Public health

The world report on violence and health

Etienne G Krug, James A Mercy, Linda L Dahlberg, Anthony B Zwi

In 1996, the World Health Assembly declared violence a major public health issue. To follow up on this resolution, on Oct 3 this year, WHO released the first *World Report on Violence and Health*. The report analyses different types of violence including child abuse and neglect, youth violence, intimate partner violence, sexual violence, elder abuse, self-directed violence, and collective violence. For all these types of violence, the report explores the magnitude of the health and social effects, the risk and protective factors, and the types of prevention efforts that have been initiated. The launch of the report will be followed by a 1-year Global Campaign on Violence Prevention, focusing on implementation of the recommendations. This article summarises some of the main points of the world report.

About 4400 people die every day because of intentional acts of self-directed, interpersonal, or collective violence. Many thousands more are injured or suffer other non-fatal health consequences as a result of being the victim or witness to acts of violence. Additionally, tens of thousands of lives are destroyed, families shattered, and huge costs are incurred in treating victims, supporting families, repairing infrastructure, prosecuting perpetrators, or as a result of lost productivity and investment.

This week, WHO sounds the alarm by releasing the first *World Report on Violence and Health*[1] and launching a Global Campaign on Violence Prevention. The report analyses a broad spectrum of violence including child abuse and neglect by care givers, youth violence, intimate partner violence, sexual violence, elder abuse, self-directed violence and collective violence. For all these types of violence, the report explores the magnitude and effect in different cultural, social, and economic contexts and describes the types of prevention efforts that have been initiated. WHO intends to attract greater attention and draw in resources for violence prevention and to stimulate action at local, national, and international levels.

History of violence as a public health issue

In many countries, violence prevention is still a new or emerging field in public health. The public health community has started only recently to realise the contributions it can make to reducing violence and mitigating its consequences. In 1949, Gordon called for injury prevention efforts to be based on the understanding of causes, in a similar way to prevention efforts for communicable and other diseases.[2] In 1962, Gomez, referring to the WHO definition of health, stated that it is obvious that violence does not contribute to “extending life” or to a “complete state of well-being”. He defined violence as an issue that public health experts needed to address and stated that it should not be the primary domain of lawyers, military personnel, or politicians.[3]

The attention devoted to violence prevention by public health experts has increased substantially since the 1970s; the number of publications on violence listed in Medline has risen by 550% (from 2711 in the 1970s to more than 8000 in the 1990s). During the same period, the total number of articles listed in Medline less than doubled. In addition to undertaking scientific research, several countries developed other activities related to violence, mainly in the area of data collection and services for victims. The number of civil society organisations and activities directed at responding to gender-based violence against women also rose steeply. Efforts to put violence on the global public health agenda culminated in 1996 with the adoption of a resolution by the World Health Assembly, the annual gathering of all ministers of health.[4] This resolution declared violence a major global public health issue and called for increased action.

Why should the public health sector be involved in violence prevention?

The public health sector is directly concerned with violence not only because of its huge effect on health and health services, but also because of the significant contributions that can and should be made by public health workers in reducing its consequences. Public health can benefit efforts in this area with its focus on prevention, scientific approach, potential to coordinate multidisciplinary and multisectoral efforts, and role in assuring the availability of services for victims.

Public health complements existing approaches to violence, which are mainly reactive, by focusing on changing the behavioural, social, and environmental factors that give rise to violence.[5] This vision is grounded in traditions and concepts of public health that have been successfully applied to reducing other public health problems such as smallpox, motor vehicle injuries, and poliomyelitis. There is growing evidence for, and commitment to, the idea that violence prevention works. Public health also has a strong emphasis on using scientific evidence when making policies. If we are to be successful in preventing violence, prevention policies and programmes must be firmly grounded in science, as in other successful public health efforts.

Violence prevention activities typically involve partnerships across sectors of society, scientific

Lancet 2002; **360:** 1083–88

Injuries and Violence Prevention Department, Non Communicable Diseases and Mental Health, WHO, Geneva, Switzerland (E G Krug MD); **Division of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, GA, USA** (J A Mercy PhD, L L Dahlberg PhD); **and School of Public Health and Community Medicine, University of New South Wales, Sydney, NSW, Australia** (Prof A B Zwi PhD)

Correspondence to: Dr E G Krug, Injuries and Violence Prevention Department, WHO, Av Appia 20, 1211 Geneva, Switzerland (e-mail: kruge@who.int)

For personal use. Only reproduce with permission from The Lancet Publishing Group.

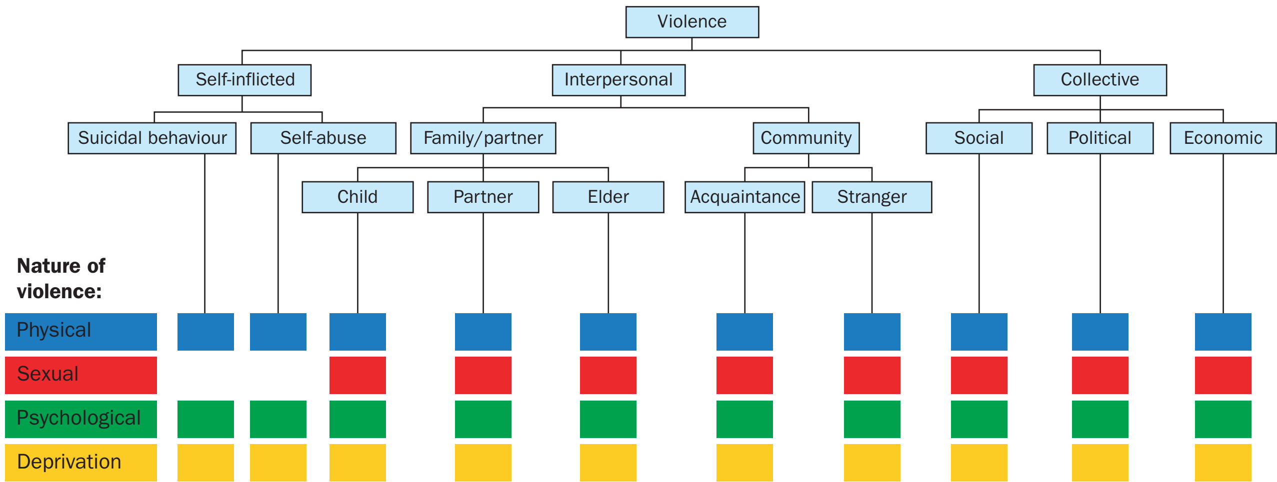

Figure 1: **Types of violence**

disciplines, and organisations. The central role of communities in preventing violence has also become a common theme. Public health has a long-standing commitment to supporting and aiding communities to solve their own health problems. Public health also plays an important part in assuring that necessary health services are available in communities.[6] This role can be extended to health services to reduce the severity and duration of the physical or psychological injuries and disabilities of people injured in violent incidents. Clearly, for example, emergency response and trauma systems are a critical health-services component of comprehensive approaches to violence prevention and management.

The report and what it will achieve

Overview

The report is a result of 3 years of work by more than 160 experts from more than 70 countries and regional consultations held in Africa, the Americas, Asia, Europe, and the Middle East. Much of the available information regarding violence and health at the global level has been compiled in one document. It is the first time that WHO has taken such a clear and visible stand in favour of violence prevention. With endorsements of political leaders such as Nelson Mandela, Kofi Annan, and Oscar Arias the report will be a powerful tool for mobilising decision-makers around the world. The Director General of WHO has clearly committed the organisation to playing an important part in violence prevention: "While public health does not offer all the answers to this complex problem, we are determined to play our role in the prevention of violence worldwide. This report will contribute to shaping the global response to violence and to making the world a healthier and safer place for all."

Definition and types of violence

The report uses the definition of violence developed by a WHO working group in 1996: "The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation."[7] This particular definition encompasses all types of violence and covers the wide range of acts of commission and omission that constitute violence and outcomes beyond deaths and injuries.

In the report, violence is divided into three broad categories: self-inflicted, interpersonal, and collective (figure 1). Each category is subdivided to reflect specific types of violence, settings of violence, and nature of violent acts (physical, sexual, psychological, and deprivation or neglect). Although analysis of specific types of violence is worthwhile, it is also important to understand their links. For example, victims of child abuse have an above average chance of becoming involved in aggressive and violent behaviour as adolescents and adults,[8–10] and sexual abuse during childhood or ado-

Rights were not granted to include this image in electronic media. Please refer to the printed journal.

Sébastien Godefroy

A battered woman in an establishment for women in difficulty

For personal use. Only reproduce with permission from The Lancet Publishing Group.

lescence has been linked to suicidal behaviour.[11] Many risk factors, such as alcohol abuse, the availability of firearms, or socioeconomic inequalities are also common in most types of violence. These links are important because they show the potential for prevention of several types of violence by interventions to address a few key risk factors. They also support the need for greater collaboration between groups working on the prevention of different types of violence.

Magnitude

Global and national data are very scarce. However, it is estimated that 1·6 million people died from violence in 2000,[12] which corresponds to 28·8 per 100 000 population. Almost half these deaths were suicides, nearly a third were homicides, and a fifth were war related. Rates vary considerably between and within countries.

Without reliable data, global estimates for the different types of abuse are difficult to make. However, the widespread nature of violence is clear: in 48 population-based studies from around the world, between 10% and 69% of women reported having been physically assaulted by an intimate partner during their lifetime;[13] about 20% of women and 5–10% of men reported having been sexually abused as children;[14,15] and the results of the few population-based studies on abuse of elderly people show that between 4% and 6% are abused in some way in their homes.[16–20]

Much research has shown that the health consequences of violence are far broader than death and injuries. Victims of violence are at risk of psychological and behavioural problems, including depression, alcohol abuse, anxiety, and suicidal behaviour, and reproductive health problems, such as sexually transmitted diseases, unwanted pregnancies, and sexual dysfunction.[13,21–23]

Causes

Violence cannot be attributed to a single factor. Its causes are complex and occur at different levels. To represent this complexity, the report uses an ecological model with four levels.[24–30] The first level identifies biological and personal factors that influence how individuals behave and increase their likelihood of becoming a victim or perpetrator of violence: demographic characteristics (age, education, income), personality disorders, substance abuse, and a history of experiencing, witnessing, or engaging in violent behaviour.

The second level focuses on close relationships, such as those with family and friends. In youth violence, for example, having friends who engage in or encourage violence can increase a young person's risk of being a victim or perpetrator of violence.[31,32] For intimate partner violence, the most consistent marker at this level of the model is marital conflict or discord in the relationship. In elder abuse, important factors are stress due to the nature of the past relationship between the abused person and the care giver or because of overcrowded living conditions.

The third level explores the community context—ie, schools, workplaces, and neighbourhoods. Risk at this level may be affected by factors such as the existence of a local drug trade, the absence of social networks, and poverty. All these factors have been shown to be important in several types of violence.

Finally, the fourth level looks at the broad societal factors that help to create a climate in which violence is encouraged or inhibited: the responsiveness of the criminal justice system, social and cultural norms regarding gender roles or parent-child relationships, income inequality, the strength of the social welfare system, the social acceptability of violence, the availability of firearms, the exposure to violence in mass media, and political instability.

Rights were not granted to include this image in electronic media. Please refer to the printed journal.

AP/Kamenko Pajic

Million Mom March for gun control in Washington DC, USA

Lessons learned about prevention

The ecological model can also be used as a framework for violence prevention. To prevent violence it is necessary to act across several different levels at the same time. Programmes focusing on individuals tend to encourage positive attitudes and behaviour in children and young people and can change the behaviour of individuals who have already become violent. Relationship approaches are used to influence interactions inside families and negative influences from peers. Community-based efforts can stimulate community action or focus on the care and

For personal use. Only reproduce with permission from The Lancet Publishing Group.

support of victims. Finally, societal approaches focus on economic conditions, cultural norms, and broad social influences such as mass media.

Our understanding of the nature and prevention of the major types of violence suggests some common directions. First, families play a fundamental part in influencing the propensity for violent behaviour. Families can exert both protective and risk-inducing influences on the likelihood that their children will engage in interpersonal violence and suicidal behaviour as they grow older. The creation of environments that enhance the ability of families to protect their children from violence will be a key activity. Efforts to provide parents with information they can use to raise their children more effectively in difficult environments seems another promising direction.

Rights were not granted to include this image in electronic media. Please refer to the printed journal.

Panos Pictures

Graffiti against violence, Calcutta, India

Childhood exposure to violence in the form of physical, sexual, or emotional abuse, neglect, or even witnessing violence in the home has a significant effect on the wellbeing of children. Childhood exposure to violence is a risk factor for a range of risk behaviours and disorders (eg, smoking, obesity, high-risk sexual behaviour, and depression) that are, in turn, causally related to other major public health problems such as cancer, heart disease, sexually transmitted disease, and suicide.[33] Early interventions to reduce childhood exposure to violence are key factors to reduce the far-reaching consequences of violence and its expression by children as they grow into adolescents and adults.

Social norms and values can have a powerful role in justifying the victimisation of women and children. Suicidal behaviour and even war are also more easily justified in certain cultural contexts. Much attention has to be paid to the varied social and cultural traditions that exist across the world. The notion that violence towards women, children, or other human beings can be justified needs to be reconsidered given the enormous health and social costs that violence exacts from victims and societies. Promotion of norms and values in which violence is depicted as illegitimate and irresponsible could be very important in creating social contexts that are intolerant of violence and are considerate to its victims.

Economic conditions are both causes and effects of violence. Poor people bear a disproportionate share of the public health burden of violence in almost every society. Income inequality, in particular, is associated with national homicide rates.[34] Interpersonal violence and war impede economic development by increasing the costs of health and security-related services, reducing productivity and property values, disrupting human services, and undermining governance. The threat of violence can destabilise the economies of nations and regions by compromising the establishment and viability of businesses. Consequently, we cannot separate economic policies and programmes from violence prevention. Comprehensive approaches to violence prevention should include efforts to promote positive economic development, especially in ways that seek to reduce inequities.

The WHO report shows that early childhood interventions, such as home visits, reduce maltreatment of children and are among the most promising interventions for long-term reduction in violence among young people. Parenting and family therapy programmes also have positive, long-term effects on violent and delinquent behaviour and are cost effective. Programmes that emphasise life-skills and social competency are promising approaches to address interpersonal violence, and treatment for mental disorders and behavioural therapy programmes can reduce suicidal behaviour. Other measures, such as reducing access to tools for suicide and homicide, have reduced rates of these incidents in some settings. The report also shows, however, that few programmes have been rigorously assessed. There is also an imbalance in focus—community and societal strategies have been underemphasised by comparison with programmes addressing individual and relationship factors.

Proposed way ahead

National plans of action need to be developed in collaboration with all relevant agencies to ensure that governmental and non-governmental agencies agree priorities and objectives, define one another's responsibilities, and work together on achieving these goals. Plans should include review and reform of legislation and policy, building data collection and research capacity, strengthening services for victims, and developing and assessing prevention responses. To ensure that the plan moves beyond words to action, a specific organisation must be mandated to monitor and report periodically on progress.

Our understanding of the magnitude and causes of violence needs to be improved. Data for the human, social, and financial costs of violence are important for understanding the issue, setting priorities, and advocating for increased prevention efforts. However, the quantity and quality of data are poor all over the world. Furthermore, data are often not comparable across countries and regions because of differences in definition, data collection methods, and classification systems. Greater efforts are needed to collect data in a standard way and ensure its wide dissemination. Although progress has been made in understanding the factors that cause violence and those that contribute to its prevention, much more research is needed, especially into broader social and cultural factors, including those related to globalisation.

For personal use. Only reproduce with permission from The Lancet Publishing Group.

One of the main areas the report draws attention to is investment in primary prevention: early intervention to prevent children developing into perpetrators of violence. Several primary prevention interventions show promise. Violence prevention efforts need to be integrated into social and educational policies and thereby reduce gender and social inequalities, which are major risk factors for most types of violence. Inequalities can be addressed only by an array of interventions including legal reforms, strengthening of social protection services, education, and advocacy.

One area where the public health sector has an important responsibility is in assuring the availability of services for victims of violence. Emergency and long-term care services need to be improved so that they provide a comprehensive response for victims of violence. Common taboos often prevent recognition of, and services for, sexual violence, self-inflicted violence, and abuse of children, women, or elderly people. Furthermore, efforts should be made to provide a response that integrates the medical, legal, and social services that victims might need.

Many agencies are working towards addressing violence at the international or national level. However, few mechanisms exist to promote collaboration between agencies and specialties. WHO held a meeting to increase collaboration across UN agencies, which led to the publication of *The Guide to UN Resources and Activities for the Prevention of Interpersonal Violence*.[35] In the Americas, the Inter-American Coalition on Violence Prevention (http//www.iacpv.org) builds on the strengths of six agencies to develop multisectoral violence prevention: Centers for Disease Control and Prevention (CDC); Inter-American Development Bank; Organization of American States; Pan-American Health Organization; United Nations Education, Scientific, and Cultural Organization; and the World Bank. The coalition's main objectives are to raise awareness among decision makers, opinion makers, and civic leaders about the social and economic costs of violence; to promote the need to transcend traditional crime-fighting approaches based on control, and to promote those emphasising prevention; and to establish coordination procedures between multilateral organisations to enhance the success of interventions at national and local levels.

Adherence to international treaties and human rights mechanisms needs to be promoted and strengthened. Various international instruments of direct relevance for violence prevention have been signed in the past few decades. Countries could intensify efforts to ratify these instruments and adapt their national legislation accordingly. Finally, practical international responses to the global drugs and arms trade need to be sought. Because of their large and global effects, even small successes in this area might change the lives of many people.

What challenges does the movement to prevent violence face?

The movement to prevent violence faces many challenges. First and foremost, we need to convince policy makers, ministers of health, and the public that violence prevention programmes and policies can be cost effective compared with alternatives such as incarceration. Although more scientific evidence is needed in many areas, good evidence is already available for some types of violence. For example, in an economic analysis of several violence prevention strategies compared with incarceration in California, incentives for high school graduation and parental training were more cost effective than a repeat offender minimum sentence incarceration approach such as the three strikes law.[36]

Another major challenge is to convince national and local public health institutions that violence prevention is a legitimate and important part of their mission. Ministers of health can be important actors and facilitators for violence prevention. At present, violence prevention is not generally viewed as a public health priority, much less a legitimate public health activity in most ministries of health. However, this attitude is slowly changing. For example, the ministry of health in Mozambique has supported the creation of a national violence prevention plan, and schools of public health are increasingly offering courses in violence epidemiology and integrating violence prevention topics into their curricula.

A significant challenge is the creation of a sense of ownership and responsibility for addressing the problem of violence at the community level. Empowerment of communities is essential, because many of the most important solutions will have to be implemented locally. The value of community ownership and a sustained commitment to violence prevention has been shown powerfully in Bogota, Colombia, where three successive mayors have supported and continued to implement a multifaceted set of violence prevention policies and programmes, including restrictions on the sale of alcohol and firearm carrying on weekends and special occasions, community mobilisation, and infrastructure development. Homicide rates in Bogota have fallen substantially, and this decline is associated, in part, with the intermittent city-wide ban on carrying firearms.[37]

Global leadership will be needed to help stimulate and provide technical assistance to violence prevention efforts across the world. Without the creation of international organisations with a capacity for such leadership, development and implementation of effective violence prevention policies and programmes will proceed slowly and with difficulty. Moreover, such leadership can improve the ability of nations to learn from one another.

To prevent violence we must be able to measure and monitor it. Development of surveillance systems to collect basic information systematically and continuously on the magnitude and character of injuries and deaths from violence is a challenge in all parts of the world. Fortunately, many efforts are underway to develop such systems. For example, earlier this year, WHO and CDC published *Injury Surveillance Guidelines*. Standards for the classification of injury data are also being developed: the international classification of external causes of injury (http://www.iceci.org) is intended to help researchers and prevention practitioners to understand more precisely the characteristics of the injuries they are studying, answer questions on the circumstances of injuries, and provide more detailed information about specific injury categories such as assaults and suicide attempts. These standards have been used to develop an emergency department injury surveillance system in Jamaica.[38] Information from this system is being used to guide violence prevention activities.

Conclusion

With the publication of the *World Report on Violence and Health*, the international community now has a compilation of some of the best available knowledge on the prevention of violence and the role of the public health sector. The report should serve as catalyst for debate and action. During the 1-year campaign that starts this week, WHO and its partners will bring this debate to countries

For personal use. Only reproduce with permission from The Lancet Publishing Group.

around the world to ensure the wide use of the report and the implementation of its recommendations into policies and action.

Conflict of interest statement
The authors of this article co-edited the WHO report.

References

1 Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, eds. World report on violence and health. Geneva: World Health Organization, 2002.
2 Gordon JE. The epidemiology of accidents. *Am J Public Health* 1949; 504–15.
3 Abad Gomez, H. Violence requires epidemiological studies. *Tribuna Medic*a 1962; **2:** 1–12.
4 World Health Assembly. Prevention of violence: public health priority (WHA 49,25). Geneva: World Health Organization, 1996.
5 Mercy JA, Rosenberg ML, Powell KE, Broome CV, Roper WL. Public health policy for preventing violence. *Health Aff (Millwood)* 1993; Winter **12:** 7–29.
6 Committee for the Study of the Future of Public Health, Division of Health Care Services, Institute of Medicine. The future of public health. Washington: National Academy Press, 1988.
7 WHO global consultation on violence and health. Violence: a public health priority (WHO/EHA/SPI.POA.2). Geneva: World Health Organisation, 1996.
8 Farrington DP. The family backgrounds of aggressive youths. In: Hersov LA, Berger M, Shaffer D (eds). Aggression and antisocial behavior in childhood and adolescence. Oxford: Pergamon Press, 1978: 73–93.
9 McCord J. A forty year perspective on the effects of child abuse and neglect. *Child Abuse Negl* 1983; **7:** 265–70.
10 Widom CS. Child abuse, neglect, and violent criminal behavior. *Criminology* 1989; **27:** 251–72.
11 Paolucci EO, Genuis ML, Violato C. A meta-analysis of the published researchon the effects of child sexual abuse. *J Psychol* 2001; **135:** 17–36.
12 Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, eds. Statistical annex: world report on violence and health. Geneva: World Health Organization, 2002.
13 Heise LL, Ellsberg M, Gottemoeller M. Ending violence against women (population reports, series L, no 11). Baltimore: Johns Hopkins University School of Public Health, Center for Communications Programs, 1999.
14 Finkelhor D. The international epidemiology of child sexual abuse. *Child Abuse Negl* 1994; **18:** 409–17.
15 Finkelhor D. Current information on the scope and nature of child sexual abuse. *Future Child* 1994; **4:** 31–53.
16 Pillemer K, Finkelhor D. Prevalence of elder abuse: a random sample survey. *Gerontologist* 1988; **28:** 51–57.
17 Podnieks E. National survey on abuse of the elderly in Canada. *J Elder Abuse Negl* 1992; **4:** 5–58.
18 Kivelä SL et al. Abuse in old age: epidemiological data from Finland. *J Elder Abuse Negl* 1992; **4:** 1–18.
19 Ogg J, Bennett GCJ. Elder abuse in Britain. *BMJ* 1992; **305:** 998–99.
20 Comijs HC, Pot AM, Smit JH, Bouter LM, Jonker C. Elder abuse in the community: prevalence and consequences. *J Am Geriatr Soc* 1998; **46:** 885–88.
21 Fergusson DM, Horwood MT, Lynskey LJ. Childhood sexual abuse and psychiatric disorder in young adulthood: II psychiatric outcomes of childhood sexual abuse. *J Am Acad Child Adolesc Psychiatry* 1996; **35:** 1365–74.
22 Davidson JR, Hughes DC, George LK, Blazer DG. The association of sexual assault and attempted suicide within the community. *Arch Gen Psychiatry*, 1996, **53:** 550–55.
23 Wiederman MW, Sansone RA, Sansone LA. History of trauma and attempted suicide among women in a primary care setting. *Violence Vict* 1998; **13:** 3–9.
24 Garbarino J, Crouter A. Defining the community context for parent-child relations: the correlates of child maltreatment. *Child Dev* 1978; **49:** 604–16.
25 Bronfenbrenner V. The ecology of human development: experiments by nature and design. Cambridge: Harvard University Press, 1979.
26 Garbarino J. Adolescent development: an ecological perspective. Columbus: Charles E Merrill, 1985.
27 Tolan P, Guerra N. What works in reducing adolescent violence: an empirical review of the field. Boulder: University of Colorado, Center for the Study and Prevention of Violence, 1994.
28 Heise LL. Violence against women: an integrated ecological framework. *Violence Against Women* 1998; **4:** 262–90.
29 Schiamberg LB, Gans D. An ecological framework for contextual risk factors in elder abuse by adult children. *J Elder Abuse Negl* 1999; **11:** 79–103.
30 Carp RM. Elder abuse in the family: an interdisciplinary model for research. New York: Springer, 2000.
31 Thornberry TP, Huizina D, Loeber R. The prevention of serious delinquency and violence: implications from the program of research on the causes and correlates of delinquency. In: Howell JC, Krisberg B, Hawkins JD, Wilson JJ, eds. Sourcebook on serious, violent and chronic juvenile offenders. Thousand Oaks: Sage, 1995: 213–37.
32 Lipsey MW, Derzon JH. Predictors of serious delinquency in adolescence and early adulthood: a synthesis of longitudinal research. In: Loeber R, Farrington DP, eds. Serious and violent juvenile offenders: risk factors and successful interventions. Thousand Oaks: Sage, 1998: 86–105.
33 Felitti VJ, Anda RF, Nordenberg D, et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) study. *Am J Prev Med* 1998; **14:** 245–58.
34 Fajnzylber P, Lederman D, Loayza N. Inequality and violent crime. Washington: Regional Studies Program, Office of the Chief Economist for Latin America and the Caribbean, World Bank, 1999.
35 Guide to United Nations resources and activities for the prevention of interpersonal violence (WHO/NMH/VIP/02.05). Geneva: World Health Organization, 2002.
36 Greenwood PW, Model KE, Rydell CP, Chiesa J. Diverting children from a life of crime: measuring costs and benefits. Santa Monica: RAND, 1996.
37 Villaveces A, Cummings P, Espitia VE, Koepsell TD, McKnight B, Kellermann AL. Effect of a ban on carrying firearms on homicide rates in 2 Colombian Cities. *JAMA* 2000; **283:** 1205–09.
38 Ward E, Durant T, Thompson M, Gordon G, Mitchell W, Ashley D, and the VRISS working group. Implementing a hospital-based violence-related injury surveillance system—a background to the Jamaican experience. *J Injury Control Safety Promotion* (in press).

For personal use. Only reproduce with permission from The Lancet Publishing Group.