To Prevent, React, and Rebuild: Health Research and the Prevention of Genocide

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Objective. To develop an approach to the primary prevention of genocide, based on established public health-based violence prevention methods derived from a variety of high-risk settings.

Data Sources. (1) Peer-reviewed literature in the fields of public health, violence/injury prevention, medicine, economics, sociology, psychology, history, and genocide studies, (2) demographic and health data bases made available by governments and international organizations, (3) reports on recent episodes of genocide published by international and nongovernmental organizations, (4) newspaper and journalistic accounts of recent and past genocides, (5) archival testimonies of genocide victims and perpetrators, and (6) court transcripts of international genocide prosecutions.

Study Design. The research was conducted as a medical-historical policy analysis synthesizing data within the following framework: (1) Assessment of current violence and injury prevention models for suitability in the prevention of extreme, population-wide violence, (2) analysis of morbidity and mortality data to quantify the impact of genocide on the health of populations, (3) making an inventory of the known societal risk factors for genocidal violence, (4) identification of the theorized, modifiable attitudinal risk factors for genocidal behavior within a population health model, and (5) assessment of existing projects targeting primary violence and injury prevention in high risk jurisdictions, for future adaptation within a structured, public health approach.

Principal Findings. Mortality rates due to genocidal violence are far in excess of other public health emergencies including malaria and HIV/AIDS. The immediate and long-range health consequences of genocide include the sequelae of infectious diseases, organ system failure, and psychiatric disorders, conferring an increased burden of disease on affected populations for multiple subsequent generations. The impact of genocide on local health economies is catastrophic, and the opportunity costs of diverting scarce global health dollars toward ameliorating genocide related outcomes are substantial. Structural risk factors for genocide within societies include: totalitarian government, exclusionary ideologies, armed conflict, economic hardship, and inaction of bystander nations. Proposed psychological risk factors for genocidal behavior include: moral exclusion, authority orientation, action in self-interest, desensitization, and compartmentalized thinking. Violence and injury prevention models, incorporating what is currently known about the societal and behavioral risk factors for genocide in high-risk populations, may be modified to address the primary prevention of catastrophic violence on a population-wide scale. A number of existent global peace building

initiatives may serve as models for the design of future prevention initiatives in high-risk, pre-genocide jurisdictions.

Conclusions. Our analysis suggests that genocide is one of the most pressing threats to the health of populations in the twenty-first century. Recent advances in the public health discipline of violence prevention provide a blueprint for approaches to primary genocide prevention based on epidemiological methods.

Key Words. Violence/prevention, human rights, public health, public policy, health promotion/organization

Genocide, a term defined by the United Nations General Assembly in 1948, is defined as a specific series of acts committed with intent to destroy, in whole or in part, a national, ethnical, racial, or religious group, including:

- a. Killing members of a targeted group;
- b. Causing serious bodily or mental harm to members of the group;
- c. Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part;
- d. Imposing measures intended to prevent births within the group;
- e. Forcibly transferring children of the group to another group (Kuper 1981).

Of genocide, Kuper writes, "the word is new, the crime ancient" (Kuper 1981). The sacking of Carthage by Rome in 149 B.C. the massacre of Huguenots in sixteenth-century France, the murder of 800,000 Armenians in the Ottoman Empire in 1915, the elimination of six million Jews and one million Sinti and Roma by the Nazis between 1939 and 1945, the execution of 1.7 million Cambodians between 1975 and 1979, and the killing of 800,000 Tutsis and Hutu moderates in Rwanda in 1994 are but a few examples of early and modern episodes of genocide (Du Preez 1994; Hancock 1998; Human Rights Watch 1999; Kiernan 1997; Kuper 1981). Genocide is a global phenomenon and has been present in every historical period. Genocide-specific mortality rates are high, increasing, and far in excess of mortality rates

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for other catastrophic epidemics. The health sequelae of genocide may be chronic, lifelong, and difficult to treat, increasing the burden of disease in affected communities for decades after the killing has ended. The resultant impact of genocide on the global health economy has been, and continues to be, substantial.

It is not widely held that genocide is either preventable or a population health issue. Genocide prevention is typically framed as a political and national defense matter, and resistance to participating in genocide is frequently said to be virtually impossible. None of these statements are wholly accurate. Political and military interventions have not prevented genocide in this century. Further, although genocide is a complex phenomenon, social scientists since World War II have succeeded in unraveling many of its precursors, and we now know much about how and why individuals have successfully resisted participating in every modern genocide. Finally, advances in the science of violence and injury prevention now make it possible to consider primary genocide prevention from public health-based, as well as political and military, perspectives.

In October 2002 the World Health Organization published the *World Report on Violence and Health*, an exhaustive document characterizing the impact of violence and injury on global health, and bringing violence prevention into high relief as an international public health priority (Krug et al. 2002). However, for health care providers and organizations, the only preventive options for genocide remain primarily tertiary ones, aimed at ameliorating disabilities associated with survivorship long after genocidal violence has ended. In 2004, as the world soberly commemorates the tenth anniversary of the devastating Rwandan genocide, it is timely to reconsider the prevention of catastrophic violence within a full trajectory of health promotion principles. The paper that follows explores the global nature, health consequences, and possible preventive options for genocide, one of the most destructive forms of human violence, and seeks to answer the following questions: Is primary prevention of genocide possible? Can public health approaches to violence prevention be applied in addressing this compelling societal goal?

DATA AND METHODS

Specific Aims

This study was conducted with the following objectives:

1. To quantify the local and global impact of genocide on the health of populations, health services, and the health economy.

2. To assess the suitability of public-health-based violence and injury prevention models in the prevention of population-wide, catastrophic violence.
3. To list and assess what is currently known and theorized regarding the societal and psychological risk factors for genocidal behavior in individuals and groups, as a departure point for future genocide prevention research and practice within a public health model.
4. To review existing research and service programs addressing conflict resolution and violence prevention in high-risk settings, in order to identify practicable models for future genocide prevention initiatives.

Study Design

The research was conducted as a medical-historical policy analysis employing the following structure:

1. Analysis of morbidity and mortality data to quantify the impact of genocide on the health of local and global populations;
2. Construction of an inventory of the known structural and societal risk factors for genocidal violence;
3. Identification of the theorized and evidence-based attitudinal risk factors for the commission of genocidal violence in individuals and groups;
4. Assessment of current violence and injury prevention models for suitability in the prevention of extreme, population-wide, collective violence;
5. Evaluation of existing projects targeting primary prevention of catastrophic violence in high-risk settings, for adaptation within a structured, population health approach.

Data Sources

1. Peer reviewed literature in the fields of public health, with specific attention to data regarding successful methods of violence/injury prevention, health education, and population-based health risk reduction.
2. Peer reviewed data regarding the acute, intermediate, and long-range health effects of genocide on local and global populations.

3. Peer reviewed literature in the fields of clinical and social psychology, sociology, history, and genocide studies, for evidence-based and theorized risk factors for genocidal violence.
4. Demographic, economic, and health data bases published by international organizations, with specific attention to baseline population denominators and mortality statistics for a variety of comparative international epidemics, as well as health costs in pre-genocide and post-genocide jurisdictions.
5. Reports on recent episodes of genocide published by international and nongovernmental organizations
6. Court transcripts of international genocide prosecutions, journalistic accounts of recent and past genocides, and archival testimony of genocide victims and perpetrators, looking for evidence of the attitudinal risk factors outlined in the scholarly literature.

Guiding Public Health Models

Since the inauguration of the U.S. Center for Injury Prevention and Control in 1995, violence prevention has gradually entered the public health mainstream. In 1996, U.S. Surgeon General David Satcher observed that we must begin to think about violence prevention in the same way we think about a healthy diet (Satcher 1996).

Specialists focusing on violence prevention assert that violence, when viewed as a public health problem like any other, may be prevented. They advocate for special emphasis to be placed on primary violence prevention, as this approach lessens the consequences of violence for perpetrators and victims alike. Host (individual), agent-related (weapon), and environmental (sociocultural) antecedents are all considered in prevention models, and sustainable, targeted interventions are emphasized. All researchers working in the field underscore the critical importance of applying an organized approach, based on sound scientific expertise, in addressing the problem (Mercy 1988; Hammond 1993; Guerra 1994; Scott 1999; Dodge 2001).

The data obtained for this study were organized according to two methods: The *Public Health Approach* (to violence prevention) and the *Haddon Matrix* (for injury prevention). The Public Health Approach, promoted by the U.S. Centers for Disease Control, is frequently used as a framework for violence prevention research and intervention, and has been endorsed by the World Health Assembly resolutions on Violence and Health (Lett,

Kobusingye, and Sethi 2002). Using initial data collection and analysis to guide the development and evaluation of violence prevention programming, the Public Health Model is summarized below (Mercy 1993). In this analysis, sources were reviewed for data corresponding to one of these categories, and organized accordingly:

- **PROBLEM DEFINITION AND SURVEILLANCE** including demographic description and rate calculations, and assessment of those at highest risk for injury
- **RISK FACTOR IDENTIFICATION** comprising an analysis of all causative factors contributing the mode of violence being studied
- **DEVELOPMENT, TESTING, AND IMPLEMENTATION OF INTERVENTIONS** based on the information obtained in the first two steps
- **OUTCOME MEASUREMENT** and subsequent evolution of interventions based on results.

In addition, data were also organized into a Haddon Matrix, a method of analyzing and preventing physical and psychological harm due to potentially injurious events. Developed in 1968 by Dr. William Haddon Jr., a public health physician with the New York State Health Department, a Haddon Matrix divides each potentially injurious event into Human Factors, Agent Factors, and Environmental Factors leading to injury, and considers each of these factors in order to develop a thorough plan of injury prevention (Haddon 1980). Focusing on time periods before, during and after each incident with the possibility of injury, the Haddon Matrix has been applied recently to a number of problems involving prevention of injury associated with extreme, violent incidents (National Academy of Sciences 2003). Use of the Haddon Matrix facilitated analysis of data and consideration of interventions across a specific timeline, as well as from the vantage points of the victim, the perpetrator and the socio-political context. Figure 1 illustrates the Haddon Matrix used to organize our inquiry.

Guiding Sociopolitical Models

In January 2004 Prime Minister Göran Persson of Sweden convened the Final Stockholm International Forum on the Holocaust and Genocide “to gain an overall understanding of the problem of genocide . . . and thus pave the way for preventive action” (Stockholm International Forum 2004). Using the

Figure 1: The Haddon Matrix Adapted for an Approach to Genocide Prevention

	<u>Human</u> (Targeted Individuals)	<u>Agent</u> (Perpetrator/Weapon)	<u>Environment</u> (Physical/Social)
<u>Pre-Event</u>	Will genocide, with the potential to cause injury and death, occur?		
<u>Event</u>	When genocide has already started, will injury and death occur? Can it be stopped?		
<u>Post-Event</u>	After genocide, what will the outcome be? What types of secondary and tertiary prevention will be effective?		

report of the International Commission on Intervention and State Sovereignty (ICISS) as an intellectual template (Evans and Sahnoun 2001), Stockholm Forum 2004 participants are asked to consider best approaches to genocide prevention within three critical international responsibilities: (1) The Responsibility to Prevent Genocide (to address both the root and direct causes of internal conflict), (2) The Responsibility to React to Genocide (to respond to impending crisis with sanctions, international prosecution, and military intervention), and (3) The Responsibility to Rebuild after Genocide (to provide full assistance with recovery, reconstruction and reconciliation). It is intriguing to note that the key responsibilities outlined in the ICISS report correspond to the central public health constructs of *primary*, *late primary/secondary*, and *tertiary* violence prevention, respectively.

Much has been written in the sociopolitical literature regarding the Responsibility to *React* to Genocide, particularly with diplomatic, economic and military pressures. It is the purpose of this inquiry, however, to consider a robust definition and workable methods for engaging in the Responsibility to *Prevent* Genocide (i.e., engage in primary genocide prevention) through understanding and modifying the root causes of genocidal behavior in individuals and groups. Corresponding to an exploration of *Pre-event* factors and preventive techniques within a Haddon Matrix format, this phase of prevention serves as the central focus of the analysis presented here.

RESULTS

Surveillance and Rate Calculations

Impact on Population Health. Deaths resulting from genocide are estimated to have exceeded war-related mortality in every historical period (Rummel 1998). Table 1 compares war deaths and deaths resulting from *democide*, a term including genocide, *politicide* (targeted murder for political purposes), and *mass murder* (indiscriminate killing of any person or people). Even taking into account the less reliable data from antiquity, it is clear that targeted civilian populations are under greater threat from organized violence than are combatants in armed conflict. Based on these and similar statistics, scholars have characterized the twentieth century as the most violent and deadly in history (Elliot 1972; Markusen 1991; Sorokin 1962).

Genocide-related mortality in the latter half of the twentieth century far exceeded other public health emergencies of the same period. Of the 800,000 Jews living in Romania in 1939, only 400,000 were alive at the end of WW II (Kuper 1981). Assuming a constant number of deaths for each of the six years in question, all-cause mortality rates for Jews in Romania during that period ranged from 8,300/100,000 in the first year to 14,200/100,000 in the war's final year. Statistics from the 1994 genocide in Rwanda illustrate this point and are summarized in Table 2.

Table 1: Mortality for War and Democide: 5000 B.C. to A.D. 2000 (Rummel 1998)

	<i>5000 B.C.-A.D. 1900</i>	<i>Twentieth Century</i>
War Deaths	40,269,000	110,929,000
War Death Rate	290/100,000/yr	4,440/100,000/yr
Genocide Deaths	133,147,000	192,284,000
Genocide Death Rate	970/100,000/yr	7,700/100,000/yr

Table 2: Mortality Rates for Selected Public Health Emergencies in Sub-Saharan Africa: 1990–2000 (Common Market for Eastern Africa 2001; Caplan 2000; World Health Organization 1999b, 1998)

<i>Year</i>	<i>Cause</i>	<i>Mortality Rate</i>
1994	Genocide	12,100/100,000/yr
1997	Malaria	165/100,000/yr
1999	HIV/AIDS	553/100,000/yr

Conservatively estimated, 800,000 individuals, representing 11 percent of the entire Rwandan population, were killed between April and July of 1994 (Caplan 2000). Genocide-specific mortality for the susceptible population (Tutsis and politically moderate Hutus) was 12,100/100,000. The genocide prevented collection of other baseline health data for Rwanda in 1994. However, when compared to mortality rates for the latter years of the decade, genocide mortality was 20 times higher than the rate for HIV/AIDS (World Health Organization 1999b) and 70 times higher than the malaria mortality rate (World Health Organization 1999a). Thus, although Rwanda was located in the geographical center of two critical pandemics in the 1990s, the leading cause of death, by many-fold, was genocide.

The immediate health sequelae of genocide and the social disruption it creates include increased rates of low infant birth weights, perinatal mortality, malnutrition, and epidemic infectious disease for surviving victims and non-targeted refugees alike (Carballo, Simic, and Zeric 1996; Dvorjetski 1961; Goma Epidemiology Group 1995). For example, refugee health status during and after the Rwandan genocide is summarized in Table 3. Approximately 800,000 Rwandan Hutus fled to Zaire (renamed Democratic Republic of Congo in 1997), and 170,000 to Burundi (*MMWR* 1996). Crude mortality rates ranged from 0–80/100,000/day in Burundi to 340–540/100,000/day in Zaire. Both rates were far in excess of the crude mortality in pre-genocide Rwanda: 6/100,000/day (Goma Epidemiology Group 1995). The mortality in Zaire was among the highest recorded during recent emergencies (*MMWR* 1996). In Zaire, 90 percent of deaths occurred outside of health care facilities, suggesting that services were either overwhelmed or nonexistent (*MMWR* 1996).

The destructive and ubiquitous effects of genocidal violence result in additionally increased rates of acute and chronic disease in postgenocide societies. Immediate and long-range consequences include the sequelae of

Table 3: Highest Morbidity and Mortality Rates: Rwandan Refugees in Zaire and Burundi May–September, 1994 (*MMWR* 1996; Goma Epidemiology Group 1995)

<i>Indicator</i>	<i>Burundi</i>	<i>Zaire</i>
Crude Death Rate	0–80/100,000/day	340–540/100,000/day
Crude Death Rate—Unaccompanied Children		200–1200/100,000/day
Vibrio Cholera: Incidence	980/100,000/week	1300–1750/100,000/week
Meningococcal Meningitis: Incidence	54/100,000/week	
Acute Respiratory Infection: Incidence		390–518/100,000/week
Malnutrition (ageD 6–59 mos): Prevalence		18,000–23,000/100,000

traumatic assault, infectious diseases, malnutrition, and psychological torture. In one post-WWII Norwegian study of former Nazi prisoners, 79 percent of subjects demonstrated intellectual impairment on neuropsychological testing, 28 percent were found to have abnormal EEG patterns, and 84 percent demonstrated abnormalities on pneumoencephalograms (Eitinger 1981; Gronvik and Lonnum 1961). In another sample of 3,030 Rwandan children ages 8–18, 80 percent had heard and 70 percent had “seen with their own eyes” someone being killed or injured during the 1994 genocide. Eighty percent of these children hid themselves for protection during the violence. A majority suffered from symptoms of post-traumatic stress disorder (Dyregrov et al. 2000).

Organ system failure, neurological dysfunction, cognitive impairment, depression, chronic pain syndromes, and post-traumatic stress disorder have all been documented to be more prevalent in survivor groups than the general population (Carballo et al. 1996; Carlson and Rosser-Hogan 1991; Conn 2000; Eitinger 1980; Sadavoy 1997; Yaari et al. 1999). Tragically, intergenerational transmission of mental health sequelae has also been documented, with offspring of holocaust survivors reporting higher rates of current and lifetime post-traumatic stress disorder symptoms than control subjects, despite similar self-reported rates of traumatic experiences in both groups (Yehuda et al. 1998). Thus, an extended burden of disease may be conferred on communities already coping with a multiplicity of genocide-related health consequences.

Impact on Health Services. Population health and health services have been targeted for destruction in most modern episodes of genocide as a method of compounding the number of casualties. German public health officials during the Nazi era advocated not only for “quarantine” of Jews into “sealed” ghettos as a means of controlling typhus epidemics, but also insisted that food and medical services be withheld in order to facilitate the goal of increasing death rates through starvation (Browning 1988). During the war in the former Yugoslavia between 1992 and 1995, along with the protracted siege of Sarajevo cutting off food, clean water and medical supplies, Serbian forces selectively bombed hospital facilities as an additional method of advancing ethnic cleansing objectives (Carballo et al. 1996). In Rwanda, the deliberate murder of health professionals within the targeted minority groups lead to the death or flight of 60 to 80 percent of trained health care personnel in some regions of the country. Finally, in all of the aforementioned episodes of genocide, a subset of health professionals were fully complicit in murdering victims: by the “selection” of hospital patients for extermination, by the

administration of lethal gas or injections, or by ordering others to mete out machete blows (Horton 1999; Internews 1999; Lifton 1986).

Impact on Health Economics. While there is no “typical experience” from which to assess the health-related economic consequences of genocide, recent events in Rwanda provide some insight into this question. Prior to the violence that began in 1994, Rwanda spent approximately US\$100 million, or 5 percent of the country's GDP on health services (World Bank 2000). By the end of 1994, a similar level of expenditure was supporting dramatically increased health care needs, but other governments and international NGOs were providing 90 percent of these funds. In the first year following the genocide, international agencies were spending US\$1,000,000 per day to provide basic food and public health services to 1.9 million externally displaced Rwandans (Bureau for Humanitarian Assistance 1995; World Food Programme 1996), largely representing members of the non-targeted majority population fleeing the country. In addition, the United States contributed an additional US\$256 million to relief efforts internal to Rwanda.

Although the absolute value of this support is significant, it is important to view the magnitude of these figures in context. Short-run emergency aid amounted to just under half of the entire output of the Rwandan economy in the year before the genocide. Further, total U.S. support during the first year of the crisis amounted to 57 percent of the total amount requested by the U.S. Agency for International Development (USAID) to fund all of its development and relief programs in Africa for the following fiscal year (U.S. Office of Management and Budget 1995).

The consequences of the events of 1994 had additional global ramifications as scarce international resources were diverted to support the Rwandan emergency. One way to examine the cost impact of the genocide is to assess opportunity costs of the international relief aid that supported internally and externally displaced Rwandans. In the year following the genocide, although Rwanda had just 1.3 percent of the population of sub-Saharan Africa, approximately US\$80 was spent per Rwandan from U.S. unilateral support, leaving less than US\$0.50 per person for the remaining 98.7 percent of the region's population.

Risk Factor Analysis

Early Warning. Recent advances in the field of genocide prediction and early warning place the possibility of *pre-event*, or *primary* genocide prevention into a practicable framework. In 1998, at the request of the U.S. State Failure Task

Table 4: Risk Factors for Genocide and Politicide in Countries with International Wars and Regime Crises: 1955–2002 (Harff 2004)

<i>Risk Factor</i>	<i>Countries at Greater Risk</i>	<i>Countries at Lesser Risk</i>	<i>Relative Risks</i>
Occurrence of Prior Genocide since 1550	Prior genocide	No prior genocide	3.1
Magnitude of internal war and regime crises	High magnitude of upheaval in past 15 years	Low magnitude of upheaval in past 15 years	1.6
Ethnic character of the ruling elite	Elite represents a minority in a multiethnic society	Elite represents most or all groups	2.3
Ideological orientation of the ruling elite	Elite promotes exclusionary doctrines	Elite does not promote exclusionary doctrine	2.3
Type of regime	Autocracy	Partial or full democracy	3.0
Trade openness (exports+imports as % of GDP)	Low	High	2.5

Force convened by President Clinton, Dr. Barbara Harff developed a “workable and theoretically sound” database for the assessment of genocide risk and early warning. Utilizing six structural risk factors for genocide, Table 4 summarizes the most recent update of the Harff risk-assessment model (Harff 2004). In a retrospective validation of precision, the Harff model predicted with 93 percent accuracy the 36 episodes of collective conflict between 1955 and 2002 that led to genocide, and differentiated these episodes from 93 others that did not.

Currently, Dr. Harff places six countries in the “*very high risk*” category for genocide: Sudan, Burundi, Democratic Republic of Congo, Somalia, Algeria, and Afghanistan. Noting that predictive knowledge alone does not precisely identify *when* the situation in a high-risk location will deteriorate, she goes on to recommend that her predictive model be used to mobilize financial and humanitarian interventions, rescue operations, and “subtle and not so subtle” political pressures when highest risk status is assigned. Starting from this work, the development of a long-range approach to identifying and

modifying the Haddon Matrix *Pre-event* factors leading to genocide may be explored.

Structural Risk Factors. Over the past 50 years, researchers have ascertained that the risk of catastrophic violence is increased when a destructive amalgam of autocratic government, malevolent ideology, trying social conditions, and psychological conditioning is present. Societal factors increasing the likelihood of genocide include:

- **NONDEMOCRACY.** Genocide is carried out by governments holding a “high degree of centralized authority” (Chalk and Jonassohn 1990). Many authors characterize genocide as a crime of ruling powers (Fein 1993; Harff and Gurr 1989; Kuper 1981; Rummel 1995).
- **IDEOLOGY.** Ideologies alleging the superiority of a single societal group are particularly pernicious (Harff 1993). Nationalistic, racist, ethnocentric, and religious doctrines targeting “outsiders” fall into this category (Alvarez 2004; Fein 1984).
- **ARMED CONFLICT/WARFARE.** While genocide is a crime distinct from warfare, armed conflict obscures genocidal killing, obstructs victims’ calls for assistance, desensitizes bystanders to cruelty, and impedes intervention from outside states (Fein 1984). Concurrent warfare confuses international observers about the nature of genocidal conflict. Finally, governments may conflate warfare and genocide into a single function, utilizing a trained military for both purposes (Markusen and Mirkovic 1999).
- **ECONOMIC HARDSHIP.** In times of economic decline or scarcity, nondemocratic governments may feel permitted to increase inequitable treatment of disadvantaged groups (Harff 1993).
- **AMBIVALENCE OF PATRON NATIONS.** When empty threats of intervention or punishment are made by influential nations, governments may believe that there is nothing to lose by committing genocide within domestic borders (Fein 1993; Harff 1993). *Impunity* has led perpetrating governments to repeat and intensify atrocities against their own civilians.

Psychological Risk Factors. Psychological risk factors, defined as the emotional, attitudinal, and cognitive characteristics facilitating genocidal behavior or the condoning of genocidal violence, will increase the probability of genocide in

societies with conducive structural characteristics. The following are some of the psychological predictors of hands-on killing during genocide, as proposed in the social sciences literature:

- EXCLUSION FROM THE UNIVERSE OF OBLIGATION, including scapegoating, devaluation, demonization, and dehumanization of victims. Offenses against individuals outside of a society's *universe of obligation*, characterized as the "the range of people to whom the common conscience extends" (Fein 1984), are not acknowledged morally as crimes, and therefore, are not subject to penalty.
- AUTHORITY ORIENTATION, predisposing individuals and groups to seek personal safety in times of social turmoil by following the orders of charismatic leaders promising a hopeful future (Staub 1999).
- SELF-INTEREST ORIENTATION, inducing individuals to engage willingly in genocidal acts for career, financial, or sociopolitical advancement (Staub 1999).
- DESENSITIZATION. Noting that people "learn by doing," the psychologist Ervin Staub observes that gradual escalation of cruelty desensitizes perpetrators to victims' suffering (Staub 1999).
- COMPARTMENTALIZED THINKING. Bureaucratic deconstruction of the genocidal process into segments channels perpetrators into focusing on small tasks, ignoring the horror and outcome of the whole. Workers arrange transportation (*of victims to killing areas*), purchase implements (*for killing innocent civilians*), and inventory property (*stolen from victims*), all without confronting the sum of their actions (*the mass murder of their neighbors*) (Hilberg 1961).

Genocide Prevention: Public Health Models

The significance of identifying the behavioral precursors of genocide becomes more evident when viewed through the lens of contemporary violence prevention research. Although there have been no published intervention trials focusing on the prevention of extreme violence on a population-wide scale, a number of studies have documented the successes of violence prevention study and intervention in a variety of high-risk settings such as prisons, schools, and impoverished communities, thereby providing direction for future genocide prevention activities based on public health methods. Based on the identification and modification of psychosocial risk factors for

the commission of interpersonal violence, such models have contributed to changing both attitudes toward violence, as well as violent behavior.

A comprehensive example of violence prevention research and practice is contained in Slaby and Guerra's study of youth aggression. Focusing on Haddon Matrix *Pre-event, Agent/Perpetrator* factors, the authors conducted questionnaire research with incarcerated adolescents, identified six cognitive risk factors associated with increased violent behavior (Slaby and Guerra 1988), and designed a 12-session program to modify those risks (Guerra and Slaby 1990). In a pretest/posttest outcomes evaluation, participants reported fewer perceptions of hostility, improved fact finding, and better ability to generate alternatives to violence. After program completion, fewer participants believed that violence was legitimate, that violence created self-esteem, or that victims deserved aggression and didn't suffer. Participants demonstrated less-impulsive behavior as rated by facility staff, and a trend toward fewer parole violations after release (Guerra and Slaby 1990).

Although designed for another discrete setting and population, this and similar research is applicable to a broader population base at high risk for genocide. It is not difficult to envision widening this approach to encompass longer-range study and intervention in societies ranked at high risk for genocidal violence, years in advance of catastrophe. Such an agenda would include study of larger samples of individuals and groups to identify the critical risk factors for extreme violent behavior, followed by the crafting, implementation, evaluation, and refinement of educational programs and media campaigns designed to modify those risks.

Genocide Prevention: Feasibility

A small number of separate but key initiatives demonstrate the feasibility of each phase of the Public Health approach to the prevention of collective violence. Further short-range and longitudinal research is needed. The following examples represent the best in current catastrophic violence prevention practice:

- **SURVEILLANCE.** In the Gulu Province of Northern Uganda, the leading cause of death is injury by firearm during interethnic conflict. An initiative funded by the Canadian International Development Agency, in partnership with Injury Control Centre-Uganda, has extended the Ugandan trauma registry to include broad-scale surveillance of interethnic violence effecting Gulu elementary school children. The registry includes an ethnographic analysis of the

behavioral risk factors for such violence (Charles Owor Foundation 2002; Kobusingye et al. 2002). A complete data set from the project is not yet available. However, this project represents the first time a purpose-built registry have been used for gathering public health data on episodes of collective violence, and as such, constitutes an important first step in the development of a stepwise approach to studying genocidal violence in vulnerable populations.

- **RISK FACTOR ANALYSIS.** Although there has been retrospective analysis of the historical record, to date, no published papers have focused on *prospective study*, through interview and questionnaire research, of the cognitive and attitudinal risk factors leading to extreme violence within high-risk jurisdictions. In 2005, researchers will conduct a mixed-method study employing semi-structured, qualitative interviews and survey research with confessed perpetrators of the Rwandan genocide, with the objective of elucidating the psychological risk factors for genocidal violence in a population of *known genocide perpetrators* (Adler 2002). In later phase studies, these data will be used to formulate follow-up research protocols with potentially genocidal individuals in high-risk, *pre-genocide* societies. The ultimate goal of this research is to identify a panel of psychological risk factors that may be modified through targeted, population-wide health promotion activities.
- **INTERVENTION. Media-Based Interventions.** Media-based violence prevention and conflict resolution programming has been developed and tested in several locations worldwide. The NGO Search for Common Ground sponsors initiatives in Sierra Leone, Liberia, Kosovo, Bosnia, and Burundi, countries recovering from devastating civil conflicts. Both *Talking Drum* (in Sierra Leone and Liberia) and *Studio Ijambo* (in Burundi) produce a wide variety of programs aimed at promoting peace and reconciliation between previous combatants.

In Liberia, 90 percent of surveyed individuals have listened to Talking Drum broadcasts, 96 percent believe that Talking Drum programs “tell the truth” about the sociopolitical situation in Liberia, and 94 percent feel that broadcasts have contributed to resolving conflict within the country. In Burundi, a 1999 evaluation revealed that over 90 percent of Burundian listeners described the radio dramas as dealing with true-to-life issues in a way that brings

Burundians together. In 2000, 82 percent of those surveyed said that Studio Ijambo's programs help reconciliation "a lot" (Common Ground Productions 1998). Based on these and other experiences, several templates are now available for use in the development, implementation, and evaluation of media-based, violence prevention programs (United Kingdom Department for International Development 2000; Howard 2001).

Primary School-Based Interventions. Growing out of the surveillance efforts in northern Uganda, the Injury Control Centre-Uganda (ICC-U) has developed a peace building and conflict resolution curriculum for elementary school children in Gulu, as well as an injury treatment program for school aged children. Working interprofessionally with the National Curriculum Development Centre, Gulu district officials, Lacor Hospital, Gulu District Health Secretariat, and Jami Ya Kupataisha (meaning "*The Fellowship for Reconciliation*"), data on curriculum efficacy is being gathered in 2004–2005. This Canadian-funded work represents best practices in direct, school-based intervention in an active, high-risk region, and has the potential to provide a working template for future initiatives focusing on children and adolescents.

Genocide Prevention: A Public Health Approach. Thus, the Haddon Matrix presented earlier may be expanded to reflect a synergistic model of primary through tertiary genocide prevention, synthesizing our current understanding of best practices into an interlocking program. One such model for a comprehensive approach, weighted toward *Pre-event* factors, is summarized in Figure 2.

DISCUSSION

Despite such parallel advances in violence prevention methods, only a small number of health professionals have turned their attention to the prevention of genocide, a form of population-based, catastrophic violence. This interdisciplinary inquiry has evolved slowly over decades, resulting in three approaches. The first approach acknowledges the devastating impact of both poverty and power inequities on index populations, and calls for transforming democratization and improvements in health determinants as methods of primary genocide prevention within vulnerable societies (Hamburg, George, and Ballentine 1999). These goals are consistent with the fundamental tenets

Figure 2: Haddon Matrix for Genocide Prevention: Pre-Event Factors

	<u>Human</u> (Targeted Persons)	<u>Agent</u> (Perpetrator/Weapon)	<u>Environment</u> (Physical/Social)
Pre-event (The Responsibility to Prevent)	<u>Humanitarian Support</u>	<u>Behavioral Intervention</u>	<u>Structural Intervention</u>
	<u>Surveillance:</u> <ul style="list-style-type: none">● Give key organizations in high-risk areas satellite, radio, & video equipment to document escalating abuses● Develop official warning networks to alert influential governments of escalating abuses	<u>Surveillance:</u> <ul style="list-style-type: none">● Develop government, academic, and NGO databases, meticulously document escalating episodes of minorities at risk	<u>Surveillance:</u> <ul style="list-style-type: none">● Use early warning tools to collect data on jurisdictions at high structural risk for genocide● Continuously refine existing tools
	<u>Risk Factor Analysis:</u> <ul style="list-style-type: none">● Analyze databases for victim characteristics leading to injury and death● Interview and survey at risk minority communities for information on situations leading to injury and death● Scrutinize data for characteristics predisposing to protection and “good outcomes ”	<u>Risk Factor Analysis</u> <ul style="list-style-type: none">● Analyze data for perpetrator and weapon characteristics leading to increased injury and death● Interview and survey violence perpetrators for behavioral characteristics leading to acts of extreme violence● Examine data for characteristics of resistors to violence behavior	<u>Risk Factor Analysis</u> <ul style="list-style-type: none">● Evaluate early warning data for high-risk characteristics leading to collective violence● Analyze data for structural characteristics leading to “good outcomes” in situations of threatening violence● Create UN Special Rapporteur for Genocide Prevention
	<u>Intervention</u> <ul style="list-style-type: none">● Support minorities at risk with funds for education and economic development● Improve international criteria for emigration and in dangerous jurisdictions● Train health personnel in mental and physical support and first aid	<u>Intervention</u> <ul style="list-style-type: none">● Develop implement public health media interventions targeting genocidal attitudes in individuals and groups● Develop implement school curricula on intercultural tolerance and peaceful conflict resolution● Establish intercultural youth adult peace building groups in all major religious denominations● Establish intercultural peace building steering teams in professional organizations trade unions	<u>Intervention</u> <ul style="list-style-type: none">● International pressure aid for transition of single party governance● Aid high-risk jurisdictions for improvement of social determinants of health● Aid pressure for improved human rights policies in high-risk areas● Strengthen children’s and women’s rights in high-risk● areas Influence international corporations to promote human rights in high-risk areas, where they do business● Jam hate radio and TV
	<u>Evaluation/Refinement</u> <ul style="list-style-type: none">● Evaluate and refine interventions● Develop new interventions based on evaluation	<u>Evaluation/Refinement</u> <ul style="list-style-type: none">● Evaluate and refine interventions● Develop new interventions based on evaluation	<u>Evaluation/Refinement</u> <ul style="list-style-type: none">● Evaluate and refine interventions● Develop new interventions based on evaluation

of health promotion and “disease” prevention, and are critical to a global evolution toward peace and full human potential. However, such objectives will only be achieved (if ever) over centuries, and have limited utility for the prevention of genocide in the predictable future. Additionally, not all genocide stems from extreme poverty or underdevelopment, as the Nazi genocide and recent events in the former Yugoslavia have demonstrated.

The second is the most frequently advocated approach and calls for surveillance of sociopolitical risk factors (“Early Warning”), triggering intercession by the world community when genocide seems imminent (“Prevention”) (American Public Health Association 2001; Gellert 1995; Willis and Levy 2000). In a comparative disease-prevention model, this approach could be considered as analogous to the emergency treatment of ischemic heart disease, where crescendo angina (“Early Warning”) is treated with thrombolysis (“Prevention”). Such treatments represent secondary disease prevention if the size or associated disability of a myocardial infarction are decreased. This type of intervention is intended to avoid untoward outcomes when a disease process is long-standing and well established.

A third, novel approach to *primary* genocide prevention is suggested by contemporary violence prevention research and warrants scrutiny and testing. This approach employs sophisticated genocide-prediction models to identify societies at high risk for genocide, years before catastrophic violence actually erupts. In a departure from other models, vulnerable societies are then studied for specific cognitive and psychological risk factors for hands-on killing, and interventions are consequently developed, implemented, and tested.

All genocide is inevitably preceded by long-standing programs of escalating hate propaganda, exclusionary legislation, and mounting violence. This approach seeks to foster durable public attitudes that are resistant to genocidal provocations, years before incitements escalate. Using the ischemic heart disease example, this strategy corresponds to long-range, population-wide efforts to modify such risk factors as smoking and saturated fat intake. Similar approaches have proven effective elsewhere, and are consistent with repeated calls for the study of genocide within a community health model (Charny 1986; Cormier 1966; Kleinman 1999).

The practical, behavioral focus of the public health approach offers new opportunities to reframe the question of catastrophic violence within a population-health construct. For example, the defining question in drinking and driving might well be characterized as “Why is there addiction?” or “Why are people self-destructive?” The public health approach to impaired

driving passes over these larger questions in favor of a functional avenue of inquiry: "*How can we change the behavior of people who drink, and the bystanders to their drinking, in order to prevent them from driving while intoxicated?*" A broad interprofessional consortium has transformed public attitudes toward this hazardous activity through a combination of classroom education, media campaigns, legislation, and criminal penalties. In 2002, drinking and driving is considered by many to be at best ill advised and dangerous and at worst cause for serious legal consequences. Thus, due to a combination of punitive measures and a change in culture, rates of alcohol-related motor vehicle deaths are decreasing significantly.

A parallel approach to genocide prevention is both possible and long overdue. While no one would equate genocide to the comparatively smaller (per annum) question of impaired driving, the two problems share similarities. Both result in harm and death of innocent victims. Both have attitudinal and behavioral determinants. Perhaps most importantly, drunk driving and genocide may both be modified by the intervention of bystanders.

It is important to note that in considering genocide prevention, there are also several important caveats. Albert Einstein is quoted as once having said, "Things should always be made as simple as possible, but no simpler." Genocide prevention is one such question that should not be oversimplified. The public health-based approach to genocide prevention outlined in this article is considered to be both additive and synergistic to the political and military interventions proposed elsewhere. Success in answering complicated questions will rest in the ability of all groups working on a problem to collaborate in developing innovative, comprehensive, and lasting solutions.

As in most health promotion campaigns, a public-health-based approach to genocide prevention is envisioned to unfold in a single high-risk jurisdiction over a period of years. Such efforts are predicated on at least some ability to disseminate information through print and broadcast media, as well as to engage in a variety of organizational activities with specialists both at home and abroad. As such, the strategies we have outlined will be applicable to some, but not all situations of threatening catastrophic violence. For example, in the decades leading up to the genocide (in fact, until the day the genocide started), Rwandans enjoyed relatively unimpeded access to a variety of media outlets, and mingled freely with a large community of international specialists residing throughout the country. In other recent incidents, however, readers will no doubt call to mind the failings of

other monitoring efforts in nations whose leaders may be hostile to such attempts.

Ultimately, such instances are not in conflict with the model of genocide prevention proposed here, and are mirrored in other areas of health decision-making. A decision in favor of a conservative approach when aggressive management is either impossible or excessively dangerous *is not the same as doing nothing*. What is important is to recognize the inherent dangers, and to apply a range of management options tailored for each unique situation. Thus, development of a public-health-based, long-range approach to primary genocide prevention has the potential to enhance the flexibility, and thereby the efficacy, of the world community's efforts to address one of our most fundamental challenges.

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