



British Columbia
Centre for Excellence
in HIV/AIDS



Effect of Drug Law Enforcement on Drug-Related Violence: Evidence from a Scientific Review

Urban Health Research Initiative of the
British Columbia Centre for Excellence in HIV/AIDS

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Cover photo: RCMP Corporal Wayne Oakes looks over some of the several thousand rounds of ammunition and firearms that were displayed to the media at the Fort Saskatchewan RCMP detachment and were discovered when the joint forces RCMP and Edmonton Police Service Green Team served a search warrant on a rural property in Lamont County, east of Edmonton, Alberta, on August 16, 2005. Thirty marijuana plants were also seized, along with a bullet-proof vest and gas mask. (Canadian Press / *Edmonton Sun* – David Bloom)

All images used with permission.



Staff Sergeant Grant Miller holds a 9mm semi-automatic handgun and a clip of bullets that were seized along with drugs, cell phones and cash, displayed at a news conference on October 1, 2008, in Calgary. An 11-month investigation has resulted in 250 criminal charges against 34 suspects believed to be involved in Calgary's drug trade and in several violent incidents in the city. (Canadian Press / *Calgary Sun* – Jack Cusano)

EXECUTIVE SUMMARY

Violence is among the primary concerns of communities around the world, and research from many settings has demonstrated clear links between violence and the illicit drug trade, particularly in urban settings. While violence has traditionally been framed as resulting from the effects of drugs on individual users (e.g., drug-induced psychosis), violence in drug markets and in drug-producing areas such as Mexico is increasingly understood as a means of gaining or maintaining a share of the lucrative illicit drug market.

Similarly, several Canadian cities have recently experienced a sharp rise in gun violence, and investigations have demonstrated the intimate role that gangs involved in the production and distribution of illegal drugs have played. For many years both Toronto and Montreal have been plagued with drug-related gun violence, and over the last year Vancouver has experienced a surge in gun violence that authorities have attributed to disputes between criminal gangs involved in the illicit drug market. This increase in violence has occurred despite the Canadian federal government's announcement of a new National Anti-Drug Strategy, which has redoubled emphasis on law enforcement as the primary approach to the illicit drug problem.

In response to the emergence of violence in Canadian cities, provincial and federal leaders have proposed a range of law enforcement interventions aimed at addressing the illicit drug problem. Although many of these strategies, such as mandatory minimum sentences for drug law violations, have been in place in the United States for many years, the scientific evidence to support Canada's new policy directions has not been

articulated, and several prominent groups have indicated that certain proposed interventions may actually increase harm.

Given the growing emphasis on evidence-based policy-making and the ongoing severe violence attributable to drug gangs in many countries around the world, including, more recently, Canada, a systematic review of the available English language scientific literature was conducted to examine the impacts of drug law enforcement interventions on drug market violence. The hypothesis was that the existing scientific evidence would demonstrate an association between drug law enforcement expenditures or intensity and reduced levels of violence.

This comprehensive review of the existing scientific literature involved conventional systematic searching, data extraction and synthesis methods, and adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Specifically, a complete search of the English language literature was undertaken using electronic databases (Academic Search Complete, PubMed, PsycINFO, EMBASE, Web of Science, Sociological Abstracts, Social Service Abstracts, PAIS International and Lexis-Nexis), the Internet (Google, Google Scholar) and article reference lists from date of inception to October 2009.

The initial search captured 306 studies for further analysis. Of these, 15 were identified which evaluated the impact of drug law enforcement on violence: 11 (73%) presented findings from longitudinal studies using regression analysis, 2 (13%) presented theoretical models of drug market responses to drug law enforcement, and 2



An RCMP officer passes a bullet-riddled vehicle that was involved in a targeted gang shooting on February 16 in Surrey, BC, on display outside RCMP headquarters in Vancouver on March 3, 2009. Police are trumpeting what they say is a major blow against violent gangs in Metro Vancouver with several arrests and attempted murder charges. RCMP say they've arrested two members of the UN Gang, an associate member and two women. (Canadian Press / Darryl Dyck)

(13%) presented qualitative data. Contrary to our primary hypothesis, 13 (87%) studies reported a likely adverse impact of drug law enforcement on levels of violence. That is, most studies found that increasing drug law enforcement intensity resulted in increased rates of drug market violence. Notably, 9 of the 11 studies (82%) employing regression analyses of longitudinal data found a significant positive association between drug law enforcement increases and increased levels of violence. One study (9%) that employed a theoretical model reported that violence was negatively associated with increased drug law enforcement.

The present systematic review evaluated all available English language published research on the impact of law enforcement on drug market

violence. The available scientific evidence suggests that increasing law enforcement interventions to disrupt drug markets is unlikely to reduce drug gang violence. Instead, the existing evidence suggests that gun violence and high homicide rates are likely a natural consequence of drug prohibition and that increasingly sophisticated methods of disrupting Canadian gangs involved in drug distribution could unintentionally increase violence. From an evidence-based public policy perspective, gun violence and the enrichment of organized crime networks appear to be natural consequences of drug prohibition. In this context, and since drug prohibition has not achieved its stated goal of reducing drug supply, alternative models for drug control may need to be considered if drug supply and drug-related violence are to be meaningfully reduced.

BACKGROUND

Violence is among the primary concerns of communities around the world, and the illegal drug trade has been identified as a key cause of violence, particularly in urban areas.¹⁻⁴ While violence has traditionally been framed as resulting from the effects of drugs on individual users (e.g., violence stemming from drug-induced psychosis), violence is increasingly being understood as a means used by individuals and groups to gain or maintain market share of the lucrative illicit drug trade.⁵⁻⁹

In a variety of settings, gangs or cartels that derive their primary financing from illicit drugs have been implicated in a substantial proportion of homicides.¹⁰⁻¹² Research from the US, where homicide rates are among the highest in the developed world, has shown that a large proportion of homicides is attributable to gang activity, and that many of these homicides are directly or indirectly related to drugs.¹³ For instance, studies of drug gangs in Chicago have demonstrated that as much as 25% of gang activity involves violent assault and homicide.¹⁴ In Los Angeles, gang-related homicides accounted for 43% of the 1,365 homicides occurring between 1994 and 1995.¹¹

Certain Canadian cities have recently experienced a sharp rise in gun violence, and recent investigations have demonstrated the intimate

role that gangs involved in the production and distribution of illegal drugs have likely played.¹⁵ Toronto and Montreal have long dealt with high rates of gun violence and homicide often attributed to drugs.¹⁶⁻¹⁹ For instance, in Toronto in 2006, 1,993 individuals were victims of violence related to guns.²⁰ While Vancouver is home to one of North America's largest illicit drug markets and has consistently had one of the highest drug offence rates in Canada for the past 30 years,²¹ the level of drug-related gun violence has historically remained low within the greater Vancouver area compared to other large Canadian cities. However, over the last year Vancouver has experienced a surge in gun violence that authorities have attributed to disputes between criminal gangs involved in the illicit drug trade.^{22, 23} Consequently, according to Statistics Canada, Vancouver now has the highest rate of gun crime per capita in Canada.²⁴ In the short period between January 20 and March 5, 2009, 24 gang-related shootings took place in British Columbia's Lower Mainland.²⁵

Conventional wisdom would suggest that gang violence should be decreased by the increased enforcement of drug laws. Interestingly, however, the increase in Vancouver's gang violence has occurred several years after the release of a new

“The illicit drug market remains the largest criminal market in terms of extent, scope, and the degree of involvement by the majority of organized crime groups.”

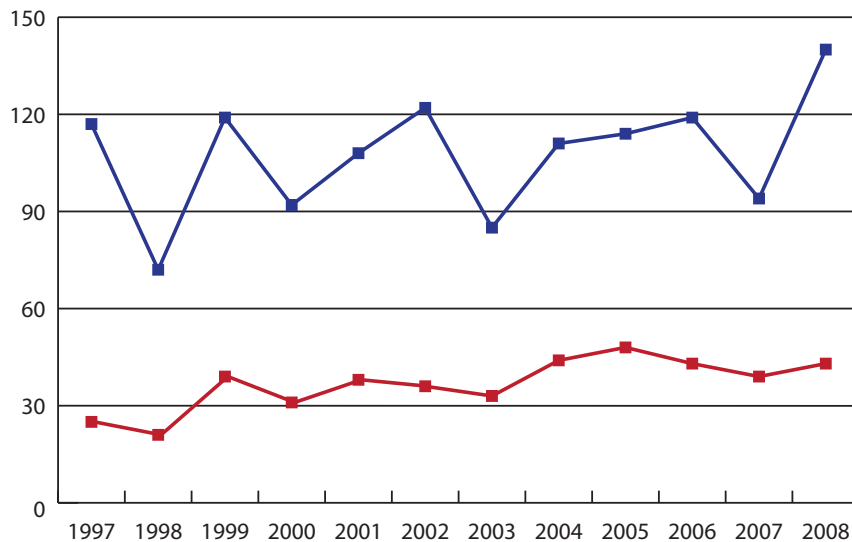
Criminal Intelligence Service Canada
2008 Annual Report on Organized Crime

National Anti-Drug Strategy by the Canadian federal government, which has redoubled emphasis on drug law enforcement as the primary strategy to address the drug problem.²⁶ There is no evidence to suggest that the federal drug strategy is directly linked to the increased violence, however, and its impact on violence is yet to be evaluated.

Increased interest in the role of drug law enforcement on violence rates has also arisen from the recent experience in Mexico, where extreme violence emerged subsequent to a large counter-narcotics campaign in 2006.²⁷ In 2008, for instance, 6,290 people were killed as a result of the Mexican drug war, and as of February 26, 2009, more than a thousand more had died.²⁸ In 2008, British Columbia experienced 140 homicides, more than in any other year in its history, and

over 30% of these homicides were deemed by the Royal Canadian Mounted Police (RCMP) to be gang-related.¹² Moreover, the proportion of gang-related homicides has steadily increased in British Columbia for over a decade (Figure 1). To date, the recent upsurge in violence in Vancouver has been attributed to fighting between local gangs involved in the local drug economy and, although the RCMP have alleged that the upsurge in drug-related gang violence in Vancouver in 2009 was linked to increased interdiction efforts undertaken by the Mexican government against drug cartels in that country,²⁹⁻³¹ no evidence has been produced to demonstrate that gang violence in Vancouver is attributable to violence related to the ongoing drug war in Mexico.

Figure 1. Total (top blue line) and gang-related (bottom red line) homicides in British Columbia, 1997–2008



Source: *Statistical overview of homicides in British Columbia, 1997-2007: 2009 update* (RCMP, 2009). Linear regression estimates using data from 1997 to 2008 suggest that 49 (95% confidence interval: 35–64) gang-associated homicides can be expected in 2010 in British Columbia. (Calculations available from the corresponding author.)



Police officers assist as the coroner removes a body following a suspected shooting in Vancouver, BC, on February 17, 2009. Canada's top cop labelled Metro Vancouver the country's gang capital as police in the region identified the young mother killed in a hail of bullets as her four-year-old son witnessed the slaying. (Canadian Press / Darryl Dyck)

In response to the emergence of violence in Canadian cities, provincial and federal leaders have enacted or proposed a range of law enforcement interventions aimed at addressing the drug problem. One of the most highly publicized policy responses has been Bill C-15, a federal bill that would impose mandatory minimum sentences on individuals convicted of drug crimes.³² However, the scientific evidence to support the proposed new policy directions has not been articulated by the federal government, and several prominent scientific bodies have indicated that such policy interventions may actually increase harm.³³⁻³⁵

In light of the serious problems related to drug market violence that have emerged in many countries, including Canada, we conducted a systematic review of the scientific literature to examine the role that law enforcement interventions may play in reducing drug-related violence. Given the widespread assumption that drug law enforcement interventions should reduce drug market violence, our primary hypothesis was that the available scientific evidence would demonstrate an association between increased drug law enforcement expenditures or intensity and reduced levels of violence.

METHODS

This review involved conventional systematic searching, data extraction and synthesis methods. Specifically, a comprehensive search of the literature was undertaken using electronic databases (Academic Search Complete, PubMed, PsycINFO, EMBASE, Web of Science, Sociological Abstracts, Social Science Abstracts, PAIS International and Lexis-Nexis), the Internet (Google, Google Scholar), and article reference lists. Search terms included *violence, homicide, prohibition, drug law enforcement, enforcement, drug crime, gangs, drug gangs* and *gun violence*. The terms were searched as keywords and mapped to database-specific subject headings or controlled vocabulary terms when available. Each database was searched for English language articles from its inception to its most recent update as of October 2009.

Inclusion & Exclusion Criteria

Studies published in peer-reviewed journals, abstracts from international conferences, and publications from governments and non-governmental organizations that reported on a link between drug law enforcement, illicit drug strategies and violence were all eligible for inclusion in the systematic review. Editorials, advocacy articles, and studies of police violence were excluded.

Data Collection Process

Two investigators (DW, GR) conducted data extraction independently, in duplicate, using standardized techniques. Data abstractors collected information about the study design, sample

size, methods of effectiveness measurement, and outcomes (i.e., violence). The data were entered into an electronic database such that duplicate entries existed for each study; when the two entries did not match, consensus was reached through discussion.

Data Items & Summary Measures

The primary outcome of interest for this review was to identify reported associations between drug law enforcement and violence. Given the heterogeneity of the literature on drug law enforcement, in some instances proxy measures were used for both drug law enforcement (e.g., numbers of drug arrests, police officers) and violence (e.g., numbers of homicides, shootings).

Data Synthesis

To ensure scientific rigour, the Preferred Reporting of Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used for systematic data synthesis.³⁶ These guidelines are widely recognized as the gold standard in transparent reporting of systematic evaluations of scientific research questions.

Because studies included in this systematic review varied extensively regarding methodologies and outcomes, findings were summarized on a per-study basis, and statistical data were entered into a standardized form. When reporting results from individual studies, the measures of association and *p* values reported in the studies were cited.

RESULTS

Study Selection & Study Characteristics

In the initial search, 306 potential articles were identified for inclusion in the review. Of these, 43 (14.1%) were excluded because they did not present new data (e.g., editorials). As a result, 263 (86.0%) articles were retrieved for detailed examination after initial searching of keywords and abstracts. Of these, 248 (94.3%) were deemed non-relevant to the current review for the following reasons: 179 (68%) were excluded based on a lack of explicit mention of violence in the analysis; 64 (24%) were excluded based on a lack of reporting of violence related to drug law enforcement; and 5 (2%) were excluded because they reported on police violence rather than violence associated with drug law enforcement.

In the end, 15 (6%) studies were eligible for inclusion in the systematic review. The full extraction process is summarized in Figure 2.

Overall, the 15 studies deemed relevant to the systematic review included 13 (87%) studies from North America^{6, 14, 37-47} and 2 (13%) studies from Australia.^{48, 49} Further, 13 (87%) used quantitative study designs and 2 (13%) used qualitative study designs. One study used a mixed method (i.e., quantitative and qualitative techniques) design. Of the 13 studies that employed quantitative techniques, 11 (85%) conducted regression analyses of real world data, and 2 (15%) presented theoretical models of drug market dynamics. The individual studies are described in Table 1.

Figure 2. Search process and eligible studies

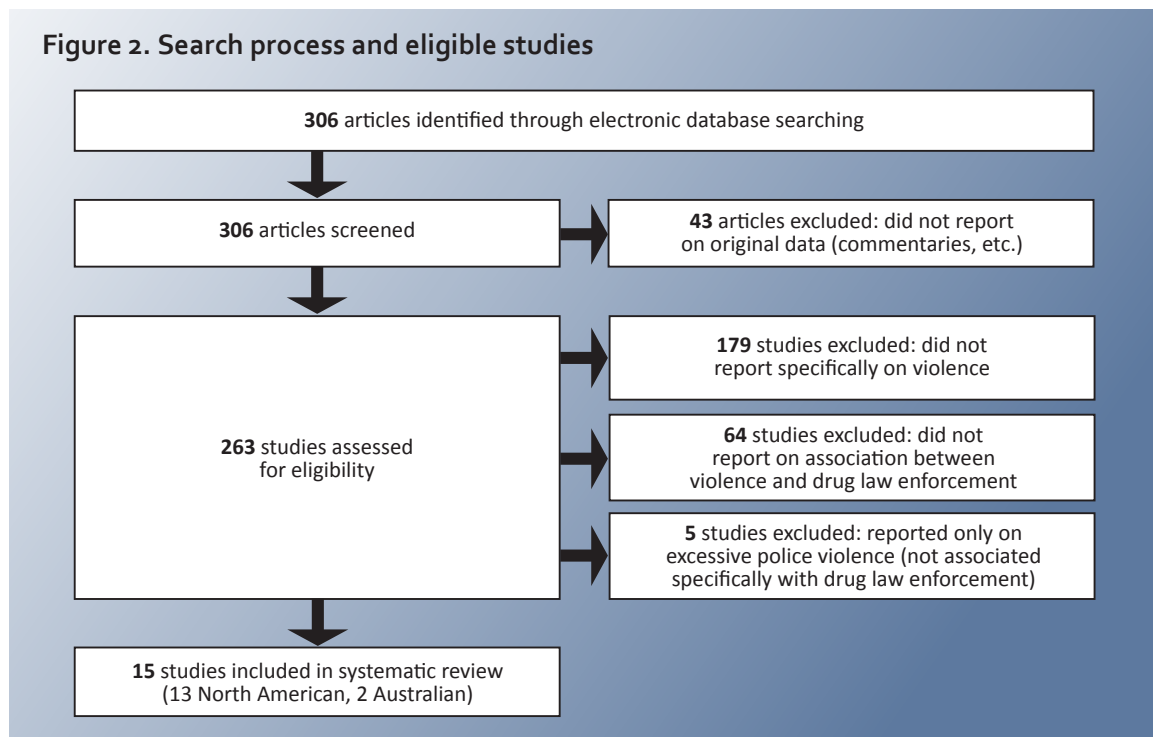


Table 1. Eligible studies on violence and prohibition

Author Year	Location	Total N	Study Design	Study Period	Main Findings
Goldstein 1989	New York City	414 homicide events	Longitudinal observational study	Mar 1, 1988 to Oct 31, 1988	39% of all homicide events were 'systemic' (i.e., a result of prohibition/enforcement effects).
Rasmussen 1993	Florida	67 Florida counties	Longitudinal observational study	1989	The model presented suggests that increased drug enforcement will increase the size of a drug market in an adjoining jurisdiction, resulting in a higher violent crime rate.
Brumm 1995	USA	57 US cities	Longitudinal observational study	1985	No significant association between drug arrests and violence was observed.
Benson 1998	Florida	67 Florida counties	Longitudinal observational study	1983 to 1987	Measures of drug law enforcement were significantly and positively associated with Index I crime (violent and property crime) in Florida, despite adjustment for confounders. Drug arrests were associated with an almost fivefold risk of violent and property crime (drug arrest relative risk = 4.6259, $p < 0.05$).
Riley 1998	6 US cities	Not reported	Longitudinal observational study, qualitative	1995	Increased enforcement efforts against crack markets were associated with increased homicide rates in 4 cities and decreased homicide rates in 2 cities.
Burrus 1999	NA	NA	Predictive model	NA	Theoretical model implies that law enforcement decreases territorial returns and the marginal benefit of violence decreases, and violence decreases.
Maher 1999	Sydney, Australia	143	Qualitative	Feb 1995 to Feb 1997	As dealers leave the market, those willing to work in a high-risk environment move in. Street dealing becomes more volatile and violent.
Miron 1999	USA	NA	Longitudinal observational study	1900 to 1995	Enforcement variables account for more than half of the variation in the homicide rate over the study period (R^2 : 0.53).
Levitt 2000	Chicago	Not reported	Longitudinal observational study	4-year period in the 1990s (anonymized for confidentiality)	Lack of formal dispute resolution mechanisms in illicit drug trade and drug law enforcement pressure caused a high level of violence among drug gang studied; as a result, violent conflict made up approximately 25% of gang activities during study period.

Author Year	Location	Total N	Study Design	Study Period	Main Findings
Resignato 2000	USA	24 US cities	Longitudinal observational study	Oct 1992 to Sept 1993	In 4 regression analyses, the drug enforcement proxy variable (ratio of drug arrests to total arrests), was positively and significantly associated with violence.
Benson 2001	Florida	67 Florida counties	Longitudinal observational study	1994 to 1997	Increases in the rate of drug arrests were associated with a twofold risk of violent and property crime across counties (adjusted relative risk for change in drug arrests = 2.20, $p < 0.01$).
Maher 2001	Sydney, Australia	Not reported	Qualitative	1995 to 2001	Violent disputes associated with the drug market contributed to a number of murders and the substantial rise in non-fatal shootings with handguns in NSW in 1995–2000.
Miron 2001	USA	Not reported	Longitudinal observational study	1993 to 1996	In a regression analysis of the homicide rate, and using nine different drug seizure rates (prohibition proxy variables), 6 drug seizure rates were significantly and positively related to the homicide rate.
Shepard 2005	New York State	62 counties	Longitudinal observational study	1996 to 2000	In regression analyses, drug arrests were not significantly negatively associated with crime (i.e., do not decrease crime). Increases in total per capita drug arrests are accompanied by higher rates of crime. Additionally, arrests for manufacture and sale of hard drugs is associated with higher levels of all crimes, including assault (relative risk for assault by hard drug arrest = 0.353, $p < 0.05$).
Caulkins 2006	NA	NA	Predictive model	NA	Theoretical model implies that increasing the severity of penalties associated with dealing drugs raises the stakes for all dealers, especially for the marginal dealers, who are the most likely to be apprehended. The remaining dealers command a higher market price. If favourable positions are secured by use of violence, violence may increase.

Results of Individual Studies

The 11 studies that conducted longitudinal analyses of real world data included violence, violent crime, or homicide as a primary independent variable of interest, and used measures of drug law enforcement as dependent variables of interest. These studies used a variety of proxy variables to quantify drug law enforcement, drug arrests as a proportion of total arrests, police expenditure, number of police officers, and drug seizure rates. Contrary to our original hypothesis,

The two qualitative studies included in this systematic review both reported on health harms among illicit drug users in Sydney, Australia's open air illicit drug market.^{48, 49} In these studies, the authors observed that, as dealers exited the illicit drug market, those willing to work in a high-risk environment entered, and that street dealing thereby became more volatile.⁴⁸ Further, the authors noted that the increased volatility associated with street dealing resulted in a higher number of violent disputes, which have

“You’re talking about a profession where people accept a risk of being murdered, execution-style, as an occupational hazard. How is a mandatory minimum sentence going to deter a person who already accepts the risk of being shot and having their body dumped in a car?”

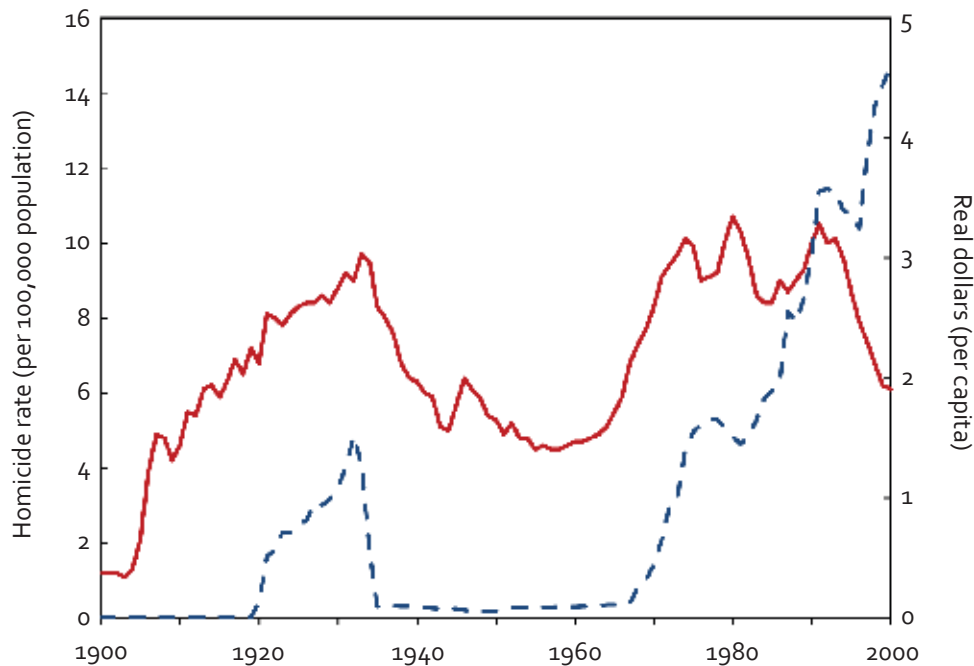
David Bratzer
Law Enforcement Against Prohibition

in 9 (82%) of the studies that employed regression analysis of longitudinal data, a significant positive association was observed between drug law enforcement increases and increased levels of violence.^{6, 14, 37-39, 41, 44, 45, 47} Only one study (9%) reported no significant association (i.e., no beneficial or negative impact) between drug law enforcement and violence.⁴⁶ The two theoretical models of drug market dynamics, which used hypothetical data to model the potential impact of law enforcement, reached divergent conclusions: one concluded that increased law enforcement would decrease violence,⁴² while the other concluded that increased law enforcement would increase violence.⁴⁰

contributed to an increase in murders and non-fatal shootings among individuals involved in the illicit drug trade.⁴⁹

Figure 3, from a study by Miron, shows a close association between the amount of money spent on enforcement of prohibition (against first alcohol and later drugs) and the national homicide rate in the United States. This study adjusted for other possible causes of homicide and found that drug law enforcement expenditures remained a strong independent predictor of the homicide rate.

Figure 3. Homicide rate (solid red line) and estimated expenditure for enforcement of alcohol and drug prohibition (dashed blue line) in the United States, 1900–2000



Sources: *Vital Statistics of the United States* (US Census Bureau, 1975), *Statistical Abstracts of the United States* (US Census Bureau, various issues), Eckberg (1995), and *Annual Budget of the United States*, as described in Miron (1999)

“Many, especially the young, are not dissuaded by the bullets that fly so freely in disputes between competing drug dealers—bullets that fly only because dealing drugs is illegal. Al Capone epitomizes our earlier attempt at Prohibition; the Crips and Bloods epitomize this one.”

Milton Friedman
Economist & Nobel Laureate



Hamilton police officers Inspector Dan Kinsella, left, and Acting Inspector Ted Davis look at the display of cash, drugs and firearms after a press conference in St. Catharines on September 24, 2008. Police from Halton, Hamilton and Niagara with RCMP and the Canada Border Services Agency were involved in the investigation. Police are tracking the fallout of a large Niagara drug bust that netted 20 people, waiting to see who tries to pick up the slack in the local narcotics trade. (Canadian Press / *St. Catharines Standard* – Denis Cahill)

DISCUSSION

Summary of Evidence

In this systematic review, all available English language studies that evaluated the association between drug law enforcement and violence were reviewed. Though limited in number, they employed a diverse array of methodologies, including longitudinal analyses involving up to six years of prospective follow-up, multilevel regression analyses, qualitative analyses, and mathematical predictive models. Contrary to our primary hypothesis, among studies that systematically evaluated this question using real world data, 82% found a significant positive association between drug law enforcement and violence.

Discussion

The present systematic review suggests that drug law enforcement interventions are unlikely to reduce drug-related violence. Instead, and contrary to the conventional wisdom that increasing drug law enforcement will reduce violence, the existing scientific evidence strongly suggests that drug prohibition likely contributes to drug market violence and higher homicide rates. On the basis of these findings, it is reasonable to infer that increasingly sophisticated methods of disrupting drug distribution networks may increase levels of drug-related violence.

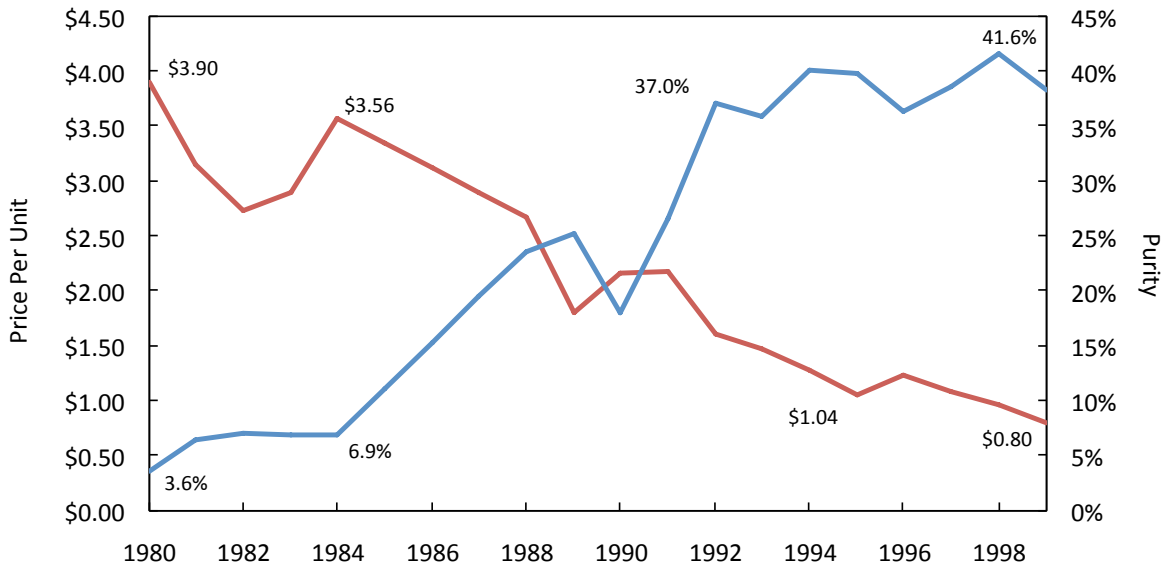
The association between increased drug law enforcement funding and drug market violence may seem counter-intuitive. However, in many of the studies reviewed here, experts delineated certain causative mechanisms that may explain this association. Specifically, research has shown that by removing key players from the lucrative illegal drug market, drug law enforcement may

have the perverse effect of creating significant financial incentives for other individuals to fill this vacuum by entering the market.^{47, 48}

These findings are consistent with historical examples such as the steep increase in gun-related homicides that emerged under alcohol prohibition in the United States³⁷ and after the removal of Columbia's Cali and Medellin cartels in the 1990s, which appears to have led to the emergence of a complex network of cocaine-producing cartels that were characterized by their increasing use of violence.⁵⁰⁻⁵¹ Violence may be a natural consequence of drug prohibition when groups compete for massive profits without recourse to formal non-violent negotiation and dispute resolution mechanisms.^{38, 39}

While not a central focus of this review, prior reviews have concluded that, in addition to violence, drug prohibition has produced several other unintended consequences. One key concern driving the introduction of new players into the illicit drug market is the existence of a massive illicit market that has resulted in response to the prohibition of illicit drugs, estimated by the United Nations to be worth as much as US\$320 billion annually.⁵² These enormous drug profits are entirely outside the control of governments and, based on the findings of the present review, likely fuel crime, violence, and corruption in countless urban communities. Further, these profits have destabilized entire countries, such as Colombia, Mexico and Afghanistan.⁵³⁻⁵⁵ In British Columbia, while the local drug market involves a number of illicit drugs, a major source of revenue for local gangs is derived from cannabis, much of which is exported to the US.⁵⁶ In 2000, this local market

Figure 4. Heroin price (red line) and purity (blue line) in the United States, 1980–1999



Source: *Briefing Book 2001* (Drug Enforcement Administration, Washington, DC)

was estimated to be worth approximately C\$7 billion, or roughly 2.8% of British Columbia’s entire Gross Domestic Product (GDP).⁵⁶ By contrast, the province’s forestry and fisheries industries generated slightly less than C\$3 billion in 2000.⁵⁷

While theoretically it could be argued that some increase in drug-related violence could be justified if drug law enforcement reduced the flow of drugs, prior research suggests that law enforcement efforts have not achieved their stated objectives with respect to reducing drug supply and use. In fact, despite annual federal budgets of approximately US\$15 billion and higher in the US since the 1990s, illegal drugs—including heroin, cocaine, and cannabis—have become

cheaper, their purity has increased, and rates of use have not markedly changed.⁵⁸⁻⁶⁰ Figure 4 shows the startling increase in heroin purity in the US from 1980 to 1999 against the equally startling drop in price over the same period.

In the face of strong evidence that drug law enforcement has failed to achieve its stated objectives and instead appears to contribute to drug market violence,^{38, 39, 59} policy makers must consider alternatives. In response to the known limitations of law enforcement in reducing drug supply, several medical and scientific bodies have called for the regulation of illicit drugs. For instance, the British Columbia Health Officers Council recently released a statement in support of a regulatory framework for addressing

problems associated with drug consumption.⁶¹ Specifically, their report states:

The [Canadian] federal government needs to take a leadership role at the national and international levels in actively initiating reform of current psychoactive drug laws, including a review and revision of the Controlled Drugs and Substances Act, to create regulatory frameworks for drugs that will allow governments at all levels to better address the harms associated with the production, trade, distribution, and use of these substances.⁶¹

In the British Columbia context, the vast majority of the province's illegal drug market is based in the cannabis trade. As such, this may present an opportunity to explore alternative approaches to reducing drug supply to vulnerable groups (youth, for example) while removing a key revenue stream for local gangs.

The findings of this review are also relevant to the recently proposed Bill C-15, a federal bill that would impose mandatory minimum sentences on individuals convicted of drug crimes.³² In this regard, it should be noted that, in the United



Vancouver, BC, September 5, 2000 – RCMP media rep Cpl. Grant Learned stands behind over 99 kilos of high grade heroin found in the frame of a container which arrived in Vancouver from China. (Vancouver Sun / Ian Smith)

A subsequent study published in the *Canadian Medical Association Journal* proved that this massive heroin seizure did not meaningfully affect heroin supply on Vancouver's streets, where prices remain low. (Wood E et al. Impact of supply-side policies for control of illicit drugs in the face of the AIDS and overdose epidemics: investigation of a massive heroin seizure. *CMAJ* 2003; 168: 165.)

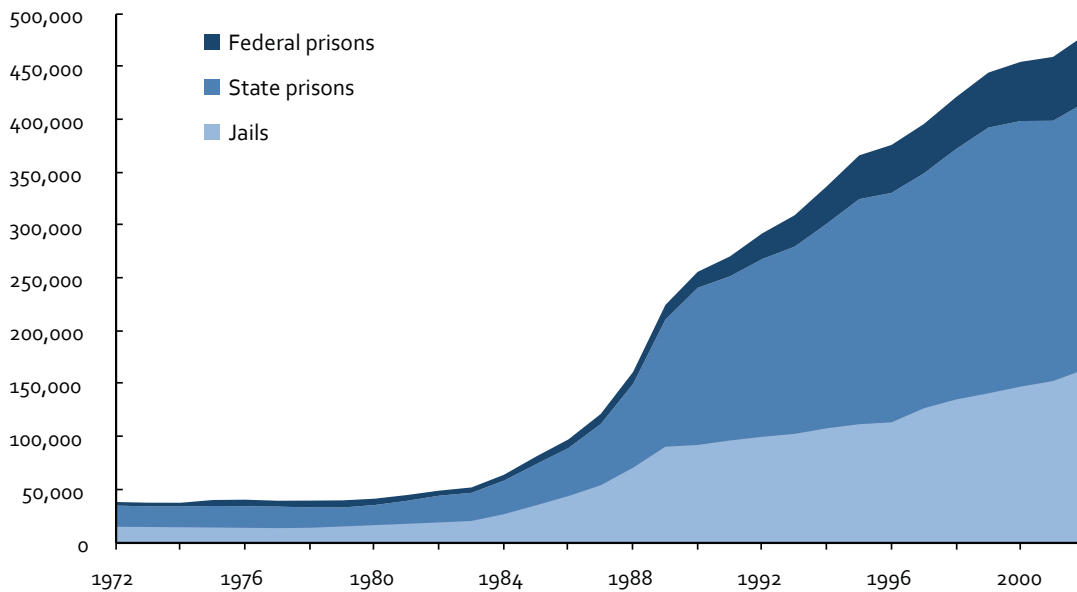
States, a massive tax burden has emerged as a result of the costs stemming from mandatory minimum sentencing policies, and evidence to suggest that these policies have been effective in reducing drug use, drug supply or drug crime remains lacking.⁶² Figure 5 illustrates the dramatic rise in incarceration rates following the implementation of mandatory sentencing policies by many American states beginning in the 1980s. It is also significant that mandatory minimum sentences have generated substantial racial disparities in drug crime sentencing.⁶³⁻⁶⁵ For instance, one in nine African-American males between the ages

of 20 and 34 is incarcerated on any given day in the United States.⁶⁶ In response, states are now considering repealing these policies.^{33, 34} The findings of this review suggest that, in addition to the above unintended harms, if C-15 is successful at interrupting the drug market, it may increase violence in Canadian communities.

Limitations

This study has a number of limitations. Most importantly, publication bias may have skewed the availability of studies investigating the role of violence and drug law enforcement as a result

Figure 5. Estimated number of adults incarcerated for drug law violations in the United States, 1972–2002



Source: Data were extracted from Beck (1997), Beck & Glaze (2002), Cahalan (1986), Harrison & Karberg (2003), and Pastore & Maguire (2003) as described in Caulkins et al. (2006)

“The prestige of government has undoubtedly been lowered considerably by the Prohibition law. For nothing is more destructive of respect for the government and the law of the land than passing laws which cannot be enforced. It is an open secret that the dangerous increase of crime in this country is closely connected with this.”

Albert Einstein
My First Impression of the USA, 1921

of political sensitivities in organizations funding research on drug policy. Specifically, research sponsors traditionally have been unsympathetic to funding research critical of drug prohibition.^{67, 68}

There are also instances, such as the recent outbreak of violence in Mexico, where there is widespread agreement that law enforcement efforts sparked drug market clashes, but this phenomenon does not get reported in the context of a scientific study.

In terms of potentially underestimating violence, the present analysis was restricted to only those studies investigating the effect of drug law enforcement on drug market violence; studies that reported only on police violence were excluded.

For the above reasons, the positive association between drug law enforcement and violence that we identified in the literature is most likely an underestimate.

The findings of this report do not imply that current government policies are responsible for recent increases in violence in some cities, nor do they imply that individual police officers are responsible for this violence. Rather, the evidence

suggests that front line police officers are given the task of enforcing drug laws that appear to lead to increased violence by unintentionally driving up the enormous black market profits attributable to the illegal drug trade.

Conclusions

Based on the available English language scientific evidence, the results of this systematic review suggest that an increase in drug law enforcement interventions to disrupt drug markets is unlikely to reduce violence attributable to drug gangs. Instead, from an evidence-based public policy perspective and based on several decades of available data, the existing evidence strongly suggests that drug law enforcement contributes to gun violence and high homicide rates and that increasingly sophisticated methods of disrupting Canadian gangs involved in drug distribution could unintentionally increase violence. In this context, and since drug prohibition has not achieved its stated goal of reducing drug supply, alternative models for drug control may need to be considered if drug-related violence is to be meaningfully reduced.

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ABOUT THE URBAN HEALTH RESEARCH INITIATIVE

The Urban Health Research Initiative (UHRI) was established in 2007 by the British Columbia Centre for Excellence in HIV/AIDS at St. Paul's Hospital in Vancouver, Canada. Led by principal investigators Drs. Evan Wood and Thomas Kerr, UHRI is based on a network of studies that were developed to help identify and understand the many factors that affect the health of urban populations, with a focus on substance use, infectious diseases, the urban environment and homelessness. UHRI's mission is to achieve excellence in health research and research training with the ultimate goal of improving the health of individuals and communities. UHRI's research focuses on issues that affect the health of urban populations, with special emphasis placed on infectious diseases such as HIV and HCV, substance use and addiction, health care and social services access, and policy that has a direct bearing on public health.



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