 2 percent, with considerable variation by state, sampling unit, and year of investigation. The discrepancy between the present estimate of suicides that occurred within a cluster and the impression given by media coverage of clusters may be accounted for by the large number of clusters that are expected by chance. For example, in 1979 through 1984 for a 7-day window, the estimate of suicides that occurred within a cluster would rise to 24 percent if the number of expected occurrences was not taken into account. The estimates of the effect size are approximate because they do not reflect clusters that do not conform to the time and space parameters employed in the study. Moreover, these estimates do not reflect clusters of attempted suicides. It is not possible to enumerate suicide attempts adequately because no registry of attempts exists. Therefore, the estimates of clustering may represent a lower bound due to the set definitions of a cluster and the sole

employment of mortality data. There is also a potential bias that would yield the opposite effect on estimates of clustering. There exists the possibility that the occurrence of one or two suicides in a community may induce medical examiners to classify some additional ambiguous deaths, such as motor vehicle accidents, as suicides. However, in examinations of the validity and reliability of suicide statistics, it has been concluded that overreporting is negligible (it is primarily underreporting that needs to be considered) and that the misclassification of accidents or undetermined deaths has not been able to explain changes in suicide rates over time and has little impact on epidemiologic research or studies of social correlates of suicide (24, 36-38). Therefore, it seems unlikely that this bias could explain the finding of significant time-space clustering of suicide.

The demonstration of time-space clustering of teenage suicide is consistent with a mechanism of contagion. However, it does not necessarily identify it as the underlying mechanism. The analytic techniques to detect time-space clustering are not designed to identify the mechanisms underlying a cluster. For example, it is not possible to

ascertain whether clusters were precipitated by an initial suicide, acting as a model, or whether the presumed model merely happened to be the first person who committed suicide in response to conditions that then led others to suicide. Contagion would assume either direct or indirect awareness of the prior suicide. Various suicide contagion pathways may exist: direct contact or friendship with a victim, word-of-mouth knowledge, and indirect transmission through the media. A large body of research indicates that suicides significantly cluster in time following suicide stories (see references 7 and 23 for reviews). Field studies of representative samples of clusters will be necessary to identify the mechanisms of the clusters.

Given the present estimates of the proportion of cluster suicides, the sole focus on suicides that occur within a cluster would be an inadequate prevention strategy for a substantial reduction of the suicide rate among teenagers. However, the relative risk for suicide given exposure to the suicide of one or more other persons may be quite great. Studies at the individual level will be needed to define this relative risk. Moreover, predicting subsequent cluster suicides within a community may be easier than predicting the initial single suicide. The prediction of who will initially commit suicide is fraught with the same difficulties that typify the general class of predicting rare events. Suicide prevention efforts that focus on high-risk populations are one recommended strategy (39). The occurrence of a suicide within a community appears to increase the risk of a subsequent suicide and, thus, can define a high risk population. An interim set of guidelines for such communities' responses to a suicide has recently been developed by the Centers for Disease Control (40). A final set of guidelines will have to await the systematic ascertainment of the mechanisms that underlie a cluster situation.

REFERENCES

1. National Center for Health Statistics. Vital Statistics of the United States, 1985. Vol II. Mortality, part A. Washington, DC: US GPO, 1988 (DHHS publication no. (PHS)88-1101).
2. Blonston G. Suicides among Arapahoe youths tied to "cultural identity crisis." (Editorial). Hartford Courant 1985, October 10:A14-A15.
3. Doan M. As "cluster suicides" take toll of teenagers. US News World Rep 1985;97:49.
4. Gelman D, Gangelhoff BK. Teen-age suicide in the sunbelt. Newsweek 1983;15:70-4.
5. Bakwin H. Suicide in children and adolescents. J Pediatr 1957;50:749-69.
6. Coleman L. Suicide clusters. Boston: Faber & Faber, 1987.
7. Davidson L, Gould MS. Contagion as a risk factor for youth suicide. In: US Department of Health and Human Services. Report of the Secretary's Task Force on Youth Suicide. Vol 2. Risk factors for youth suicide. Washington, DC: US GPO, 1988:88-109.
8. Anonymous. A suicide epidemic in a psychiatric hospital. Dis Nerv Syst 1977;38:327-31.
9. Crawford JP, Willis JH. Double suicide in psychiatric hospital patients. Br J Psychiatry 1966; 112:1231-5.
10. Kahne MJ. Suicide among patients in mental hospitals. Psychiatry 1968;1:32-43.
11. Kobler ALL, Stotland E. The end of hope: a social-clinical study of suicide. London: The Free Press of Glencoe, 1964.
12. Sacks M, Eth S. Pathological identification as a cause of suicide on an inpatient unit. Hosp Community Psychiatry 1981;32:36-40.
13. Robbins D, Conroy RC. A cluster of adolescent suicide attempts: is suicide contagious. J Adolesc Health Care 1983;3:253-5.
14. Seiden RH. Suicidal behavior contagion on a college campus. In: Farberow NL, ed. Proceedings of Fourth International Conference for Suicide Prevention, Los Angeles, CA, 1968:360-5.
15. Ashton VR, Donnan S. Suicide by burning as an epidemic phenomenon: an analysis of 82 deaths and inquests in England and Wales in 1978-79. Psychol Med 1981;11:735-9.
16. Nalin DR. Epidemic of suicide by malathion poisoning in Guyana. Trop Geogr Med 1973;25:8-14.
17. Rubinstein DH. Epidemic suicide among Micronesian adolescents. Soc Sci Med 1983;17:657-65.
18. Walton EW. An epidemic of antifreeze poisoning. Med Sci Law 1978;18:231-7.
19. Ward JA, Fox J. A suicide epidemic on an Indian reserve. Can Psychiatr Assoc J 1977;22:423-6.
20. Hankoff LD. A epidemic of attempted suicide. Compr Psychiatry 1961;2:294-8.
21. Niemi T. The time-space distances of suicides committed in the lock-up in Finland in 1963-1967. Isr Ann Psychiatry Relat Discip 1978;16:39-45.
22. Rovinsky A. Epidemic suicides. Boston Med Surg J 1898;138:238-9.
23. Gould MS, Davidson L. Suicide contagion among adolescents. In: Stiffman AR, Feldman FA, eds. Advances in adolescent mental health. Vol III. Depression and suicide. Greenwich, CT: JAI Press, Inc, 1988:29-59.
24. Barraclough BM, White SJ. Monthly variation of suicide and undertermined death compared. Br J Psychiatry 1978;132:275-8.

25. MacMahon K. Short-term temporal cycles in the frequency of suicide, United States, 1972-1978. *Am J Epidemiol* 1983;117:744-50.
26. Phillips DP. Teenage and adult temporal fluctuations in suicide and auto fatalities. In: Sudak HS, Ford AB, Rushforth NB, eds. *Suicide in the young*. Boston: John Wright PSG Inc, 1984:69-80.
27. Centers for Disease Control. Suicide surveillance, 1970-1980. Atlanta, GA: Centers for Disease Control, 1985.
28. Gould MS, Wallenstein S, Kleinman M. A study of time-space clustering of suicide. (Final report contract #RFP 200-85-0834). Atlanta, GA: Centers for Disease Control, September 1987.
29. Ederer F, Myers MH, Mantel N. A statistical problem in space and time: do leukemia cases come in clusters? *Biometrics* 1964;20:626-38.
30. Knox G. The detection of space-time interactions. *Appl Stat* 1964;3:25-9.
31. Mantel N. The detection of disease clustering and a generalized regression approach. *Cancer Res* 1967;27:209-20.
32. Smith PG. Spatial and temporal clustering. In: Schottenfeld D, Fraumeni JF, eds. *Cancer epidemiology and prevention*. Philadelphia: WB Saunders, 1982:391-407.
33. Klauber MR. Space-time clustering analysis: a prospectus. In: Ludwig D, Cooke KL, eds. *Proceedings of SIMS Conference on Epidemiology*. Philadelphia: Society for Industrial and Applied Mathematics, 1975:75-89.
34. Chen R, Mantel N, Klingberg MA. A study of three techniques for clustering in Hodgkin's disease. *Stat Med* 1984;3:173-84.
35. David SN, Barton DE. Two space-time interaction tests for epidemicity. *Br J Prev Soc Med* 1966;20:44-8.
36. Sainsbury P. Validity and reliability of trends in suicide statistics. *World Health Stat Q* 1983;36:339-48.
37. Pescolido BA, Mendelsohn R. Social causation or social construction of suicide? An investigation into the social organization of official rates. *Am Sociol Rev* 1986;51:80-100.
38. Sainsbury P, Jenkins JS. The accuracy of officially reported suicide statistics for purposes of epidemiological research. *J Epidemiol Community Health* 1982;36:43-8.
39. Shaffer D, Garland A, Gould M, et al. Preventing teenage suicide: a critical review. *J Am Acad Child Adolesc Psychiatry* 1988;27:675-87.
40. Centers for Disease Control. CDC recommendations for a community plan for the prevention and containment of suicide clusters. *MMWR* 1988; 37(suppl S-6):1-12.
41. Gould MS, Wallenstein S, Kleinman M. Suicide clusters: an examination of age-specific effects. *Am J Public Health* (in press).

SUICIDE: EPIDEMIOLOGY, PREVENTION, TREATMENT
Kachur SP, Potter LB, Powell KE, Rosenberg ML
pp. 171-182.

Adolescent Medicine

Adolescent Injuries: Epidemiology and Prevention

Guest Editors:

Katherine Kaufer Christoffel, M.D., M.P.H.

Professor, Departments of Pediatrics and Preventive Medicine
Northwestern University Medical School
and

Attending Physician, Division of General
and Emergency Pediatrics
Children's Memorial Hospital
Chicago, Illinois

Carol W. Runyan, M.P.H., Ph.D.

Director
Injury Prevention Research Center
and

Associate Professor
Department of Health Behavior and Health Education
University of North Carolina
Chapel Hill, North Carolina

Volume 6/Number 2
HANLEY & BELFUS, INC.

June 1995
Philadelphia

STATE OF THE ART REVIEWS

Publisher: HANLEY & BELFUS, INC.
210 South 13th Street
Philadelphia, PA 19107
(215) 546-7293
Fax (215) 790-9330

ADOLESCENT MEDICINE: State of the Art Reviews is indexed in the *Combined Cumulative Index to Pediatrics*, ISI/ISTP&B online database, Index to Scientific Book Contents, Biological Abstracts/RRM, and Current Contents (Clinical Medicine and Social & Behavioral Sciences).

ADOLESCENT MEDICINE: State of the Art Reviews
June 1995 Volume 6, Number 2

ISSN 1041-3499
ISBN 1-56053-190-8

© 1995 by Hanley & Belfus, Inc. under the International Copyright Union. All rights reserved. No part of this book may be reproduced, reused, republished, or transmitted in any form or by any means without written permission of the publisher.

ADOLESCENT MEDICINE: State of the Art Reviews is published triannually (three times per year) by Hanley & Belfus, Inc., 210 South 13th Street, Philadelphia, Pennsylvania 19107.

POSTMASTER: Send address changes to ADOLESCENT MEDICINE: State of the Art Reviews, Hanley & Belfus, Inc., 210 South 13th Street, Philadelphia, PA 19107.

This issue is Volume 6, Number 2.

The Editor of this publication is Linda C. Belfus.

Suicide: Epidemiology, Prevention, Treatment

S. PATRICK KACHUR, M.D., M.P.H.
LLOYD B. POTTER, PH.D., M.P.H.
KENNETH E. POWELL, M.D., M.P.H.
MARK L. ROSENBERG, M.D., M.P.P.

From the Division of Violence
Prevention
National Center for Injury
Prevention and Control
Centers for Disease Control
and Prevention
Atlanta, Georgia

Reprint requests to:
S. Patrick Kachur, M.D.
Mailstop K-60
4470 Buford Highway, NE
Atlanta, GA 30341

In 1992, a total of 1,847 American adolescents (15–19 years old) took their own lives (suicide rate = 10.82/100,000). Although the highest suicide rates generally occur among older adults and elderly persons, the number of adolescent and young adult suicides is quite substantial and increasing. In 1992, more than 15% of all suicides in the United States occurred among adolescents and young adults between the ages of 15 and 24. Suicide rates for these groups have nearly tripled in the last 30 years (Fig. 1). One of the nation's public health objectives for the Year 2000 is to reverse this disturbing trend and reduce the adolescent suicide rate to less than 8.2/100,000.⁶⁰ We hope that the epidemiology of youth suicide may suggest effective science-based preventive interventions.

EPIDEMIOLOGY

Suicide is the third leading cause of death in the 15- to 19-year age group, behind unintentional injury and homicide. Overall, it is the ninth leading cause of death and the sixth leading cause of years of potential life lost before age 65 (YPLL-65).¹⁸ Before describing the epidemiology of suicide among young persons, it is important to consider the origins of the data that support our scientific understanding of adolescent suicide. Suicidal behavior ranges in severity from merely thinking about self-destruction (suicidal ideation), through developing a plan and obtaining the means, to attempting, and finally to completing the fatal act (Fig. 2).

ADOLESCENT MEDICINE: State of the Art Reviews—Vol. 6, No. 2, June 1995
Philadelphia, Hanley & Belfus, Inc.

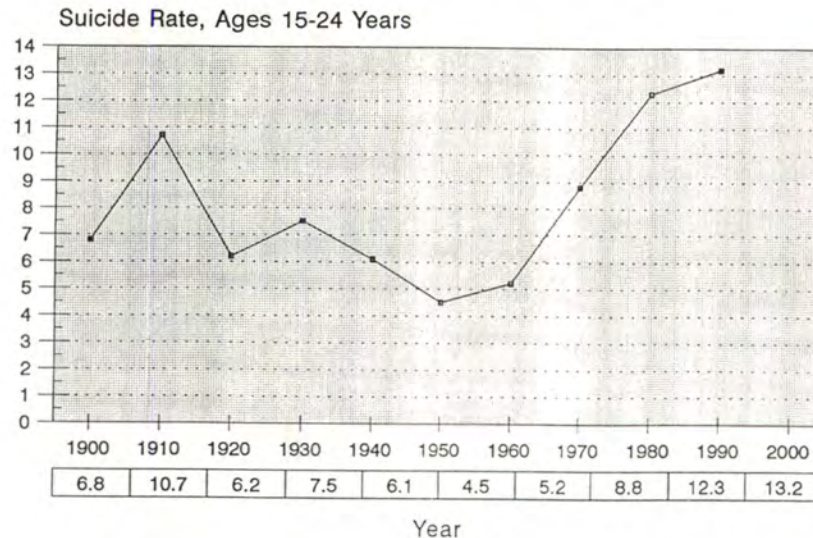


FIGURE 1. Age-specific suicide rate,* 15-24 year olds, U.S., 1900-1990.

Source: NCHS mortality files.

*Rates = deaths per 100,000 population per year.

Important differences exist between people at different stages along this continuum; most individuals who experience suicidal ideation or make a single suicide attempt do not go on to kill themselves. Thus, the epidemiology of completed suicide differs from the epidemiology of attempted suicide, which, in turn, differs from the epidemiology of suicidal ideation. Furthermore, data on each of these activities are collected from various sources, and the quality of information available on the different forms of suicidal behavior can differ substantially.⁴⁹

Suicide fatalities are tracked through a national system of vital statistics compiled by the National Center for Health Statistics. This system is based on death certificate data and considered reasonably complete, but it includes only limited information on the risk factors and personal characteristics of the deceased. There are several other limitations inherent in the vital statistics data. Suicides may be slightly underreported,⁵⁴ and there is usually a 3-year lag between the time of an event and the availability of the relevant vital statistics. Nevertheless, mortality data are useful for describing general trends in suicide nationwide.

For each suicide death, it is estimated that there are as many as 25 attempted suicides.⁴⁰ Unfortunately, there is no national system and few, if any, local and statewide systems for reporting nonlethal suicidal behaviors. To characterize trends in suicidal

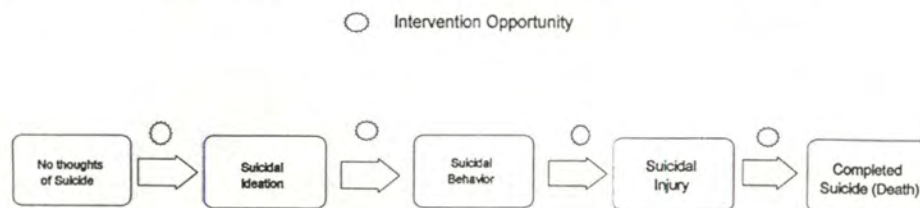


FIGURE 2. Continuum of suicidal behavior and opportunities for preventive intervention.

ideation and attempted suicide, public health officials rely on systematic reviews of hospital records, population surveys, and special studies. These data sources often include meaningful detail that is lacking in the mortality data. Many of these special studies have been limited to adult populations. Academic research specifically focused on adolescent suicide is a relatively recent endeavor.

Some young people are at greater risk for self-inflicted death than others. Epidemiologists and suicidologists have described specific characteristics that are most closely associated with an elevated incidence of suicidal behavior. These include demographic, psychiatric, biologic, and social or environmental features. Some characteristics—such as gender, race, and family history—are permanent markers. Recognizing them can help identify individuals and populations at greatest risk of suicide and most in need of preventive services. Other features—including mental health status and living conditions—are amenable to change. Such modifiable risk factors often suggest specific intervention strategies. Table 1 summarizes the identified characteristics and risk factors that have been associated with suicide in adolescents. Even with our present understanding of the multiple features that may predispose individuals to suicidal behavior, it is not possible to predict with confidence which young people will eventually take their own lives.

Demographic Characteristics

One of the most apparent demographic markers of suicide risk is age. Suicide rates vary considerably, even within the adolescent and young adult population. In recent decades, suicide has increasingly affected younger and younger age groups. During the 1960s, suicide rates rose most dramatically for young adults in the 20- to 24-year age group. The young adult suicide rate peaked and began to level off in the 1970s and 1980s. At the same time, the adolescent (15–19 years) suicide rate continued to climb. Suicides before age 15 years have always been rare. In 1992, for example, there were only 314 suicides reported among children less than 15 years old. However, this modest total belies a 100% increase in suicide rate among children 10–14 years old that occurred between 1980 and 1992.¹⁸

Gender, race, and ethnicity also feature importantly in the epidemiology of suicidal behavior. Suicide rates are higher than the national average among white teens, lower among African-Americans, and intermediate among young persons of other races.¹⁸ This other race category combines a heterogeneous assortment of many cultures—including

TABLE 1. Risk Markers and Risk Factors Associated with Suicide in Adolescents

Category of Risk	Risk Markers & Risk Factors	Association with Elevated Risk
Demographic	Age	Older adolescents, young adults
	Gender	Males
	Race	Whites, Native Americans
	Ethnicity	Non-Hispanics
Psychiatric	Affective disorders	Depression, bipolar disorder
	Substance abuse	Alcohol, drug abuse
	Prior suicidal behavior	History of suicide attempt
	Other psychiatric conditions	Anxiety, conduct, personality
Biologic	Genetic predisposition	Family history of suicide
	Neurobiologic factors	Altered serotonin metabolism
Social/Environmental	Geographic location	Western states, rural areas
	Exposure to completed suicide	Suicide of friend or peer
	Predisposing circumstances	Discipline, relationship problems
	Availability of means	Firearm in the home

Native Americans, Alaska Natives, Asian-Americans, and Pacific Islanders—which are not reported consistently by all 50 states and the District of Columbia. Consequently, these rates may not accurately reflect the experience of any one of the component groups. Likewise, Hispanic ethnicity actually represents a number of distinct cultural groups and is not consistently recorded on death certificates. In states where these data are well reported, the highest suicide rates of all occur among Native Americans. Hispanic populations demonstrate suicide rates only slightly below the national average.^{18,41}

Completed suicides among males outnumber those among females in every age, race, and ethnic group.¹⁸ For the total U.S. population, the male to female ratio is roughly 4:1. Among white teens, male suicides outnumber female suicides 5:1; for teens of other races, the ratio is 4:1; but among African-Americans, the ratio approaches 8:1. From 1980 to 1992, the overall adolescent suicide rate rose 27%. At the same time, the suicide rate for male African-American youth more than doubled. Although males are much more likely to complete suicide, females have more nonfatal suicide attempts. In the 1990 Youth Risk Behavior Survey, 10% of female and 6% of male high school students reported that they had attempted suicide at least once in the 12 months preceding the study.¹⁷ The highest rates of attempted suicide were reported by Hispanic students (12%), followed by white (8%) and black (6.5%) students. In other studies Native-American youth are reported to have attempted suicide up to 65% more frequently than white youth.^{4,38}

Some of the variation in the rates of attempted and completed suicide among the different race and gender groups may be related to their choices of method. The total and method-specific suicide rates for teens in each of the race and gender groups are provided in Table 2. Overall, firearms accounted for the majority (68%) of suicides among 15–19 year olds in 1992.¹⁸ Firearms were the leading method of suicide for all race and gender groups except for females of other races, among whom poisoning was the most prevalent method of suicide, hanging second, and firearm injury third. For all groups of males, hanging was the second most common method of completed suicide and poisoning was third. Among females, poisoning deaths were more common than hangings. Poisoning is the most common method of attempted suicide overall. Individuals who attempt suicide by highly lethal methods such as firearm or hanging are successful 90% of the time.⁴⁰ Therefore, uncompleted suicide attempts by these means are relatively rare.

Psychiatric Risk Factors

Much of what is known about suicide risk is derived from retrospective studies where researchers interview a surviving parent, friend, or other close proxy to identify

TABLE 2. Adolescent Suicide Rates* by Method, Race and Gender, U.S., 1991

Race/Gender Group	All Methods	Firearms	Hanging	Poisoning	Cutting	Other
Total	10.82	7.33	1.95	1.12	0.04	0.37
Males						
white	18.39	12.85	3.39	1.40	0.09	0.66
black	14.83	12.58	1.72	0.22	0.00	0.30
other	17.45	10.99	4.78	1.20	0.00	0.48
Females						
white	3.66	1.72	0.65	1.10	0.00	0.17
black	1.92	1.30	0.15	0.38	0.00	0.08
other	5.03	1.26	1.76	2.01	0.00	0.00

*Adolescent aged 15–19 years. All rates are per 100,000 population per year.

specific
death. C
nearly
that co
of adol
at least
fession
team id

Ar
affectiv
disorde
All of t
group c
every c
isted fo
nosed
prospec
pressed
pleted
with de

No
vious n
compar
suicida
identifi
at great
cent ps
admiss
riod, th
followi

Al
can be
prevale
comm
of suic
which
serious
as man
many a

Biolo

Fa
some r
tion to
genetic
dency
M
in rece
robiolo
dispos
lites in

specific life events and psychiatric symptoms that a suicide victim experienced before death. Case-control studies using this psychological autopsy technique have shown that nearly all adults who complete suicide had evidence of a specific psychiatric condition that could be diagnosed retrospectively.⁵ Similar findings have been reported in studies of adolescent suicide victims. In their New York study, Shaffer and colleagues noted that at least half of all adolescent suicide victims had prior contact with a mental health professional.⁵⁴ In more recent work from Southwestern Pennsylvania, Brent and his research team identified psychiatric symptoms in all but 10.5% of youthful suicide completers.^{9,11}

Among the conditions most commonly recognized in these and similar studies were affective disorders, alcohol and other drug abuse, and conduct, personality, and anxiety disorders. Substance abuse appears to be particularly important in young populations.⁵¹ All of these conditions were far more common among suicide victims than in a control group of demographically matched adolescents from the same community. In almost every case, psychological autopsy revealed that psychiatric symptoms and disorders existed for months or years before the suicide, although many conditions went undiagnosed until after death. These retrospective findings are supported by some early prospective evidence. Rao and colleagues followed a cohort of more than 400 depressed, anxious, and normal adolescents into adulthood. Seven of the subjects completed suicide during the follow-up period. All seven belonged to the group diagnosed with depression in childhood.⁵¹

Not surprisingly, some of the strongest risk factors for completed suicide are previous nonfatal suicidal behaviors. Psychological autopsy studies have concluded that, compared with adolescents in the community, suicide victims showed higher rates of suicidal ideation as well as prior suicide attempts.^{9,48,54} Among young persons with identified psychiatric risk factors, a history of suicidal behavior may help identify those at greatest risk of subsequent suicidal activity. In a small prospective study of adolescent psychiatric inpatients, those who did not show evidence of suicidal inclinations on admission were far less likely to make a suicide attempt during a 6-month follow-up period, than were those patients originally admitted for either suicidal ideation or directly following a suicide attempt.⁷

Although they are important risk factors, suicidal ideation and attempted suicide can be difficult to detect in adolescents. Furthermore, some suicidal behavior is very prevalent among otherwise healthy young people—but completed suicide remains uncommon. Not every suicidal ideator or attempter goes on to complete suicide. Thoughts of suicide, in particular, are so widespread that they may not be a useful indicator of which adolescents are most in need of preventive services.⁵⁴ Attempted suicide is a more serious suicidal behavior and a better predictor of future suicidality. Studies indicate that as many as 40% of adolescent suicide attempters will make a repeat attempt, and as many as 14% will eventually go on to die by suicide.²⁷

Biologic Markers

Family history is also a recognized marker of increased risk for suicide.^{27,54} To some researchers, this suggests that there may be a biologic trait passed from generation to generation which predisposes some people to suicidal behavior. In addition to genetic factors, social and environmental forces almost certainly contribute to this tendency for an increased risk of suicide in the families of suicide victims.

More direct evidence suggesting a biologic basis for suicide has become available in recent years as considerable progress has been made toward understanding the neurobiologic processes that underlie many psychiatric conditions, including those that predispose to suicide. A number of studies have shown altered levels of serotonin metabolites in the cerebrospinal fluid of adult psychiatric patients who completed suicide.^{23,42}

Other

0.37

0.66

0.30

0.48

0.17

0.08

0.00

1991

More recent work has also identified peripheral markers of impaired neurotransmitter activity in suicidal persons with depression.^{47,51} This early evidence is far from conclusive, but as this field of research evolves, scientists may ultimately identify a practical chemical marker for suicidal risk.²⁹

Social and Environmental Risk Factors

A number of social and environmental conditions can influence suicidal behavior. High levels of divorce, migration, unemployment, abuse of alcohol and other drugs, as well as more general indicators of limited socioeconomic opportunity and an unstable social environment have been noted in communities with higher rates of youth suicide.^{27,32} Keinhorst and colleagues described two types of young suicide attempters: those with problems of behavior (usually manifest as psychiatric symptoms) and those with problems of circumstance.³⁴ Other researchers have also emphasized the importance of precipitating events in the pathogenesis of adolescent suicide and adolescent suicide attempts.^{12,15,39} Among the most frequently recognized precipitating life events are personal loss, interpersonal conflict, disruption of a romantic attachment, inadequate family support, difficulties in school, and impending legal or disciplinary problems. A history of physical or sexual abuse^{6,7} in childhood also contributes to suicide risk in adolescents. Still largely unexplored is the role of emerging sexual orientation in youth suicide.¹⁹

In general, suicide rates are higher in western states, while southern, northeastern, and middle-western states show relatively lower rates. This regional variation can be largely attributed to an excessively high rate of firearm-related suicide.¹⁸ Ecologic studies have shown that communities where firearms are more readily available have higher rates of suicide—particularly among young people—than similar communities where guns are more carefully restricted.⁵⁷ The availability of handguns appears to be particularly important.⁶¹ Case-control studies have determined that individuals who live in homes where a firearm is kept are as much as 5 times more likely to die by suicide.^{8,33} This relationship persisted even after controlling for psychiatric symptoms and other known risk factors.¹³ In addition, the availability of a firearm was the most important risk factor identified in a study of suicides in adolescents without evidence of mental health problems.¹¹

Occasionally, a number of adolescents in a community attempt or complete suicide within a brief time period.^{16,22} In these cases, there is often evidence that knowledge of the earlier suicides influenced the decisions of the later victims. Researchers have identified this phenomenon as suicide "contagion" or clustering and it appears to be unique among young people.³⁰ Relatively few (5%) adolescent and young adult suicides occur in the context of recognized suicide clusters. None the less, these events provide striking evidence that social and environmental circumstances can and do influence suicidal behavior. It has already been noted that first-degree relatives of suicide victims are at increased risk of suicidal behavior and that this may be due to genetic or environmental factors or to some combination of the two. In case-control studies, Brent and colleagues found increased rates of depression and suicidal ideation among the surviving siblings¹⁴ and friends¹⁰ of adolescent suicide victims. Despite these interesting findings, preventing the process of contagion would reduce the number of adolescent suicides by only a small fraction.

PREVENTION

Based on recognizing—and, where possible, modifying—risk factors for adolescent suicide, a wide variety of prevention programs has been developed and implemented. Interventions can operate at one or more positions along the continuum of suicidal behavior (Fig. 2). For the most part, these programs were developed and operated

in relative isolation from one another. In 1992, the U.S. Centers for Disease Control and Prevention (CDC) compiled information on youth suicide prevention activities throughout North America and identified eight basic prevention strategies:²⁰ (1) school gatekeeper training; (2) community gatekeeper training; (3) general suicide education; (4) screening and referral programs; (5) peer support programs; (6) crisis centers and hotlines; (7) restriction of access to lethal means; (8) intervention after a suicide.

There is no consensus as to which of these specific measures is most effective.⁴⁵ Indeed, there is very little scientific evidence either to support or refute the effectiveness of these individual preventive strategies at reducing the rate of suicide among adolescents and young adults. Establishing such an outcome would require prospective evaluation studies with very large sample sizes and long terms of follow-up—efforts that are well beyond the means of the local agencies that administer most teen suicide prevention programs. Too often, only changes in mental health knowledge or attitudes toward suicide are measured. However, some interventions have documented promising reductions in rates of suicide risk factors and nonfatal suicidal behaviors. Moreover, certain interventions, such as early diagnosis and treatment of substance abuse or affective disorders, have considerable merit in their own right, whether or not they achieve a measurable reduction in suicide rates.

School and Community Gatekeeper Training

These programs train school staff (e.g., teachers, coaches, counselors), other community members (e.g., clergy, police, recreation staff), or health care providers to identify young persons at risk for suicide and refer them for mental health services. The extent of training provided varies from program to program. One essential feature of gatekeeper training programs in general is a strong link to local mental health service providers. In evaluation studies, participants of school gatekeeper training programs demonstrated improved knowledge of suicide and willingness to refer students for appropriate help.^{2,26} One Swedish study showed a very promising reduction in the local suicide rate for all ages after a community gatekeeper training program.⁵³ No such evaluation has been attempted for programs specific to adolescents and young adults.

General Suicide Education

General suicide education is the most common of the suicide prevention strategies. Through these programs, usually conducted in schools and only rarely targeted at high-risk groups, young people learn about suicide, its risk factors, and how to seek help for themselves or for others. Evaluative research indicates that these measures can improve students' knowledge about suicide, at least in the short term.^{46,58} Studies that have sought to evaluate the effect of general suicide education on students' attitudes toward seeking help have failed to show a significant positive impact.⁵⁵ There is some concern that providing information about suicide to large numbers of adolescents might actually encourage some students to attempt it. There are no studies that demonstrate any measurable effect—positive or negative—on rates of completed suicide.

Screening

In these programs, a standardized questionnaire is used to identify high-risk young persons who are then referred for further evaluation and treatment or other assistance. Potentially, screening could be an effective strategy to reach large numbers of individuals and concentrate services on those most in need. Although numerous instruments have been developed, a sensitive and reliable screening protocol has not yet been established.²⁸ Therefore, this intervention strategy has not been widely employed.

Peer Support

Designed to enhance the interpersonal and coping skills of young people who may be at risk of suicidal behavior, peer support programs may be based inside or outside of the school system. These programs are not intended to substitute for psychiatric treatment programs. Rather, the rationale is to allow participants to expand their natural social support systems. The anticipated result is a reduction in a constellation of risk behaviors: substance use, truancy, school failure, delinquency. Several studies have shown that peer support can reduce many of these interrelated risk behaviors.^{1,24,59} Generally, peer support programs are neither designed nor evaluated for their specific impact on suicide prevention.

Crisis Centers and Hotlines

Many suicide prevention programs operate crisis centers and hotlines designed to support young people through stressful life events that could precipitate suicidal behavior. These services are intended to deter self-destructive acts until the immediate crisis is diffused and callers can be connected with community mental health resources. The projects are usually staffed by volunteers, occasionally adolescents, who are supervised by professional mental health staff.⁵⁴ Evaluation of crisis intervention and hotline service programs has not clearly established whether or not they alter suicide rates in the communities they serve.^{25,56} One study indicated that crisis intervention services were more effective at reaching young women than young men.⁵⁴ It has been suggested that stronger, more focused outreach activities directed toward males might improve the effectiveness of these projects.

Restriction of Access to Lethal Means

Efforts intended to reduce access to firearms, drugs, high places, and other common means of committing suicide are an important consideration in suicide prevention. Impulsiveness and ambivalence are prominent features of suicidal behavior, particularly among young people. Many suicide prevention specialists contend that if lethal means are not available when someone decides to attempt suicide, they will delay the attempt or opt for some less deadly method. Evidence in favor of this approach is limited, but encouraging. In Great Britain, for example, asphyxiation with domestic cooking gas was a common method of suicide before 1957. Since that year, domestic cooking gas has contained a lower concentration of carbon monoxide. As a result, the rates of suicide by asphyxiation and suicide by any means declined.³⁵ Likewise, suicide rates in Australia declined when legislation was passed to restrict the prescription of sedatives, especially barbiturates.³¹ More recent studies in the United States have shown reduced suicide rates in some communities following the implementation of restrictive firearm regulations.^{36,37,57} Relatively few youth suicide prevention programs feature strong means restriction components.

Intervention after a Suicide

"Postvention," or intervention after one or more youth suicides, is designed to prevent or contain suicide clusters and to provide support to families, friends, and peers who survive suicide victims. A community-based crisis intervention plan to minimize suicide contagion should include broad cooperation between medical, mental health, education, government, and public health agencies.²¹ Local media can also have an important role in containing potential suicide clusters.⁴⁴ At present, there is no empirical evidence that postvention programs effectively reduce suicide or suicidal behavior.

However, suicide prevention experts agree that the crisis intervention model is a reasonable approach and recommend specific steps for developing and implementing such a program.^{21,43}

Recommendations

The continued high rate of suicide among adolescents and young adults has inspired a number of different prevention strategies. Because evidence is lacking for or against the effectiveness of these interventions, it is not possible to recommend one intervention over another. In a review of youth suicide prevention efforts throughout North America, the Centers for Disease Control and Prevention (CDC) issued general recommendations for youth suicide prevention.²⁰ First, they noted that suicide prevention efforts should be linked as closely as possible with professional mental health resources in the community. Second, they suggested incorporating multiple interventions into each program. Promising, but underutilized strategies—such as restricting access to lethal means—should be included wherever possible. Furthermore, CDC recommended expanding suicide prevention initiatives to young adult populations as well as adolescents. Finally, they urged that suicide prevention planners incorporate evaluation efforts into their developing programs.

TREATMENT

Treatment of the suicidal adolescent can take many forms, including: hospitalization, medical management of predisposing conditions, cognitive and behavioral psychotherapy, and family counseling. In most cases the style and orientation of the therapeutic plan are determined by the needs of the patient and the skills of the therapist. Like prevention, there is a dearth of empirical evidence to support any one of the many treatment options that are available.

Assessment

When suicidal thoughts or behaviors are identified, the first step is evaluating the risk of self-harm. Awareness of established risk factors is essential to an informed assessment. Clinicians should inquire about the persistence, duration, and intensity of the adolescent's suicidal urges, predisposing and precipitating conditions, and the extent and strength of interpersonal supports available to the young person. Care should be taken to identify underlying depressive, affective, or personality disorders as well as substance abuse. These diagnoses may frequently be difficult to make because depression in childhood and adolescence may frequently differ from the more classic presentation of depression in adults. Assessment data can be used to guide decisions about immediate management (such as inpatient or outpatient care) and to develop an appropriate treatment plan. Because suicidal intent is not static, clinicians should assess and document the risk of suicide on several occasions throughout the duration of treatment.

Crisis Intervention

The immediate goal of any therapeutic plan is to protect the adolescent from self-harm. In some cases the seriousness of the intent, the lack of adequate support, or both may require that the patient be hospitalized. Measures that can protect against self-harm begin with restricting access to firearms, medications, or other means of suicide. It has been documented that the presence of a firearm in the home increases the risk of suicide to residents in that household almost five-fold.³³ It is critically important, then, to make sure that suicidal adolescents do not have access to firearms. Other measures include es-

establishing a "no suicide agreement" or contract with the client, ensuring that the suicidal teen is not left alone, and treating symptoms such as acute anxiety or insomnia which contribute to the crisis. A brief course of problem-solving therapy is often central to diffusing the suicidal crisis. A final goal of this phase of treatment is to establish an attachment between the client and therapist. Linking the crisis intervention phase with the ongoing treatment phase can help ensure compliance.

Ongoing Treatment

The objective of this phase of treatment is to treat any underlying psychiatric conditions and to broaden the adolescent's attachments to a wider network of social support. Ongoing treatment must include appropriate therapy for affective disorders, substance abuse, or any other condition which might predispose an individual to suicidal ideation or behavior. Therapy should also orient the client to the time limits of suicidal crises, enabling him or her to recall better times in the past and to hope for a less troubled future. Social skills training and interventions to alleviate loneliness can help the young person develop stronger and more positive social bonds beyond the therapeutic relationship. Cognitive-behavioral therapy, other behavioral approaches, further training in problem-solving skills, and techniques of anger and aggression management can all be applied to this phase of treatment.

Berman and Jobes³ describe two overriding issues that must be considered in the treatment of suicidal young persons. The first of these is the role that attachment plays in both the problem and its resolution. Because the therapist often belongs to the same generation as the client's parents—from whom the adolescent is often rebelling—developing a therapeutic attachment can be challenging, but it is central to the process of recovery. Once solidified, the therapist should work toward generalizing this attachment to the client's relationships with family, peers, and others in the community at large. Second, regardless of the theoretical approach, the therapist should consider the unique circumstances of each case and involve the client in developing a plan of treatment. Three critical steps in the treatment process are an assessment of suicidal risk, crisis intervention, and ongoing treatment.

CONCLUSION

Suicidologists and epidemiologists have identified many risk factors for suicidal behavior in adolescents and young adults. However, it is still not possible to predict with confidence which young persons will take their own lives. Additional research to better characterize modifiable risk factors is needed. Nevertheless, the predisposing conditions already identified have helped to guide the development of preventive and therapeutic interventions. Although many such strategies have been implemented, there is little scientific evidence to suggest that any single intervention can successfully reduce the risk of suicide. Future success in the prevention and treatment of adolescent suicide will depend on careful evaluation of ongoing efforts and a concerted effort to put the most effective prevention and treatment programs into place.

References

1. Bangert-Downs R: The effects of school-based substance abuse education: a meta-analysis. *J Drug Educ* 18:243, 1988.
2. Barrett, TC: *Youth in Crisis: Seeking Solutions to Self-Destructive Behavior*. Longmont, CO, Sopris West, 1985.
3. Berman AL, Jobes DA: *Adolescent Suicide Assessment and Intervention*. Washington, DC, American Psychological Association, 1991.

4. B
J.
5. B
N
6. B
I
7. B
at
I
8. B
le
9. B
J
10. B
A
11. B
C
12. B
es
13. B
A
14. B
ol
15. B
li
16. C
Ji
17. C
S
18. C
N
19. C
a
P
20. C
li
21. C
ti
22. C
I
23. C
c
24. E
25. F
F
t
f
26. C
I
27. C
F
28. C
I
29. C
I
30. C
s
31. I
I
32. I
I
33. I

4. Blum RW, Harmon B, Harris L, Bergeisen L, Resnick MD: American Indian-Alaska Native youth health. *JAMA* 267:1637, 1992.
5. Blumenthal SJ: Suicide: a guide to risk factors, assessment, and treatment of suicidal patients. *Med Clin North Am* 72:937, 1988.
6. Blumenthal SJ: Youth suicide: the physician's role in suicide prevention (editorial). *JAMA* 246:3194, 1990.
7. Brent DA, Kolko DJ, Wartella ME, Boylan MB, Moritz G, Baugher M, Zelenak JP: Adolescent psychiatric inpatients' risk of suicide attempt at 6-month follow-up. *J Am Acad Child Adolesc Psychiatry* 32:95, 1993.
8. Brent DA, Perper JA, Allman CJ, et al: The presence and accessibility of firearms in the homes of adolescent suicides: a case-control study. *JAMA* 266:2989, 1991.
9. Brent DA, Perper JA, Moritz G, et al: Psychiatric risk factors for adolescent suicide: a case-control study. *J Am Acad Child Adolesc Psychiatry* 32:521, 1993.
10. Brent DA, Perper JA, Moritz G, et al: Psychiatric sequelae to the loss of an adolescent peer to suicide. *J Am Acad Child Adolesc Psychiatry* 32:509, 1993.
11. Brent DA, Perper J, Moritz G, et al: Suicide in adolescents with no apparent psychopathology. *J Am Acad Child Adolesc Psychiatry* 32:494, 1993.
12. Brent DA, Perper JA, Moritz G, et al: Stressful life events, psychopathology, and adolescent suicide: a case control study. *Suicide Life Threat Behav* 23:179, 1993.
13. Brent DA, Perper JA, Moritz G, et al: Firearms and adolescent suicide. A community case-control study. *Am J Dis Child* 147:1066, 1993.
14. Brent DA, Perper JA, Moritz G, et al: Psychiatric impact of an adolescent sibling to suicide. *J Affect Disord* 28:249, 1993.
15. Bukstein OG, Brent DA, Perper JA, et al: Risk factors for completed suicide among adolescents with a lifetime history of substance abuse: a case-control study. *Acta Psychiatr Scand* 88:403, 1993.
16. Centers for Disease Control: Adolescent suicide and suicide attempts—Santa Fe County, New Mexico, January 1985–May 1990. *MMWR* 40:329, 1991.
17. Centers for Disease Control and Prevention: Attempted suicide among high school students—United States, 1990. *MMWR* 40:633, 1991.
18. Centers for Disease Control and Prevention, National Center for Health Statistics: Underlying Cause Mortality Files, United States, 1992. Hyattsville, MD, National Center for Health Statistics, 1994.
19. Centers for Disease Control and Prevention, National Institute of Mental Health: Research issues: suicide and sexual orientation. Proceedings of a national meeting. Atlanta, GA, Centers for Disease Control and Prevention, 1994.
20. Centers for Disease Control and Prevention: Youth suicide prevention programs: a resource guide. Atlanta, GA, US Department of Health and Human Services. Public Health Service, CDC, 1992.
21. Centers for Disease Control: CDC recommendations for a community plan for the prevention and containment of suicide clusters. *MMWR* 37(Suppl S-6):1, 1988.
22. Centers for Disease Control: Cluster of suicides and suicide attempts—New Jersey. *MMWR* 37:213, 1988.
23. Cooper SJ, Kelley CB, King DJ: 5-Hydroxyindoleacetic acid in cerebrospinal fluid and prediction of suicidal behaviour in schizophrenia. *Lancet* 340:940, 1992.
24. Dryfoos JG: Adolescents at Risk: Prevalence and Prevention. New York, Oxford University Press, 1990.
25. Franklin JL, Comstock BS, Simmons JT, Mason M: Characteristics of suicide prevention-intervention programs: analysis of a survey. In Alcohol, Drug Abuse, and Mental Health Administration. Report of the Secretary's Task Force on Youth Suicide, Volume 3. Washington, DC, US Government Printing Office (Pub. No. ADM-89-1623), 1989, p. 93.
26. Garland A, Whittle B, Shaffer D: A survey of youth suicide prevention programs. *J Am Acad Child Adolesc Psychiatry* 28:931, 1988.
27. Garland AF, Zigler E: Adolescent suicide prevention: current research and social policy implications. *Am Psychol* 48:169, 1993.
28. Garrison C, Lewinsohn P, Martstetter F, et al: Assessment of suicidal behavior in adolescents. *Suicide Life Threat Behav* 21:217, 1991.
29. Golden RN, Gilmore JH, Corrigan HN, et al: Serotonin, suicide, and aggression: clinical studies. *J Clin Psychiatry* 52(Suppl):61, 1991.
30. Gould MS, Wallenstein S, Kleinman MH, O'Carroll P, Mercy J: Suicide clusters: an examination of age-specific effects. *Am J Public Health* 80:211, 1990.
31. Harrison J, Moller J, Dolinis J: Suicide in Australia: past trends and current patterns. *Aust Injury Prevent Bull* 5:1, 1994.
32. Hawton K, Fagg J, Platt S, Hawkins M: Factors associated with suicide after parasuicide in young people. *BMJ* 306:1641, 1993.
33. Kellerman AL, Rivara FP, Somes G, Reay DT: Suicide in the home in relation to gun ownership. *N Engl J Med* 327:467, 1992.

34. Kienhorst CW, de Wilde EJ, van den Bout J, et al: Two subtypes of adolescent suicide attempters; an empirical classification. *Acta Psychiatr Scand* 87:18, 1993.
35. Kreitman N: The coal-gas story: United Kingdom suicide rates 1960-1971. *Br J Soc Prev Med* 30:86, 1976.
36. Loftin C, McDowall D, Wiersma B, Cottey TJ: Effects of restrictive licensing of handguns on homicide and suicide in the District of Columbia. *N Engl J Med* 325:1615, 1991.
37. Loftin C, McDowall D, Wiersma B: Evaluating effects of changes in gun laws. *Am J Prev Med* 9(Suppl 1):39, 1993.
38. Manson SM, Beals J, Dick RW, Duclos C: Risk factors for suicide among Indian adolescents at a boarding school. *Public Health Rep* 104:609, 1989.
39. Morano CD, Cisler RA, Lemerond J: Risk factors for adolescent suicidal behavior: loss, insufficient familial support, and hopelessness. *Adolescence* 28:851, 1993.
40. Moscicki EK, O'Carroll PW, Rae DS, Roy AG, Locke BZ, Regier DA: Suicidal ideation and attempts: The Epidemiological Catchment Area Study. In: *Alcohol, Drug Abuse and Mental Health Administration. Report of the Secretary's Task Force on Youth Suicide, Volume 4: Strategies for the prevention of youth suicide*. Washington, DC, US Government Printing Office (DHHS Pub. No. ADM-89-1624), 1989.
41. Mrela CK: *Suicide Mortality, Arizona, 1991*. Phoenix, AZ, Arizona Department of Health Services, 1993.
42. Nordstrom P, Samuelsson M, Asberg B, et al: CSF 5-HIAA predicts suicide risk after attempted suicide. *Suicide Life Threat Behav* 24:1, 1994.
43. O'Carroll PW: Community strategies for suicide prevention-intervention. In Blumenthal SJ, Kupfer DJ (eds): *Suicide Over the Life Cycle: Risk Factors, Assessment, and Treatment of Suicidal Patients*. Washington, DC, American Psychiatric Press, 1990, p 499.
44. O'Carroll PW, Potter LB: Suicide contagion and the reporting of suicide: recommendations from a national workshop. *MMWR Reports and Recommendations* 43(RR-6):9, 1994.
45. O'Carroll PW: Suicide. In Last JM, Wallace RB (eds). *Maxcy-Rosenau-Last Public Health and Preventive Medicine*. 13th ed. Norwalk, CT, Appleton & Lange, 1992, p 1054.
46. Orbach I, Bar-Joseph H: The impact of a suicide prevention program for adolescents on suicidal tendencies, hopelessness, ego identity, and coping. *Suicide Life Threat Behav* 23:120, 1993.
47. Pandey GN, Pandey SC, Janicak PG, et al: Platelet serotonin-2 receptor binding sites in depression and suicide. *Biol Psychiatry* 28:215, 1990.
48. Pfeffer CR, Klerman GL, Hurt SW, et al: Suicidal children grow up: rates and psychosocial risk factors for suicide attempts during follow-up. *J Am Acad Child Adolesc Psychiatry* 32:106, 1993.
49. Potter LB, Powell KE: Suicide prevention from a public health perspective. Presentation at Interregional Expert Meeting on Guidelines for the Formulation and Implementation of Comprehensive National Strategies for the Prevention of Suicidal Behaviors and the Provision of Supportive and Rehabilitative Services to Persons at Risk and to Other Affected Persons. Calgary, Canada, The University of Calgary, 1993.
50. Rao U, Weissman MM, Martin JA, Hammond RW: Childhood depression and risk of suicide: a preliminary report of a longitudinal study. *J Am Acad Child Adolesc Psychiatry* 32:21, 1993.
51. Rich CL, Young D, Fowler RC: San Diego suicide study. I. Young vs. old subjects. *Arch Gen Psychiatry* 43:577, 1986.
52. Roy A: Recent biologic studies on suicide. *Suicide Life Threat Behav* 24:10, 1994.
53. Rutz W, von Knorring L, Walinder J: Frequency of suicide on Gotland after systematic postgraduate education of general practitioners. *Acta Psychiatr Scand* 80:151, 1989.
54. Shaffer D, Garland A, Gould M, et al: Preventing teenage suicide: a critical review. *J Am Acad Child Adolesc Psychiatry* 27:675, 1988.
55. Shaffer D, Veland V, Garland A, et al: Adolescent suicide attempters: response to suicide-prevention programs. *JAMA* 264:3151, 1990.
56. Simmons JT, Comstock BS, Franklin JL: Prevention-intervention programs for suicidal adolescents. In *Alcohol, Drug Abuse, and Mental Health Administration. Report of the Secretary's Task Force on Youth Suicide, Volume 3*. Washington, DC, US Government Printing Office (Pub. No. ADM-89-1623), 1989, p 80.
57. Sloan JH, Rivara FP, Reay DT, et al: Firearm regulations and rates of suicide: a comparison of two metropolitan areas. *N Engl J Med* 322:369, 1990.
58. Spirto A, Overholser J, Ashworth S, et al: Evaluation of a suicide awareness curriculum for high school students. *J Am Acad Child Adolesc Psychiatry* 27:705, 1988.
59. Tobler N: Meta-analysis of 143 adolescent drug prevention programs: quantitative outcome results of program participants compared to a control or comparison group. *J Drug Issues* 16:537, 1986.
60. United States Department of Health and Human Services, Public Health Service: *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. Washington, DC, U.S. Government Printing Office (DHHS Pub. No. PHS-91-50213), 1991.
61. Wintemute GJ, Teret SP, Kraus JF, Wright MW: The choice of weapons in firearm suicides. *Am J Public Health* 78:824, 1988.

SUICIDE CONTAGION AMONG ADOLESCENTS

Madelyn S. Gould and Lucy Davidson

INTRODUCTION

Suicidal behavior in adolescents is a major public health problem. Suicide accounts for 7.95% of all deaths in late adolescence (Shaffer & Fisher, 1981) and is among the top three leading causes of death for 15 to 24 years olds (Centers for Disease Control, 1985). For every completed suicide, there appears to be an overwhelming number of adolescents who attempt suicide, with estimates ranging from 8 to 100 attempts to every completed suicide (Jacobziner, 1965; Kennedy, Kreitman, & Orenstone, 1974; Shneidman & Farberow, 1961).

One risk factor for youth suicide that has attracted considerable attention in recent years has been the role of imitation and contagion which is presumed to play a role in so-called suicide "epidemics" or "clusters" (Blonston, 1985; Doan, 1985; Fox, Manitowabi, & Ward, 1984; Gelman & Gangelhoff, 1983; McCain, 1984; Robbins & Conroy, 1983; Taylor, 1984; Ward & Fox, 1977). The importance of suicide contagion, the process by which one suicide becomes

Advances in Adolescent Mental Health,
Volume 3, pages 29-59.

Copyright © 1988 by JAI Press Inc.

All rights of reproduction in any form reserved.

ISBN: 0-89232-812-6

a compelling model for successive suicides or facilitates other suicides, has been suggested by two diverse literatures—the reports of suicide “epidemics” or “cluster outbreaks” and research on the effects of suicide stories in the mass media. A critical review of these two bodies of literature (published through 1986) is the focus of this chapter.

EVIDENCE OF SUICIDE CLUSTER OUTBREAKS

If contagion does play a role in suicidal behavior one would expect “outbreaks” of suicide. That is, an excessive number of suicides would occur in close temporal and geographic proximity. Evidence for suicide contagion has been reported in accounts of epidemic suicides from ancient times through the twentieth century (Bakwin, 1957; Popow, 1911). Detailed accounts of epidemic or cluster suicides can be examined for characteristics which suggest that suicide contagion may be part of the etiology. Table 1 summarizes these reports.

A number of studies highlight the choice of identical methods among suicides in a cluster (Ashton & Donnan, 1981; Crawford & Willis, 1966; Hankoff, 1961; Nalin, 1973; Rovinsky, 1898; Seiden, 1967; Walton, 1978). Most striking is Walton's report of an unintentional death by antifreeze poisoning which was headlined in the evening paper. Five suicides from antifreeze poisoning ensued. One decedent was found on the bed next to the newspaper featuring the article, while another told her husband before her death that she drank the antifreeze because she read about it in the paper (Walton, 1978). Seiden (1967) described five cases of suicide by jumping that occurred within a month on a college campus. Each successive case was given extensive news coverage. In these two series, as in a report of suicides by burning in Great Britain (Ashton & Donnan, 1981), decedents were not acquaintances and the route of contagion was presumed to be indirect via the mass media or word-of-mouth.

In reviewing epidemic suicide, Winslow (1895) observed, “All human actions are under the influence and power of example more than precept.” He attributed the outbreak of suicides to “the force of imitation being so great and acting prejudicially on weak-minded persons or on those pre-disposed to mental disorders.” Another nineteenth-century writer, in considering the role of the potential suicide's intrinsic vulnerability and the impact of outside events, said that “it is difficult to determine how much was due to the psychopathic tendencies of the actors . . . and how much to the external circumstances which probably served only as the spark applied to the inflammable material” (Rovinsky, 1898). Contemporary researchers have also considered the impact of poor baseline emotional functioning on susceptibility to suicide in a cluster (Ashton & Donnan, 1981; Niemi, 1978; Robbins & Conroy, 1983; Walton, 1978; Ward & Fox, 1977). Emotional well-being, then, could be viewed as a determinant of host susceptibility. However, the proportion of noncluster suicides with psychiatric

Table 1. Descriptive Studies of Epidemic or Cluster Suicide

Citation	Population Studied	Data Source	Description/Findings	Proposed Mechanism
Anonymous, 1977	Case histories	Psychiatric inpatient suicides	Three suicides on one ward occurred within 6 months and no others in 10 years in that psychiatric hospital.	“[F]ragmented leadership, faulty supervision, and staff demoralization and anomie may contribute to poor psychiatric care and to epidemics of suicide in psychiatric hospitals.” - Imitation, “mediated by news coverage.”
Ashton & Donnan, 1981	Coroner's reports and death certificates	82 suicides by self-immolation, 1978-79 in England and Wales	- Between 10/78 and 9/79, there were 82 suicides by burning compared with a yearly average of 23 between 1963 and 1978. - Most of the suicides were known to be psychiatrically ill and were predominantly young men or older married women.	
Crawford & Willis, 1966	Psychiatric hospital records	24 inpatient suicides at Stone House Hospital, England, between 1876 and 1965 from which “similar” suicides occurring within 12 months were identified.	- Three pairs of similar suicides were identified plus one suicide that imitated that of a patient from another psychiatric hospital whose body was found on the hospital grounds. - Each of the 4 pairs used the same method: cut throat, hanging (2 pairs), jumping. - One pair were close friends. - Two pairs used identical locations.	- The second patients were “infected” by the success of the first. - Suicide as an effort to join a deceased friend. - Imitation.

Table 1. (continued)

<i>Citation</i>	<i>Population Studied</i>	<i>Data Source</i>	<i>Description/Findings</i>	<i>Proposed Mechanism</i>
Hankoff, 1961	Case histories	12,000 U.S. Marine Corps troops stationed in a remote, isolated place	• Sixteen suicide attempts and one suicide occurred in 12 months. • Seven of the attempts occurred in July and August and were knife wounds. The suicide occurred during this span.	• The suicide attempts represented infectious acting-out, the epidemic being "an emergent event of a shared group process. . . ." • Choice of method seemed "more a matter of suggestion or conformity than of specific motivational significance." • July-August attempts were "inaugurated by an attempt which attained 'maximum' secondary gains (evacuation) and terminated by an attempt which received 'minimum' secondary gains (no hospitalization)."
Kahne, 1968	Questionnaires and interviews	Psychiatric inpatients	• An "epidemic" of 8 suicides occurred.	• "[A]ll eight suicide cases occurred during a period of marked social disorganization within the hospital, a period which is most appropriately described as anomic."
Kobler & Stotland, 1964	Hospital records, interviews	Psychiatric inpatients, average census = 26	• One patient attempted suicide 12/23/59 and three others committed suicide between 1/1/60 and 1/19/60. Another suicide occurred 6/60.	• Social expectations among hospital staff of helplessness and hopelessness were communicated to the patients as an implicit or explicit expectation of suicide.
Nalin, 1973	Hospital records, and case reports	Suicides and suicide attempts by malathion poisoning in Guyana	• Malathion was introduced to Guyana between 1960 and 1962 and Malathion poisoning cases increased from 16 in 1962 to 100 in 1964. • From hospital records the malathion suicide attempt rate was 31 per 100,000 and increasing.	• "Retroflected rage, impulsively expressed and without obvious depression . . ." • Uncontrolled availability of Malathion. • "Widespread press publicity exploiting the dramatic aspects of cases in which rejected love is the motivation for poisoning has helped to give [M]alathion an aura of lethality." • Attempters may expect newspaper publicity of their act to affect their families.
Niemi, 1978	Questionnaires sent to police districts	Suicides in jail in Finland 1963-1967. N = 28.	• "[T]he number of suicides committed in the lock-up within 24 and 48 hours counted from the previous suicide in the lock-up was significantly greater than expected. . . ."	• Identification and a "mental state of readiness . . ."
Robbins & Conroy, 1983	Case reports of patients seen at a psychiatric hospital	Chappagua high school students, New York, who presented with suicide attempt or ideation.	• Following 2 suicides in a high school population, 5 students attempted and 1 was admitted with severe suicidal ideation within 7 weeks. The first attempter was visited during his hospitalization by the other 5. They comprised a peer group at school.	• "[S]uicide attempts may cluster among groups of young people with risk factors for self-destructive behavior."

Table 1. (continued)

Citation	Population Studied	Data Source	Description/Findings	Proposed Mechanism
Rovinski, 1898	Interviews	"Epidemic" suicides near Odessa, Russia	- Members of a religious sect committed suicide by being buried alive. - Deaths occurred in groups on 4 occasions during a 3-month period. - N = 9, unknown, 5.	- The sect leader convinced followers that deaths from the Anti-Christians was imminent and unavoidable and that it was preferable to "die for Christ" voluntarily by suicide. - Influence of the charismatic leader on "psychopathic tendencies" of the members—"the spark applied to the inflammable material."
34 Rubinstei, 1983	Hospital and medical records, all death certificates, police records, church records; and 250 semistructured interviews with suicide attempters and friends and relatives of suicide victims	Micronesia (the U.S. Trust Territory of the Pacific Islands)	- Over 12 years, 25 suicides occurred in clusters of 3 or 4 cases in several months, then none for a year or so. - Eightfold increase in suicide rates since 1960 among 15–24 year old males.	"[A]s suicide grows more frequent in these communities, the idea itself acquires a certain familiarity if not fascination to young men, and the lethality of the act seems to be trivialized." - Prominence of role model a factor. "[S]uicides have acquired subcultural significance among male youth, giving use to fad-like and imitative acts." "[T]he significance of the act acquires an aspect of collective identification and familiarity, making it less aversive to troubled youth."
Sacks & Eth, 1981	Case histories	Psychiatric inpatients	- One patient's suicide precipitated another's suicide attempt and suicidal preoccupation in another. - The suicide attempter used the same method as the suicide (jumping). Patient with suicidal preoccupation had a previous attempt by this method and had visited the attempter in intensive care unit after his fall.	- Risk is high in "those who have formed pathological identifications with the victim as the result of a history of similar past experience, especially that of a suicidal or abandoning parent. . . ." - The schizophrenic's impaired object relations and reality testing may increase "vulnerability to the partial and bizarre identifications that might have contributed to their suicidal preoccupation and behavior."
Seiden, 1967	Hospital records, police reports, coroner's reports, newspapers, interviews	Suicides on a college campus	- Five male suicides by jumping occurred on the University of California, Berkeley campus during one month in 1967. - Subjects had histories of chronic and severe mental disorders.	- Hypothesis of symbolic location rather than behavioral contagion. "[P]articular locations may be highly valued and perhaps even necessary for the commission of suicide."
Walton, 1978	Case reports	Accidental poisonings, suicides and suicide attempts by antifreeze in England	- Following a widely publicized unintentional death from antifreeze, 5 suicides and 6 attempts occurred by that method. - All of the suicides had preexisting psychiatric illness.	"There is little doubt that the publicity attached to the first unfortunate accident resulted in five imitative suicidal deaths."
Ward & Fox, 1977	Interviews with family and neighbors, police reports, coroner's reports, hospital records	Native Americans in Ontario	Eight suicides within 12 months in a small rural community of 3,000.	"[T]he stimulus of one suicide could suggest to others a similar mode of escaping an intolerable life situation. - Contagion among vulnerable persons.

problems (Robins, 1981) may not differ from proportions reported in case series of cluster suicides.

The mechanisms most often associated with epidemic suicides among susceptibles are imitation and identification (Bunch & Barraclough, 1971; Crawford & Willis, 1966; Niemi, 1978; Rosenbaum, 1983; Rubinstein, 1983; Sacks & Eth, 1981). Ward and Fox (1977) studied a suicide epidemic on an Indian reserve during which 8 adolescents and young adults died from among the 37 families in that community. The researchers examined the way that one suicidal youth can serve as a role model to be imitated. "The stimulus of one suicide could suggest to others a similar mode of escaping an intolerable life situation." The model also may be an unintentional death, as in the series of antifreeze suicides reported by Walton (1978). Sacks and Eth (1981) explored the idea of pathological identification in a cluster of suicides among hospitalized patients. They felt that these pathological identifications are "fostered by the individual's past history that may contain many points of common experience."

Although imitation and identification may be powerful mechanisms, emphasizing these components exclusively, as in the term "copycat suicides," trivializes the many other factors contributing to suicide. Suicides remain multidetermined events even when they occur in clusters. Imitation alone cannot account for the susceptibility and stresses each decedent brings to that final pathway.

Some researchers have considered the social environment and the ways in which disruptions in that environment or negative social expectations within the milieu may foster epidemic suicides. Rubinstein (1983) viewed rapid sociocultural change as a precipitant for youth suicide, and cluster suicides in hospital settings have been attributed to social disruptions creating anomie or a sense of hopelessness (Anonymous, 1977; Kahne, 1968; Kobler & Stotland, 1964). Hankoff (1961) felt that the prospect of secondary gain was the major environmental influence for a cluster of suicide attempts among U.S. Marines. The environmental response to the first attempt provided significant secondary gains and became the harbinger of other attempts, which were finally averted by minimizing secondary gains.

These accounts of epidemic suicides indicate that temporal and geographic clustering of suicides does occur. Cluster suicides appear to be multidetermined, as are noncluster suicides, but imitation and identification are factors hypothesized to increase the likelihood of cluster suicides. Among susceptibles, the route of exposure to the model may be direct or indirect.

The nature of the existing research on suicide clusters limits conclusions that might be drawn. A critique of the research and areas recommended for further clarification will be presented in the next sections.

Critique of Methods

Most of what is currently known about suicide clustering is based on anecdotal reports of case studies. There is no systematic surveillance or reporting system of

suicide clusters. Therefore, these case series have selection biases that affect their representativeness. As descriptive studies, no comparison groups or statistical analyses have been included. Without reference to a comparison group, descriptions of the demographic and psychological characteristics of suicides that occur within the context of a cluster are speculative. What may appear to be a ubiquitous characteristic of cluster suicides may not differentiate them from noncluster suicides and, therefore, be of limited value in preventing this particular type of death. Furthermore, most of the studies describe suicides among adults. Youth may be differentially exposed and susceptible to the characteristics of suicide contagion presented in these case reports.

Until recently there has been no systematic research on the extent to which cluster outbreaks occur. Sporadic reports of "outbreaks" are virtually impossible to interpret. Even if the suicides are occurring essentially "at random," some clustering is bound to arise by chance alone, and if enough people are looking for it, some are bound to find it. What is necessary to determine is whether or not "outbreaks" are occurring to an extent greater than would be expected by chance variation. Such time-space clustering would be suggestive of contagion.

The absence of a standard operational definition for the time and space parameters of a suicide cluster limits our ability to conduct research, compare results from the existing case studies, or develop surveillance procedures. Without a clear and replicable definition for suicide clusters, surveillance cannot be undertaken. A systematic surveillance procedure could determine what proportion of youth suicides appear to occur in clusters and how representative the case-series findings may be.

Studies in Progress

Ongoing studies are attempting to address the problems identified in the previous section. Field studies applying a "psychological autopsy" protocol to several cluster outbreaks include comparison groups and detailed analyses of the relationships between the suicides in an attempt to identify possible mechanisms of suicide outbreaks. The Centers for Disease Control and the New York State Psychiatric Institute are conducting two such studies. "The term 'psychological autopsy' was coined to describe a procedure that involves reconstruction of the life style and circumstances of the victim, together with details of behaviors and events that led to the death of that individual" (Farberow & Neuringer, 1971). Data collection and analysis are still in progress for these studies. Additional suicide clusters have been reported to the Centers for Disease Control in Atlanta. Table 2 highlights some recent known clusters.

These recent clusters indicate that it is not necessary for the decedents to have had direct contact with each other. In the Westchester County outbreak, indirect knowledge of the suicides appears to have been obtained through the news media. Other clusters have a mixture of members from one social network plus individuals unknown to each other directly. Among those who knew another dece-

Table 2. Characteristics of Recent Suicide Clusters

Location	Number of Suicides	Sex	Age Range	First Date of Death	Last Date of Death	Methods	Social Relation to Another in Cluster
Plano, Texas	8	7M 1F	14-18	2/23/83	5/8/84	4 gunshot 4 carbon monoxide	Some
Westchester and Putnam County, New York	5*	5M	13-19	2/4/84	3/13/84	3 hanging 1 gunshot 1 carbon monoxide	None
Clear Lake, Texas	6	5M 1F	14-19	8/9/84	10/11/84	3 gunshot 2 hanging 1 carbon monoxide	Some
Seattle, Washington	3	3M	20s-42	7/9/85	7/14/85	3 jumping from expressway overpass	Unknown
Wind River, Wyoming	9*	9M	14-25	8/10/85	10/1/85	9 hanging	Some
Omaha, Nebraska	3	2M 1F	15-18	2/3/86	2/7/86	1 gunshot 2 overdose	Some

*An unintentional hanging also occurred.

*Four other suicides to tribal members ages 17-23 occurred between 1/2/85 and 10/18/85. All were by hanging.

dent, the degree of acquaintance varied from closest friends to those in the same school or church who knew of each other but had little direct personal contact.

Methods may be similar for the majority of deaths within a cluster, indicating a possible underlying imitative mechanism. The clearest imitation of method is seen in the Seattle expressway overpass jumpings, a method which had previously been extremely rare in that community. However, identical methods may not always reflect direct imitation of another decedent in the cluster. Although all of the Wind River suicides were by hanging, cultural factors may have predominated in that choice of method.

Time-space cluster analysis is another type of ongoing study that uses epidemiological techniques to detect and statistically assess temporal and geographic clustering of suicides (Gould & Wallenstein, 1985). Several epidemiological techniques have been developed to examine the occurrence and significance of time-space clusters of disease (e.g., Ederer, Meyers & Mantel, 1964; Knox, 1964; Mantel, 1967; Wallenstein, 1980; see Mantel, 1967, and Smith, 1982 for reviews). These methods seek to establish clustering by demonstrating an excess frequency of disease in certain times and places or a significant relationship between the time and space distances between pairs of suicides. These techniques are currently being applied to U.S. mortality data on suicides occurring during the period 1978 to 1984 and to a consecutive series of adolescent suicides in the Greater New York Metropolitan Area whose deaths occurred during the period June 1, 1984 through May 31, 1986. The principal aims of the study are to determine whether "outbreaks" of suicide are "real," in other words, whether clusters are occurring more frequently than by chance alone; what proportion of suicides occur in clusters; whether clustering of suicides is predominantly a phenomenon of youth; and whether the proportion of cluster outbreaks is increasing. The analyses will also provide guidelines on the time and space parameters that should define a suicide "outbreak."

A limitation of statistical time-space cluster analyses is that they cannot indicate whether clusters are due to the influence of a model suicide or whether the presumed model merely happened to be the first individual who committed suicide in response to conditions that then led others to kill themselves. Field studies are better suited to identify the mechanisms of the clusters. A goal of the time-space cluster analytic study is to identify a representative sample of clusters for future complementary field investigations.

MEDIA INFLUENCES

Most of the research of imitative suicide has focused on the impact of the reporting of suicides in the mass media. This research strategy examines the possibility of indirect transmission of contagion through the media, in contrast to direct person-to-person propagation. Studies on the impact of nonfictional suicide stories will first be reviewed (see Table 3), followed by a review of the studies on fictional suicide stories (see Table 4).

Table 3. Studies Examining Media Influences on Subsequent Imitative Suicides^a:

Nonfictional Suicide Stories					
<i>Citation</i>	<i>Period and Population Studied</i>	<i>Methodology</i>	<i>Comparison Group/Period</i>	<i>Findings</i>	<i>Support of Imitation</i>
Baron & Reiss, 1985	Daily U.S. suicides for 1972-1976 (also examined homicides for 1973-1978; only the portion pertaining to the suicides is presented here).	Employed a list of publicized suicide stories carried on network news programs, a list originally used by Bollen & Phillips (1982). A different set of publicized stories was employed also (details of added stories not given). The study was designed to extend the earlier study by Bollen & Phillips. Regression analytic design; ecological study.	Indirect control periods through the use of regression analysis.	Suicides stories only had their effects during periods when suicides were already high. Explained the discrepancy between this finding and Bollen & Phillips's earlier finding by the fact that the earlier regression model did not include a term to represent an interaction between the day of the week and holidays and suicide story. However, Bollen & Phillips did control for main effects of day, week, and holidays in their regression model.	No.
Barraclough, Shepherd, & Jennings, 1977	Suicides and undetermined deaths in Portsmouth, England, in 3-year period, 1/1/70 to 12/31/72. There were 76 deaths (54 suicides and 22 undetermined).	Newspaper reports about suicide inquests were identified in the local daily newspaper in the area (128 reports were identified). They determined the number of days which had been preceded within 2, 4, and 7 days by one or more reports to derive an "expected" distribution. They compared this to the "observed" distribution of the number of days on which a suicide occurred that had been preceded by a report. Four age/sex groups (aged 44 and younger; 45 and older) were independently tested. Ecological study—cannot determine whether suicides read the newspaper.	Observed-to-expected distribution of days preceded by a newspaper report.	Association between newspaper reports of suicide inquests and men under 45 years, but not for other age and sex groups. Characteristics of the suicides did not correspond to the reports.	Yes—sex- and age-specific.

Table 3. (continued)

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Support of Imitation
Blumenthal & Bergner, 1973	Period of major newspaper strike in New York City: 4/24/66 to 9/11/66 (140 days) 3/6 newspapers on strike.	The age, sex, and method of each suicide during the strike period was determined and suicide rates per 100,000 were calculated. The same data were obtained for each of the preceding 3 years. Design as replication of Motto (1970) study. Ecological study.	Period of strike was compared to identical periods in preceding 3 years; 2 later years also examined.	The overall rate during the strike was not significantly lower than the mean rate for the preceding 3 years. However, for women aged 15-24 and 25-34 the suicide rates during the blackout were the lowest in the 6 years studied.	Yes—age- and sex-specific.
42 Bollen & Phillips, 1981	Daily Detroit mortality statistics for 1973-1976. Motor vehicle fatalities considered covert suicides.	Compiled a list of all suicide stories appearing on the front pages of the 2 largest daily newspapers in Detroit (9 suicide stories identified). Examined relationship between publicized suicides and motor vehicle fatalities (MVF). Designed as replication of Phillips (1979) study. Quasi-experimental analysis similar to Phillips's study and regression analysis. Ecological study.	In quasi-experimental analysis the experimental period was the third day after the publicized suicide. The control period was 1 week before.	Motor vehicle fatalities increased significantly on the third day after a suicide was publicized in the newspaper. Third day corresponds to peak found in Phillips's (1979) study.	Yes.
Bollen & Phillips, 1982	U.S. daily mortality statistics (suicides), 1972-1976.	The <i>Vanderbilt Television News Index</i> was searched for all stories about specific individual suicides carried on 2 or more network news programs (presented by ABC, CBS, and NBC). Several publicized suicides identified. Examined the relationship between publicized TV suicides and subsequent suicides. Quasi-experimental design as well as regression analysis. Ecological study.	In quasi-experimental analysis the experimental period was the entire week after the publicized suicide. The control period was the week prior to the experimental period.	Suicides generally increased in the week after publicized suicide story. The effect did not extend beyond 10 days.	Yes.
43 Littmann, 1985	Toronto subway suicides, 1968-1977. Epidemic of subway suicides in 1971 (N = 96 subway suicides).	Examined the temporal relationship between subway suicides and all suicide related reports (reports, articles, features and editorials) in the <i>Toronto Star</i> (newspaper). Ecological study.	Before and after periods (ranging from 1 to 21 days) for each subway suicide. An annual before and after average was calculated for each interval.	No significant difference between the number of suicide-related newspaper reports before and after subway suicides. However, as author reports, there were overlaps of before periods of some suicides with the after period of other suicides.	No.

Table 3. (continued)

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Support of Imitation
Motto, 1967	Suicide rates in 7 cities that had complete cessation of newspaper publication during strikes (Baltimore: 48 days in 1965; New York: 109 days in 1963; Detroit: 135 days in 1963; Portland: 25 days in 1949; Seattle: 56 days in 1945; Honolulu: 63 days in 1963). Ecological study.	Compared incidence of suicide during newspaper blackout to incidence during the same months of the 5 years prior to the newspaper blackout. An imitation hypothesis would predict the reduction of suicides during a newspaper blackout.	Blackout period compared to same months in 5 prior years. (Use of prior 5 years as comparison period introduces possible confounding of secular trends.)	No significant difference between the incidence during the blackout and the mean of the prior 5 years. However, there was a trend for the incidence to be lower during the blackout in 5 cities. In Detroit, the previous rising trend of suicide attempts appeared to be interrupted by the blackout. Attempts were examined only in this city.	No (although trends in data give some support).
Motto, 1970	Period of newspaper blackout in Detroit, 11/17/67 through 8/10/68 (268 days).	The age, sex, and method of suicides during the newspaper blackout were determined and the suicide rates of age- and sex-specific groups were calculated. The same data were obtained for the same period of the preceding 4 years and the year subsequent to the blackout year. Ecological study.	Blackout period compared to same period in 4 prior years and 1 subsequent year.	60% drop in incidence during blackout from women's prior mean. Specific age groups showed consistent decline in incidence during blackout with exception of 55-64 year group. Women aged 15-24 and 25-35 showed the most marked decline.	Yes-age- and sex-specific.
Phillips, 1974	Monthly U.S. suicide statistics for 1947 to 1967.	Compiled a list of suicide stories appearing on the front page of the <i>New York Times</i> , <i>The New York Daily News</i> , <i>Chicago Tribune</i> , and <i>London Daily Mirror</i> were employed to examine the effect of the amount of publicity: 35 front page suicide stories were identified; 3 pairs shared same dates. Quasi-experimental design. Ecological study.	In quasi-experimental analysis the experimental period was the month of the suicide story. The control period was the average of the same months in the prior and subsequent years. For suicide stories late in a month (after the 23rd), the experimental period was the month after the story. The 23rd was an arbitrary cutoff; however, results were consistent when other cutoffs were used.	Suicides increased after 25 front page stories. Excess suicides occurred only after stories, not prior to stories. The more publicity, the larger the rise in subsequent suicides. The rise is restricted to the area of publication. Bereavement, effect of prior conditions, and misclassification ruled out as explanations.	Yes.
Phillips, 1979	Daily motor vehicle fatalities in California, 1966-1973.	Compiled list of front page suicide stories from the <i>Los Angeles Times</i> and <i>San Francisco Chronicle</i> : 23 front page suicides identified; 3 and 2 suicides occurred within 1 week of each other and therefore each group treated as one story. To examine the effect of publicity, the 5 largest papers in California were examined. Ecological study.	The experimental period was the week after the story. The control period was the same period in remaining (prior and subsequent) years of study. A regression line was fitted to the number of MVF in the control periods to estimate the expected number of deaths in the period. For the analysis of the duration of the effect, the periods varied from 2 days before to 11 days after the story.	The number of MVF increased an average of 9% in the week following each suicide story. The greatest increase occurred 3 days after story (31%). The more publicity, the greater increase in MVF. The age of the drivers was correlated to the age of the person described in the story. Single-car accidents increased more than other types. Fatalities more frequent in area where story was	Yes.

Table 3. (continued)

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Support of Imitation
46 Phillips & Carstensen, 1986	U.S. daily mortality statistics on suicide among 10 to 19 year olds for 1973-1979.	Compiled list of all news or feature stories about suicides televised on ABC, CBS, or NBC. Thirty eight stories were identified from the <i>Vanderbilt Television News Index</i> and <i>CBS News Index</i> . News stories that did not appear on the evening news for ABC and NBC were not included because no index was available. Time-series regression analysis similar to Bollen & Phillips (1981) study. Ecological study.	The regression analysis corrected for the effects of day of the week, month of the year, yearly trends, and holidays by including dummy variables in the equation. The regression analysis generated estimates of the number of suicides expected on each day following the news stories; 0-7 days after each suicide story was examined.	publicized. Lastly, crashes after suicide stories were more lethal than crashes at other times, as indicated by time between crash and death. One the average, teenage suicides rose by 2.91 above the expected number for the 8-day period following the stories. Overall, the number suicides increased by 110.58 after the 38 stories. The more highly publicized the story the greater the increase. Alternative explanations of prior conditions, acceleration (not causation), misclassification, the effect of grief, seasonal effects and statistical artifacts were ruled out.	Yes.
Stack, 1983	Monthly U.S. suicide rates for January 1977-June 1980 and unemployment rates.	Two months of media coverage were set at a score of 1 to be a dummy variable.	Pre- and postexposure time periods were compared.	There was no relationship between reporting of the Jonestown suicides and U.S. suicide rates. The greater the unemployment rate, though, the greater the suicide rate.	No.
Stack, 1984	Monthly U.S. suicide statistics for 1972-1980.	Two indices of TV coverage of suicide events were developed: the first represented the number of events per month on the evening news (ABC, NBC, CBS); the second was the number of seconds of coverage per month. The data were taken from the <i>Vanderbilt Television News Index</i> . Time-series analysis to examine the relationship between TV coverage and monthly suicide rate. Additional variables in multivariate model were monthly divorce rate, unemployment rate, and duration of employment. Ecological study.	Indirect control periods through the use of regression analysis.	Amount of TV coverage was unrelated to monthly suicide rate. Duration of unemployment and springtime related to increase in suicide rate.	No.

Table 3. (continued)

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Support of Imitation
Wasserman, 1984	Monthly U.S. suicide rates for 1947-1977.	Extended Phillips (1947) list of front-page suicides in the <i>New York Times</i> (N = 46 cases). Also indicated whether the suicides were national celebrities. Quasi-experimental design as well as multivariate time-series analysis. Used months as the unit of analysis. Included duration of unemployment as another explanatory variable, controlling for seasonal effects and wars. Ecological study.	For quasi-experimental analysis the experimental period was the month after the suicide story; the control period was the same month in prior and subsequent years. Indirect control periods time-series analysis.	There was a rise in suicides after 34 of the 46 cases. The increase was due to the celebrity suicides. There was a mean rise of 133.8 suicide after the suicides of entertainment celebrities, a rise of 98 for national political celebrities, and a rise of 35.8 after the suicide of an international celebrity.	Yes.

*A few studies on "covert suicides" are included (Bollen & Phillips, 1981; Phillips, 1979). A study that examined the impact of murder-suicide stories on subsequent airplane crashes (Phillips, 1980) was not included. The findings from the 1980 study do support a theory of imitation and suggestion.

Table 4. Studies Examining Media Influences on Subsequent Imitative Suicides: Fictional Suicide Stories

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Support of Imitation
Gould & Shaffer, 1986	Adolescent suicides and attempted suicides aged 19 years and younger during the period 9/16/84 through 3/9/85 in the Greater New York Metropolitan Area.	The variation in suicide and attempted suicide before and after four made-for-TV movies broadcast in the fall of 1984 and winter of 1985 was examined. Ecological study.	Two-week periods before and after each movie were compared. In addition, observed numbers of suicides and attempts during the "after" periods were compared with expected numbers derived from the average of all weeks.	The observed number of attempted suicides following the TV movies was significantly greater than expected, and a significant excess of completed suicides was found after three broadcasts. Referral bias, sensitization of medical examiners, or hospital personnel were unlikely to account for the increase in attempted and completed suicides.	Yes.
Holding, 1974, 1975	Completed suicides and undetermined deaths in Edinburgh, Scotland, during the same 30-week period in 1969-1973.	The variation in deaths before, during, and after "The Befrienders," an 11-episode weekly series on BBC in 1972 was examined. As described in Holding (1974), the series dramatized the suicide prevention work of the Samaritans. Corresponding weeks in comparison years (1969-1971 and 1973) were examined. Ecological study.	The 4 weeks before the series broadcast date each year were used as the baselines. Numbers of referrals and suicide attempts during and after the series dates were compared with baseline numbers for each year.	Average weekly suicide attempt admissions increased by 13% during the "Befrienders" series and by 22% during the following 4 weeks. Samaritan new client referrals increased by 112% during the series and 140% in the following 4 weeks.	Yes.

Table 4. (continued)

Citation	Period and Population Studied	Methodology	Comparison Group/Period	Findings	Support of Imitation
Kessler & Stripp, 1984	Same as Phillips (1982).	Designed as a replication and extension of Phillips's (1982) work. Used additional sources of soap opera summaries and found 3 additional suicide stories overlooked by Phillips. A story used in Phillips's work was deleted here because it involved only a discussion of a past suicide attempt. Most noteworthy was the use of the exact date of the story. Phillips's earlier study by employing weekly summaries inadvertently misspecified the dates of 8 of the 13 stories. The present study reanalyzed the corrected data with a quasi-experimental analysis and a time-series regression analysis.	In quasi-experimental design, the experimental period was the 4 days including and after the story. The control period was the closest time interval preceding the story that contained the same days of the week as the experimental period and did not contain any holidays, real-life celebrity suicides, or soap opera suicide stories. In the regression analysis, the control variables were days of the week, months of the year, and 2 celebrity deaths.	There was no significant effect of soap opera suicides on real suicides.	No.
Phillips, 1982	U.S. suicides and MVF for 1977. Restricted to persons described as "white" on their death certificates.	Compiled a list of TV soap opera episodes in which a suicide or suicide attempt occurred. The list was derived from a newspaper column, "The Soaps," published in the <i>Los Angeles Times</i> . The plot summaries identified the week in which a soap opera suicide occurred but not the specific day. Examined whether suicide and MVF increased after these episodes. Thirteen soap opera suicides stories were identified. Quasi-experimental design. Ecological study.	A 1-week experimental period was used; this was defined as the week, Monday-Sunday, in which the TV soap opera suicide episode occurred. The control period was 1-week before the experimental period. If an experimental period of a particular episode overlapped with a major holiday, it was deleted from the sample. If the control period overlapped with a major holiday, it was replaced by the nearest available control period that occurred prior to the holiday. To compensate for a possible linear trend in deaths, the control periods, which by design always preceded the experimental periods, were given an adjustment to reflect the slope of the regression line that best fit the data.	White suicides increased significantly on and just after the dates of soap opera suicide stories. Single-vehicle crash deaths also increased after the suicide stories, whereas multiple-vehicle deaths did not increase. This provides additional support for the belief that single-vehicle crash deaths may be "covert" suicides.	Inconclusive because an inaccurate and nonexhaustive index of TV suicide stores was used. See Kessler & Stripp (1984).

Nonfictional Suicide Stories

Increasing evidence suggesting imitative behavior following media coverage of nonfictional suicides has been provided by Phillips and his colleagues (Bollen & Phillips, 1981, 1982; Phillips, 1974, 1979, 1980; 1982; Phillips & Carstensen, 1986). They have reported that prominent newspaper coverage of a suicide has the effect of increasing suicide behavior within the readership area of the newspaper. The magnitude of the increase is related to the "attractiveness" of the individual whose death is being reported and the amount of publicity given to the story. This finding has been replicated with American (Bollen & Phillips, 1982) and Dutch data (Ganzeboom & de Haan, 1982). Likewise, Wasserman (1984) found that a significant rise in the national suicide rate occurred only after celebrity suicides were covered on the front page of the *New York Times*.

Sex- and age-specific imitative effects have been noted by Barraclough, Shepherd, and Jennings (1977), who found an association between reports of suicide inquests in a local paper and the subsequent suicide of men under 45 years. Further support for a sex- and age-specific effect was reported by Motto (1970), who found a reduction in suicides among women younger than 35 years during a newspaper strike in Detroit. This specific reduction was replicated in another city (Blumenthal & Bergner, 1973).

Phillips (1979; see Bollen & Phillips, 1981) has also provided support for the notion that some imitative suicides are disguised as automobile accidents. This conclusion was derived from the findings that (1) fatal automobile accidents also increased just after publicized suicide stories, with single-car accidents increasing more than other types of accidents, and (2) the age of drivers crashing in single-car accidents after the suicide story was correlated with the age of the person described in the suicide story.

Despite substantial support for the role of imitative behavior following nonfictional suicide stories, there are a number of studies that have been contradictory (Baron & Reiss, 1985; Stack, 1984; Littmann, 1985).

Baron and Reiss (1985) reported that Bollen and Phillips's (1982) finding of a significant imitative effect for nonfictional television news stories was due to statistical artifacts and the timing of media events. In a reanalysis of Phillips's data, Baron and Reiss (1984) reported that the media events only had their effects during periods when suicides were already high and that the variables measuring the "effects" of the media events were actually capturing regularities in the distribution of suicides. However, Bollen and Phillips (1982) did report an excess in suicides that could not be predicted by any day-of-the-week, month, year, or holiday effect, and established the excess with two analytic strategies.

Stack (1984) failed to find a relationship between the monthly national suicide rate and the amount of television coverage per month on suicide stories. However, this lack of a relationship may have been an artifact of the methodology used in the study. The core independent variable in Stack's study was the number

of seconds of television coverage of suicide stories covered in the six o'clock news. There is evidence that the type of story, not only the amount of coverage, has an impact on subsequent suicides (Phillips, 1982; Wasserman, 1984). Moreover, monthly rates of suicide may not be sensitive enough to detect imitative influences since a "contagion" effect has been reported not to extend beyond 10 days (Phillips, 1980; Bollen & Phillips, 1982). Methodological artifacts may also account for Littmann's (1985) failure to find a relationship between suicide-related newspaper reports and the occurrence of subway suicides in Toronto. Littmann (1985) reported that there was no significant excess of newspaper reports prior to subway suicides in both epidemic and nonepidemic years. However, there were overlaps in the "before" periods of one suicide with the "after" periods of another suicide. Therefore, there was no independent examination of the "before" period. In addition, no distinction was made among the types of suicide story ("reports, articles, features, editorials"), which, based on previously cited studies, are likely to have a differential effect. Lastly, the examination was limited to subway suicides. It is unknown whether an examination of all suicides might have yielded a different result.

Fictional Suicide Stories

Very little research has been carried out on the impact of the fictional representation of suicide. In the context of an epidemiological study of childhood suicide, Shaffer (1974) implicated this mechanism as a precipitant in one of thirty consecutive suicidal deaths (the teenage victim was found dead with a copy of Graham Greene's novel *Brighton Rock*, in which the young central character commits suicide), and there have been anecdotal reports of suicide rates increasing in response to the publication and popularity of other novels and poems. For example, in the late eighteenth century Goethe's *The Sorrows of Young Werther* was banned in various parts of Europe because young people were killing themselves in the same manner as the story's hero (Spender, 1962; Goethe, 1962).

Recent studies focusing on the effects of media coverage of fictional suicide stories prove to be controversial. Inconsistent with an imitation hypothesis, Kessler and Stripp (1984) failed to replicate Phillips's (1982) finding that fictional television suicide stories on daytime TV serials, or "soap operas," triggered imitative deaths. Kessler and Stripp (1984) explained the discrepancy as due to Phillips's misspecification of the dates of 8 of 13 TV suicide stories, invalidating Phillips's one attempt to examine the impact of fictional suicide stories.

Holding (1974, 1975) examined the impact of an 11-episode weekly series on the BBC in Edinburgh that dramatized the suicide prevention work of the Samaritans. The series resulted in a significant increase in new client referrals in the four weeks following the programs. If the series had produced a preventive effect then the rise in referrals should have been associated with a fall in completed

suicides. To the contrary, no decline in suicides was evidenced in a 10-week period following the series. Moreover, the period after the series failed to show the decline that was evidenced in corresponding weeks in comparison years. These results suggest a deleterious effect of fictional suicide stories in the media.

Gould and Shaffer (1986) examined the variation in youth suicide and attempted suicide before and after four fictional television films broadcast in the fall and winter of 1984/85. They reported that the observed number of attempted suicides after the broadcasts was significantly greater than expected and a significant excess of completed suicides was found after three broadcasts. Their finding is consistent with an imitation mechanism.

Critique of Methods

The major limitation of the studies examining the impact of media coverage of suicides is that all have employed aggregate data (see Tables 3 and 4). A major constraint of this design is that it cannot demonstrate whether the suicide victims were actually exposed to the media events. Therefore, there is always the danger of an "ecological fallacy," which involves making spurious individual level inferences from aggregate relationships.

Despite the limitation imposed by the use of aggregate data, the studies taken as a whole have employed rigorous statistics, comparison periods, and control variables and have fulfilled a number of criteria that assist judgments about the causal significance of associations. Five criteria for judging causal relations have been suggested: time sequence of variables, consistency of associations on replication, strength of association, specificity of association, and coherent explanation (Susser, 1973).

Several studies (Bollen & Phillips, 1981, 1982; Phillips, 1974, 1979; Wasserman, 1984) have established the time sequence of the variables—in other words, that the increase in mortality occurred only after the media events. The suicide stories did not occur during a "suicide wave" but before it.

Consistent findings in support of an imitation hypothesis have been reported by the majority of studies despite their variation in method, location, and type of variables. A number of studies examined an excess of deaths following the appearance of suicide stories (Barracough, Shepherd, & Jennings, 1977; Bollen & Phillips, 1981, 1982; Gould & Shaffer, 1986; Phillips, 1974, 1979; Wasserman, 1984), and other studies examined the decrease in deaths during the cessation of newspaper stories (Blumenthal & Bergner, 1973; Motto, 1970). Different types of "control" periods have been employed—varying from control periods immediately prior to the suicide story (Bollen & Phillips, 1981), control periods in different years (Motto, 1970; Phillips, 1979), and indirect control periods used in time series analyses (Wasserman, 1984). Both quasi-experimental designs (e.g., Phillips, 1974) and regression analytic strategies (e.g., Bollen & Phillips, 1981)

have been employed. It should be noted, however, that the consistency in the findings does not entirely rule out confounding variables.

The strength of the association is indicated by the reports that suicide stories had larger effects on suicide rates than day of the week, month, or holidays, variables known to affect the suicide rate (Bollen & Phillips, 1982), and that the reports of celebrities' suicides resulted in an increase of approximately 134 suicides (Wasserman, 1984).

The final criterion suggested for judging a causal association is whether it is coherent with existing knowledge. The association of media coverage of suicides with an increase in subsequent suicides, as well as the findings that the increase is a function of the amount of publicity and is restricted to the area in which the stories are publicized, is coherent with the consensus of laboratory findings that mass media violence can elicit aggression (see Comstock, 1975, for review). The association is also coherent with a number of mechanisms of contagion, such as imitation and familiarity with the idea of suicide. These mechanisms will be discussed in a subsequent section.

In summary, growing evidence forcefully supports the existence of imitative suicides following media coverage of nonfictional suicides. The effect extends to both newspaper and television coverage. Some of the inconsistencies that exist among studies could have arisen as a result of significant methodological differences between them. While there is some evidence on the impact of fictional suicide stories, firm conclusions would be premature until additional studies report consistent findings.

MECHANISM OF SUICIDE CONTAGION

The mechanisms underlying the phenomenon of imitation or contagion have not been studied in the context of cluster suicides. In social learning theory, however, behavioral scientists have constructed a foundation on which many aspects of suicide contagion may build. According to this, most human behavior is learned observationally through modeling (Bandura, 1977). Imitative learning is influenced by a number of factors, including the characteristics of the model and the consequences or rewards associated with the observed behavior (Bandura, 1977). Models who possess engaging qualities or who have high status are more likely to be imitated. Behaviors depicted as resulting in gains, including notoriety, are more effective in prompting imitation.

Consistent with these principles, Phillips and his colleagues have reported that the magnitude of the increase in suicidal behavior after prominent newspaper coverage is related to the "attractiveness" of the individual whose death is being reported and the amount of publicity given to the story. Likewise, Wasserman (1984) found that a significant rise in the national suicide rate occurred only after celebrity suicides were covered on the front page of the *New York Times*.

People cannot learn much by observation unless they attend to the modeled behavior (Bandura, 1977). A number of factors, some involving the *observers'* characteristics, regulate the amount of attention to an observed behavior. To date, the host characteristics that may yield a greater susceptibility to suicide imitation have not been studied. One host characteristic proposed by Sacks and Eth (1981) is a history of similar past experiences that lead to "pathological identification" with the victim.

In addition to imitative effects, the occurrence of suicides in the community or in the media may produce a familiarity and acceptance of the *idea* of suicide. This mechanism was postulated by Rubinstein (1983) in his study of a suicide epidemic among Micronesian adolescents. Familiarity with suicide may eliminate the "taboo" of suicide, lower the threshold at which point the behavior is manifested and introduce suicide as an acceptable alternative response or option to life stresses.

CONCLUSIONS

The extent to which suicides occur within the context of an "outbreak" is currently unknown. Anecdotal case reports suggest that time-space clusters of suicide occur among various age groups and are not a new phenomenon. Although a moderate proportion is suggested by anecdotal reports, it is impossible to meaningfully interpret these reports. Research employing epidemiological techniques to examine the occurrence and significance of clusters is currently addressing this issue. Similarly, field investigations are attempting to identify the underlying mechanisms of suicide clusters and the processes that initiate an outbreak.

A substantial amount of research has been conducted on the effect of the media on suicide. This work has primarily focused on media coverage of nonfictional suicide stories because accurate, accessible indexes are available for such stories. From this review, it can be concluded that newspaper and television coverage of nonfictional suicide stories yields a significant excess of suicides and there is some support for the existence of imitative suicides following fictional suicide stories.

There remain many unanswered questions that require research attention. These include the identification of the host characteristics that yield a greater susceptibility to suicide contagion within the context of an "outbreak" as well as after media coverage; the extent to which cluster outbreaks may occur in certain age groups, geographic locations, or times; the duration of the "contagious" period; the characteristics of model suicides which are most influential in increasing the likelihood of subsequent suicides; which combination of host susceptibility and contagion factors are most lethal; and what sorts of prevention and intervention efforts are most effective in averting cluster suicides. Field studies

of representative samples of suicide outbreaks would be useful in answering these questions. Future endeavors should also focus on the impact of the fictional representation of suicide on television, movies, and in other media of entertainment, such as music. A particular emphasis should be on the identification of what types of stories and what components of a story foster imitation. It is also incumbent for future research endeavors to try to identify any positive components of broadcasts as a basis for preventive programming.

ACKNOWLEDGMENT

Portions of this material were adapted from "Contagion as a Risk Factor for Youth Suicide" prepared by Drs. Davidson and Gould for the U.S. Department of Health and Human Services Task Force on Youth Suicide, Work Group on Risk Factors, May 1986.

REFERENCES

- Anonymous. (1977). A suicide epidemic in a psychiatric hospital. *Journal of Diseases of the Nervous System*, 38, 327-331.
- Ashton, V.R., & Donnan, S. (1981). Suicide by burning as an epidemic phenomenon: An analysis of 82 deaths and inquests in England and Wales in 1978-79. *Psychological Medicine*, 11, 735-739.
- Bakwin, H. (1957). Suicide in children and adolescents. *Journal of Pediatrics*, 50, 749-769.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Baron, J.N., & Reiss, P.C. (1985). Same time next year: Aggregate analyses of the mass media and violent behavior. *American Sociological Review*, 50, 347-363.
- Barracough, B., Shepherd, D., & Jennings, C. (1977). Do newspaper reports of coroners' inquests incite people to commit suicide? *British Journal of Psychiatry*, 131, 259-332.
- Blonston, G. (1985). Suicides among Arapahoe youths tied to "cultural identity crisis." *Hartford Courant* (October).
- Blumenthal, S., & Bergner, L. (1973). Suicide and newspapers: A replicated study. *American Journal of Psychiatry*, 130, 468-471.
- Bollen, K.A., & Phillips, D.P. (1981). Suicidal motor vehicle fatalities in Detroit: A replication. *American Journal of Sociology*, 87, 404-412.
- Bollen, K.A., & Phillips, D.P. (1982). Imitative suicides: A national study of the effects of television news stories. *American Sociological Review*, 47, 802-809.
- Bunch, J., & Barracough, B.L. (1971). The influence of parental death anniversaries upon suicide dates. *British Journal of Psychiatry*, 118, 621-626.
- Centers for Disease Control. (1985). *Suicide surveillance, 1970-1980*. Atlanta: CDC.
- Comstock, B. (1975). *Television and human behavior: The key studies*. Santa Monica, CA: Rand.
- Crawford, J.P., & Willis, J.H. (1966). Double suicide in psychiatric hospital patients. *British Journal of Psychiatry*, 112, 1231-1235.
- Doan, M. (1985). As "cluster suicides" take toll of teenagers. *U.S. News and World Report*, 97, (November), 49.
- Ederer, F., Meyers, M., & Mantel, N. (1964). A statistical problem in space and time: Do leukemia cases come in clusters? *Biometrics*, September, pp. 626-628.
- Farberow, N.L., & Neuringer, C. (1971). The social scientist as coroner deputy. *Journal of Forensic Sciences*, 16, 15-39.

- Fox, J., Manitowabi, D., & Ward, J.A. (1984). An Indian community with a high suicide rate—5 years after. *Canadian Journal of Psychiatry*, 29, 425–427.
- Ganzeboom, H.B.G., & de Haan, D. (1982). Gepubliceerde zelfmoorden en verhoging van sterfte door zelfmoord en ongelukken in Nederland, 1972–1980. *Mens en Maatschappij*, 57, 55–69.
- Gelman, D., & Gangelhoff, B.K. (1983). Teen-age suicide in the sunbelt. *Newsweek*, 15, 70–74.
- Goethe, J.S. (1962). *Reflection on Werther*. New York: New American Library.
- Gould, M.S., & Shaffer, D. (1986). The impact of suicide in television movies: Evidence of imitation. *New England Journal of Medicine*, 315, 690–694.
- Gould, M.S., & Wallenstein, S. (1985). A study of time-space clustering of suicide RFP 200-85-0834(P), Centers for Disease Control, Atlanta.
- Hankoff, L.D. (1961). An epidemic of attempted suicide. *Comprehensive Psychiatry*, 2, 294–298.
- Holding, T.A. (1974). The B.B.C. "Befrienders" series and its effects. *British Journal of Psychiatry*, vol. 124, 470–472.
- Holding, T.A. (1975). Suicide and "The Befrienders." *British Medical Journal*, 3, 751–753.
- Jacobziner, H. (1965). Attempted suicides in adolescents. *Journal of the American Medical Association*, 191, 7–11.
- Kahne, M.J. (1968). Suicide among patients in mental hospitals. *Psychiatry*, 1, 32–43.
- Kennedy, P., Kreitman, N., & Ovenstone, I.M.K. (1974). The prevalence of suicide and parasuicide ("attempted suicide") in Edinburgh. *British Journal of Psychiatry*, 124, 36–41.
- Kessler, R.C., & Stripp, H. (1984). The impact of fictional television suicide stories on U.S. fatalities: A replication. *American Journal of Sociology*, 90, 151–167.
- Knox, G. (1964). The detection of space-time interactions. *Applied Statistics*, 3, 25–29.
- Kobler, A.L.L., & Stotland, E. (1964). *The end of hope: A social-clinical study of suicide*. New York: Free Press.
- Littman, S.K. (1985). Suicide epidemics and newspaper reporting. *Suicide and Life-Threatening Behavior*, 15, 43–50.
- Mantel, N. (1967). The detection of disease clustering and a generalized regression approach. *Cancer Research*, 27, 209–220.
- McCain, M. (1984). Suicides at an early age. *Boston Globe* (March).
- Motto, J.A. (1967). Suicide and suggestibility: The role of the press. *American Journal of Psychiatry*, 124, 252–256.
- Motto, J.A. (1970). Newspaper influence on suicide. *Archives of General Psychiatry*, 23, 143–148.
- Nalin, D.R. (1973). Epidemic of suicide by Malathion poisoning in Guyana. *Tropical and Geographical Medicine*, 25, 8–14.
- Niemi, T. (1978). The time-space distances of suicides committed in the lockup in Finland in 1963–1967. *Israel Annals of Psychiatry and Related Disciplines*, 16, 39–45.
- Phillips, D.P. (1974). The influence of suggestion on suicide: Substantive and theoretical implication of the Werther effect. *American Sociological Review*, 39, 340–354.
- Phillips, D.P. (1979). Suicide, motor vehicle fatalities, and the mass media: Evidence toward a theory of suggestion. *American Journal of Sociology*, 84, 1150–1174.
- Phillips, D.P. (1980). Airplane accidents, murder, and the mass media: Towards a theory of imitation and suggestion. *Social Forces*, 58, 1001–1004.
- Phillips, D.P. (1982). The impact of fictional television stories on U.S. adult fatalities: New evidence on the effect of the mass media on violence. *American Journal of Sociology*, 87, 1340–1359.
- Phillips, D.P., & Carstensen, L.L. (1986). Clustering of teenage suicides after television news stories about suicide. *New England Journal of Medicine*, 315, 685–689.
- Popow, N.M. (1911). The present epidemic of school suicides in Russia. *Neyrol Nestnik (Kazan)*, 18, 312–355, 592–646.
- Robins, E. (1981). *The final months*. New York: Oxford University Press.
- Robbins, D., & Conroy, R.C. (1983). A cluster of adolescent suicide attempts: Is suicide contagious? *Journal of Adolescent Health Care*, 3, 253–255.

- Rosenbaum, M.K. (1983). Crime and punishment: The suicide pact. *Archives of General Psychiatry*, 40, 979–982.
- Rovinsky, A. (1898). Epidemic suicides. *Boston Medical and Surgical Journal*, 1898, 238–239.
- Rubinstein, D.H. (1983). Epidemic suicide among Micronesian adolescents. *Social Science Medicine*, 17, 657–665.
- Sacks, M., & Eth, S. (1981). Pathological identification as a cause of suicide on an inpatient unit. *Hospital and Community Psychiatry*, 32, 36–40.
- Seiden, R.H. (1967). Suicidal behavior contagion on a college campus. In N.L. Farberow (Ed.), *Proceedings of fourth international conference for suicide prevention*, pp. 360–365.
- Shaffer, D. (1974). Suicide in childhood and early adolescence. *Journal of Child Psychology and Psychiatry*, 15, 275–291.
- Shaffer, D., & Fisher, P. (1981). The epidemiology of suicide in children and young adolescents. *Journal of the American Academy of Child Psychiatry*, 20, 545–565.
- Shneidman, E., & Farberow, N. (1961). Statistical comparisons between attempted and committed suicides. In N. Farberow & E. Shneidman (Eds.), *The cry for help*. New York: McGraw-Hill.
- Smith, P.G. (1982). Spatial and temporal clustering. In D. Schoenfeld & J.F. Fraumeni (Eds.), *Cancer epidemiology and prevention*. Philadelphia: Saunders.
- Spender, S., forward to Goethe, J.S. (1962). *The sorrows of young Werther*. New York: New American Library.
- Stack, S. (1983). The effect of Jonestown suicides on American suicide rates. *Journal of Social Psychology*, 119, 145–146.
- Stack, S. (1984). The effect of suggestion on suicide: A reassessment. Paper read at the Annual Meetings of the American Sociological Association, San Antonio, TX.
- Susser, M. (1973). *Causal thinking in the health sciences: Concepts and strategies in epidemiology*. New York: Oxford University Press.
- Taylor, P. (1984). Cluster phenomenon of young suicides raises contagion theory. *Washington Post*, March 15–16, 231–237.
- Walton, E.W. (1978). An epidemic of antifreeze poisoning. *Medicine, Science and the Law*, 18, 231–237.
- Ward, J.A., & Fox, J. (1977). A suicide epidemic on an Indian reserve. *Canadian Journal of the Psychiatric Association*, 22, 423–426.
- Wasserman, I.M. (1984). Imitation and suicide: A reexamination of the Werther effect. *American Sociological Review*, 49, 427–436.
- Winslow, F. (1985). Suicide considered as a mental epidemic. *Bulletin of the Medico-Legal Congress*, pp. 334–351.

Suicide Clusters: An Examination of Age-Specific Effects

MADelyn S. GOULD, PhD, MPH, SYLVAN WALLENSTEIN, PhD, MARJORIE H. KLEINMAN, MS,
PATRICK O'CARROLL, MD, MPH, AND JAMES MERCY, PhD

Abstract: The age specificity of time-space clusters of suicide was examined using National Center for Health Statistics data for 1978–84. Significant clustering of suicide occurred primarily among teenagers and young adults, with minimal effect beyond 24 years of age. Clustering was two to four times more common among adolescents and young adults than among other age groups. (*Am J Public Health* 1990; 80:211–212.)

Introduction

Approximately 29,000 people killed themselves in 1985 in the United States.* Suicide is rare before the age of 12, increases dramatically during adolescence, and reaches a peak between ages 20 to 24 at which time the suicide rate plateaus until another increase is witnessed among elderly men. Suicide among teenagers and young adults has increased markedly since 1960, moving suicide from the fifth leading cause of death to the second leading cause of death among teenagers in 1985.*

The recent occurrence of several highly publicized clusters of youth suicides has focused attention on the problem of suicide "epidemics"—unusually high numbers of suicides occurring in a small area and brief time period. Such outbreaks have been reported from ancient times through the twentieth century in diverse populations of varied ages,^{1,2} but these reports are difficult to interpret without systematic surveillance and reporting of suicide clusters. Moreover, only recently³ have statistical techniques for the detection of clusters of suicide in time and space been used, although several studies have examined temporal clustering after suicide stories.¹ Few studies have examined temporal fluctuations, in general^{4–7} or spatial patterns.⁷ Some clustering of suicides occurs by chance alone, even if suicides are occurring at random, so measurement of the rate of "outbreaks" must account for the clustering expected by chance variation.

Our earlier work indicated that clustering of suicides occurred among 15–19 year olds to a greater extent than would be expected by chance alone.³ The present report examines the whole life span to determine whether suicide clusters are unique to adolescents or represent a more general phenomenon.

Address reprint requests to Madelyn S. Gould, PhD, MPH, Division of Child Psychiatry, Columbia University, College of Physicians & Surgeons, 722 West 168 Street, New York, NY 10032. Dr. Gould is also affiliated with the School of Public Health at Columbia University, and the New York State Psychiatric Institute. Dr. Wallenstein is with the School of Public Health, Columbia University; Ms. Kleinman is with the New York State Psychiatric Institute; Dr. O'Carroll and Dr. Mercy are with the Division of Injury Epidemiology and Control, Center for Environmental Health and Injury Control, CDC, Atlanta. This paper, submitted to the *Journal* October 4, 1988, was revised and accepted for publication April 11, 1989.

*Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics. *Vital Statistics of the United States* (Unpublished data for 1985).

Methods

Data Sources

Vital statistics mortality data tapes 1978–84 were obtained from the National Center for Health Statistics (NCHS). Separate analyses were performed for the following age groups: 15–19, 20–24, 25–29, 30–34, 35–44, 45–54, 55–64, and 75+ years.

A suicide was defined as any individual whose cause of death had been listed as codes E950–959 of the Ninth Revision of the International Classification of Diseases (ICD-9). The late effects of a self-inflicted injury (E959) was included in the analyses because the timing of the death, in addition to the initial suicidal act, may influence a subsequent suicide. However, this classification of death only accounted for up to 0.2 percent of the total number of suicides within any age group and, therefore, it is unlikely that it had an impact on the analyses.

Statistical Method

The Knox procedure⁸ was used to assess the degree of time-space clustering. Details on alternative procedures and the reasons for selection of the Knox procedure are given elsewhere.³ The Knox procedure considers all possible pairs of cases and the time and space distances between them. Critical values for time and space to define "closeness" must be specified in advance. The test statistic involves a comparison of the observed number of pairs close in time and space with the expected number, which is the product of the proportion of pairs that are close in time with the number of pairs close in space. The test statistic approximately follows a normal distribution, $Z = (O-E)/\text{variance}$. The variance of the statistic was estimated following the method of David and Barton.⁹

Definition of Cluster

There are no explicit definitions of a "suicide cluster" in the literature. Initial operational definitions and limits for time and space parameters were examined in an exploratory analysis of NCHS data for 15–19 year olds for 1978 and state mortality data for 1978 through 1985, as described elsewhere.³ Four space units (county and town of residence and occurrence) and five critical time units (3, 7, 14, 30 and 60 days) were examined to define closeness between pairs of cases. Exploratory analyses indicated that county of residence yielded a space unit more sensitive to the definition of a cluster. There was little difference between the five time units in the exploratory examination. The data are reported for 7, 14 and 30 days.

Results

As shown in Table 1, 1,420 close pairs of suicides (same county, 0–7 days) occurred among 15–19 year-olds, whereas 1,339.2 were expected. The 6 percent elevation above chance had an associated p-value of .011. The effect of clustering is primarily observed in the younger age groups (15–19 and 20–24 year olds) at the three critical time units. Very little clustering occurred at older ages, with the exception of the 55–64 year old age group at the seven-day critical time unit.

TABLE 1—Results of Knox Procedure on 1978–1984 NCHS Mortality Detail File

Age (years)	N	Window = 7 Days				Window = 14 Days				Window = 30 Days			
		Close-Close Pairs		O/E	P	Close-Close Pairs		O/E	P	Close-Close Pairs		O/E	P
		Expected	Observed			Expected	Observed			Expected	Observed		
15–19	12135	1339.2	1420	1.060	.011	2756.7	2842	1.031	.047	6000.7	6177	1.029	.009
20–24	25511	6335.5	6523	1.030	.008	13126.1	13481	1.027	.001	23542.6	29602	1.033	.000
25–29	23275	7126.1	7155	1.004	.365	14775.8	14888	1.008	.174	32247.7	32681	1.013	.008
30–34	19534	4805.0	4834	1.006	.338	9991.0	10035	1.004	.328	21794.4	21978	1.008	.106
35–44	29092	9707.5	9822	1.012	.119	20086.4	20271	1.009	.094	43780.9	44066	1.007	.087
45–54	26002	6976.1	7103	1.018	.060	14530.8	14629	1.007	.205	31622.9	31633	1.000	.478
55–64	25624	6399.6	6623	1.035	.002	13277.2	13401	1.009	.136	28928.5	29260	1.011	.024
65–74	19621	3334.8	3395	1.018	.139	6877.7	6976	1.014	.111	15002.1	15247	1.016	.020
75+	14718	2373.0	2367	0.997	.550	4876.8	4888	1.002	.435	10567.0	10554	.996	.551

The effect size was two to four times greater among the adolescents than in other age groups.

Discussion

Suicide clusters appear to occur primarily among teenagers and young adults, although clusters do occur occasionally at other ages. This is consistent with the findings of Phillips and Carstensen¹⁰: the impact of suicide stories on subsequent suicides was greatest for teenagers. In addition, although there is no formal surveillance system for suicide clusters in the United States, most of the suicide clusters reported to the Centers for Disease Control have primarily involved adolescents, young adults, or both.¹

The magnitude of the clustering effect is relatively small, even among teenagers and young adults. Estimates of the percentage of teenage suicides that occur in clusters averages between 1 percent and 2 percent with considerable variation by state and year, yielding a range of estimates from less than 1 percent to 13 percent.³ However, the relative risk for suicide given exposure to the suicide of one or more other persons may be quite great. Studies at the individual level will be needed to define this relative risk. Moreover, although the number of youth suicides that occur in clusters may be relatively small, they represent a class of suicides that may be particularly preventable. Suicide prevention efforts that focus on high-risk populations is a recommended strategy.¹¹

The Centers for Disease Control has recently developed recommendations for a community plan for the prevention and containment of suicide clusters.¹² Targeting multiple risk

groups in prevention strategies will be necessary to reduce the suicide rate substantially.

ACKNOWLEDGMENTS

The work was supported by research contract 200-85-0834(P) from the Centers for Disease Control and a Faculty Scholars Award from the William T. Grant Foundation.

REFERENCES

- Gould MS, Davidson L: Suicide contagion among adolescents. In: Stiffman AR, Felman RA (eds): *Advances in Adolescent Mental Health, Vol. III: Depression and Suicide*. Greenwich, CT: JAI Press, 1988.
- Gould MS, Wallenstein S, Davidson L: Suicide clusters: A critical review. *Suicide Life Threat Behav* 1989; 19(1):17–29.
- Gould MS, Wallenstein S, Kleinman M: Time-space clustering of teenage suicide. *Am J Epidemiol* 1990 (in press).
- Barracough BM, White SJ: Monthly variation of suicide and undetermined death compared. *Br J Psychiatry* 1978; 132:275–278.
- MacMahon K: Short-term temporal cycles in the frequency of suicide, United States, 1972–1978. *Am J Epidemiol* 1983; 117:744–750.
- Phillips DP: Teenage and adult temporal fluctuations in suicide and auto fatalities. In: Sudak HS, Ford AB, Rushforth NB (eds): *Suicide in the Young*. Boston: John Wright PSG Inc, 1984.
- Centers for Disease Control: *Suicide Surveillance, 1970–1980*. Atlanta, GA: CDC, April 1985.
- Knox G: The detection of space-time interactions. *Applied Stat* 1964; 3:25–29.
- David SN, Barton DE: Two space-time interaction tests for epidemicity. *Br J Prev Soc Med* 1966; 20:44–48.
- Phillips DP, Carstensen LL: The effect of suicide stories on various demographic groups, 1968–1985. *Suicide Life Threat Behav* 1988; 18:100–114.
- Shaffer D, Garland A, Gould M, Fisher P, Trautman P: Preventing teenage suicide: A critical review. *JAACAP* 1988; 27:6:675–687.
- Centers for Disease Control: CDC recommendations for a community plan for the prevention and containment of suicide clusters. *MMWR* 1988; 37(Suppl no. s-6):1–12.

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a publication.

Publications have not been scanned in their entirety for the purpose of digitization. To see the full publication please search online or visit the Clinton Presidential Library's Research Room.

"Responding to Community - Identified Suicide Clusters:
Statistical Verification of the Cluster Is Not the Primary
Issue" by Patrick W. O'Carroll and James A. Mercy

RESPONDING TO COMMUNITY-IDENTIFIED SUICIDE CLUSTERS: STATISTICAL VERIFICATION OF THE CLUSTER IS NOT THE PRIMARY ISSUE

PATRICK W. O'CARROLL AND JAMES A. MERCY

O'Carroll, P. W. (Div. of Injury Epidemiology and Control, CDC, Atlanta, GA 30333) and J. A. Mercy. Responding to community-identified suicide clusters: statistical verification of the cluster is not the primary issue. *Am J Epidemiol* 1990;132:S196-S202.

Establishing the presence of an epidemic is traditionally a first step in any outbreak investigation. For two reasons, however, this has not been a fruitful approach for suicide cluster investigations. First, the data necessary to statistically verify an excess number of suicidal incidents are often lacking or of poor quality. Second, and more important, when a community perceives that it is experiencing a suicide cluster, it is not immediately relevant whether the cluster is statistically significant. The perception of suicide clustering, and the highly charged emotional atmosphere associated with that perception, may dramatically heighten the potentially "contagious" effect of suicide. That the perception of clustering may itself be a risk factor for suicide distinguishes suicide clusters from all other clusters of fatal disease or illness. A community response plan should, therefore, be implemented to identify and refer persons who may be at high risk of suicide, regardless of whether the community-identified suicide cluster is statistically significant. Statistical techniques may be useful at several stages in the investigation and control of apparent suicide clusters, but statistical verification of a community-identified suicide cluster is *not* appropriate as a starting point for response to the cluster.

space-time clustering; suicide; suicide, attempted

Recent suicide clusters among teenagers and young adults have received national attention, and public concern about this

issue is growing. Unfortunately, our understanding of the causes and means of preventing suicide clusters is far from com-

Received for publication May 8, 1989, and in final form December 1, 1989.

From the Division of Injury Epidemiology and Control, Center for Environmental Health and Injury Control, Centers for Disease Control, Public Health Service, US Department of Health and Human Services, Atlanta, GA.

Reprint requests to Dr. Patrick W. O'Carroll, Centers for Disease Control, Mailstop F36, 1600 Clifton Road NE, Atlanta, GA 30333.

The authors thank the participants of a workshop, jointly sponsored by the New Jersey State Department of Health and the Centers for Disease Control, who gave freely of their time in assisting in the development of the Centers for Disease Control recommendations for a community plan for the prevention and containment of suicide clusters.

Participants in the workshop included: Dr. Eugene

Aronowitz, Department of Community Mental Health, Westchester County, NY; Ines Assafi, Jefferson County Mental Health Center, Lakewood, CO; Dennis Blomquist, Guidance and Counseling for Mankato Public Schools, Mankato, MN; Dr. Ronald G. Burmood, Omaha Public Schools, Omaha, NE; Dr. Betsey S. Comstock, Baylor College of Medicine, Houston, TX; Karen Dunne-Maxim, New Jersey Youth Suicide Prevention Project, Princeton Junction, NJ; John W. Farrell, New Jersey State Department of Health, Trenton, NJ; Louis C. Goetting, IV, South Brunswick Township, Monmouth Junction, NJ; Dr. Madelyn S. Gould, New York State Psychiatric Institute/Columbia University, New York, NY; Myra Herbert, Fairfax Public Schools, Fairfax, VA; Karen Hymbaugh, Indian Health Service, Albuquerque, NM; Elizabeth N. Jones, American Association of Suicidology, Gainesville, FL; Dr. Alan J. Krumholz,

AN INVESTIGATION OF A CLUSTER OF SUICIDE ATTEMPTS

Patrick W. O'Carroll, M.D., M.P.H.

In August 1986, the U.S. Centers for Disease Control received a request from a New England State health department to assist in investigating an apparent cluster of suicide attempts during the preceding school year among junior and senior high school students in a small, semi-rural town. One student had committed suicide and 17 other students had attempted suicide during the period December 1985 to April 1, 1986.

Background

There is one junior and one senior high school in the town in question. The town has a population of approximately 10,000; 1,065 students are enrolled in the junior and senior high schools. This cluster of suicide attempts among students in these schools first became apparent through interviews with students conducted by staff from a local social service agency. This agency had regularly provided an array of counseling services to a number of schools in the region. Following the suicide death in February 1986, agency staff were invited into the two schools to provide counseling and to help in the assessment of any potentially high-risk students.

Methods

Despite the fact that no formal surveillance system was in place, the social service agency staff believe that they were quickly notified, through a variety of sources, of any recent or new suicide attempts among the junior and senior high school students. A suicide attempter was defined as any individual who 1) reported, or was noted to have sustained, an intentionally self-inflicted injury (including ingestion of pills or other toxic agents) and 2) reported that this injury was inflicted to attempt suicide. Neither severity of injury nor seriousness of intent were included in this initial definition, which was used to identify any student who might need counseling or other services.

The above definition was used in a record review at the agency and in interviewing agency staff. The principal and the student counselor at the senior high school were also interviewed to validate information provided by the social service agency staff.

Results

During the period December 1985 to April 1, 1986, one senior high school student completed suicide and 17 other junior and senior high school students attempted suicide. No other suicides or attempted suicides were determined to have occurred during the 1985-86 school year, either before or after this cluster. The persons who completed suicide was a 16-year old male. Of the 17 suicide attempters, 13 were females, ranging in age from 12 to 17, and 4 were males, ranging in age from 14 to 15 years. Of those who attempted suicide, 8 made their attempts before, and 9 after, the suicide death.

Of the 17 attempters, four attempted suicide more than once, resulting in a total of 24 suicide attempts from December 1985 to April 1, 1986 (attempt incidence). Of these 24 attempts, 10 (42%) occurred in February and nine (38%) occurred in March. Whereas the attempt incidence focuses on the suicidal event, "attempter incidence" focuses on individuals, who may or may not attempt suicide more than once. Attempter incidence

may be calculated by considering only the first suicide attempt of each attempter during the 1985-86 school year. Of the 17 attempters, eight (47%) first attempted suicide in February and only four (24%) first attempted suicide in March.

Since the focus of case ascertainment was the junior and senior high schools, the combined enrollment of these schools may be considered the population at risk. Using this as the denominator, the suicide attempt incidence rate was 2,254 per 100,000 students per 9 month school year. The incidence rate of first suicide attempts (attempter incidence) during this school year was 1,596 per 100,000 students per school year.

The method by which suicide was attempted varied by sex ($p=0.032$, Fisher's exact test). The females attempted suicide by only two methods: ingestion of pills and laceration of the wrists with a razor. The males attempted suicide by a variety of methods including ingestion of pills, laceration of the wrists with a razor, ingestion of iodine, and hanging. The single completed suicide was committed with a firearm; this is the only case in which a firearm was used.

A group of four to six attempters seemed particularly fascinated by suicide. These persons were all close friends, dating primarily only those in the group. One individual who had been excluded from this group apparently gained acceptance by virtue of her repeated suicide attempts.

Two additional factors seemed to the social service agency staff to be particularly prominent among the suicide attempters. First, approximately half of the families of the 17 suicide attempters evidenced some history of family disorder (e.g., severe alcoholism, physical abuse, sexual abuse). Second, many of the attempters seemed to come from families with a limited period of residence in the community. Unfortunately, it was not possible in this investigation to verify these factors or to compare their prevalence among the suicide attempters to that of a control group.

Discussion

As with suicide clusters, we do not yet know the frequency of suicide attempt clusters, the proportion of suicide attempts that occur in suicide attempt clusters, or the risk factors for attempted suicide in the context of a cluster. Indeed, the basic descriptive epidemiology of attempted suicide in general is very limited. Most studies of attempted suicide thus far have been based on special populations, such as persons admitted to particular hospitals or psychiatric services.

This investigation provides anecdotal evidence for several potential risk factors for attempted suicide among adolescents in the context of a suicide attempt cluster. These include family problems, a limited period of residence in the community, and exposure to individuals who attempt suicide or who are actively suicidal. One of our key recommendations is that these factors be explored through a case-control study. These potential risk factors, if confirmed through further epidemiologic research, might identify high-risk individuals in need of focused preventive interventions. Such identification is especially critical in the context of an evolving cluster of suicides or suicide attempts.

We also recommend that a surveillance system for suicide attempts be developed. A suicide attempt surveillance system would identify individuals in need of mental health or social services. It would identify a population of individuals known to be at high risk of subsequent suicide. It would allow the determination of the scope and trends of

attempted suicide in a community. It would characterize epidemiologically those who attempt suicide, such that high risk groups could be identified and specific prevention strategies formulated. It would make possible a more sensitive evaluation of suicide prevention efforts. Finally, it would allow for timely identification and monitoring of clusters of suicide attempts.

Patrick W. O'Carroll, M.D., M.P.H.
Centers for Disease Control
1600 Clifton Road
Atlanta, GA 30333

COMBINED 1987 PROCEEDINGS:
TWENTIETH ANNUAL MEETING OF
AMERICAN ASSOCIATION OF SUICIDOLOGY
and
NINETEENTH INTERNATIONAL CONGRESS OF
INTERNATIONAL ASSOCIATION OF SUICIDE PREVENTION

* * *

SAN FRANCISCO, CALIFORNIA

MAY 25-30, 1987

* * *

FIRST COMBINED MEETING
SUICIDE AND CULTURAL VALUES:
NATIONAL AND INTERNATIONAL ASPECTS

* * *

EDITOR:
ROBERT I. YUFIT, PH.D.



DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of the Secretary

Washington, D.C. 20201

March 27, 1995

*free
Violence &
children*

MEMORANDUM TO MELANNE VERVEER

Here are my talking points regarding violence, as promised.
What next?

Peter B. Edelman
Counselor to the Secretary

TALKING POINTS -- SUMMARY OF PETER EDELMAN SPEECH ON VIOLENCE

1. I want to talk about two subjects that are closely connected to each other -- the wave of violence that has swept our nation, and the life chances we offer to our children. These are closely connected. Everything that prevents violence helps children grow up safely to become healthy, productive, responsible citizens. And everything that makes our streets safe, strengthens families, improves schools, builds neighborhoods, promotes child and youth development, and broadens opportunities -- all of those things prevent violence. So the two subjects are in many ways one. (And because the two subjects are one, we can't talk about violence without recognizing the assault on programs and policies for children and families that is going on in Congress right now.)

2. We do have a wave of violence. A child is killed by gunfire every 2 hours in America. We are seeing gang violence and drive-by shootings in places where we never thought we would see it -- in cities like Fort Worth, Kansas City, Omaha; in suburbs; in small towns. It is pervasive. And it is not just on the street. Violence in the home -- child abuse and domestic violence -- kills 1200 to 1400 children every year and an approximately equal number of women. When you add the two together, more than 1 in 10 homicides every year is a result of family and intimate violence. Shocking number.

3. So the violence is everywhere. And it is all connected. Because what children see and experience in the home all too often results in their own violence later on. For too many children there is a deadly synergism between the violence at home, the violence they see in the street, and the violence they see on television and in the movies and hear in rap music.

4. We need nothing less than a national movement to stop the violence. Laws are important. Public policy is important. But we will not stop the violence unless we all take responsibility, unless in every community in America there is a coming together of every element and every sector to take responsibility and restore the peace. We need the business community to provide jobs, schools that teach, clergy and civic leaders who transmit values, and parents who take responsibility for their children every day. (And, with the attack on fundamental policies for children that is going on in Congress now, we need people to pay greater attention than ever to what is going on in Washington even as they take greater responsibility in their own communities.)

5. So what are we to do? We have to begin by assuring the public safety. This is obligation number one. If people aren't safe going to and from work and the store, if children aren't safe going to and from school, nothing else works right. President Clinton's Crime Act will put 100,000 police officers on the street, and we have to make sure this isn't taken away in

Congress, but we also have to use them wisely and get them out into communities and neighborhoods in ways that build neighborhood strength and stability. Community policing has demonstrated effects in preventing crime, so we have to make sure we use what we know in every community.

6. But effective law enforcement is not sufficient. Law enforcement professionals are the first to say they can't do the job all by themselves, that unless we have prevention policies, we will have a steady stream of new perpetrators, and we will never be able to build enough prisons to lock them all up.

7. A lot of the violence relates to economics. There is child abuse among families at all income levels. There is domestic violence in families at all income levels. But if we are going to strengthen the ability and commitment of parents to raise their children responsibly, we have to pay attention to economics. If we are going to see to it that young people have opportunities -- something to say yes to, as the President always says -- we have to pay attention to economics. The question of economics is inseparable from the question of violence.

8. And if we are going to see to it that young people have opportunities, we also have to see to it that they have clear pathways to reach those opportunities. They need to be able to see the opportunity at the end of the path, and the path needs to be clearly marked to help them be ready to accept the opportunity when they get there. If they don't see the opportunities, they are going to make other choices, as they are doing right now in too many places. They are going to choose gangs and crime and drugs and having babies too soon. They need to understand that there are opportunities. But they also need to understand that they will get there only if they accept the responsibility for doing what they need to do to there. Opportunity and responsibility. Two ideas, not one.

9. Prevention is really in fact the wrong idea. Prevention means preventing negative outcomes. It means preventing crime and teen pregnancy and drug abuse. But the best way to prevent all of those things is to develop able and successful young people who have no use for and no interest in those negative things. Prevention is the wrong idea. Development is the right idea.

10. If we are going to create clear pathways, if we are going to create opportunities plus the road to opportunity, there is so much we must do, and we must do it at the community level, in communities across America. We need national policy, we need state policy, but there will never be enough money, there can never be enough leadership from the outside, if the leadership and the commitment and the follow through are not there in each and every community.

11. This means the business community must reach into every place where the only choices that seem to be available now are the wrong ones, and help provide the right ones. Who is hiring high school graduates? The health care providers? The banks? The insurance companies? Let them partner with the schools and the job training people and reach in and identify young people early, and help them get ready, and make jobs available to those who accept the responsibility. Let them join with others in the community in I Have a Dream efforts to assure a college education to those who accept the responsibility for getting ready. These are the ideas that are the foundation of the President's school-to-work program. The framework is there in legislation. But it will not succeed unless businesses in every community join to make it a reality.

12. Another part of clearing the pathways is simple, overt, blatant race discrimination in entry-level hiring, which is occurring, unfortunately, in every community in America. African-American and Latino young people encounter widespread discrimination as they seek to enter the labor market, even when they are fully prepared and as well or better qualified than white or Anglo applicants. Tests conducted by the Fair Employment Council of Greater Washington, using simulated job applicants, revealed overt discrimination one time in five against applicants of color. As we are debating the future of affirmative action, we should be taking much firmer action to end pure garden variety discrimination which raises no issue of affirmative action whatsoever.

13. If there are going to be clear pathways, we have to do everything necessary to make schools effective all along the way. We have to have schools that teach, and we have to make schools into community centers, partnering with the business community and with community organizations to open schools early and keep them open late and on weekends and in the summer, offering academic enrichment and all kinds of recreation, and programs for parents, and more caring adults for young people to relate to. It doesn't have to be a school building. It can be a Boys Club or a Girls Club or a settlement house. But school buildings are naturals, because they are there, and it should be possible to get much better use out of them. This is the idea of the community schools program in the Crime Act, which was passed with strong bipartisan support last year and is now threatened. The question used to be, it's ten o'clock, do you know where your kids are? Now it is, it's four o'clock, do you know where your kids are? We have to have safe places to keep kids out of trouble and to protect kids from being victims of violence as well.

14. And this is something that all of us can get involved in. Because one part of community schools or community centers or any program for young people should be the involvement of caring

adults in a sustained way in young people's lives. Mentoring. It's a word we hear a lot. We all need to spend time with kids. Listen to kids. Value kids. There is a myth in this country -- call it the Horatio Alger myth -- that each of us makes it on our own, without any help from anyone. Rugged individualism. Nonsense. We all stood on someone's shoulders. Our parents, a teacher, a coach, a scout leader, a minister or a rabbi. We all had help getting to where we are. Too many kids today don't have anyone's shoulders to stand on. We need to supply those shoulders for the kids who don't have them. It's not easy or simple. If you do it, you have to stay with it, you have to spend the time, you have to be there. But it is something all of us can do. It's not the solution by itself. The jobs have to be there, the schools have to teach, but mentors can help.

15. Mentoring is part of restoring a sense of community, part of revitalizing the civic enterprise, part of reinventing citizenship. That's what the President's national service program is all about, too. That's why it's so important that we don't cripple that important effort before it even gets fully up to speed. Dr. King said, "Life's most persistent and urgent question is, what are you doing for others?" He was absolutely right.

16. But the sense of community that we have to restore goes further. We need to understand that the idea of "place" matters, that families live in neighborhoods, that the life chances of children depend significantly on whether there is a sense of community in their neighborhoods. That's why the President's Empowerment Zone and Enterprise Community program is so important. Because in those 100-plus neighborhoods around the country we are going to show that neighborhood revitalization makes a difference. That's a major point of our community schools program, too -- safe, visible places for young people and their families to go. That's about community, too.

17. If we are going to stop the violence, we also have to pay direct attention to helping families function. That's what our Family Preservation program is about. That's what the Healthy Start program is about. So is the home visitation program in Hawaii and the Hippy program in Arkansas which was started when the President was Governor. But the child welfare block grant recently passed by the House would wipe out the gains we have been making. It would take away the national principle that we need to help families do a better job of caring for their children before we remove them to foster care, unless the children are in imminent danger. It would say to a state, we will provide federal matching for foster care unless it's too late in the fiscal year -- then you'll have to leave the child home to be further abused unless you want to pay for it yourself. That's one of the most short-sighted, cruel propositions before the Congress right now.

18. There's a challenge to communities here, too. If we're going to stop the violence against spouses and partners in the home, which is mostly although not entirely against women, every community needs to send a clear and precise message. The violence will not be tolerated. The perpetrators will be arrested, tried, and sentenced like the criminals they are. There will be shelters for women to go to with their children. There will be welfare assistance so they can start a new life. Health professionals and social workers will be trained to recognize the signs of domestic violence when they see it. Communities around America -- Quincy, Massachusetts, Duluth, Minnesota, Newport News, Virginia, and many more -- have shown us this is possible. We need to do it everywhere.

19. We will not stop the violence unless we address the abuse of alcohol and illegal drugs that is so closely and intimately associated with so much of the violence. Alcohol in particular is involved in well over half the incidents of child abuse and domestic violence. Contests over turf for the marketing of illegal drugs have set a tone of violence in the street in low-income communities that has spilled over into the entire climate of life. We need to hang tough on law enforcement against illegal drugs, we need to double and redouble our prevention messages, and we need to invest much more substantially in treatment.

20. We can't talk about violence without talking about guns. This President's leadership has brought us the Brady Act and the ban on assault weapons. There are those who would seek to erase those gains. They cannot be allowed to succeed. But we need to do more. We need to get guns out of the hands of people who shouldn't have them. The police in Indianapolis and Kansas City have begun concentrating on arresting people who carry illegal concealed weapons in the street, and gun crimes are down in those cities. Other cities can do the same. We need to convince people who have a gun at home to keep it under lock and key, unloaded. We need to get the facts to people as they are deciding whether to have or keep a handgun at home -- if they have a gun in the house, it is 43 times more likely that it will kill someone other than an intruder than that it will kill and intruder. It is five times more likely that there will be a suicide, three times more likely there will be a homicide, in a home with a gun, than in a home where there isn't one. This has been such a divisive issue. We need to find the places where we can agree and move ahead.

21. The media are part of the problem, too. We need to work with the creative community to reduce the amount of gratuitous violence in television, films, and music, and to send pro-active messages in programming and public service announcements that violence settles nothing, that drugs kill, that real men don't beat women.

22. There is a major question of values. From the top to the grass roots, we need to talk about nonviolence, about hard work, responsibility, fairness, honesty, citizenship. These are American values. They don't belong to one side of the political spectrum or the other. Messages about values can't do the job by themselves, but all the programs and policies and services in the world won't make a difference unless we can restore a shared commitment to some very basic values.

23. We need to think of all of this as a tripod. One leg is about children and families and what we do to strengthen and enable and inspire and convince parents to be committed to do the best possible job they possibly can in raising their kids. The second leg is what we do in the neighborhood and city-wide and county-wide to restore a sense of community and citizenship and enforce the law fairly and effectively and make our schools and all of our systems work for children and families. The third leg is in the state and nationally, in government and through the media and other national leadership, to pursue intelligent policies and set a tone and send a message of nonviolence. We all know that if one leg is missing, a tripod falls down. All three legs need to be in place.

24. Ending the violence in our nation, or even reducing it substantially, is a giant, complicated job. But I think we can make a difference if we try.

file violence/
kid

Hillary Clinton Seeks Balance In News Coverage of Violence

By SUSAN CHIRA
Special to The New York Times

PALO ALTO, Calif., March 4 — Hillary Rodham Clinton said today that excessive news coverage of violence might be just as damaging to children as violence on television programs and in movies, and she urged journalists to strike a better balance.

"I am not suggesting that all news coverage of violence is bad or wrong," Mrs. Clinton said as she spoke via satellite from the White House to an audience of about 80 television and newspaper journalists here. "I think there must be balance. Good caution

G.O.P. Senators Fail To Reach Consensus On Health Measure

Special to The New York Times

ANNAPOLIS, March 4 — Senate Republicans finished a two-day retreat here today on health care legislation with pledges to keep meeting, keep searching for a consensus and, once they find one, to work with the Democrats to pass a bipartisan bill.

But there was no sign of a major breakthrough. The divisions in the party, participants said, remained the same: whether they should seek to guarantee universal coverage and how to achieve it if they do, what role government should play and how much restructuring was needed.

The senators highlighted the positive. Senator John H. Chafee of Rhode Island, who organized the retreat in the historic section of Annapolis, said he was impressed by the commitment to bipartisanship expressed by the 36 senators who participated.

Republicans also emphasized that this was the beginning of a process that had new relevance now that the Clinton plan, as many asserted, was dead.

After the closed meeting, William Kristol, a conservative theoretician who has pushed for specific, incremental changes rather than a systemic overhaul, said he was pleased with the gathering. "I was struck by the degree that Republicans seem to be coalescing around targeted reforms," he said.

But Mr. Chafee, one of the centrists on health care, said after the session that he remained committed to universal coverage, which he planned to propose in his bill.

Representative Newt Gingrich, the Republican whip and a staunch conservative, reflected the divisions in the conference when he said: "There's a general sense that we want to insure universal access. And we want to see if there's some noncoercive way to ensure universal coverage."

and prudence do not violate First Amendment rights."

The journalists were attending a conference on "Children and the News Media" held at Stanford University. While news coverage of violence may in some cases raise public awareness and prompt support for measures like gun control, Mrs. Clinton said, in many cases violence shows up more often on television screens and in newspapers than it does in daily life.

She cited a recent study by the Center for Media and Public Affairs, a private, nonpartisan monitoring organization in Washington, showing that network television coverage of violence had doubled over the past year, while the overall crime rate nationally had remained the same.

'Cynicism and Distrust'

"We have to ask ourselves, 'Has the exhaustive and perhaps excessive coverage of violence contributed to the increasing alienation and dysfunctional behavior on the part of our children and youth?'" Mrs. Clinton said. "And does news coverage engender so much cynicism and distrust among young people that they grow up with no faith in their institutions?"

The conference, held in an auditorium at the Lucile Salter Packard Children's Hospital at Stanford, was sponsored by Children Now, an advocacy group, as well as Stanford University and the University of California at Los Angeles Center for Communication Policy.

Researchers are continuing to debate whether news coverage of violence perpetuates violence itself, Mrs. Clinton said. But she suggested that watching and reading about violence exacted a clear psychological and emotional toll on children, particularly in an age when fewer children have adults who monitor them.

Incessant television and newspaper accounts of drive-by shootings, murders and kidnappings may at the same time glamorize those acts and make them seem normal, prompting children to become frightened and fatalistic, she said.

When violence dominates the airwaves and newspapers, Mrs. Clinton said, it can also perpetuate damaging stereotypes both of minority groups and women. For example, she said, news reports often show black and Hispanic children committing crimes and adults punishing them.

After her speech, Mrs. Clinton answered questions from students. One student, Lydia Cheng, a high school student from San Jose, Calif., told Mrs. Clinton that she was worried that television news presented politicians and policymakers with false images of children. She asked Mrs. Clinton where she got her ideas about children.

Abortion Foe's Defense Argues Brainwashing

Special to The New York Times

PENSACOLA, Fla., March 4 — As the defense neared the close of its case, the man accused of killing an abortion doctor here last year broke down and wept today when a local anti-abortion leader, John Burt, described the burial of two dismembered fetuses recovered from a Dumpster.

Defense lawyers have asserted that Mr. Burt's graphic depictions and videotapes of abortions provoked the defendant, Michael F. Griffin, to kill Dr. David Gunn.

Mr. Griffin, who had sat quietly throughout most of the trial, is charged with murder in the slaying of Dr. Gunn, who was shot three times in the back outside Pensacola Women's Medical Services last March 10.

Under questioning by a defense lawyer, Bill Eddins, Mr. Burt described showing videotapes of abortions as well as two dismembered aborted fetuses about 3½ months old to Mr. Griffin and his wife, Patricia.

"Patricia cried, but Michael was just quiet, not disturbed, at least outwardly," Mr. Burt said.

Defense lawyers contend that Mr. Griffin was "influenced" or "brainwashed" by Mr. Burt. Mr. Griffin's chief lawyer, Robert Kerrigan, said that if Mr. Griffin did fire the shots that killed Dr. Gunn, it was in the heat of a religious passion aroused by Mr. Burt's inundating him with anti-abortion literature and materials.

In other testimony, Paula Leonard, Dr. Gunn's girlfriend, said that for months before the doctor was shot, Mr. Burt had harassed and stalked both her and Dr. Gunn and had even led a demonstration in front of her house.

Ms. Leonard, a divorced mother, testified that Mr. Burt had taunted her with suggestions like "Why don't you find a real man and daddy for your kids instead of a butcher." She said on several occasions Mr. Burt had followed her to her mother's house after work when she would pick up her children.

How Far Would He Go?

"It was frightening," said Ms. Leonard, who also testified that exchanges between Mr. Burt and Dr. Gunn had escalated in the months just before the shooting.

Mr. Burt, a longtime abortion opponent, testified that he believed life began at conception and that anything "short of that" was "taking a life" was acceptable. That, he said, included trespassing and intimidation, but he denied stalking Ms. Leonard, or following her or taking photo-

Did anti-abortion material provoke an act of violence?

graphs of her children.

Asked by Mr. Eddins whether he believed in the use of violence in defense of the unborn, Mr. Burt said, "That depends on what you call violence."

Mr. Burt also said he did not object to trespassing at or even burning clinics. "A clinic's just brick and mortar, it's not flesh," Mr. Burt said. As for using violence, he said it was acceptable "if that is the way God speaks to some."

'These Videos Show the Truth'

"Have you ever heard God speak?" Mr. Eddins asked.

"No, sir," Mr. Burt responded angrily. He admitted that after a trio of clinics were bombed on Christmas 1984 in Pensacola he had stated "We're in a battle between good and evil. I can't help it if what I do inspired someone to go off the deep end."

After defense lawyers played a videotape to refresh his memory, Mr. Burt agreed that shortly after Dr. Gunn was shot he appeared on a television talk show and said "If I am a general with troops under me and I give them a game plan and send them out, I can't be responsible for every soldier in that army."

Mr. Burt also testified that he had given Mr. Griffin abortion videotapes titled "The Hard Truth" and "A Song for David" and various pieces of graphic literature. He said he had also shown Mr. Griffin dismembered fetuses in jars before burying them in small coffins during a ceremony. But he denied urging Mr. Griffin to kill anyone.

Mr. Burt said he used the videos to show that the product of abortion was "not a blob of tissue."

"These videos show the truth of what's going on in the clinics," he said.

Following defense testimony, the state said it would have no rebuttal witnesses and Judge John Parham closed the trial for the night.

Closing arguments will be heard early Saturday, and the jury is expected to begin its deliberations by mid- or late afternoon.