

WORKING PAPER

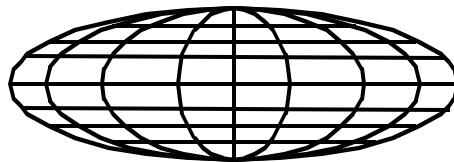
GLOBAL TRADE IN SMALL ARMS: HEALTH EFFECTS AND INTERVENTIONS

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Global trade in small arms: health effects and interventions ¹

1. INTRODUCTION

Violence has been identified as a pandemic by the World Health Organization (1). Weapons, and particularly firearms, play a significant role in violence in countries which are engaged in military conflicts (2) as well as countries which are considered peaceful. (3) Although the surveillance data is uneven at best, the total mortality from firearms is believed to exceed 500,000 deaths per year worldwide. (4) As Robin Coupland, a surgeon with the International Committee of the Red Cross wrote: "Weapons are bad for people's health... Yet health professionals have been slow to recognize that the effects of weapons are, by design, a health issue, and moreover constitute a global epidemic mostly affecting civilians." (5) This paper will focus on exploring the global health effects of firearms including handguns, rifles, shotguns and military weapons. "Small arms" have been defined in many ways, but for the purposes of this paper will be considered synonymous with firearms. The UN Panel of Governmental Experts on Small Arms defined them as: "Revolvers and self-loading pistols; rifles and carbines; submachine-guns; assault rifles; light machine guns". (6) While they tried to restrict these to those designed for military specifications, the difficulty in separating military from civilian weapons has led many to argue for a harmonized definition. In this regard The International Consultation on the Illicit Proliferation, Circulation and Trafficking in Small Arms and Light Weapons, 22 -23 June 2000, mandated by the Organisation of African Unity (OAU), maintained that the OAU should focus on a single accepted definition of SALW that meets the real needs of Africa. It proposed a synthesis of the definition used by the UN Panel of Experts on Small Arms and that used in the draft UN Firearm Protocol, suggesting that "firearm" be used instead to encompass the full range of weapons. (7)

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2. RESEARCH TO DATE

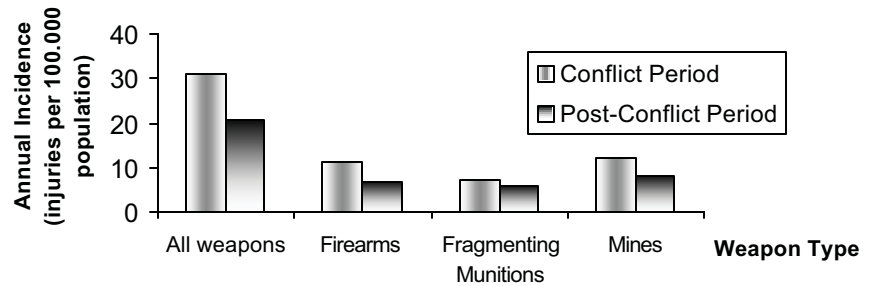
Despite the health burden of firearms, there is limited research on the international context of firearms death and injury. International injury reporting data records on homicide suicide and unintentional injuries are not consistent for a host of reasons. (8) The victimization studies are surveys which ask respondents about their experiences with crime as well as parameters such as firearms ownership. (9) Several studies have collected comparative data. For example, The United Nations International Study of Firearms Regulation collected data for over 60 countries (8) and provides updates on the internet. The Centers for Disease Control sponsored two studies - one survey of deaths of children in 24 industrialized countries (10) and another on deaths in high and middle income countries (3) There have been other studies of industrialized countries (11) (12) and there have been some efforts to examine the problem in conflict zones (13), comparative studies (14) (15) (16) as well as in particular countries (17) (18) (19). There are many studies examining aspects of the licit and illicit international arms trade (20) (21) (22) (23) (24) but they tend to define the problem in terms of the proliferation of weapons, i.e. the number of small arms, rather than the human effects. While some try to draw boundaries between "small arms" in conflict and "firearms" in crime, from a health perspective, the constructions of "conflict" and "crime" are not particularly meaningful or useful: the focus is the protection of human life within the context of human rights and humanitarian law. (25)

3. MORTALITY AND MORBIDITY

It has been estimated that 3 million people have been killed with small arms in conflict over the past 10 years, about 300,000 per year. (26) A recent study claimed that in most conflicts underway, light weapons (handguns, rifles, shotguns, mortars and other small arms) are a significant cause of both civilian and combatant deaths. A large percentage are civilians. (13) (2) The evidence also suggests that if weapons are not removed from circulation following a conflict rates of injury remain high as interpersonal violence replaced violence among warring factions. Research shows that when weapons are in circulation, death rates remain high even after conflict has ceased. One study compared the rate of weapons injury five years before the region came under uncontested control and 1 1/2 years after. Weapons injury declined only 20-40%. (2) Many

working on peacebuilding and disarmament argue that the link between violence levels and access to weapons is self evident. (2)

Figure 1: Annual Incidence of Weapon Injuries During Conflict and Post-Conflict Periods



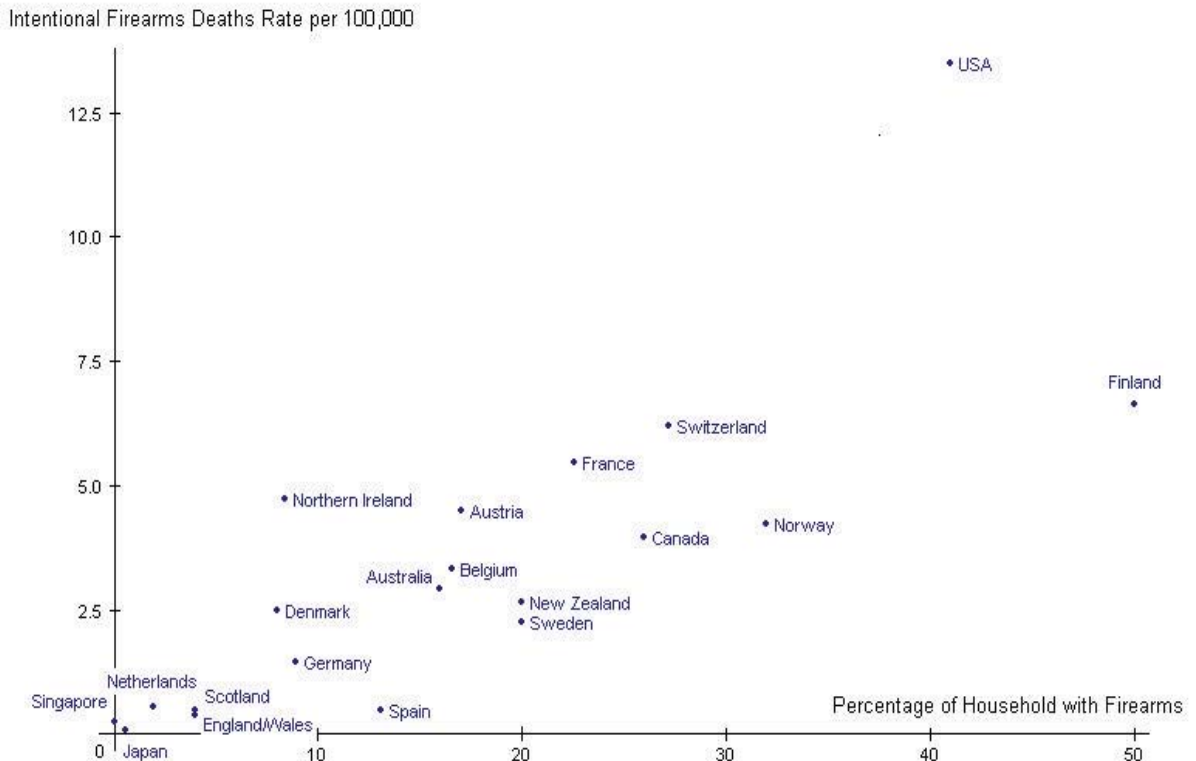
Source: ICRC. "Arms Availability and Situation of Civilians in Armed Conflict." ICRC. 1999.

Another 200,000 per year are killed with firearms in murder, suicide and "accidents", many in countries which are, at least nominally, in "peace". (4) (See Appendix 1) Many of these deaths are preventable. (27) For every death there are additional injuries requiring hospitalization. In Brazil, for example there are almost 10 times as many reported firearm injuries as fatalities while in Canada and Finland the reported mortality and injury rates are roughly equivalent. (8) This may be related to the context in which the death and injury occurs: in Brazil homicide is the principal problem while in Canada and Finland it is suicide. Fatality rates for attempted suicide with firearms tend to be higher than for attempted homicide.

Despite the data limitations, however, there have been a number of studies which have explored the relationship between the availability of firearms (measured in many different ways) and firearm death rates. Given the complex effects of social, economic, political, cultural, and other factors, such research is difficult. However, a number of researchers have maintained that there is sufficient evidence to conclude that rates of firearms death and injury are linked to access to firearms. (12) In one of the largest studies, based on a standardized survey of victimization in fifty-four countries, gun ownership was significantly related to both the level of robberies and the level of sexual assaults. There was also evidence that high levels of gun ownership such as in

the USA, the former Yugoslavia, South Africa and several Latin American countries are strongly related to higher levels of violence generally (9). Some studies focus on particular contexts – for example high income countries - reveal even stronger relationships between the availability of firearms and firearms deaths. (See Figure 2)

Figure 2: Firearms Possession and Intentional Firearm Deaths in 15 Countries



Source: Cukier, W. cited in: ICRC. "Arms Availability and Situation of Civilians in Armed Conflict." ICRC. 1999.

4. REGIONAL PERSPECTIVES

The problem with small arms varies by region. In some contexts, conflict is a priority (e.g. Afghanistan, the Horn of Africa). In others, crime is the most compelling problem (e.g. Brazil). And in many contexts within the newly-democratizing and economic-transitioning world, (e.g. South Africa, Colombia and former Soviet republics) conflict and crime are inseparable. In other regions (e.g. Canada, Finland) suicide and unintentional injury are significant.

Afghanistan

The negative effects of small arms are seldom confined to the parties engaged in conflict. Small arms easily flow between military and civilian populations and where weapons are in broad circulation, mortality and injury are high. A study in Afghanistan examined the circumstances of injuries for six months. One area of the country was at peace, while there were armed conflicts between factions in other regions. There were high rates of non-combat injury, even in the peaceful region: 80 deaths per 100,000, 50% of those were firearm related (2)

Brazil

Firearms in Brazil have been deemed a major public health hazard. In 1995, 50,000 Brazilians were murdered, 88% of them with firearms (41 per 100,000). The rate of firearm death has increased 320% since 1979. In Rio de Janeiro, the homicide rate is 48 per 100,000 and 59% of youth aged 15 - 19 who die of external causes are killed with firearms. (28) The majority of firearms recovered in crime in Brazil are handguns - pistols and revolvers. (29)

South Africa

In South Africa the toll of overtly "political" violence is dwarfed by the costs of other forms of violence: 15,000 people were killed from 1990 - 1998 in acts deemed "political" (30) while 25,000 South Africans were murdered in 1998 alone, half of them with firearms. (8) Violence has been called "the greatest threat to human rights" in the young democracy. "Firearms are one of the leading causes of non-natural death in South Africa and studies by medical practitioners show a dramatic increase in firearms injuries and deaths. In a study of 10 mortuaries, deaths from firearms equalled deaths from traffic fatalities. The vast majority of these deaths were homicides (87%) while an additional 11% were suicides. Young males are particularly at risk but the risk of suicide is high for white males. The costs of firearm injury and death are staggering in terms of direct health care costs and lost productivity resulting from premature disability and death. In addition, they divert scarce health care resources and overload scarce hospital facilities. (30) Despite the attention focused on military small arms, only a small fraction (2.8%) of the firearms used to kill in South Africa are the infamous AK-47. The vast majority are pistols and revolvers (57.4%) followed by hunting rifles and shotguns (24.8%). (31) In South Africa, the illegal firearms trade is fuelled by diversion from

civilian and police weapons. While "self protection" is a major reason citizens possess firearms, there is little evidence that this is an effective strategy. Rather the evidence suggests that guns are often targets for thieves and that victims carrying guns are more likely to be injured in an assault than those who are unarmed.

South African firearms also fuel the illicit trade in the sub-Saharan region (32) and the country has recently passed legislation to further restrict civilian possession of firearms.

Colombia

In the UN study of 1998, Colombia reported 18,986 firearm murders, the highest rate among the 64 countries reporting results. (8) Murder in Colombia is fuelled by political and criminal violence. The two are inseparable. From 1983 to 1993, the annual rate of homicide in Colombia increased 366% from 24 to 88 per 100,000. (33) The majority - 80% of these homicides involve firearms. Two thirds of all deaths of Colombian men aged 15 to 44 years old were due to homicide in 1993 and this segment accounts for nearly 2/3 of homicide victims. Men were 20 times more likely to be victims than women. Much of the increase in violence has been concentrated in the large cities of Bogota, Medellin and Cali which account for 23% of the country's population and 31% of its homicides. In 1994, the rate of homicide in Cali was 124 per 100,000 and in Bogota it was 68 per 100,000 person years.

There has been very little research on the firearm violence in Colombia or interventions. Colombian law allows private civilians to carry handguns for self protection following a licensing process. A recent study examined the effects of a handgun ban which prohibited carrying firearms on weekends after a payday, on holidays and on election days coupled with an aggressive enforcement strategy. The study concluded that the incidence of homicide was lowered by 13% in Bogota and 14% in Cali during the intervention periods although other factors may have contributed.

Canada and the United States

On many levels, Canada and the United States are similar. While there are differences in the social-economic fabric of the countries and their political

structures, they are comparable in terms of both per capita GDP and culture. In Canada access to handguns is severely restricted although firearms are estimated to be owned in approximately 20% of households. Between 1987 and 1998, 1200 (4.1 per 100,000) people were killed with firearms in Canada each year, the majority of them with rifles and shotguns in suicides. Canada has roughly 165 firearm murders each year (0.7 per 100,000). In contrast, in the United States, 32,000 are killed each year with firearms (14.05 per 100,000) and 13,000 murders (5.5 per 100,000). The non-firearm murder rates in the US are slightly higher than in Canada (2.9 versus 1.5 per 100,000 respectively) but the firearm murder rate is 7.9 times higher and the handgun murder rate is 14 times higher. (34) One of the most well-known studies was a comparison of Seattle Washington and Vancouver Canada. The differences in the rate of gun ownership was offered as the principal explanation of the differences in rates of gun death and injury. The rates of costs of firearms death and injury in the two countries have been compared as well as regional variations within Canada, once again reinforcing the "availability thesis". (14)

Finland

Finland has a high rate of firearms ownership - estimated at 29 % by the International Crime Victimization Study but reported at 50% in the UN Survey. Finland also has the second highest rate of firearm death among surveys of industrialized countries (6.77 per 100,000 in 1994 including 0.87 murders and 5.78 suicides per 100,000) (8)

There are roughly as many injuries as deaths - a pattern that is often seen in countries where suicides account for the bulk of firearms fatalities. Suicide attempts with firearms generally succeed (93% completion) consequently the ratio of deaths to injuries is high. Over a 5-year period 1985-1989, a total of 1,268 persons required hospital treatment for injuries caused by firearms in Finland. During the same period 1,295 persons died on the scene of the shooting or during transport to hospital. Among the 1,268 patients admitted alive, 57% were the victims of accidental shooting, 20% had attempted suicide and 13% were the victims of assault. Of the 1,268 patients, 141 later died in hospital. The average length of stay in hospital was 13 days. In all, 16,506 hospital days were required. (35)

Finland has the second highest rate of firearms death among children aged 14 and under (0.62 per 100,000) in a survey of 26 industrialized countries. (10) There is limited information on the context of these deaths however the majority of them are homicide (0.5 per 100,000) rather than suicide or unintentional injury. If the patterns in Finland are similar to other high income countries, many of these may be in the context of domestic violence and further exploration of the use of firearms in the context of violence against women may be warranted.

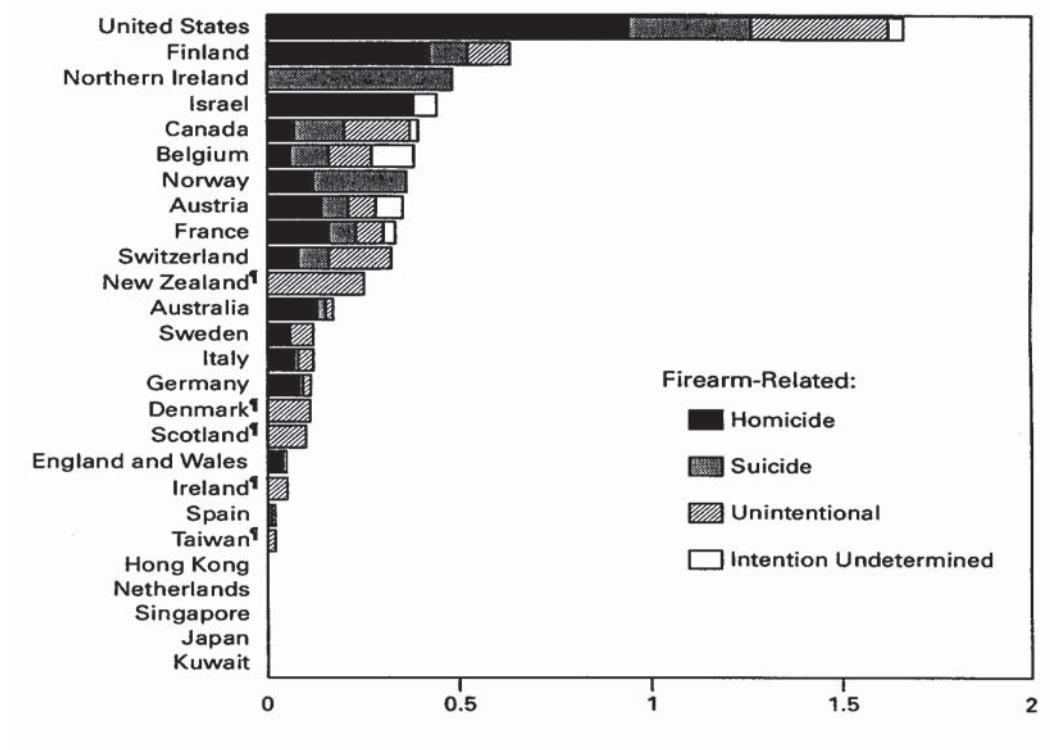
Studies in Finland have linked the high suicide rates among 15-24 year old males to firearms ownership. The annual suicide rate in this group was 51 per 100,000. 62% of the suicides involved firearms and 60% of the firearm suicides involved legal hunting guns stored in the homes of the victims. (36)

5. OTHER EFFECTS

Vulnerable Populations

The costs among vulnerable populations are particularly high in both industrialized and developing contexts. Women are seldom users of firearms but are often victims both in the context of war and in domestic violence. Guns figure prominently in the cycle of violence against women and children whether in Canada, Australia or South Africa. (37) (38) (39) (40) The patterns of weapons use in domestic violence are remarkably consistent across many cultures. In many developed countries, firearms are a leading cause of mortality among children and youth (10) and these groups represent a large percentage of the victims of conflict (41), both as combatants and casualties. (42) A number of studies have revealed that the poor are more likely to be victims of violence. (43)

Figure 3: Firearms Death Among Children in High Income Countries



Source: Centers for Disease Control: "Rates of Homicides, Suicides and Firearm-related Death Among Children – 26 industrialized countries." *MMWR*. Vol. 46 No.5. 1997.

Human Rights and Governance

The proliferation of weapons is also an impediment to building sustainable peace. (44) long term stability and reconciliation. (45) The importance of effective domestic regulations in reducing the misuse and proliferation of small arms has been affirmed by the United Nations in several different contexts, including the UN Security Council Resolution 1209 (1998); the Report of the Disarmament Commission considered at the General Assembly (1999); and the Report of the UN Commission on Crime Prevention and Criminal Justice (1997). (46) There is no right to bear arms under any international human rights instrument. Even claims of the civilian rights to bear arms without regulation appear to have little constitutional basis anyway. For example, even in the U.S., courts have repeatedly and unanimously maintained that the United States Constitution does not guarantee individuals the right to possess or carry guns; the Second Amendment only protects only the right of the states to maintain *organized* military forces. It does not impede local, state, or national legislatures from enacting or enforcing gun control laws. While controversy may remain

over the interpretation of the Second Amendment in the US, the notion that an unregulated right to bear arms exists has been dismissed in many other jurisdictions including the United Kingdom, New Zealand and Canada. (47)

Internationally, there is little legal basis for unregulated civilian possession or use of small arms as a right. As small arms cause death, injury, and fear to human beings, their unregulated presence in society affects the most fundamental of human rights. All human beings have the right to life, liberty and security of the person under Article 3 of the *Universal Declaration of Human Rights*. Further, the preamble of the *Universal Declaration* states that freedom from fear is one of the highest aspirations of the common person. Freedom from physical or psychological violence is a prerequisite to the enjoyment of fundamental human rights. War is said to be, by definition, a means of violating human rights. (48) Peace itself has been identified as a human right, with the United Nations Charter providing the foundation for this right. (49)

Firearm Violence Impedes Sustainable Development and Health

Secondary effects include economic effects. In Latin America the economic costs of violence, including costs of policing as well as the value of life lost, have been estimated to consume 14% of GDP. In Brazil 10% of GDP is consumed by violence but in Colombia the figure rises to 25%. (50) Firearms figure prominently, accounting for over 70% of homicides in Colombia and 88% of homicides in Brazil. (8) Even in developed countries, the economic costs of violence are staggering. In Canada, the costs of firearms death and injury (including murder, suicide and unintentional injuries) have been estimated at 6.6 billion dollars per year. (15)

Violence has been identified as a major impediment to the provision of basic health care as well as diverting resources from other health and social services. Treating firearms injuries absorbs considerable emergency room resources. (51) Arms fuelled violence also creates problems with blood availability and supply. Emergency responses to large-scale violence often do not accommodate careful testing for HIV and result in additional problems. (52) (53) Violence and the prevalence of weapons also create psychological stress that fuels other health problems and creates insecurity. Finally, the proliferation of weapons and the production of those weapons and ammunition have been linked to a wide range of environmental and health impacts. (54)

Firearms and the Global Culture of Violence

The "culture of violence" is both a cause and an effect of small arms and light weapons availability. A culture of arms possession, created and normalized during the militarization of societies, can contribute to individuals' resorting to a gun as their first instrument for resolving problems. (55) (56). The cycle of violence is difficult to break: Fear leads to arming which breeds violence which leads to insecurity which leads to further arming. Firearms undermine long term efforts to build civil society, whether in war zones or inner cities. Much of the demand for guns, particularly military weapons and handguns which serve little practical purpose, may be fueled by violent movies and television which tends to link heroism with guns and violence. (57) The suggestion that there is a link between values and gun violence is not new. "By our readiness to allow arms to be purchased at will and fired at whim; by allowing our movies and television screens to teach our children that the hero is one who masters the art of shooting and the technique of killing.. we have created an atmosphere in which violence and hatred have become popular pastimes". The statement by Rev. Dr. Martin Luther King, November, 1963 seems prophetic. (58)

6. A PUBLIC HEALTH PERSPECTIVE: BREAKING THE CHAIN

The public health perspective begins by an analysis of the problem to identify the causal links in the chain of events that lead to an injury and breaking them at their weakest point. (11) (59) (60) While a focus on root causes is undeniably important, public health also requires that we focus on the vector/vehicle of injury, here the instrument - the weapon. While firearms do not in themselves always cause violence, regardless of the context - crime, conflict, domestic assault, suicide - they increase its severity, the number of victims and the potential for children to become killers. They also undermine long term efforts to build civil society by fueling internal arms races, whether in war zones or inner cities.

In controlling an illness (malaria) or injury (gunshot wound), we can take preventative action against the *agent* (the parasite in malaria or the force deployed by firing a gun), the *vehicle/vector* (the mosquito bite in malaria; the gun or ammunition it uses) and the *host* (the patient or victim/aggressor). These *agents*, *vehicles* and *hosts* interact in a particular physical or socio-cultural *environment*, The nature of this environment can have an independent effect on the probability of occurrence or seriousness of the traumatic event

(and transform a suicide attempt, an assault or an "accident" into either a treatable wound or a fatal injury). There are a number of factors which affect the frequency of an event, and others which affect the lethality of the outcomes.

Public health experience has shown that the best prevention strategies involve breaking the chain of the causes of the occurrence of an injury at the point where the link in the chain is weakest. Measures that modify the potential vehicle (firearm) or vector (ammunition) of injury or the environment in which they occur have proven more successful than measures where individuals must make an effort or than education alone. It is generally acknowledged that the effectiveness of control measures is inversely proportional to the individual effort required to implement them. (61)

Whether we are talking about conflict, domestic violence, "accidental" discharge of a weapon, or the use of a firearm while under the influence of alcohol or drugs, what all these events have in common is access to a firearm by a person who makes inappropriate use of it. The firearm is an important focal point in public health strategies for preventative action.

Peace building, public health and crime prevention all have models for intervention which address the root causes of violence through social development and value building. Once crime, injury or conflict occur, there is recognition of the need to intervene with policing, enforcement, and "treatment". Controls on firearms are the intermediate step - the reduction of the opportunity for violence or conflict and the reduction of the severity of violent encounters by controlling the supply of firearms. While it is possible to kill with other means, firearms are particularly efficient and are more likely to cause death (61) (62) (63), severe injuries and multiple victims. In addition, firearms enable children who might otherwise lack the strength to kill more readily. The focus on controlling the instrument of violence, injury or death is a well-established public health approach. The measures proposed to prevent crime and conflict involving firearms contain many common elements.

Public health, crime prevention and peacebuilding experts have tended, explicitly or implicitly, to support the accessibility hypothesis - that access to firearms increases the lethality of conflicts and may even precipitate some impulsive violent acts. Factors, such as the social and legislative environment

which allow access to a gun, exert a significant influence on the frequency, distribution and growth of deaths and injuries due to firearms. (64) (65) (66).

Some have maintained that there is little evidence to support the link between access to firearms and rates of death and have disputed the studies which propose that stricter controls on firearms reduce gun death and injury. Some have even suggested that increasing access to firearms through arming for self protection save lives and reduce injury. (67) (68) (69) (70) Some of these studies have been critiqued for methodological problems. (71) (72)

Comparisons of Regions

The literature which links the availability of firearms and firearm death and injury rates across regions has been discussed above. Comparisons of regions also reinforce the suggestion that strong regulations reduce inappropriate access. Some of these studies have been summarized above. Others have focused on particular regions. For example, Australian states with registration had significantly lower rates of homicide and suicide with firearms than states without registration of firearms. (73) A comparison of "German speaking countries" – Austria, Germany and Switzerland which are assumed to have some similarities - also shows a strong correlations between gun ownership rates and death. (74) While not statistically based, observers in Southern African countries made similar arguments. (32)

Homes with and without firearms

Many of the research projects examining the accessibility thesis have conducted comparisons of homes where firearms are present to those where they are not. Another study concluded that the homicide of a family member was 2.7 times more likely to occur in a home with a firearm than in homes without guns. (75) After accounting for several independent risk factors, another study concluded that keeping one or more firearms was associated with a 4.8 fold increased risk of suicide in the home. (76) The risks increase, particularly for adolescents, where the guns were kept loaded and unlocked. (77)

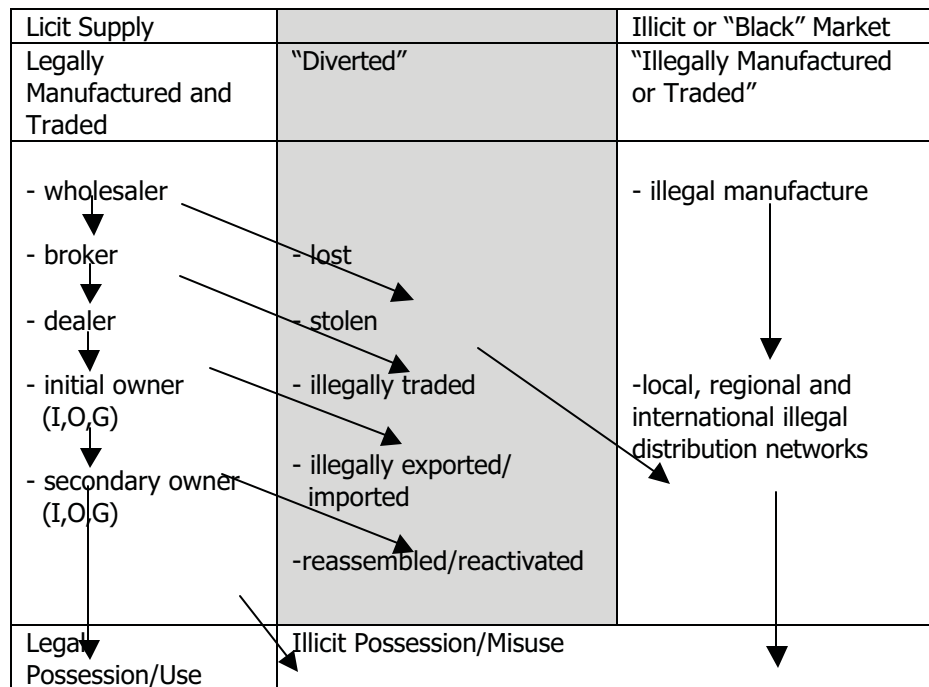
Longitudinal Studies

Studies by the International Committee of the Red Cross have explored the effects of weapons availability during and after conflict and have concluded that if weapons remain in circulation, injury rates remain high. Other studies have attempted to examine the effects of measures to limit the availability of firearms such as tighter regulations. As many factors affect crime and suicide rates over time, not the least of which is demographics, these studies are difficult. Nevertheless, many reinforce the notion that reducing availability also reduces death rates. The accessibility thesis has also been supported by studies examining the effects of legislation on death and injury rates in Canada. (78) (79) (80) Even in extremely violent contexts – for example Bogota and Cali Colombia – some researchers have found evidence to link measures which restrict access to declines in the death rates. (33)

7. REDUCING MISUSE AND ILLEGAL MARKETS: FOCUS ON THE INSTRUMENT

Most nations define a variety of legitimate purposes for small arms both in terms of national security (armies and police) and for civilian populations (hunting, sporting purposes etc.) There are two dimensions to the problem. First, small arms are misused by governments, by groups (such as private security or other non-state actors) and by civilians. There are two major sources of small arms which are misused: some are legally held and some are illegally held. Illegal manufacture of small arms is significant in some regions but globally is a small part of the problem. Unlike illicit drugs which are illegal from production, through distribution and consumption, virtually every illegal small arm and virtually every small arm which is misused began as a legal commodity. They may be diverted from licit to illicit markets through a variety of means including: theft, illegal sales, reactivation. To further complicate matters, there are interactions between national and international markets. While a country may enact restrictive regulations, weapons flow across borders. (81) (82) (83) (84)

Figure 4: Licit and Illicit Supplies of Firearms (81)



I - individuals O - organisations G - governments

Misuse of Legal Small Arms

Considerable attention has been directed to the misuse of small arms in conflict situations, by repressive governments and by individuals. Once again the context varies considerably. International efforts for example have focused on efforts to reduce the flow of small arms to conflict zones through embargoes and codes of conduct which are aimed at preventing sales to countries likely to misuse them in violation of human rights and humanitarian law. In the domestic context, many countries have regulatory frameworks aimed at reducing the risk that individuals who present a risk to themselves or others will have access to firearms. Most countries have licensing, registration and safe storage schemes aimed at this. Many industrialized countries license firearm owners in an effort to reduce the risk that individuals likely to misuse them will gain access. While these measures do not eliminate misuse, there is compelling evidence that regulations on firearms reduce the extent of the problem. In countries as diverse as Canada, Australia and South Africa, licensing owners and registering firearms has been promoted to help reduce access to firearms by individuals who ought not have them. The police, suicide prevention experts and domestic violence experts in many countries have agreed that information

about who has what firearms will allow them to take preventative action. In addition, licensing and registration increase the accountability of individual firearms owners therefore promoting compliance with safe storage regulations and increasing recognition of the risks and responsibilities of firearms ownership. A system for tracing firearms is essential to enforce licensing provisions and to enforce firearms responsibility. (81)

Illegal Small Arms

Quite apart from efforts to regulate the use in order to prevent the misuse of small arms, attention has been focused on ways of preventing small arms from moving from legal to illegal markets. There has been very little work done at a conceptual level to examine the ways in which firearms are acquired or the interactions of international licit and illicit markets. Comparisons have been made between illicit drug and firearm markets largely because their users intersect and they may share distribution networks at the local and international level. (83) These links have been documented by a number of researchers and law enforcement agencies. (84) Narcotics trafficking generates a demand for illegal arms both directly and develops infrastructure which is also used for gun trafficking. This international infrastructure, particularly the distribution and money laundering components can also be used to support the illicit gun trade.

The relaxation of border controls and the growing scale of transnational organized crime are also believed to have contributed to the expansion of the problem on a global basis. (85) (86) Added to this is the globalization of finance which enables money used in illicit firearms deals to be deposited without question. (87) Globalization of supply and criminal infrastructure has been the subject of much discussion. (88) With globalization of crime, it is suggested that there is a need for globalization of crime prevention strategies and in particular the need for harmonization and information sharing. (89)

The United Nations surveyed more than 60 countries and asked questions regarding illicit trafficking. Of the countries which responded 20 reported some incidence of illegal import of firearms and ammunition, while 7 reported none. Information is incomplete but over 30 countries cited anecdotal examples of the mechanisms used to supply illicit markets. (8)

Once again there are significant regional differences in the types of small arms which are misused and the sources of them. In conflict and post conflict regions, AK-47s are prevalent. In regions where the International Committee of the Red Cross (ICRC) is active, these are the weapons most frequently encountered.

Sources of illicit firearms vary considerably from region to region. A recent analysis of guns recovered in Rio de Janeiro Brazil during 1994 -99 revealed that the vast majority (over 44,000, or 83 percent) were manufactured in Brazil. Just over one thousand guns (2.5 percent) were made in Argentina, and three thousand (6.7 percent) were manufactured in the United States. (29) Some of these weapons are believed to have been diverted from legal domestic supplies. Others are believed to have been exported and then illegally imported.

In South Africa, efforts by the South African Police Service to track the supply of firearms recovered in crime are relatively recent, but they have tended to undermine claims based on anecdotal information regarding the prevalence of post-conflict military weapons. (90) Detailed analysis of firearms recovered in crime has revealed that the bulk of the weapons used are actually handguns, many of them at one time legally owned. Military-style weapons, such as assault rifles, have represented a small proportion of guns used in crime. (31)

In Europe, we have found no comparable studies of illicit firearms trafficking but the anecdotal reports suggest a variety of sources and a variety of channels. Military and state weapons from the former Soviet Union and other eastern European countries are seen as a particular problem. However, there is also evidence that firearms are bought legally in one country (particularly those with less rigorous controls) and trafficked to others. (8)

In Canada, studies undertaken in 1995 and 1997 in a number of jurisdictions revealed that the firearms most often recovered in crime were rifles and shotguns, most of which originated in domestic markets. (91) This finding contradicted previous claims, based on anecdotal studies, that handguns were most often used in crime. (92) Canada historically has had very strict controls on handguns and only about 20% of the firearms recovered in crime are handguns. However, of the handguns recovered in crime in major cities such as Toronto, it is estimated that over half originate in the US and are smuggled

into Canada using many of the same mechanisms used to divert legal firearms to illegal markets in the US, particularly straw purchases and gun shows.

In Japan officials recover 1000 firearms each year most of which have been illegally imported. Typically 30 per cent are said to originate in the United States and 21 per cent from China. (93) They enter the countries through a variety of channels. As these studies indicate, weapons frequently cross over from the realm of the legal to the illegal, and they frequently cross international borders.

The networks which are used to distribute illicit drugs, stolen goods and other illegal products are often the same ones used to distribute illegal guns. Often guns are traded for drugs and many of the same people who are involved in the illegal drug trade are also involved in the trade in illicit firearms. Such links are well known, and include shared transit routes, the use of weapons for protection by drug traffickers and funding gunrunning through the drug trade. The link between drugs, guns and illicit activities such as credit card fraud has been made in other contexts as well. (94) Williams cites a case in Italy where profits from drug sales were used by the Mafia to buy weapons which were subsequently sold illegally. (88) The fact that legal firearms are misused and that legal firearms "leak" to illegal markets through various channels is the principal fact underlying efforts to apply regulations to legal use.

The most extensive empirical research available on illicit firearm markets comes from the United States. (95) (96) Given that the same mechanisms used to supply these markets also feed international markets these conceptual frameworks are relevant. In the United States there is evidence to suggest that leakage from legal to illegal markets is the principal source of firearms in criminal activity. (97)

Diversions: Licit to Illicit

In post-conflict areas, weapons may represent one of the few forms of hard currency and flow from legal sources to illegal purposes. Government agencies are often major suppliers in "the gray market". The "gray market" is defined as that portion of the illegal gun trade where the state is actually involved as a supplier or where the state has turned a blind eye to the problem. Often the motivation is partly commercial and partly political. For example, during the

Afghanistan conflict, the CIA funneled weapons to Pakistan in order to ensure that it could mount a defense against the Soviets. Of firearms shipped through a Pakistan-to-Afghanistan pipeline during the Soviet invasion, only some 30% reached their intended destination due to "leakage". (98) Just as the weapons used in crime come from a variety of sources, firearms move into areas of conflict in a variety of legal, covert and illegal ways including: government and private sales, technology transfers, covert transfers, black market sales, theft of government and privately owned arms and exchanges between criminal and insurgent organizations. In contrast, in the United States where 41% of households have firearms, there is little smuggling but state to state trafficking is a major problem.

In the context of crime, it is well-understood that legal weapons acquired for legitimate purposes are often sold or stolen for illegal or illegitimate purposes. Many firearms recovered in crime around the world originate in the United States. The link between legal sources of firearms and illegal purposes is underscored by studies of "straw purchasers" being used to buy guns legally in the US where there are few controls of firearms acquisition and only three states have "one gun a month" restrictions. One of the major problems in Canada, as in other countries, is leakage from licit sources to illicit purposes. Another problem revolves around firearms which are bought legally and then sold illegally. Within Canada the old system created huge opportunities for "leakage" because imports were not recorded at time of import but at time of sale. In between the border and the sale point many "disappeared". Traditionally, customs officials were required to record the value of firearms shipments rather than the quantity, type or serial numbers. Firearm theft contributes to illicit trafficking: for example, approximately 3,000 guns are reported missing, lost or stolen each year in Canada, by definition falling into the wrong hands (99) and the figures in other countries are even higher. In South Africa, for example more than 15,000 firearms are reported stolen each year. While much has been made of the flow of post conflict military assault weapons into Africa, the majority of firearms murders are actually committed with handguns. (31)

The illegal market operates at many levels. For example, the Pakistan/Afghanistan region continues to be the largest source of weapons for militant/criminal groups in South Asia. Surplus weapons from the conflicts in

Cambodia, Myanmar, and in some cases, China, are trafficked along with drugs. (100)

Small arms initially sold legally in the United States also account for the majority of handguns recovered in crime in Canada and 30% of the guns recovered in crime in Japan. In 1994 foreign governments reported 6238 unlawfully acquired US original firearms to the Bureau of Alcohol Tobacco and Firearms. Over half of them were discovered in Mexico. (101) Trafficked firearms are often acquired by individuals with criminal intent and are often recovered in crimes associated with the illegal drug trade and organized crime. However, in order to identify illegally held firearms, one must be able to identify those that are held legally. In other words, by tracking legal movements of firearms, one can identify those that are illegal.

The erosion of borders in the interests of free trade have contributed to the proliferation of firearms. With improved trade between Canada, the US and Mexico, border checks have been reduced and United States customs officials have acknowledged that they inspect less than one percent of export shipments. (102) The removal of internal trade barriers in the European Union has also reduced the number of check points illegal shipments must pass through.

Illegally manufactured and reactivated firearms

In some regions illegally manufactured firearms are a significant problem. For instance in South Africa of the firearms seized by the South African Police Service in 1998 approximately 15 percent were home made. (31) The domestic manufacture and assembly of firearms from imported parts, for example, is cited as a major source of illicit weapons in Australia. In some cases, firearms that were legally owned at one time but that have been deactivated because of a change in laws are simply reactivated. For example, in Great Britain, more than 70 deactivated Mac 10 machine pistols were imported from the US and reactivated by a dealer. (103)

Illegal Sales by Legal Dealers

A major source of illegal firearms is illegal sales by legal dealers. For example in the United States, research shows that a small proportion of legal dealers

supply a large proportion of guns to juveniles and adults otherwise prohibited from making legal gun purchases. More than half of the weapons submitted by local and state police to the BATF for tracing originated with less than one half of one percent of the United States' 180,000 licensed dealers. (97) In some cases, dishonest firearms dealers have engaged in legal firearms trade while diverting some of their firearms to illicit markets. Several cases of this type have been identified by major police investigations such as Operation ABONAR in the United Kingdom. (103) Anecdotal information abounds. For example, in one case 40 rifles were sold by a Swiss dealer to Yugoslavian citizens (in violation of Swiss law) who, it is believed, intended to sell them to Albania. (8) This of course is only the tip of the iceberg.

Resale

Most countries regulate initial firearms sales, but often do not regulate secondary markets. Because of their durability, firearms are sold and resold several times and at each point in the distribution chain there are opportunities for diversion. Firearms that are bought legally and then sold or given to a second owner are a problem in many countries. Within the United States, 'straw purchases', where a gun is purchased legally and sold illegally is the principal means used to move guns from states with lax controls to states with stricter controls. It is estimated that there are approximately 200,000,000 firearms legally in the hands of civilians in the United States. In comparison the 21 countries reporting legal gun ownership in the UN study owned a total of 50,000,000 firearms between them. (8) A study of guns recovered in crime revealed that one-quarter of all weapons that came from outside the state in which they were recovered came from Georgia, South Carolina and Texas, all states with relatively loose controls. The same mechanisms are used to supply firearms to illegal markets in Canada and Mexico. Gun shows, which are largely unregulated, have proved to be a major source of illicit guns to international illegal markets. For example, an individual was arrested having purchased a consignment of 30 Lorcin pistols at gun shows in Miami and Dallas. The weapons were destined for Romania. Anecdotal evidence suggests that the same principles apply elsewhere: South Africa has been a source of handguns for destinations as far away as Japan. In another example, 205 pistols were recovered in Austria en route to Rotterdam via Germany. In another case, a firearm dealer in Vienna gave 43 pistols to a gunsmith in Carinthia, Austria who intended to sell them to a Yugoslav citizen. (8)

Theft

According to countries responding to the UN survey, more than 100,000 firearms are reported stolen each year, by definition entering the illicit market. Reported figures are only the tip of the iceberg depending on large part on legal requirements to report loss and theft. For example, while the United States reported more than 12,000 stolen guns during a nine month period (1996) other sources have estimated that the number could be as high as half a million. (96) South Africa reported nearly 17,500 guns stolen annually to the UN survey but more recent studies indicate that the figure may be even higher. Stolen guns travel globally. In Uruguay, for example, officials recovered 156 9mm pistols and 15 machine guns that had been stolen in Poland. (8)

Diversions from State Sources

State-owned firearms leak into illicit markets through theft, corruption or other forms of diversion. In Australia military personnel falsified records to conceal the theft of firearms from national stockpiles. Police in South Africa have reported more than 14,000 firearms lost or stolen in South Africa. Over 3000 firearms recovered in crime or surrendered in amnesties to the Metropolitan Toronto Police Service in Canada were illegally sold by officers and civilians working in the unit . (104)

Illegal Importation – concealment and false declarations

Illegal weapons are illegally moved from one country to another via concealment, false declaration and falsification of documents and mail order. The networks for smuggling guns are diffuse and range from individuals concealing a few guns in their car to large-scale commercial operations. (8)

The Industry

The firearms industry is large and powerful. It has responded to the maturing and decline of traditional markets in a variety of ways. Manufacturers are constantly exploring ways to expand civilian markets by targeting specific market segments such as women. Like tobacco companies, there is also evidence that some manufacturers are targeting youth in order to sustain markets. (105) There are also efforts to grow the market for guns by promoting

the notion that increasing firearms ownership increases safety. Certainly there have been parallels drawn between the gun lobby and the tobacco lobby's efforts to shape the research agenda and to block any regulatory efforts to constrain the free market for firearms. (106)

8. TOWARDS A COMPREHENSIVE STRATEGY

There is little doubt that firearms represent a significant burden of mortality and morbidity on an international scale and that globalization has fuelled the supply. While strategies to address the problem must respond to local conditions and capacity there are many opportunities for international cooperation on research and on measures to reduce demand and to control supply. There are no simple solutions to complex problems. Public health researchers have focused considerable attention on ways to prevent firearm violence. Models of injury prevention suggest strategies that begin with a detailed analysis of the problem in order to understand the contributing factors and focus efforts on breaking the chain at its weakest link. The factors which create the demand for illicit firearms must be addressed. Such primary prevention includes social development approaches to crime, poverty reduction, protection of civil and human rights and strategies aimed at preventing the "culture of violence". In addition, scholars maintain that until there are fundamental structural changes in weapons industries and cultural values, measures to reduce the misuse and illicit trade in firearms will be limited. (107) In post-conflict environments, reintegration is critical.

However, while addressing root causes is undeniably important, public health focuses also on the vector/vehicle of injury, here the instrument - the weapon. According to these models, firearms do not in themselves always cause violence, regardless of the context - crime, conflict, domestic assault, suicide - they increase its severity, the number of victims and the potential for children to become killers. This is consistent with notions of situational crime prevention which suggests that by limiting access to "facilitators" one can reduce the occurrence and lethality of certain types of crime. (108) Finally, while the evidence of deterrent effects is mixed at best, emphasis on increased enforcement may be seen as deterring some behaviours by increasing the "cost" or risk of apprehension for illegal firearms possession or trafficking. (109) Ultimately, designing effective measures to counter illicit trafficking is hampered

by the lack of empirical data and analysis of the nature of the problem and the potential points of intervention and considerably more research is needed in this area.

Prevention strategies for the most part aim at reducing the risk that small arms will be misused, whether by states in conflicts and violations of human rights and humanitarian law, or by legal owners in homicide, suicide or accidents. In particular, attention has been focused on efforts to reduce the diversion of licit small arms to illicit markets where they are more likely to be misused. Given the interactions between national, regional and global markets, strategies must be comprehensive and multi-layered. There is a significant body of research exploring the root causes of conflict, crime, suicide and injury. In order to develop appropriate strategies, it is important to understand the forces that shape the supply of small arms.

Among the measures proposed are:

- demand reduction
- regulation of civilian sale, possession and use
- state to state transfers
- import/export/transit controls
- controls on brokering
- marking standards
- amnesties, buybacks, collection and destruction programs
- enforcement and capacity building

Demand Reduction

Regardless of the model - conflict prevention, crime prevention, suicide prevention or injury prevention, the starting point is the reduction of demand and the need to address the factors which give rise to the demand for weapons. A wide range of intervention strategies are needed including socio-economic development, education, conflict resolution and good governance. Particular attention must be paid to the demobilization and reintegration of ex-combatants.

Regulation of Civilian Sale, Possession and Use

The bulk of the refereed research suggests that there is sufficient evidence to conclude that rates of firearms death and injury are linked to access to firearms and that measures to reduce or control access are effective. Stricter regulatory controls reduce availability and risk by defining who may have weapons under what circumstances. Safe storage regulations which create barriers between the user and the instrument may also be seen as measures limiting availability. It has been suggested that there is also an important interaction between laws and values: countries with stricter controls send a signal about the acceptability of violence in the same way legislation has been observed to have long term effects on other behaviours such as smoking, drunk driving, and drug abuse. (110)

Given the links between licit and illicit firearms markets, there are also links between domestic regulations and the ease with which firearms can be diverted. Many studies and official sources have emphasized the need for domestic legislation in order to prevent misuse and reduce the diversion of firearms to illegal markets. Currently the initial sale and resale of firearms is a matter of domestic legislation and varies considerably from country to country. Most countries control the sale of firearms – typically restricting sale to licensed individuals. The 1997 Resolution of the UN Crime Prevention and Criminal Justice Commission recommended that countries which have not already done so should introduce regulations to ensure licensing, safe storage and tracking of firearms. (46) Most countries in the world have firearms legislation with these common elements but there are also differences. Some countries such as the US, South Africa and Switzerland only regulate initial sales while others require all transfers to be conducted by authorized dealers. Some restrict the number of firearms an individual may own. Others require proof of legitimate need. In addition, the rigour of licensing requirements varies considerably.

A number of nations are continuing to strengthen their domestic controls. For example, many American states have introduced "one gun a month" laws and federal legislation regarding Federal Firearms Licensees has increased controls and record keeping requirements for dealers. South Africa is in the process of introducing legislation to reduce the number of firearms an individual can own and to increase accountability for firearms. Canada is in the process of implementing legislation which attempts to increase the accountability of firearm owners through licensing and registration. In 1996 China introduced legislation which prohibits buying, selling and transporting of firearms without

official permission and imposed the death penalty for the illegal sale of firearms. (111) Poland and Great Britain recently strengthened their domestic regulations and both Hungary and France are in the process of introducing stronger laws.

Not only are there links between levels of gun ownership and rates of firearms death but anecdotal evidence would seem to suggest that countries that have higher rates of gun ownership, less rigorous controls, and higher rates of gun death are also often sources of illicit firearms for international markets. This warrants further investigation.

State to State Transfers

Given the problems of leakage from state owned firearms stocks, there are a wide range of proposals for improving transparency on state to state transfers of firearms. (112) While these are typically aimed at reducing illicit flows to conflict zones they would also, presumably, help stem the flows to other markets. The European Union Program for Combating and Preventing Illicit Trafficking in Conventional Arms, adopted in 1997, provides a framework for EU action in the following areas: (a) preventing and combating illicit trafficking in arms from and through EU; (b) assistance to other countries in preventing and combating illicit arms trafficking; and (c) assistance to countries in post-conflict situations.

Import/Export/Transit Controls

The Organisation of American States (OAS) Inter-American Convention against the Illicit Manufacturing of and Trafficking in Firearms adopted in November 1997 is aimed at developing harmonized measures for monitoring and controlling the international movement of firearms in an effort to reduce illicit trafficking. It calls for reciprocal systems of import, export and in transit authorizations for legal transfers and the marking of firearms both at manufacture and again at import for better identification and tracing. (113) As of March 2000, only 10 of the 35 countries which signed the convention have actually ratified this agreement. The United Nations recently completed negotiations on the Revised Draft Protocol against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition supplementing the United Nations Convention against Transnational Organized Crime which includes many of the same elements. The proposed system will

require countries to provide authorization to one another before allowing commercial shipments of firearms to leave, enter or move across their territory. By improving the tracking of legal firearms, these measures are intended to reduce the opportunities for diversion, to improve enforcement of laws against illicit trafficking and help deter criminal activity. (113)

Controls on Brokering

Arms brokers often operate in one country while arranging trades between entities in others. As a consequence they often operate beyond the reach of national laws. A wide range of NGOs and governments have emphasized the importance of developing standard international definitions of arms brokers and shipping agents and developing legally binding controls on their activities, including a commitment for all states to require nationals and resident brokers to register and receive licenses for each transaction. The recently concluded UN Protocol on Firearms includes some reference to brokers but does not go far enough. (114)

Marking Standards

Both domestic and international efforts to regulate firearms and reduce illicit trafficking and misuse rest on the ability to track individual firearms. Firearm manufacturers often serve both commercial and military markets (115) and so the issue of marking is of interest to both those concerned with preventing crime and those focused on preventing the proliferation of small arms in the context of conflict. It is also supported by a substantial number of manufacturers. (116) Marking requirements are included in both the recently concluded Firearms Protocol within the UN Convention on Transnational Organized Crime as well as the OAS Conventions. However, these exclude small arms transferred by states. It is hoped that an international standard for marking all small arms, including those traded by states, will follow from the 2001 Conference on Illicit Trade in Small Arms and Light Weapons in All its Aspects.

Amnesties, Buybacks, Collection and Destruction Programs

Firearm amnesties, buybacks and collection programs have been used to remove surplus or illicit firearms from circulation with mixed success. In the cases of Great Britain and Australia, these have accompanied changes in the law which made certain weapons illegal after a given point in time, offered compensation to those who surrendered weapons and imposed severe penalties on those who retained the weapons. In these cases the buy backs required a significant investment but also yielded large quantities of firearms - over 500,000 in the case of Australia. While many agree that removing illegal and unneeded firearms from circulation is desirable, research suggests that the impact of various weapons collection programs, buybacks and amnesties on the supply of illicit firearms has been uneven at best. The factors that determine their effectiveness have been the subject of much discussion. (117)

Enforcement and Capacity Building

The experience of the BATF in the United States and INTERPOL suggests that detailed analysis of data has proved invaluable to criminal investigations and to identifying "hot spots". Improved exchange of information among police agencies is considered critical to addressing the problem on an international level. Increase information sharing between intelligence, customs, police and other law enforcement agencies and / or information exchange regarding sensitive end users is essential. Cooperation between intelligence and enforcement agencies in countries of source, destination and transit can better monitor and counter the activities of traffickers, suspect brokers and potential unlawful end users. However, many countries simply lack the capacity to effectively enforce the law. To this end, capacity building is critical if such efforts are to succeed. (115)

9. CONCLUSION

Given the enormity of the problem of illicit trafficking in firearms, both from the perspective of crime and conflict, it is surprising that there has been so little research on its dimensions and effects. One of the major challenges in understanding the problem, quite apart from the limited availability of empirical data, is its complexity and diversity, not to mention the political sensitivity of the issue in some contexts. The dimensions of the problem, the kinds of guns and the sources of guns vary considerably from region to region. More work is

needed to better understand the scope of the problem, the contributing factors in different contexts, appropriate interventions and evaluation.

At the same time, there is enough empirical and anecdotal evidence to draw some broad conclusions. First, while firearms trafficking and drug trafficking share common distribution networks and are both forms of currency, there are significant differences. The vast majority of firearms recovered in crime were at one time legally owned and the interplay between licit and illicit markets coupled with the durability of firearms and the uneven national regulatory standards creates very different market dynamics as well as opportunities for intervention. Finally, while effective crime prevention rests on addressing root causes of violence – the demand for weapons, if you will – there are also opportunities to reduce the lethality of violence by restricting access to firearms. The research to date, while limited, suggests some potential intervention points but more is clearly required.

To date, international health organizations have had limited involvement in the small arms/firearm issue. For some it is a question of "proof". Even though the weight of scientific evidence suggests a link between firearms access and negative health effect, it is a complex issue. We are reminded of Austin Bradford Hill's comment in 1965 on the need to control tobacco products: "all scientific work is incomplete - whether it be observational or experimental. All scientific work is liable to be upset or modified by advancing knowledge. That does not confer upon us a freedom to ignore the knowledge we already have, or to postpone the action that it appears to demand at a given time."(118)

There is little doubt that firearms represent a significant burden of mortality and morbidity on an international scale and that globalization has fuelled the supply. While strategies to address the problem must respond to local conditions and capacity there are many opportunities for international cooperation on research and on measures to reduce demand and control supply.

The International Action Network on Small Arms (IANSA), a network of more than 300 Non-governmental organizations, recently released *Focusing attention on Small Arms: Opportunities for the UN 2001 Conference on the Illicit Trade in Small Arms and Light Weapons in all its Aspects*, a paper endorsed by over 50 organizations (119) Among the key recommendations are:

- measures to counter demand

- improved data collection and information sharing
- preventing and combating illicit transfers through developing legally binding instruments on marking and brokering
- controlling legal transfers between states to reduce the risk that weapons will be used in human rights violations
- controls on the availability, use and storage of small arms within states, including strong domestic firearms regulation and a ban on civilian possession of military weapons
- collection and destruction of surplus weapons from both civil society and regions of conflict
- increasing transparency and accountability.
- resources to support effective implementation
- support for research and information sharing
- improved coordination between government and civil society at all levels.

International Physicians for the Prevention of Nuclear War (IPPNW) is contributing to both furthering the understanding of the problem as well as to its solutions. IPPNW supports the work of IANSA in the 2001 conference as well as a wide range of interventions at the regional and local level in partnership with other players in civil society. The organization will contribute to extending the understanding of the effects of small arms on health as well as strategies for intervention, with its upcoming conference, Aiming for Prevention, in Helsinki, September, 2001.

IPPNW believes that physicians and health professionals have an important role to play in tackling this global epidemic. Physicians have access to crucial data that will help understand the scope of the small arms problem. Public health analysts can help to guide policy creation, and the evaluation of policy effectiveness. Physicians are in a "watchdog" position to ensure that that public policies and interventions actually result in reduced injury and death, and increased enjoyment of health. Finally, physicians have a unique voice and credibility for use in public education campaigns to dissuade use of small arms. While firearms represent a significant burden of injury, some would prefer to avoid the issue because of the strong and vocal forces which oppose any efforts to restrict access to weapons - however modest they may be and even encourage the use of firearms as solutions to the problem of violence. But important public health issues, such as poverty, tobacco or AIDS, are never easy. As Rudolph Virchow said in 1848: "medicine is a social science and

politics nothing but medicine on a grand scale". (120)

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Appendix 1: Intentional Deaths in High Income Countries

INTERNATIONAL FIREARMS REGULATIONS, ACCESS AND DEATHS IN HIGH INCOME COUNTRIES

Country	Licensing of Owners?	Registration of all Firearms?	Other	Households with firearms (%)	Gun Homicide (per 100,000)	Gun Suicide (per 100,000.)	Total Intentional Gun Death Rate per 100,000
Japan	Yes	Yes	Prohibits handguns with few exceptions	0.6	0.03	0.04	0.07
Taiwan	N/A	N/A		NA	0.15	0.12	0.27
Singapore	Yes	Yes	Most handguns and rifles prohibited	0.01 (795 in the country)	0.07	0.17	0.24
Kuwait	N/A	N/A		NA	0.34	0.03	0.37
Netherlands	Yes	Yes		1.9	0.27	0.28	0.55
England/Wales	Yes	Yes	Prohibits handguns	4.0	0.07	0.33	0.4
Scotland	Yes	Yes	Identical legislation to England and Wales though made separately	4.0	0.19	0.30	0.49
Ireland	Yes	Yes	Severely restricts handguns	NA	0.30	0.94	1.24
Denmark	Yes	For long guns only		8	0.23	2.25	2.48
Northern Ireland	Yes	Yes	UK legislation applies except for right to possess for self defense	8.4	3.55	1.18	4.72
Germany	Yes	Yes		8.9	0.21	1.23	1.44
Spain	Yes	Yes	Some handguns and rifles are prohibited	13.1	0.19	0.55	0.74
Austria	Handguns	Handguns	Certain handguns and rifles are prohibited	16-18% est.*	0.42	4.06	4.48
Australia	Yes	all 8 states after 1997	Banned semiautomatics unless good reason shown	16.0	0.56	2.38	2.94
Belgium	For certain types	Yes	Some rifles are prohibited	16.6	0.87	2.45	3.32
Sweden	Yes	Yes	Restrictions in some regions	20	0.18	2.09	2.27
New Zealand	Yes	Handguns only. Proposed for long guns		20	0.22	2.45	2.67
France	Yes	Yes, except for selected sporting rifles		22.6	0.55	4.93	5.48
Canada	yes	Handguns	Automatic, converted	26	0.60	3.35	3.95

		only, all guns by 2003	and semi-automatic assault weapons and some handguns				
Italy	Yes	Yes		NA	1.16	1.11	2.27
Switzerland	Yes	Yes		27.2	0.46	5.74	6.2
Israel	Yes	Yes		NA	0.72	1.84	2.56
Norway	Yes	unknown		32	0.36	3.87	4.23
USA	in some states	Handguns in some states	Some weapons in some states	41	6.24	7.23	13.47
Finland	Yes	Yes	No prohibitions	501	0.87	5.78	6.65

Austria reported 41.5 gun owners per population of 1000 but no household ownership rate. Germany reports 24.5 gun owners per population of 1000 as well as 10% of households. ICVR estimate was 16% in 1996. Note the more recent ICVS estimates for ownership in Switzerland was 35% and for Finland only 19%. and update graphs

