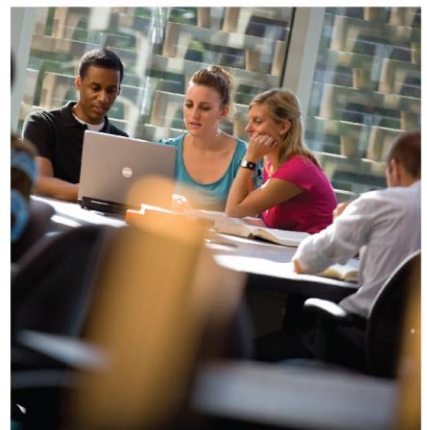McMaster
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EVIDENCE
BRIEF

PREVENTING INTERPERSONAL
AND SELF-DIRECTED
VIOLENCE AND INJURIES
IN THE CARIBBEAN

24 JUNE 2015

EVIDENCE >> INSIGHT >> ACTION

Evidence Brief:
Preventing Interpersonal and Self-directed Violence and Injuries in the Caribbean

24 June 2015

McMaster Health Forum

> For concerned citizens and influential thinkers and doers, the McMaster Health Forum strives to be a leading hub for improving health outcomes through collective problem solving. Operating at regional/provincial levels and at national levels, the Forum harnesses information, convenes stakeholders, and prepares action-oriented leaders to meet pressing health issues creatively. The Forum acts as an agent of change by empowering stakeholders to set agendas, take well-considered actions, and communicate the rationale for actions effectively.

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Table of Contents

KEY MESSAGES

What's the problem?
- Interpersonal and self-directed violence places a burden on Caribbean states. Women and children are particularly vulnerable to non-fatal physical, sexual and psychological abuse, while young men are at higher risk of engaging in and being victims of violent acts, especially homicide. Early and continuous exposure increases the likelihood of future violent behaviour, thus creating a cycle of violence in the region.
- The underlying causes of violence are many, complex and interrelated. While there is a growing body of evidence about effective interventions for preventing different types of violence, they require the involvement of multiple sectors. A multi-sectoral plan outlining a comprehensive approach is therefore a necessary first step, however four main issues are likely to stymie the success of these plans:
  - Difficulties in establishing and sustaining collaboration across various policy and program sectors;
  - Weak monitoring and surveillance systems that result in incomplete violence and injury data;
  - Insufficient attention paid to the factors (such as the harmful use of alcohol) associated with and that cut across different types of interpersonal violence;
  - Sub-optimal functioning of the health system with respect to delivery of its core violence and injury responsibilities (i.e. screening, care provision and referral services).

What do we know (from systematic reviews) about viable options to address the problem?
- <u>Option 1</u>– Strengthen efforts to establish and sustain inter-sectoral collaboration to facilitate the development and implementation of comprehensive violence- and injury-prevention strategies
  - Systematic reviews directly addressing inter-sectoral collaboration in the context of violence and injury were not identified, however, two reviews which examined the effectiveness of inter-sectoral action on the social determinants of health found that this practice had mixed results (moderate to no effect on the outcomes of interest).
- <u>Option 2</u>– Strengthen violence and injury monitoring and surveillance systems at the regional and national levels
  - Again, no reviews focusing directly on violence and injury were available. One review that examined surveillance of healthcare-associated infections found that electronic systems outperformed manual methods. Another which focused on integrating user-generated information from the internet and social media into public health disease surveillance concluded that more research is needed.
- <u>Option 3</u>– Address the cross-cutting issue of harmful use of alcohol in the Caribbean region through targeted initiatives
  - Various interventions targeted to individuals were found to be effective at reducing alcohol consumption: motivational interviewing; information and skills training; brief interventions in primary care; behavioural counselling; and personalized feedback delivered through multiple platforms
  - Broader community-based interventions, such as school-based, family-based and multi-component programs were also found to be effective.
  - Evidence supports restriction of alcohol sales availability (days, hours, locations) and taxation and price as effective public policy measures for reducing harmful consumption.
- <u>Option 4</u>- Strengthen core elements of health systems related to interpersonal and self-directed violence and injury prevention
  - Initiatives such as the use of multidisciplinary teams, discharge planning and case management were found to improve care coordination and health outcomes, although not in the context of violence and injury
  - Evidence about the effectiveness of intimate partner violence screening is lacking
  - Interventions targeting health care provider behaviours led to more appropriate referral behaviours, though not in the context of violence and injury
  - Telehealth was found to be an effective way to train providers, increase the competency of mental health providers and overcome staff shortages

- Given the dearth of evidence related to many of the sub-elements considered, it is important to note that where no supportive research evidence is available, decisions can be made on the basis of other types of evidence (tacit knowledge, views and experiences, which will be elicited through the stakeholder dialogue that this brief was prepared to inform) and subjected to monitoring and evaluation.

What implementation considerations need to be kept in mind?

- Much attention is currently being paid to violence and injuries in the Caribbean by national governments, and regional and intergovernmental agencies. Barriers to implementation at the level of citizens, providers and organizations will exist for each option. In addition, a comprehensive approach to addressing the situation will require significant financial and human investments to bolster capacity in each sector that has a role to play in a comprehensive strategy to address interpersonal and self-directed violence and injuries.

REPORT

BACKGROUND AND POLICY CONTEXT

The issue of violence and injuries and its status as a major public health problem has gained significant political traction both internationally and within the Caribbean region during the last two decades. Internationally, the momentum began to build across the Americas in 1993 with PAHO resolution CD37.R19 (Violence and Health)(1), and in 1996 when, at the 49th World Health Assembly, resolution 49.25 first helped to establish the issue of violence and injuries as a recognized global health priority. Specifically, it urged member states to: 1) assess the problem of violence in their own jurisdictions; and 2) communicate the extent of their problems to the World Health Organization (WHO) with suggestions about solutions.(2) Building on these efforts, in 2002 WHO released the World Report on Violence and Health, which was the first comprehensive review of the problem of violence on a global scale, and helped to further raise the profile of the issue on the agendas of global institutions and several national governments.(3,4) The report also led to the development of the Global Status Report on Violence Prevention, which was published in 2014 with data from 133 countries (including five English-speaking Caribbean countries). (3-5)

In 2006, WHO released guidelines for policymakers and planners to develop national violence- and injury-prevention policies (6), and in 2007, it also released a guide to assist ministries of health in taking a central role in efforts to address the problem of injuries resulting from violence (both interpersonal and self-inflicted).(7) Subsequent resolutions followed the release of these support documents, which all helped to further solidify national governments' commitments to addressing violence and injuries, including WHA 56.24, which focused on implementing the recommendations contained in the 2002 World Health Report (8), and the WHA 60.22 resolution on emergency care systems (and their ability to respond to violence and injuries).(9) Most recently, in 2014 at the 67th World Health Assembly, Member States again committed to strengthening the role of health systems in addressing violence, and WHO committed to developing a global plan of action to strengthen the role of national health systems

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Box 1: Background to the evidence brief

This evidence brief mobilizes both global and local research evidence about a problem, four options for addressing the problem, and key implementation considerations. Whenever possible, the evidence brief summarizes research evidence drawn from systematic reviews of the research literature and occasionally from single research studies. A systematic review is a summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select and appraise research studies and to synthesize data from the included studies. The evidence brief does not contain recommendations, which would have required the authors of the brief to make judgments based on their personal values and preferences, and which could pre-empt important deliberations about whose values and preferences matter in making such judgments.

The preparation of the evidence brief involved five steps:
1) convening a Steering Committee comprised of representatives from CARPHA, other key stakeholder groups, and the McMaster Health Forum;
2) developing and refining the terms of reference for an evidence brief, particularly the framing of the problem and four viable options for addressing it, in consultation with the Steering Committee and a number of key informants, and with the aid of several conceptual frameworks that organize thinking about ways to approach the issue;
3) identifying, selecting, appraising and synthesizing relevant research evidence about the problem, options and implementation considerations;
4) drafting the evidence brief in such a way as to present concisely and in accessible language the global and local research evidence; and
5) finalizing the evidence brief based on the input of several merit reviewers.

The four options for addressing the problem were not designed to be mutually exclusive. They could be pursued simultaneously or in a sequenced way, and each option could be given greater or lesser attention relative to the others.

The evidence brief was prepared to inform a stakeholder dialogue at which research evidence is one of many considerations. Participants' views and experiences and the tacit knowledge they bring to the issues at hand are also important inputs to the dialogue. One goal of the stakeholder dialogue is to spark insights – insights that can only come about when all of those who will be involved in or affected by future decisions about the issue can work through it together. A second goal of the stakeholder dialogue is to generate action by those who participate in the dialogue and by those who review the dialogue summary and the video interviews with dialogue participants.

within inter-sectoral responses to address interpersonal violence, in particular against women and girls, and against children.(10) Most recently, the Sustainable Development Goals (2015-2030) have included Goal 16, focused on ensuring peace and security, with an emphasis on violence reduction.(11) The sustained emphasis placed on violence over the last 20 years at the international level has helped to lay the foundation for regional and national efforts that aim to strengthen the role of the health sector within inter-sectoral efforts to address the underlying causes, as well as the consequences of violence.

In the region of the Americas and in the Caribbean, the prioritization of violence and injuries as a focal public health issue, while established in previous resolutions (such as CD37.R19), has also been more firmly entrenched in recent years. In 2003, PAHO Resolution CD44.R13 re-established past commitments as laid out in resolutions passed a decade earlier (i.e. CD37.R19), and urged member states to make violence a priority issue and to take up recommendations made in the 2002 World Report on Violence and Health.(12) In 2008, the Ministerial Declaration on Violence and Injury Prevention in the Americas (often referred to as the Merida Declaration) acknowledged that violence and injuries were an epidemic public health problem that affected all countries within the region.(13) Within the context of international commitments already established, the Merida Declaration served as an important step towards clearly solidifying commitments from regional ministers of health to address violence and injuries. At the same time, the Declaration brought to the fore several dimensions of the issue that have since shaped national debates, including:

- the inter-sectoral nature of violence and injuries, and the need for ministries of health to work with other sectors;
- the need for safe, healthy and sustainable environments;
- the need for country-level focal points within ministries of health for violence and injury prevention;
- the need for better information and data management systems;
- the need for better data on violence and injuries to help understand and identify risk factors related to violence and injuries, as well as to assist in establishing the magnitude and characteristics of the problem and measure health system performance;
- the need to strengthen national emergency care systems, trauma care, rehabilitation services and legal and social services;
- the need to integrate services and coordinate care systems to support those affected by violence;
- the need to establish national action plans, and strengthen policy and legal frameworks, protocols and review bodies; and
- the need for regional collaboration.

Box 2: Equity considerations

A problem may disproportionately affect some groups in society. The benefits, harms and costs of options to address the problem may vary across groups. Implementation considerations may also vary across groups.

One way to identify groups warranting particular attention is to use "PROGRESS," which is an acronym formed by the first letters of the following eight ways that can be used to describe groups†:

- place of residence (e.g., rural and remote populations);
- race/ethnicity/culture (e.g., First Nations and Inuit populations, immigrant populations and linguistic minority populations);
- occupation or labour-market experiences more generally (e.g., those in "precarious work" arrangements);
- gender;
- religion;
- educational level (e.g., health literacy);
- socio-economic status (e.g., economically disadvantaged populations); and
- social capital/social exclusion.

The evidence brief strives to address all Caribbean citizens, but (where possible) it also gives particular attention to two groups:

- women, and children (including youth and adolescents); and
- young men.

Many other groups warrant serious consideration as well, and a similar approach could be adopted for any of them.

† The PROGRESS framework was developed by Tim Evans and Hilary Brown (Evans T, Brown H. Road traffic crashes: operationalizing equity in the context of health sector reform. *Injury Control and Safety Promotion* 2003;10(1-2): 11–12). It is being tested by the Cochrane Collaboration Health Equity Field as a means of evaluating the impact of interventions on health equity.

8

During this time, the Pan American Health Organization (PAHO) also passed resolutions which were supportive of promoting a regional emphasis on violence and injury prevention, including one on preventing violence and injuries and promoting safety in 2008 (14), and another on health, human security and well-being in 2010.(15) In 2015, regional commitments have started to manifest as plans for action, with CARPHA recently commissioning the development of the Regional Violence and Injury Prevention Roadmap, which recommends proven strategies that should be adopted in comprehensive and coordinated inter-sectoral plans across the Caribbean.(16)

The issue of violence and injuries is clearly an established policy priority both internationally and in the Caribbean region. As efforts are underway to develop a plan of action in the region (16), this evidence brief aims to complement these efforts by drawing on the best available global and local evidence to help clarify some of the more pressing problems related to violence and injuries in the region (and in particular those for which the health sector is well-positioned to take a leadership role in addressing), frame options for addressing these problems, and identify implementation considerations. Given the size and scope of the issue, and its complexity and inter-sectoral nature, this brief will focus primarily on interpersonal violence (i.e. family and intimate partner violence as well as community violence), self-directed violence (i.e. suicidal behaviour and self-abuse) and the injuries that result (i.e. intentional rather than unintentional injuries), in the Caribbean.(4) As such, this document does not discuss challenges related to occupational hazards, road safety and road traffic accidents, and the range of other unintentional injuries in the region – despite the obvious need to address these in a comprehensive violence and injury prevention plan. This brief also does not address collective violence – that is social, political and economic violence – or acts of interpersonal violence that are committed within these broader categories (e.g. rape during conflicts).(4) Given our narrowed scope, we acknowledge that this document contributes to a key dimension of a larger discussion underpinning the development of a comprehensive violence- and injury-prevention strategy for the region, with the aspiration of being sufficiently focused that concrete actions can be taken over the short-to-medium term to achieve measurable results.

Table 1 defines a list of key terms that will be referred to in this document, or that may be useful for informing deliberations about the problem, options and implementation considerations.

Table 1: Key terms relevant to the issues covered in this brief, or that may be useful for informing deliberations

Term	Definition
Violence	The intentional use of physical force or power, threatened or actual, against oneself (i.e. self-directed), another person (i.e. interpersonal), or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm maldevelopment or deprivation (4)
Gender-based violence	Often used synonymously with 'violence against women', and refers to any act of violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of liberty, whether occurring in public or private life (17)
Interpersonal violence	Violence between individuals that is divided into two sub-categories: 1) family and intimate partner violence; and 2) community violence (4)
Family and intimate partner violence	Violence largely between family members and intimate partners, usually, though not exclusively, taking place in the home (4)
Community violence	Violence between individuals who are unrelated, and who may or may not know each other, generally taking place outside the home (4)
Self-directed violence	Suicidal behaviour including suicidal thoughts, attempted suicides and completed suicides, and other forms of self-abuse and self-mutilation (4)
Collective violence	Includes social (e.g. terrorist acts, mob violence), political (e.g. war) and economic violence (e.g. acts motivated by economic gain such as disrupting economic activity), usually committed by larger groups of individuals or by states (4)
Intentional injuries	Injuries that result from violence (i.e. the intentional use of physical force or power, threatened or actual against oneself, another person or a group or

	community) (4)
Unintentional injuries	Injuries that are the result of accidents (e.g. road traffic accidents or workplace injuries) and not the result of the intentional use of force or power. These can be the result of accidents that occur in a number of settings, including in the workplace and during play/recreation (4)
Primary prevention	Efforts that aim to prevent violence and injuries before they occur (4)
Secondary prevention	Efforts that focus on the more immediate response to violence and injuries, such as pre-hospital care, emergency services, or treatment (4)
Tertiary prevention	Approaches that focus on long-term care in the wake of violence (and injuries), such as rehabilitation and re-integration, and attempts to lessen trauma or reduce the long-term disabilities associated with violence and injuries (4)
Health sector and the health system	All the activities whose primary purpose is to promote, restore and/or maintain health, and the people, institutions and resources, arranged together in accordance with established policies, to improve the health of the population they serve, while responding to people's legitimate expectations and protecting them against the cost of ill-health through a variety of activities whose primary intent is to improve health (18)
Health policy	Includes the full range of decisions at the organizational and governmental level that can be the focus of data, evidence and guidelines (both directly to strengthen health organizations and systems and indirectly to optimize clinical practice), specifically: • a set of decisions or commitments to pursue courses of action aimed at achieving defined goals for improving health, stating or inferring the values that underpin these decisions (the health policy may or may not specify the source of funding that can be applied to the action, the planning and management arrangements to be adopted for implementation of the policy, and the relevant institutions to be involved) • a general statement of understanding to guide decision-making that results from an agreement or consensus among relevant partners on the issues to be addressed and on the approaches or strategies to deal with them (18)
Health services	Any service (i.e. not limited to medical or clinical services) aimed at contributing to improved health or to the diagnosis, treatment and rehabilitation of sick people (18)
Social services	Programs and services that complement health services (and are often delivered in conjunction with health services and in many cases through charitable organizations) to support individuals who are in need of medical, legal, ethical, psychological, financial and social assistance through targeted consultations
Inter-sectoral collaboration	Collective actions involving more than one specialized agency performing different roles for a common purpose (19)
Inter-sectoral action for health	Working across sectors to improve health and influence its determinants (20)
Stakeholder	Any organization or individual that is involved in or likely to be affected by decisions made about the policy issue
Adolescents, youth, young men	For the purpose of this brief, persons between the ages of 10 and 29 years (3)

THE PROBLEM

The problem of interpersonal and self-directed violence and the resultant injuries is very complex, with many underlying causes. In the Caribbean, the problem can be contextualized in relation to its global and regional magnitude, and the effect of violence on particular segments of the population. In particular, three dimensions are important to consider:
1) violence is a major health problem globally, but places a particularly heavy burden on Caribbean countries;
2) women and youth are especially vulnerable to the negative effects of violence; and
3) young men are at higher risk of engaging in and being victims of violent acts, especially homicide and suicide.

While the underlying causes that have led to this situation in the region are numerous, complex and interrelated, the current problem in the Caribbean can also be understood in terms of some of the cross-cutting and underlying causes that exacerbate the situation, as well as the systemic challenges that have heretofore made it difficult for countries in the region to tackle the issues head-on, in particular:
1) the harmful use of alcohol underlies and cuts across many different types of interpersonal violence in the region;
2) evidence of effective interventions to address the problem exists, but interventions are difficult to coordinate across sectors;
3) weak monitoring and surveillance systems make it difficult to fully understand the problem and determine appropriate action; and
4) violence and injury prevention requires well-functioning health systems across the Caribbean.

This brief has chosen to focus on those elements of the problem for which the health sector is particularly well-positioned to take a leadership role in addressing.

Box 3: Mobilizing research evidence about the problem

The available research evidence about the problem was sought from a range of published and "grey" research literature sources. Published literature that provided a comparative dimension to an understanding of the problem was sought using three health services research "hedges" in MedLine, namely those for appropriateness, processes and outcomes of care (which increase the chances of us identifying administrative database studies and community surveys). Published literature that provided insights into alternative ways of framing the problem was sought using a fourth hedge in MedLine, namely the one for qualitative research. Grey literature was sought by reviewing the websites of a number of regional and international organizations, such as PAHO, CARPHA, CARICOM, WHO and the World Bank.

Priority was given to research evidence that was published more recently, that was locally applicable (in the sense of having been conducted in the Caribbean), and that took equity considerations into account.

Violence is a major health problem globally, but places a particularly heavy burden on Caribbean countries

Worldwide, violence and injuries account for five million deaths annually – more than HIV/AIDs, TB and malaria combined – however they were traditionally left off of the global health agenda, and overlooked in national health strategies despite being predictable and preventable.(21) If current trends hold, it has been estimated that by 2020 the global burden of injuries will rise dramatically, with interpersonal violence and self-inflicted injuries as two of the four largest contributors to this rise (road traffic injuries and wars are the other two major contributors).(6) Rates of death as a result of injuries are significantly higher in low- and middle-income countries, which accounted for more than 90% of the world's deaths from injuries and violence in 2006.(6) While deaths are particularly troublesome, there are also a number of 'downstream' health and social problems that are linked to violence, and these can be expected to result in an increased burden on health and social systems in the future.(2-5,7,8,10,13,14,17,21-30)

In Latin America and the Caribbean, increasing rates of violence and homicide have been viewed as particularly challenging, and a large proportion of citizens identify interpersonal violence as a pressing

challenge and top policy priority that needs to be addressed.(15) High rates of crime and violence (particularly homicide) and other forms of interpersonal violence (such as gender-based violence) have been considered as paramount threats to human development in the region, and are often associated with harming national prosperity and negatively influencing economic growth.(31,32) Some estimates suggest that significant reductions in violence in the Dominican Republic and Guyana would result in 1.8% and 1.7% increases in annual economic growth, respectively, while in both Haiti and Jamaica annual economic growth could improve by 5.4%.(33) One study from Jamaica using data from 2006 found that injuries resulting from interpersonal violence accounted for 12% of the country's total health expenditure, and resulted in a loss of productivity worth 4% of GDP in that year.(34,35) While similar estimates are difficult to obtain for other countries in the region, the widespread prevalence and burden of violence across the Caribbean, which is outlined in detail below, suggests that it is likely that interpersonal violence places a strain on scarce resources in many Caribbean countries.

Countries in the Americas consistently report the highest rates of homicide in the world, with an average of 28.5 deaths per 100,000 population – a rate which is more than four times the global average of 6.7 per 100,000.(5) While individual countries with the highest rates in the world are found in Latin America (e.g. WHO estimated that Honduras and Venezuela had rates of 103.9 and 57.6 homicides per 100,000 population in 2012), Caribbean countries also have some of the highest homicide rates globally. In fact, while Latin America and the Caribbean is home to 8.5% of the world's population, it has nearly one-third (27%) of the world's homicides.(31) Some estimates suggest that homicide rates in the Caribbean are higher than any other sub-region in the world.(32) Jamaica has been estimated to have the third highest homicide rate in the world with an estimated 45.1 per 100,000 population in 2012, while Trinidad and Tobago and the Bahamas both have rates that were estimated at either more than or close to five times the global average in the same year (35.3 and 32.1 per 100,000, respectively).(5) Also troubling is the fact that many countries in the Caribbean with lower homicide rates are still much higher than the global average (e.g. Saint Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines all have rates that are at least double the global average). These numbers have been consistently climbing since the 1990s and continue to trend upwards.(31)

While homicide rates are the most readily available and commonly cited indicator of violence globally, statistics that can be used to accurately esimate the full magnitude of the problem with respect to other types of interpersonal violence and assaults are often incomplete given a lack of surveying in the Caribbean. Underreporting is also a major challenge, with data from 2006 victimization surveys of Jamaica suggesting that 68% of all incidents of criminal victimization were not reported to police, while in Trinidad and Tobago, the ratio of self-report rates to official reported crime rates has been found to be as high as 21 in some instances.(36) Despite low reporting, violence and violent crimes are frequently rated in citizen surveys as some of the most pressing challenges in the region (31), while estimates from the Caribbean region related to other forms of interpersonal violence also point to a troubling situation when considered alongside the homicide statistics:

- assault rates in the region based only on those reported to the police have been found to be significantly above the world average;
- three of the top 10 recorded rates of rape in the world occur in the Caribbean, and all countries for which data are available report rates of rape that are higher than the global average; and
- kidnappings have been increasing in several countries in the region, and rates of robbery have been reported as 26% higher than in countries with comparable macroeconomic conditions.(32)

While the economic burden that can be attributed to high rates of interpersonal violence have been highlighted above, it is also associated with widespread emotional, mental health and social consequences, including significant reductions in quality of life, and increased fear, anxiety, depression and suicidal thoughts, which not only result in additional burden on the health system, but also on other social and support services.(5) Early and prolonged exposure to violence can increase the risk of becoming involved in violent behaviour in the future, which creates a self-reinforcing loop that perpetuates violent behaviour as a social norm. Children who grow up in environments that expose them to interpersonal violence view it as the norm, and then go on to become adolescents and adults that are at a higher risk of committing violent acts, creating similar environments that perpetuate risks for violent behaviour among the next generation.(37)

12

Other negative consequences of violence over the longer term include the development of conditions that increase the risk of self-harm, including depression, anxiety and insomnia, as well as the development of drug, alcohol and tobacco addictions.(13) While there are no data to establish a causal linkage between high rates of violence and burden of disease attributable to these types of mental health issues, these are clearly challenges in and of themselves in the region. In the Caribbean, as is the case in many other countries in the world, mental illness contributes significantly to the burden of disease.(38) Additionally, rates of self-directed violence are particularly troublesome in some countries in the region, which record some of the highest suicide rates in the world (particularly among males). For example, as of 2011 Guyana had an estimated rate of 34 suicides per 100,000 population, Suriname had an estimated 24 per 100,000, and Trinidad and Tobago had an estimated 20 per 100,000.(38)

Women and children are especially vulnerable to the negative effects of violence

Violence is a particularly pressing issue for women and children , which has been acknowledged both internationally and in the Caribbean region.(10,16,17,23,32,39,40) Women and children bear the brunt of non-fatal physical, sexual and psychological abuse. WHO has estimated that, worldwide, more than 30% of women have experienced physical or sexual partner violence,(25,41) and 7% have experienced non-partner sexual assault at one point in their life.(42) Furthermore, one quarter of all adults report having been physically abused as children, and one in five women report having been sexually abused as a child.(29) In the Caribbean, violence against women is also widespread with between one-quarter and one-half of women reporting having experienced intimate partner violence.(23) As noted in the previous section, rates of rape are also relatively high in the region: three of the top 10 global rape rates are found in Caribbean countries.(32) Although there is also some concern about men as victims of intimate partner violence,(43) the available literature is still growing, and does not suggest that this problem is on par with partner violence against women in the region.

The health consequences associated with being a victim of non-fatal interpersonal violence (including sexual and gender-based violence) are problematic for women and children. Between one-half and two-thirds of women who experience partner violence in the Latin America and Caribbean region said they have experienced anxiety or depression that was so severe they could not carry out their usual work, and these women are also more likely to contemplate suicide.(23) Children are also affected by partner violence, which can have negative effects on their development and put them at risk for many problems in the future including their engagement in violent activities.(32) Some studies have suggested that the earlier the exposure to risk starts in children, the longer the exposure to risk continues, and the greater exposure to risks contributes significantly to the likelihood that children will become involved in violent behaviour themselves in the future, making it particularly important that violence-prevention strategies target children as young as possible.(37)High levels of corporal punishment, a violent form of discipline, are also found in countries across the region, and high levels of violence are also found in schools.(32)

Young men are at higher risk of engaging in and being victims of violent acts, especially homicide and suicide

Global estimates suggest that almost twice as many violent deaths occur in the male population.(21,37,44) In 2012 there were an estimated 475,000 deaths worldwide as a result of homicide, with 60% of these deaths in young males aged 15 to 44, making this the third leading cause of death in this group.(5) Mortality is two to three times higher among young men than it is for boys under age 15, and between one-quarter and one-third of deaths among those aged 10 to 24 who have been exposed to violence are attributed to suicide.(37) In the Caribbean, research has shown that the majority of perpetrators and victims of violence and crime are young men.(32) More broadly, male homicide rates across all age groups eclipse female rates: in Barbados the homicide rate is more than five times higher for males than females, in Trinidad and Tobago it is more than six times higher, and in Jamaica it is more than nine times higher.(5) A similar picture exists with respect to suicide rates in countries across the region. For example, in Saint Vincent and the Grenadines the male suicide rate is 7 per 100,000, whereas it is estimated as 0 per 100,000 for females. In higher incidence

countries such as Guyana and Trinidad, the male rate is three and five times higher than that of females, respectively.(38)

On the whole, many of the complex combinations of causal factors that have led to high levels of interpersonal violence in the Caribbean – including socioeconomic factors, demographic conditions and social norms (such as pervasive societal gender norms) – have been explored extensively.(3-5,27,29,45) Emphasis has also been placed on the linkages between high rates of violence and the portrayal and glorification of violence, gang culture and aggressive behaviour in the media, organized crime and drug trafficking, and easy access to firearms, the latter of which also contributes significantly to higher rates of suicide.(4,13,31) However, when considering risk factors for which the health sector is most uniquely positioned to address, the harmful use of alcohol is often cited as one of the most important cross-cutting risk factors underpinning high rates of violence in the region.(4,14,23,31,32)

The harmful use of alcohol is one problem that underlies and cuts across many different types of interpersonal violence in the region

In the Caribbean, alcohol abuse is well established, and there is a high prevalence of 'heavy drinkers'.(46) Furthermore, while deaths that can be attributed to alcohol are estimated at 1.5% globally, in Latin America and the Caribbean the figure is estimated at 4.5%.(39)

Alcohol plays an important role in instigating various forms of gender-based violence in the region, including sexual abuse and violence within families,(39) and has been found to be a contributor to violence and injuries in the region more generally.(46) Global evidence has shown the association between alcohol and the risk of being a victim of homicide,(47) and in countries such as Trinidad and Tobago, alcohol use has been linked to crime.(48) Studies from Trinidad and Tobago have also shown that nearly 30% of homicide victims in the country are under the influence of alcohol at the time of death.(49) Furthermore, alcohol abuse is often a direct consequence of victimization of interpersonal violence, which can in turn lead to more violent behaviour.(4,6,50)

In the Caribbean, youth who are out of school or who are unemployed are at a higher risk for substance abuse and harmful alcohol use.(51) This is particularly troublesome given current youth employment challenges faced across the region, which has already been linked to disenfranchisement, engagement in risky behaviours, alcohol abuse and rising youth violence.(52)

While the harmful use of alcohol is an important underlying issue, it must also be noted that another significant underlying issue is the existence of illegal markets, particularly those for illicit drugs. These can give rise to firearm use that result in injuries, and ultimately contribute to the high homicide rates in the region.(31,53) However, this brief focuses mainly on alcohol, given it was identified by key informants as the underlying and cross-cutting problem that can be addressed by approaches initiated and led by stakeholders in the health sector, which is not the case for addressing the illegal market for drugs. For the latter, the approach suggested in option 1 to strengthen inter-sectoral collaboration (see the next section) would undoubtedly need to initiate strategies to address this underlying problem in the region as well.

Effective interventions to address the problem exist, but are difficult to coordinate across sectors

Health system policymakers and stakeholders, researchers and international organizations have spent significant time and effort determining which interventions are most promising for preventing interpersonal violence and injuries, for treating and rehabilitating victims, and for reducing the chances of recidivism among offenders. Despite the fact that the underlying causes of interpersonal violence and injuries are complex, requiring coordinated inter-sectoral strategies that address a number of risk factors, many interventions have been shown to be effective in reducing various types of violence, including child maltreatment, intimate partner violence, sexual violence, youth violence, suicide and self-directed violence.(25,30) Interventions shown to be the most promising generally fall within seven broad categories: 1) the development of safe,

stable and nurturing relationships between children and their parents and carers; 2) developing life skills in children and adolescents; 3) reducing the availability and harmful use of alcohol; 4) reducing access to lethal means such as guns, knives and pesticides; 5) promoting gender equality to prevent violence against women; 6) changing cultural and social norms that support violence; and 7) victim identification, care and support programs.(30)

Table 2 provides an overview of violence-prevention interventions that have been found to be effective based on two extensive overviews of the existing evidence base.(22,25,30) Interventions are organized by the type of violence addressed, and the levels at which they are targeted (i.e. at individuals or communities, or at the level of laws, policies and regulation). Given the review of the evidence focused on interventions to reduce gender-based violence also documented those which were ineffective and those for which the evidence was unclear,(22,25) these are also presented in **Table 3**. Overall, the research shows that while dealing with the immediate consequences of violence and injuries (through providing supports to victims and by punishing offenders) are important, a comprehensive response needs to promote non-violence, reduce the perpetration of violence and change the circumstances that result in violence and injuries in the first place. (4)

Although there is a growing evidence base about 'what works' to prevent interpersonal and self-directed violence and injuries, statistics show that the problem in many countries in the region is not improving (5,21,23,32,41). This is due in part to the fact that many of the strategies require multi-sectoral collaboration, and many health systems – including those in several Caribbean countries – have not developed and implemented coordinated, inter-sectoral violence-prevention strategies that can support improvements.(5) There are challenges associated with coordinating efforts across multiple sectors as it is often unclear which agency or ministry ought to 'take the lead', communication and information-sharing is difficult and often poorly executed, and there is often a failure to establish mechanisms and forums that can ensure engagement of all stakeholders who are important contributors to an effective solution.(5)

Table 2: Violence prevention interventions that have been found to be effective

Type of violence addressed	Interventions by target
Cross-cutting (evidence to suggest positive impact on all types of intentional violence)	**Targeted at individuals or groups** • Psychosocial interventions **Laws, policies, regulation** • Raising alcohol prices • Regulating sales of alcohol
Child maltreatment	**Targeted at individuals or groups** • Parent training, including training delivered through outreach and nurse home visits**† • Parent-child programs
Intimate partner violence	**Targeted at individuals or groups** • Economic empowerment and income supplements combined with gender equity training†† • Empowerment training for women and girls (includes individual and group programs such as mentoring, life skills training or self-defence training)†† • Interventions for problem drinkers** • Protection orders • School-based programs to address gender norms and attitudes** • Screening and referrals • Victim advocacy support programs (including case management and connection to legal services and information)**† • Women and gender norms programming and training (group-based training and workshops)†† **Targeted at communities** • Community mobilization (including participatory projects, community-driven

	development engaging multiple stakeholders and addressing gender norms)††
	• Social marketing to modify social norms
Sexual violence	**Targeted at individuals or groups**
	• Economic empowerment and income supplements combined with gender equity training††
	• Empowerment training for women and girls (individual and group programs such as mentoring, life skills training or self-defence training)††
	• School-based programs to address gender norms and attitudes
	• Women and gender norms programming and training (group-based training and workshops)††
	Targeted at communities
	• Community mobilization (including participatory projects, community-driven development engaging multiple stakeholders and addressing gender norms)††
	• Social marketing to modify social norms‡
Youth violence	**Targeted at individuals or groups**
	• Parent training (including through nurse home visits)
	• Parent-child programs
	• Preschool enrichment programs
	Targeted at communities
	• Improving drinking environments
	• Social development programs**
	Laws, policies, regulation
	• Enforced bans on carrying firearms in public
	• Restrictive firearm licensing and purchase policies
Suicide and self-directed violence	**Laws, policies, regulation**
	• Policies to restrict or ban toxic substances
	• Restrictive firearm licensing and purchase policies

Note: Table 2 is adapted from the World Health Organization report "Violence Prevention: The Evidence" which contains seven briefings on the evidence underpinning violence prevention strategies(30), and an overview of reviews published by the World Bank,(22) and summarized in a recent series on violence against women and girls published in the Lancet.(25-27)

**Indicates interventions supported by a strong evidence base (as highlighted in WHO's 'Violence Prevention: The Evidence' briefing report)

†Noted in Ellsberg et al. that there is promising evidence from high-income countries, but no evidence or insufficient evidence from low- and middle-income countries

†† Noted in Ellsberg et al. that there is promising evidence from low- and middle-income countries but no evidence or insufficient evidence from high-income countries

‡ Identified as promising or effective in WHO violence prevention briefings, but as having insufficient evidence by World Bank overview of reviews

Table 3: Strategies to reduce violence against women for which evidence is unclear, or that have shown to be ineffective

Type of violence addressed	Interventions for which evidence is unclear	Interventions shown to be ineffective
Intimate partner violence	**Targeted at individuals or groups** • Economic empowering/income supplements alone (e.g. microfinance, vocational training or job placement, cash transfers, etc.) • Men and boys norms programming • Perpetrators' programs targeted at men who assault their partners • Women-centred programs for survivors (includes psychosocial counselling, post-exposure prophylaxis and emergency contraception as needed, risk assessment, referrals and safety planning) **Targeted at communities** • Information and communication technology services (emergency hotlines, mobile applications) • One-stop crisis centres (also includes hospital-based) • Shelters • Social marketing campaigns or edutainment plus group education (includes long-term social and other media programs such as posters, etc.)† • Women's police stations	**Targeted at communities** • Awareness raising campaigns (i.e. one-off media efforts including billboards, radio, posters, television advertisements) • Training of teachers, police officers, first responders and healthcare professionals (e.g. through sensitization, identification or response training) • Universal screening for all individuals at nurses' and doctors' visits **Laws, policies, regulation** • Justice and law-enforcement interventions (including mobile courts, increased enforcement and second response)
Sexual violence	**Targeted at individuals or groups** • Economic empowerment/income supplements alone (e.g. microfinance, vocational training or job placement, cash transfers, etc.) • Infrastructure and transport improvement (e.g. safety on public transport, and street lights) • Men and boys norms programming • Women-centred programs for survivors (includes psychosocial counselling, post-exposure prophylaxis and emergency contraception as needed, risk assessment, referrals and safety planning) **Targeted at communities** • ICT services (emergency hotlines, mobile applications) • Social marketing campaigns or edutainment plus group education (includes long-term social and other media programs such as posters, etc.)†	

Note this table is adapted from Table 4 in World Bank overview of reviews,(22) summarized in Lancet series on violence against women (25-27).
†Found to be promising in WHO's briefing "Violence Prevention: The Evidence", although based on an emerging evidence base

Weak monitoring and surveillance systems make it difficult to fully understand the problem and determine appropriate action

In addition to the challenges associated with coordinating the development of strategies across sectors to address violence, coordinating violence and injury monitoring and surveillance frequently emerges as a particularly problematic issue.(5) Injuries and violence are believed to be vastly underestimated, given underreporting, inconsistent and incomplete approaches to measurement, as well as fragmentation within and across sectors.(29) For example, in suicide monitoring systems, deaths may not be recorded as such, and instead those who monitor suicides often rely on community surveys to establish prevalence.(54). With respect to interpersonal violence, measures may be different across sectors and surveys, making it a challenge

to get accurate estimates of incidence (and prevalence in the case of ongoing violence), which compounds the fact that this is often under-reported.(23)

Overall, in nearly all countries in the Caribbean, data on violence are both difficult to obtain and incomplete. Furthermore, this challenge is compounded by significant underreporting of violence in many countries in the region.(36) This has resulted in weak monitoring and surveillance systems that make it challenging to: 1) fully understand the extent of existing problems; 2) make informed decisions when planning appropriate strategies; and 3) monitor progress towards achieving goals.(32) Further adding to this challenge is that issues with monitoring and surveillance are not germane only to the health and social sectors – crime and justice monitoring has also been a significant challenge identified in the region.(31)

Violence and injury prevention requires well-functioning health systems across the Caribbean

It is increasingly acknowledged that the health sector has a unique role to play in addressing many facets of violence and injuries given it is positioned to address many (although not all) of the underlying causes that have led to there being such a problem in the region.(13) The health system is also the first point of contact for those who have been victims of interpersonal violence that result in injuries, and as such has a direct interest in trying to reduce rates of violence that result in injuries and ill-health.(5,9,10,26,55,56) It has also been suggested that the health sector should act as the central coordinator in violence- and injury-prevention strategies. At least one rationale for this is the fact that there has been a growing mistrust among citizens in many Caribbean countries of other key sectors required to take action to reduce violence and prevent injuries, such as criminal justice and law enforcement.(31,32) As such, efforts led and coordinated by those working in the health and social sectors may be perceived as less threatening and have a greater chance of success.

However, playing a central role in coordinating efforts across a number of sectors that have traditionally been fragmented requires the health system to deliver on its core responsibilities related to violence and injuries, while enabling other sectors to do the same.(10,26) This includes strengthening the ability of those working in the health sector to screen for victims and those at risk of engaging in violent acts, to provide high-quality front-line supportive care, and ensure the appropriate referral to other necessary services within and outside the health sector. This also requires clearly established referral systems within the health sector and between other sectors, the appropriate integration of services and, as outlined in the previous section, the capacity to contribute to inter-sectoral monitoring and surveillance systems. Without ensuring that these core health system competencies are established, countries in the Caribbean will have great difficulty playing a larger role in coordinating inter-sectoral strategies.

Additional equity-related observations about the problem

The prioritized groups in this brief – namely women and children, adolescents, youth and young men – are so integral to developing a fulsome understanding of the problems related to interpersonal and self-directed violence and injuries in the Caribbean, that observations related to these groups have been discussed at length in their own sections above.

FOUR OPTIONS FOR ADDRESSING THE PROBLEM

A number of different approaches could be used to address the full range of problems related to interpersonal and self-directed violence in the Caribbean region. One approach, which was selected by the Steering Committee as being appropriate in the context of the current situation in the Caribbean and worthy of deliberation, and then further informed by input from key informant interviews focused on four options:
1) strengthen efforts to establish ongoing and sustained inter-sectoral collaboration to facilitate the development and implementation of comprehensive violence- and injury-prevention strategies;
2) strengthen violence and injury monitoring and surveillance systems at the regional and national levels;
3) address the cross-cutting issue of harmful use of alcohol in the Caribbean region through targeted initiatives; and
4) strengthen core elements of health systems related to interpersonal and self-directed violence and injury prevention.

Firstly, these four options should not be considered mutually exclusive. For instance, this brief positions options 3 and 4 as actions that could be adopted by the health sector, but in reality they could likely be considered as nested initiatives within the broader focus of the first two options, both of which require ongoing and sustained inter-sectoral collaboration. Second, as outlined in the previous section about the problem, recent overviews of the evidence have shown that there are many promising interventions that can be adopted to address a range of aspects related to interpersonal and self-directed violence. It is important to acknowledge that the four options presented here are intended as complements to these interventions – and in many cases supports for them – to ensure countries in the region can move towards adopting and implementing 'what works'. As such, each of the four options should be considered within the context of what evidence has shown to be the most promising interventions (see Tables 2 and 3). Third and finally, in our search for systematic reviews about elements of each of the four options, we were rarely able to find

Box 4: Mobilizing research evidence about options for addressing the problem

The available research evidence about options for addressing the problem was sought primarily from Health Systems Evidence (www.healthsystemsevidence.org), which is a continuously updated database containing more than 4,400 systematic reviews and more than 2,200 economic evaluations of delivery, financial and governance arrangements within health systems. The reviews and economic evaluations were identified by searching the database for reviews addressing features of each of the approach options and sub-elements.

The authors' conclusions were extracted from the reviews whenever possible. Some reviews contained no studies despite an exhaustive search (i.e., they were "empty" reviews), while others concluded that there was substantial uncertainty about the option based on the identified studies. Where relevant, caveats were introduced about these authors' conclusions based on assessments of the reviews' quality, the local applicability of the reviews' findings, equity considerations, and relevance to the issue. (See the appendices for a complete description of these assessments.)

Being aware of what is not known can be as important as being aware of what is known. When faced with an empty review, substantial uncertainty, or concerns about quality and local applicability or lack of attention to equity considerations, primary research could be commissioned, or an option could be pursued and a monitoring and evaluation plan designed as part of its implementation. When faced with a review that was published many years ago, an updating of the review could be commissioned if time allows.

No additional research evidence was sought beyond what was included in the systematic review. Those interested in pursuing a particular option may want to search for a more detailed description of the option or for additional research evidence about the option.

any that were directly related to the issue of interpersonal and self-directed violence and injury prevention, or that were directly applicable in Caribbean settings given only three reviews contained studies that were conducted in Caribbean countries. However, in order to glean as much as we could from the best available evidence, we focused on understanding what was known about each of our options even if the intervention or strategy considered was evaluated outside of the context of violence and injuries, or outside of the

Caribbean. We have, however, clearly noted when a review included studies that were conducted in the Caribbean.

Given the length of some of the following sections (most notably sections that outline findings from reviews about options 3 and 4), we suggest that readers with limited time focus on the 'bottom line' messages about each option provided in the paragraphs immediately preceding the summary of findings tables (i.e. Tables 4, 5, 6 and 7).

Option 1 – Strengthen efforts to establish and sustain inter-sectoral collaboration to facilitate the development and implementation of comprehensive violence- and injury-prevention strategies

Option 1 is perhaps the most vital element of a comprehensive approach to addressing the full range of underlying problems (and their causes) related to interpersonal and self-directed violence and injuries in the Caribbean. However, underpinning this option are two necessary pre-conditions: the existence of a clear and shared vision (i.e. the articulation of a common purpose through the development of a national multi-sectoral plan), and leadership (i.e. a sector or agency must assume a coordination role). In the Caribbean, the development of the Regional Violence and Injury Prevention Roadmap will assist in establishing the first pre-condition,(16) and through this process leadership and coordinating roles will be further identified (the second pre-condition). The pursuit of efforts to establish ongoing and sustained inter-sectoral collaboration could include one or both of the following elements:
1) establish or strengthen formal multi-institutional linkages across sectors within the area of violence and injuries, which could include (but would not be limited to) the creation of working groups, an inter-sectoral violence and injury 'task force', or a new government secretariat that routinely engages all stakeholders in coordinated planning and policy development initiatives; and
2) create opportunities in existing policy development processes to facilitate inter-sectoral stakeholder input (e.g. by introducing mechanisms to prompt engagement and consultation at various stages in the policy development process).

Two systematic reviews based on the same large project – one of which was high-quality(57) and of which was medium-quality(58) – were identified on the topic of inter-sectoral collaboration, which relates to the first sub-element of option 1 focused on establishing or strengthening formal multi-institutional linkages across sectors. However, these reviews addressed the influence of inter-sectoral collaboration on health equity and outcomes related to the social determinants of health, and not their influence on improving outcomes related to the development and implementation of strategies focused on interpersonal and self-directed violence and injuries. Nevertheless, given the same option (inter-sectoral collaboration) was the focus of these reviews, they provided an important opportunity to learn about whether and how this approach worked in one setting for one type of outcome, with the potential to consider how it might work in the context of violence and injuries. First, the authors found that adopting an inter-sectoral approach during the development and implementation of interventions had generally mixed results, particularly in light of the fact that the contribution of inter-sectoral collaboration to outcomes of interest can be difficult to isolate. Second, the authors noted that the strongest effects of inter-sectoral collaboration were observed for initiatives that were focused on addressing 'downstream' issues; that is, those that included direct treatment and access to care, which is often referred to as 'secondary prevention' initiatives in the context of violence prevention.(4) Third, the authors suggested that while the strongest evidence was found to support 'downstream' initiatives, the most widespread changes were likely to be seen when inter-sectoral collaboration is used to organize 'upstream' initiatives.

No reviews were found that directly addressed the second sub-element of option 1, which focused on creating opportunities in existing policy development processes to facilitate inputs from multiple sectors. However, one medium-quality qualitative review was identified that presented a model of the key features of a promising approach (deliberative stakeholder dialogues) to engaging policymakers, stakeholders and researchers in addressing priority health system policy issues using the best available research evidence.(59) The authors suggested that the key features for this type of engagement include an appropriate meeting environment and mix of participants, and an appropriate use of research evidence. The types of effects

20

intended by these initiatives include those that are short-term and focused at the individual level, medium-term and focused on the community/organizational level, and long-term and focused on system-level changes.

Additional searches for single studies identified one study that was very relevant to option 1, as it sought to identify interventions that could promote inter-sectoral collaboration in public health efforts.(60) While obesity was used as the illustrative case, the findings are extremely relevant to the context of violence and injuries, given the focus of this study was primarily on understanding more generally what could be done to improve inter-sectoral collaboration in public health efforts. In particular, the authors identified nine interventions that were found to facilitate greater inter-sectoral collaboration:
1) education;
2) persuasion;
3) incentives;
4) coercion;
5) training;
6) restriction;
7) environmental restructuring;
8) modelling; and
9) enablement.

The authors suggested that, at a strategic level, education, persuasion and incentivization were the most important, and essential to support communication across sectors. Education, training and modelling were cited as most important at the tactical level, where individuals across sectors needed to be apprised of the requirements for facilitating and managing inter-sectoral collaboration. Operationally, the authors pointed out that training, environmental restructuring and enablement were key, which would ensure actors in different sectors were equipped to engage with others from a multitude of sectors, which promoted ongoing and sustained collaboration.

A summary of the key findings from the synthesized research evidence is provided in Table 4. For those who want to know more about the systematic reviews contained in Table 4 (or obtain citations for the reviews), a fuller description of the systematic reviews is provided in Appendix 1. Overall, our searches indicated that, at present, there is no available evidence from systematic reviews that speaks to approaches for strengthening inter-sectoral collaboration to support violence- and injury-prevention strategies. The available evidence from the health equity literature is mixed – inter-sectoral collaboration had moderate to no effect on the social determinants of health. Further research is therefore required to understand the impact and effectiveness of inter-sectoral action to support comprehensive violence- and injury-prevention strategies. A qualitative review, however, suggests that deliberative dialogues could be a promising approach to create opportunities for stakeholders from multiple sectors to provide input into the policy development process. This approach could be applied to policies for violence and injury prevention.

Table 4: Summary of key findings from systematic reviews relevant to Option 1 – Strengthen efforts to establish ongoing and sustained inter-sectoral collaboration to facilitate the development and implementation of comprehensive violence and injury prevention strategies

Category of finding	Summary of key findings
Benefits	• **Establish or strengthen formal multi-institutional linkages across sectors:** o One high-quality review and one medium-quality review reporting results from the same large study found that inter-sectoral collaboration generally has mixed results in the context of improving health equity. The greatest benefits of inter-sectoral collaboration were observed for 'downstream' interventions (i.e. focused on secondary prevention), although the authors suggested that larger impacts would be seen for initiatives focused on broader system-wide change over the longer term (i.e. upstream interventions)(57,58)
Potential harms	• No systematic reviews identified potential harms
Costs and/or cost-effectiveness in relation to the status quo	• No economic evaluations or costing studies were identified that provided information about costs and cost-effectiveness of this option in relation to the status quo

Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the option were pursued)	• Uncertainty because no systematic reviews were identified related to the following sub-elements
	  o **Create opportunities in existing policy development processes to facilitate inter-sectoral stakeholder input**
	• Uncertainty because no studies were identified despite an exhaustive search as part of a systematic review
	  o Not applicable (no 'empty' reviews were found)
	• No clear message from studies included in a systematic review
	  o Not applicable

Key elements of the policy option if it was tried elsewhere	• **Create opportunities in existing policy development processes to facilitate inter-sectoral stakeholder input**
	  o One medium-quality qualitative review suggested deliberative stakeholder dialogues used to engage policymakers, stakeholders and researches in addressing priority health system policy issues should ensure the following key features are considered:
	    ▪ an appropriate environment;
	    ▪ an appropriate mix of participants; and
	    ▪ an appropriate use of research evidence.(59)

Stakeholders' views and experience	• No reviews provided information about stakeholders' views and experiences

Option 2 – Strengthen violence and injury monitoring and surveillance systems at the regional and national levels

The second option that could be considered as part of a strategy to address problems related to interpersonal and self-directed violence and injuries in the Caribbean relates to strengthening monitoring and surveillance systems. Similar to option 1, given the complex nature of violence and injuries, this option would require significant inter-sectoral collaboration and coordination across health, social services, criminal justice, education and other sectors. As such, much of the discussion outlined in the previous section also applies here. Additionally, option 2 includes four unique sub-elements, which include:
1) engage stakeholders from multiple sectors to identify where data are already being collected related to violence and injuries in order to identify opportunities for integration;
2) integrate data from across sectors to create a comprehensive inventory of violence and injury indicators that can inform national policy development and planning;
3) integrate data across the region to inform regional policy development and planning; and
4) identify gaps in available data to prioritize the development of new data collection mechanisms.

No systematic reviews were identified that addressed any of the specific sub-elements nested within option 2. However, two reviews – one of which was medium-quality and one of which was low-quality – were identified that addressed strengthening monitoring and surveillance systems more generally. Although the reviews were not focused on violence and injuries specifically, they both focused on identifying factors associated with successful monitoring and surveillance systems, which could be relevant to those who are considering option 2 as a viable solution. The medium-quality review focused on the relative benefits of using

electronic surveillance compared to manual 'gold standard' methods for healthcare-associated infections, and based on 44 included studies concluded that electronic surveillance systems outperformed manual systems.(61) The review also pointed out that a lack of electronic data in healthcare settings reduced the potential for more widespread uptake of these systems.

The low-quality review assessed the effectiveness of using the internet and social media platforms as part of public health and epidemiological surveillance systems.(62) The authors found that there was a lack of effectiveness studies on the integration of the internet and social media into national public health surveillance systems, and as such it is unclear whether they can be used to strengthen these systems. They suggest that there is great potential for both social media and the internet to enrich and possibly strengthen public health monitoring and surveillance systems, but state that more research is needed to determine the best ways to integrate these data into national systems.

Additional searches for single studies identified one particularly relevant qualitative study that was relevant to option 2, given its aim was to identify critical factors for improving inter-sectoral collaboration and understanding related to the collection and use of health risk surveillance data across multiple sectors.(63) While the study was conducted with emphasis on the Australian context, the themes highlighted are likely also important to consider in the context of integrating data across sectors to support stronger violence and injury monitoring and surveillance in the Caribbean. In particular the following four dimensions were identified as essential in supporting integration across sectors:
1) establishing a shared understanding of risk behaviour surveillance;
2) effectively delivering continuous data about the health and developmental status of individuals over time;
3) utilizing a systems approach that builds development capacity, ownership and access to data outside the health system; and
4) creating sustainable partnerships for engagement between different sectors for improving the use of data to improve policy decision-making.

While the single study did not speculate whether these factors were effective in establishing and strengthening monitoring and surveillance systems across sectors, the important factors identified by the authors serve as a potentially useful framework that can inform the planning, development and implementation of elements related to option 2.

A summary of the key findings from the synthesized research evidence is provided in Table 5. For those who want to know more about the systematic reviews contained in Table 5 (or obtain citations for the reviews), a fuller description of the systematic reviews is provided in Appendix 2.Overall, our searches indicated that with respect to the overall strengthening of disease surveillance systems, there is evidence that electronic systems outperform manual methods when both methods were compared against a gold standard. The brief, however, proposed four approaches to strengthen violence and injury monitoring and surveillance systems: engaging stakeholders from multiple sectors to identify where data are already being collected; integrating data from across sectors to create a comprehensive inventory of indicators; integrating data across the region; and identifying gaps to prioritize these data for collection. Despite the extensive search, no systematic reviews directly addressing these issues were found. It is therefore uncertain whether these approaches would result in benefits that justify the associated costs. Decisions to move forward with them would have to be made on the basis of other types of evidence (e.g. tacit knowledge, views and experiences) that will be drawn upon at the dialogue that this brief was prepared to inform.

Table 5: Summary of key findings from systematic reviews relevant to Option 2 – Strengthen violence and injury monitoring and surveillance systems at the regional and national levels

Category of finding	Summary of key findings
Benefits	• **Strengthen violence and injury monitoring and surveillance systems** o One medium-quality systematic review related to option 2 more generally (although not directly related to violence and injuries) found that electronic monitoring and surveillance systems outperformed manual systems (61)
Potential harms	• No systematic reviews identified potential harms
Costs and/or cost-effectiveness in relation to the status quo	• No economic evaluations or costing studies were identified that provided information about costs and/or cost-effectiveness of this option in relation to the status quo

Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the option were pursued)	• Uncertainty because no systematic reviews were identified related to the following sub-elements
	  o **Engage stakeholders from multiple sectors to identify where data are already being collected related to violence and injuries, in order to identify opportunities for integration**
	  o **Integrate data from across sectors to create a comprehensive inventory of violence and injury indicators that can inform national policy development and planning**
	  o **Integrate data across the region to inform regional policy development and planning**
	  o **Identify gaps in available data to prioritize the development of new data collection mechanisms**
	• Uncertainty because no studies were identified despite an exhaustive search as part of a systematic review
	  o Not applicable (no 'empty' reviews were found)
	• No clear message from studies included in a systematic review
	  o Not applicable

Key elements of the policy option if it was tried elsewhere	• **Strengthen violence and injury monitoring and surveillance systems** o One medium-quality systematic review related to option 2 more generally found that it is difficult to introduce electronic monitoring and surveillance systems in contexts where there is a lack of electronic data, and reliance on manual data collection (61)
Stakeholders' views and experience	• No reviews provided information about stakeholders' views and experiences

Option 3 – Address the cross-cutting issue of harmful use of alcohol in the Caribbean region through targeted initiatives

Given that the harmful use of alcohol is so frequently mentioned as an important factor underpinning interpersonal and self-directed violence and injuries, a third option that could be considered is to address the issue with targeted health-sector interventions. In particular, initiatives could be targeted at three levels, constituting three sub-elements of this option:
1) develop and implement interventions that reduce the harmful use of alcohol by targeting individual and group behaviours (e.g. adolescents and youth, adults, families);
2) develop and implement interventions that reduce the harmful use of alcohol by targeting entire communities (e.g. establishment of universal programs available to anyone living in a community, awareness campaigns, etc.); and
3) introduce new, or change existing laws, policies and regulations that aim to reduce the harmful use of alcohol in an entire jurisdiction.
The evidence base for the benefits of alcohol use-reduction strategies related to the first sub-element of option 3 (interventions targeted at individuals and groups) is extensive. We identified 33 systematic reviews focused on interventions targeted at individual and group behaviours to reduce alcohol consumption, 15 of which focused on adolescents and/or youth drinking, and a further 18 that focused on individuals or groups more generally. Given the volume of evidence retrieved, when highlighting what is known from reviews about the effectiveness of strategies, this brief only reports findings from high-quality reviews for this sub-element (see the appendix for details of our quality appraisal assessment criteria). However, all of the identified reviews and a summary of the key findings from each review are provided in Appendix 3.

Six high-quality reviews were identified that focused on reducing alcohol consumption among adolescents and/or youth by targeting individuals or groups. One of the high-quality reviews assessed the effects of

motivational interviewing for alcohol misuse in adolescents, and based on 55 identified studies found that this intervention reduced the quantity of alcohol consumed, frequency of use, and peak blood-alcohol concentration, although the included evidence was of moderate quality.(64) No effects were found on binge drinking, average blood alcohol levels, or on reducing risky behaviours associated with alcohol misuse. Two high-quality reviews were identified that assessed the effects of mentoring on drug and alcohol use in adolescents.(65,66) One of these reviews found significant but limited effects on the use of alcohol, and no effects on the use of drugs.(65) The second review also found that mentoring only had limited effects on reducing alcohol consumption, although it also found that mentoring was effective for reducing drug use.(66) A separate high-quality review was identified that assessed the evidence supporting a range of interventions for reducing alcohol abuse among adolescents.(67) Motivational interviewing, cognitive behavioural therapy with 12 steps, cognitive behavioural therapy with after-care, multi-dimensional family therapy, brief interventions with adolescents, and brief interventions with family support were all found to have large effects on the reduction of alcohol use. The authors of this same review found medium-sized effects associated with behavioural treatment and triple-modality social learning, and small effects for multi-systemic therapy. The review also found that individual approaches were more effective than family-based interventions, and that longer follow-up was associated with reduced effectiveness.(67) Another high-quality review assessed prevention programs that combined anti-drug and alcohol information with refusal skills training, self-management skills training and social skills training, and found that these programs reduced alcohol consumption by 12 days per month, on average.(68) The authors found that while information alone is effective (it was found to reduce alcohol consumption by an average of two days per month), it is more effective when combined with other interventions in a comprehensive prevention program.(68) The final high-quality review that was identified related to interventions targeted at individuals and groups, with a focus on adolescents and/or youth, assessed the effectiveness of brief emergency department interventions for alcohol and drugs.(69) The authors found that motivational interviewing, personalized normative assessment feedback, and referrals reduced alcohol-related consequences, which included injury and physical abuse, although the included studies were low-quality which limited their ability to form strong conclusions.

Seven high-quality reviews were identified that focused on reducing alcohol consumption among individuals and groups more generally. One review found that brief interventions delivered in primary care designed to reduce the harmful use of alcohol through the provision of information and advice delivered were effective, although there were mixed results.(70) The authors also found that increasing the time spent counselling patients improved outcomes, and that results were more significant among men compared to women.(70) However, it should be noted that a more recent, albeit medium-quality, review assessing brief interventions in primary-care settings found that length and gender targeted didn't matter.(71) Another high-quality review focused on behavioural counselling delivered in primary-care settings found that this intervention improved drinking behavioural outcomes and reduced hospitalization for adults with risky drinking.(72) The components of behavioural counselling found to be effective were brief advice, feedback, motivational interviews and cognitive behavioural strategies, and brief multi-component and multi-contact approaches were also shown to be effective, although in all cases there was no evidence to suggest the effects were sustained over periods of 48 months or more. Another high-quality review that was identified focused on outpatient interventions (not limited to primary care) to reduce alcohol consumption, which included motivational interviewing, brief interventions, educational materials and risk counselling.(73) The review found that motivational interviewing may be effective when delivered to patients in oral-maxillofacial clinics, but stated that this could not be generalized to all outpatient settings. As such, they did not have sufficient evidence to draw conclusions.

One of the reviews that was identified related to sub-element 1 and focused on individuals and groups more generally, assessed interventions to reduce alcohol consumption delivered to heavy alcohol users in inpatient general hospital settings.(74) The specific interventions assessed were brief interventions and information (e.g. leaflets), and the authors found no evidence that they resulted in significant alcohol consumption reduction. Personalized-feedback interventions were assessed in another high-quality review, which found that single-sessional and web-based, personalized-feedback interventions without professional guidance was effective for reducing risky alcohol misuse, and found that feedback combined with brief interventions and motivational interviewing was also effective.(75) The authors found no evidence about the longevity of these

effects, or if specific groups benefited more so than others. Another review addressed the effects of stand-alone computer-based interventions, including games, motivational assessment and feedback, and behaviour change skills development.(76) While the authors were hesitant to draw definitive conclusions, they found that computer-based interventions were more effective than more passive interventions (e.g. assessment-only, usual care, generic non-tailored information or educational materials) at reducing alcohol consumption and binge frequency, and at least as effective (i.e. no significant differences) as brief interventions.

Another review, the results of which are likely to be locally applicable given that all of the included studies were conducted in the Caribbean, focused on the first sub-element of option 3 and assessed the effects of psychosocial interventions (e.g. cognitive behavioural therapy, 12-step programs, brief interventions, motivational interviewing) to reduce alcohol consumption in concurrent problem alcohol and illicit drug users.(77) While one included study found a reduction in alcohol consumption, the authors concluded that there was insufficient evidence to formulate conclusions. Finally, searches for reviews also identified one medium-quality qualitative review that assessed stakeholders' views and experiences with this sub-element. In particular it focused on stigma associated with substance abuse, and healthcare providers' views and experiences with delivering care to patients with alcohol or substance abuse disorders.(78) The review found that health professionals generally had a negative attitude towards patients with substance abuse disorders, which was attributed to perceptions that these individuals were emotionally challenging, unsafe, violent, manipulative and irresponsible. Mental health workers had more positive attitudes, and patients who perceived discrimination were less likely to adhere to treatment.

Eight high-quality reviews were identified that addressed the second sub-element of option 3, which focused on reducing harmful alcohol consumption through interventions targeted at entire communities. Three of these reviews focused on assessing the effectiveness of universal programs, with generally positive results. One of these reviews showed that universal family-based prevention programs (including gender-specific programs for mothers and daughters) are effective at reducing alcohol abuse among youth and adolescents,(79) another showed multi-component programs to be effective,(80) and the final review focused on universal strategies found that school-based prevention programs showed somewhat mixed results, although more positive results were found with programs focused on reducing binge drinking.(81) Another high-quality review related to sub-element 2 focused on community-level, alcohol- and sex-relationship-education interventions delivered to students to improve health literacy and personal skills related to alcohol use and sex.(82) The authors found inconsistent findings for interventions targeting alcohol use delivered in social and community settings, although some informational interventions may improve knowledge and skills over the short term, and some family-focused programs may reduce alcohol among pre-teen and early adolescents.

Two high-quality reviews and one medium-quality review focused on interventions that addressed the locations in which people drink (i.e. drinking environments). The first of these reviews focused on interventions developed to reduce harm in drinking environments, including server training programs, changes in alcohol outlets, enforcement of existing laws, and combinations of these.(83) Multi-component interventions which combined community mobilization, responsible behaviour training, house policies and stronger licensing enforcement had positive impacts on limiting alcohol consumption and reducing harms, while there was limited evidence to support individual, stand-alone interventions. The second of these reviews focused on server-training interventions, including mandated training policies, awareness raising about laws, and training in early recognition of intoxication and tactics to deal with intoxicated customers, and found no evidence to suggest which were effective for preventing injuries.(84) The authors found some mixed evidence to suggest that server training could improve server knowledge and reduce patron aggression, and that environmental design (e.g. minimal amount of cash in the till, good visibility, bright interior and escape routes) may reduce crime and injury. Policies to reduce the movement of drinks between different bars were also found to reduce serious assaults, although the authors stated that the evidence is not strong enough to develop definitive conclusions. The medium-quality review that focused on drinking environments assessed interventions to reduce disorder and severe intoxication in and around licensed premises, and included two studies that were conducted in Caribbean countries.(85) The authors found that server training

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courses have potential to reduce disorder, but there is a lack of evidence about their ability to reduce intoxication given a weak evidence base.

Three high-quality reviews were identified that addressed the third sub-element of option 3, which focused on reducing harmful alcohol consumption through introducing new, or changing existing laws, policies or regulations. Two of the four reviews focused on the effects of sale restriction, and in both cases determined it could reduce alcohol use and associated harms (including violence and injuries). One of these reviews assessed the effectiveness of policies maintaining or restricting days of alcohol sales on alcohol abuse and violence and injuries resulting from alcohol abuse.(86) The review found that restricting days of sale resulted in a reduction in excessive drinking, and also reduced associated harms (including interpersonal violence and injuries resulting from this violence), while increasing days of sale increased harms. A second review focused on the effect of changing the hours in which alcohol could be sold, and found sufficient evidence to conclude that increasing hours of sale by two or more hours per day increased alcohol-related harms (including injuries and crime).(87) In both reviews, opposition from industry (manufacturers, distributors and sellers) was cited as an important barrier to implementing such policies. Another high-quality review focused on the effects of alcohol retail privatization on excessive alcohol consumption and related harms.(88) The authors found that privatization of retail alcohol sales led to increases in excessive alcohol consumption and related harms with as much as a 44% increase in the per capita sales in locations where sales were privatized. Monopolization of alcohol sales was found to decrease alcohol-related harms.(88) The last review that addressed the third sub-element of option 3 assessed the effects of restricting or banning alcohol advertising on reducing alcohol consumption.(89) The authors found insufficient evidence to suggest that banning alcohol advertising could reduce consumption, and identified low-quality studies suggesting that bans may actually increase consumption and sales.

Finally, an overview of reviews was identified that was relevant to the second and third sub-elements of option 3, and focused on a wide range of population-level interventions to reduce alcohol-related harm.(90) The authors identified 52 separate reviews from 10 different policy areas, and found good evidence to support the effectiveness of policies that limit the sale and availability of alcohol, that increase prices and taxes, and also those that specifically target intoxicated driving (sub-element 3). Family and community-level interventions, school interventions, alcohol-server interventions and mass media interventions were all found to have mixed evidence supporting their effectiveness, while interventions delivered in higher education settings were deemed to be ineffective (sub-element 2).

A summary of the key findings from the synthesized research evidence is provided in Table 6. For those who want to know more about the systematic reviews contained in Table 6 (or obtain citations for the reviews), a fuller description of the systematic reviews is provided in Appendix 3. Overall, our searches found that the body of evidence on effective interventions for reducing the harmful use of alcohol is extensive. There is good evidence to support the use of motivational interviewing, information and skills training, brief interventions in primary care, behavioural counselling, and personalized feedback without professional guidance, as interventions for reducing individual alcohol consumption. Brief interventions delivered in in-patient settings were not found to be effective. For interventions targeting entire communities, school-based, family-based and multi-component strategies had positive impacts on limiting alcohol consumption. There is consistent evidence that supports restriction of alcohol sales availability and taxation and price measures as policy initiatives to limit consumption. It is important to note, however, that while these interventions had a positive impact on reducing consumption, their effect on the consequences of excessive consumption, in this instance violence and injury, was not clearly established.

Table 6: Summary of key findings from systematic reviews relevant to Option 3 – Focus on addressing the cross-cutting issue of harmful use of alcohol in the Caribbean region through targeted health-sector initiatives

Category of finding	Summary of key findings
Benefits	• **Develop and implement interventions that reduce the harmful use of alcohol by targeting individual and group behaviours**
	o One recent high-quality review found moderately strong evidence which showed motivational interviewing could reduce alcohol consumption and peak blood-alcohol concentration among adolescents and youth,(64) while an older high-quality review found interventions, which included motivational interviewing and cognitive behavioural therapy in combination with other components, had large effects on reducing alcohol consumption in this age group, especially when interventions were targeted at individuals rather than families, and without lengthy follow-up (67)
	o One high-quality review found limited evidence that motivational interviewing as a brief intervention delivered in emergency departments reduced the consequences of harmful alcohol consumption, including associated violence and injury among adolescents and youth,(69) while another high-quality review found some evidence of the effectiveness of motivational interviewing in outpatient settings that could not be generalized to all settings (73)
	o One high-quality review found that information combined with skills training (refusal skills, self-management, social skills) reduced alcohol consumption among adolescents and youth, with combined interventions being most effective (68)
	o Two high-quality reviews found limited influence of mentoring on reducing the use of alcohol among adolescents and youth (65,66)
	o An older high-quality review found some evidence to support the effectiveness of brief interventions delivered in primary care, particularly when targeted at men and when longer in duration,(70) although a more recent review found no length-of-intervention or gender effect (71)
	o Another high-quality study found that brief intervention delivered in inpatient general hospital settings were not effective for reducing alcohol consumption (74)
	o One high-quality review found that behavioural counselling in primary care reduced drinking behavioural problems and reduced hospitalizations among adults, although there was no evidence to suggest that these effects lasted over time,(72) while another high-quality review that was also very relevant to the Caribbean context, given all included studies were conducted there, found it was difficult to develop strong conclusions about whether a range of psychosocial interventions, including behavioural therapy and motivational interviewing, were effective at reducing consumption (77)
	o One high-quality review found that personalized feedback without professional guidance delivered through multiple platforms, including the web, was effective at reducing harmful alcohol use,(75) and another high-quality review found that computer-based interventions were more effective than passive interventions for reducing alcohol consumption (76)
	• **Develop and implement interventions that reduce the harmful use of alcohol by targeting entire communities (e.g. establishment of universal programs available to anyone living in a community, awareness campaigns, etc.)**
	o Three high-quality reviews found evidence to support the effectiveness of universal programs to reduce alcohol consumption, with the strongest evidence to support family-based and multi-component strategies, and school-based programs shown to be effective on binge drinking in particular (79-81)
	o One high-quality review found family-based programs may be effective for improving outcomes such as pre-teen drinking behaviour (82)
	o One high-quality review found that multi-component interventions which combined community mobilization, responsible behaviour training, house policies and stronger licensing enforcement had positive impacts on limiting alcohol consumption and reducing harms in drinking environments (83)
	o One high-quality review found limited evidence to suggest that server training may reduce patron aggression, that environmental design may reduce crime and injury, and that policies to reduce the movement of drinks between different bars may reduce assaults, although no firm conclusions could be drawn,(84) and a medium-quality review that included two studies conducted in Caribbean countries found that server training courses could reduce disorder in licensed establishments (85)
	o An overview of reviews showed that there was mixed and limited evidence for family, school-based and community-level interventions, as well as limited evidence for interventions in the alcohol server setting (90)
	• **Introduce new, or change existing laws, policies and regulations that aim to reduce the harmful use of alcohol in an entire jurisdiction**
	o Two high-quality reviews found restricting alcohol sales to be effective at reducing harmful consumption and associated harms (including violence and injury), with one of the reviews showing that restricting the days of sale resulted in a decrease in excessive drinking,(86) and the other showing that restricting hours of sale was associated with less excessive drinking (87)

	o An overview of reviews also supported the effectiveness of policies to restrict alcohol sales, and found increased taxation and pricing to reduce alcohol-related harm (90) o One high-quality review found that monopolization of alcohol sales was found to reduce excessive drinking and associated harms (88) o One high-quality review found insufficient evidence to suggest that banning alcohol advertising led to reduced harmful alcohol consumption (89)
Potential harms	• **Introduce new, or change existing laws, policies and regulations that aim to reduce the harmful use of alcohol in an entire jurisdiction** o One high-quality review found that increasing hours of sale by two or more hours per day increased alcohol-related harms (87) o One high-quality review found that privatization of retail alcohol sales led to increases in excessive alcohol consumption and related harms with as much as a 44% increase in the per capita sales in locations with privatized sales (88) o One high-quality review found inconsistent evidence suggesting that alcohol advertising bans may increase alcohol consumption (89)
Costs and/or cost-effectiveness in relation to the status quo	• No economic evaluations or costing studies were identified that provided information about costs and/or cost-effectiveness of this option in relation to the status quo
Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the option were pursued)	• Uncertainty because no systematic reviews were identified o Not applicable • Uncertainty because no studies were identified despite an exhaustive search as part of a systematic review o Not applicable (no 'empty' reviews were found) • No clear message from studies included in a systematic review o Not applicable
Key elements of the policy option if it was tried elsewhere	• No systematic reviews were identified that provided information that could be used to determine what key aspects of option 3 need to be considered if it was tried elsewhere
Stakeholders' views and experience	• **Develop and implement interventions that reduce the harmful use of alcohol by targeting individual and group behaviours** o There is a generally negative perception among healthcare professionals of patients with alcohol and substance abuse problems, which could influence attitudes and behaviours of those delivering care, and discourage those receiving care from adhering to treatment (78) • **Introduce new, or change existing laws, policies and regulations that aim to reduce the harmful use of alcohol in an entire jurisdiction** o Two high-quality reviews found that restricting alcohol sales would be met with significant opposition from alcohol manufacturers, distributors and retailers, and as such would be difficult to implement (86,87)

Option 4 - Strengthen core elements of health systems related to interpersonal and self-directed violence and injury prevention

Comprehensively addressing the full spectrum of complex and interrelated causes that have led to problems associated with interpersonal and self-directed violence and injuries in the Caribbean requires responses that engage many sectors, while ensuring sustained commitment to inter-sectoral collaboration. However, given the health sector is often positioned as a key sector that could also serve as a focal point and coordinator of a comprehensive response,(8,10) as a fourth option it is vital to consider undertaking efforts that ensure strong health systems are established, particularly in areas that are related to dealing with the prevention and treatment of injuries that result from interpersonal and self-directed violence. Four sub-elements could be considered within this option:
1) improve the coordination and delivery of emergency hospital services, trauma and rehabilitation services;
2) integrate violence screening and prevention into primary-care settings;
3) develop stronger referral systems with the social service sectors; and
4) increase access to mental health services for women, children and young men who are at risk of being victims or perpetrators of violent behaviour.

Ten systematic reviews and one cost-effectiveness study were identified that addressed the first sub-element of the option related to improving care coordination, although none of them were focused on coordination in the context of interpersonal and self-directed violence, or injuries resulting from violence. However, given the

majority of these reviews focused on improving processes and quality of care across a range of health conditions, they may also provide valuable insights for health-system strengthening in the context of violence and injuries as well.

One high-quality review was identified that focused on strategies designed to improve care coordination and reduce the use of health services, and included team changes, case management, self-management, patient education and clinical information systems.(91) While the outcomes were measured for patients with chronic disease and for older adults, the authors found that these interventions could be effective for reducing hospital admissions and emergency department visits, and particularly when an outreach component was included.

Four medium-quality reviews assessed the effects of coordination of services. One of the medium-quality reviews found that there were considerable harms associated with a lack of coordination, including poor patient outcomes (e.g. adverse hospital events and medication errors), delay or lack of access to services, and higher emergency department costs.(92) The authors also found that multi-disciplinary care teams, discharge planning, nurse-led and team post-hospital interventions, case management and disease management were all promising initiatives that improve care coordination and outcomes. The second medium-quality review assessed the effectiveness of care coordination in the emergency department through interventions including internet-based electronic referral systems, appointment reminders via telephone or email, outpatient appointments made in the emergency department, as well as information, education, and care coordinators, and found mixed evidence.(93) Electronic referral systems, support from community nurses, and care coordinators to make appointments were found to decrease visits to the emergency department, but educational interventions and information did not result in better outcomes. The third medium-quality review, although less recent,(94) found that multidisciplinary teams, disease management and case management improved continuity of care and reduced both mortality and hospital readmissions, although these results were found in the context of mental health care and cardiovascular care. Another less-recent medium quality review found that care coordination combined with clinical expertise had mixed results regarding patient outcomes, costs and resource utilization.(95) One older low-quality review was also identified, and focused on assessing coordination between primary and specialist care.(96) The review authors suggested that unified policies for common medicines and budgets is essential, although little evidence was found to support this assertion.

Two medium-quality reviews looked specifically at e-health solutions to improve care coordination, including one that focused on electronic tools for health information exchange,(97) and one that focused on email for care coordination.(98) In the first review, electronic guideline reports were found to contribute to reduced hospitalizations and length of stay, as well as reductions in emergency department visits, although there was no conclusive support for effects on process-of-care, and efficiency was not improved.(97) The second review on email coordination found no eligible studies and could not evaluate effectiveness.(98) Another review that aimed to assess the effect of audit filters on care processes in trauma systems was identified, but this review was also 'empty' as no studies were identified that met the inclusion criteria.(99) The final review identified related to sub-element 1 of option 4 was a low-quality qualitative synthesis that assessed patients' experiences with care provided by several providers.(100) It found that patients valued health system connectedness as experiences that provided security and confidence, often assumed that there was coordination among providers regardless of the reality, and seldom observed active care coordination across the system. As such, this could imply that a lack of care coordination, or efforts to strengthen care coordination, may be unnoticed among patients in the system.

The single cost-effectiveness study that was identified found that care coordination programs did not result in reduced costs, although these results were U.S.-based and may not be transferrable to other settings, particularly those in the Caribbean region.(101)

Two high-quality reviews were identified that addressed the second sub-element of option 4 (integrating violence screening and prevention into primary care). The first review assessed the effectiveness of the WHO 'Safe communities' model to prevent injury, one component of which emphasizes the community-wide

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integration of several services to prevent injuries, including those that are the direct result of violence.(102) The authors of the review found some evidence to suggest the model can reduce injuries, although the review did not determine which components of the model were directly responsible, so the effects of integration could not be isolated. The second high-quality review that was identified related to sub-element 2 of option 4, and focused specifically on screening women for intimate partner violence in the U.K., although five of the 117 studies included in the review were conducted in Caribbean countries.(103) The review found that while screening was viewed as acceptable, there is no evidence to suggest it is an effective tool to reduce violence, and as such the authors did not recommend universal uptake in primary care. However, qualitative data showed that women view screening as an acceptable element of care even if they were not comfortable disclosing violence. The review also found that screening may facilitate disclosure at later dates in the event of failure to disclose.

Two systematic reviews – one high-quality and one medium-quality – and one economic evaluation were identified that addressed improving referral systems (sub-element 3). Although none of these specifically addressed referrals in the context of interpersonal and self-directed violence and injuries, they provide lessons about the factors that might be important in shaping referral patterns, whether referrals more generally are more effective than direct access, and the cost-effectiveness of referrals to specialists. However, given they don't assess violence and injuries as outcomes per se, the results need to be considered in light of the fact that the context of referral systems for violence and injury prevention may be different and affect these results. The high-quality review that was identified assessed the effect of service innovations in primary care on referral patterns, and found that interventions targeting health professional behaviour, as well as specialist outreach services, resulted in more appropriate referrals.(104) The medium-quality review compared direct access with referral for physical therapy, and found that costs to patients and insurers were less with direct access to services, that the number of visits were less for patients with direct access, and discharge outcomes were better for patients who had direct access to services.(105) The authors of this review concluded that for physical therapy, direct access may be more beneficial than referral systems.

The one economic evaluation related to sub-element 3 found that the referral of problem drinkers presenting in emergency departments to alcohol specialists can improve outcomes, and is more cost-effective than brief information interventions for reducing alcohol consumption and the negative consequences associated with harmful alcohol use. (106)

Four systematic reviews were identified that addressed sub-element 4 of option 4 (increasing access to mental health services). A medium-quality review assessed experiences among hard-to-reach groups with access to mental health services.(107) The review found that patient inability, reluctance or unwillingness to understand their problems as mental illness resulted in a barrier to service access, and that when developing mental health interventions for hard-to-reach groups, social withdrawal, resources (e.g. social resources for addressing mental illness), and roles (e.g. patient and professional roles in the primary care mental health consultation) need to be considered. A second medium-quality qualitative study assessed views of mental health services among youth more generally, although it was focused on U.K. mental health services.(108) Young people valued information, access to services, the skills of health professionals and self-reliance, and found stigma, lack of access, medicalization of problems and lack of care continuity as major problems. A low-quality review was identified that focused on the use of telehealth for providing mental health services to rural and remote communities.(109) The review found that telehealth could be useful for mitigating provider shortages and improving the digitization of clinical data. It also found that telehealth was effective for training providers and increasing confidence and competence, while being viewed as an acceptable alternative by both providers and patients in lieu of traditional care. Finally, another low-quality qualitative review was identified that addressed sub-element 4 of option 4, and focused on the perceived barriers and facilitators to seeking mental health care, among young people.(110) The authors found that stigma and embarrassment about seeking help were the most prominent barriers to help-seeking for mental health problems, and also identified confidentiality and trust, difficulty identifying the symptoms of mental illness, lack of accessibility, self-reliance, concern about characteristics of provider of help (e.g. psychologist, physicians, mental health facilitators), lack of knowledge about mental health services, and the fear or stress about the act of help-seeking itself as barriers.

31

A summary of the key findings from the synthesized research evidence is provided in Table 7. For those who want to know more about the systematic reviews contained in Table 7 (or obtain citations for the reviews), a fuller description of the systematic reviews is provided in Appendix 4. Overall, the brief focused on and searched for synthesized research evidence about the following four approaches for strengthening health sector responsibilities: improving coordination and delivery of emergency, trauma and rehabilitation services; integration of screening and prevention into primary care; developing stronger referral systems; and increasing access to mental health services for vulnerable groups. With respect to the first component, the search for literature did not uncover any reviews that assessed measures for improving the coordination of care in the specific context of interpersonal and self-directed violence. Several reviews were found that focused on improving the processes for care over a range of health conditions. These findings could be applied to violence and injuries, with the most relevant finding coming from a medium-quality review which found that initiatives such as the use of multidisciplinary teams, discharge planning, nurse-led team care and case management improved care coordination and health outcomes. With respect to the integration of screening into primary care, although viewed as acceptable, there is little evidence to support this practice for intimate partner violence. With respect to integration of prevention into primary care, no evidence was found to support this, however, there is some evidence to suggest that community-based programs reduce injuries, and since primary care is one setting that could be included in a multi-component community-wide model, there are some grounds for further consideration of this option. While referrals may be made more appropriate in primary care settings by targeting primary care providers' behaviour, the evidence is less clear as to whether referrals are better than direct access in other settings (and no reviews have addressed this in the context of violence and injuries). Finally, the use of technology in the delivery of metal health was found to be a promising option for overcoming staff shortages and for training providers.

Table 7: Summary of key findings from systematic reviews relevant to Option 4 – Strengthen core health sector responsibilities related to violence and injury prevention

Category of finding	Summary of key findings

Benefits	• **Improve the coordination and delivery of emergency hospital services, trauma and rehabilitation services**
	     ○ One high-quality review found that care coordination initiatives such as team changes, case- and self-management and information provision reduced hospital admissions and emergency department visits (91)
	     ○ One medium-quality review found evidence that multidisciplinary teams, discharge planning, nurse-led team care and case management could improve care coordination and care outcomes,(92) and a second medium-quality review found that care coordination in emergency departments through electronic referral systems, support from community nurses and care coordinators to make appointments reduced emergency department visits (93)
	     ○ One older medium-quality review found evidence that multidisciplinary teams, disease management and case management improved continuity of care and reduced hospital admissions,(94) another older medium-quality review found mixed results of care coordination on patient outcomes, costs and resource utilization,(95) and an older low-quality review found little evidence about how to improve coordination between primary and specialist services (96)
	     ○ One medium-quality review assessed the effects of e-health interventions to improve care coordination, finding that information exchange systems could reduce length of stay and emergency department visits (97)
	 • **Integrate violence screening and prevention into primary-care settings**
	     ○ One high-quality review, while not entirely focused on violence screening, found some evidence to suggest community programs that include integration of a wide range of services could reduce injuries,(102) and a second high-quality review that included five studies conducted in Caribbean countries found little evidence of the effectiveness of intimate partner violence screening in primary-care settings (103)
	 • **Develop stronger referral systems with the social service sectors**
	     ○ One high-quality review found that interventions targeting provider behaviour led to more appropriate referral decisions (104)
	 • **Increase access to mental health services for women, children and young men who are at risk of being victims or perpetrators of violent behaviour**
	     ○ A low-quality review found telehealth to be effective as a way of overcoming staff shortages, training providers and increasing confidence and competence among front-line mental health providers (109)

Potential harms	• **Improve the coordination and delivery of emergency hospital services, trauma and rehabilitation services**
	     ○ One medium-quality review found that a lack of coordination could result in poor patient outcomes, delays in access, and increased emergency department costs (92)
	 • **Develop stronger referral systems with the social service sectors**
	     ○ A medium-quality review comparing direct access with referral systems for physical therapy found that referral systems were associated with less positive patient outcomes compared to direct access (105)

Costs and/or cost-effectiveness in relation to the status quo	• **Improve the coordination and delivery of emergency hospital services, trauma and rehabilitation services**
	     ○ Viable care coordination programs did not result in reduced costs in the U.S. (101)
	 • **Develop stronger referral systems with the social service sectors**
	     ○ Referral systems were found to be associated with higher costs when compared to direct access for physical therapy services (105)
	     ○ Referral of problem drinkers presenting in emergency departments to alcohol specialists was found to be more cost-effective than brief information interventions (106)

Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the option were pursued)	• Uncertainty because no systematic reviews were identified
	     ○ Not applicable
	 • Uncertainty because no studies were identified despite an exhaustive search as part of a systematic review
	     ○ **Improve the coordination and delivery of emergency hospital services, trauma and rehabilitation services**
	         ■ One empty review aimed to assess the impact of email for care coordination,(98) and another aimed to assess audit filters to improve processes of care in trauma (99)
	 • No clear message from studies included in a systematic review
	     ○ Not applicable

Key elements of the policy option if it was tried elsewhere	• No systematic reviews were identified that provided information that could be used to determine what key aspects of option 3 need to be considered if it was tried elsewhere

Stakeholders' views and experience	• **Improve the coordination and delivery of emergency hospital services, trauma and rehabilitation services**
	   o One medium-quality review found that patients valued health system connectedness as experiences that provided security and confidence in the system, although they often assumed that there was coordination among providers regardless of the reality, and they seldom observed coordination across the system (100)
	• **Integrate violence screening and prevention into primary-care settings**
	   o A high-quality review that included five studies conducted in Caribbean countries found women view screening for intimate partner violence as an acceptable component of primary care, although they are not always likely to disclose violence (103)
	• **Increase access to mental health services for women, children and young men who are at risk of being victims or perpetrators of violent behaviour**
	   o A medium-quality review found that patient inability, reluctance or unwillingness to understand their problems as mental illness were barriers to access to mental health services (107)
	   o A medium-quality review found that young people value information, access to services, skills of health professionals and self-reliance, and found stigma, lack of access, medicalization of problems and poor continuity of care as major problems in mental health care services in the U.K. (108)
	   o One low-quality review found that telehealth was perceived as an acceptable alternative to traditional in-person mental health services when the latter were not feasible (109)
	   o One low-quality review found that stigma and embarrassment about seeking support through mental health services were perceived as the biggest barriers to access among patients (110)

Additional equity-related observations about the four options

While many reviews identified for this brief explicitly addressed strategies to address alcohol use among youth and/or adolescents through targeted individual interventions, universal community-targeted interventions (see option 3), or included studies on alcohol prevention that focused on participants from the prioritized groups,(73,85,86) there were few reviews beside those focused on alcohol reduction that considered the groups prioritized in this brief (women, children, youth and adolescents, and young men).

Two systematic reviews – one medium-quality and one low-quality –identified in relation to option 4 provided insights into the views and experiences of youth with respect to accessing mental health services.(108,110) As outlined in Table 7 above, both reviews identified significant barriers that likely reduce access for youth in need of mental health services. These barriers include a lack of confidence and trust in the system, challenges identifying their symptoms, poor physical access to services, self-reliance, and concerns about providers,(110) as well as stigma and dislike of medicalization of conditions.(108) Both reviews concluded that the design of mental health services targeted to at-risk youth must consider improvements in design if they are to reach youth at all. Specific recommendations for program design were included in the low-quality review, and included: 1) evidence-based self-help materials; 2) programs to increase mental health capacity among youth; and 3) programs designed to reduce stigma associated with mental illness and mental health help-seeking. (110)

One high-quality review focused on women who are victims of intimate partner violence, and was also discussed in relation to option 4.(103) While the authors of the review were focused on how the results could inform the health system in the U.K., five of the included studies were conducted in Caribbean countries. While this review did not find sufficient evidence to suggest that integration of screening into general practice was effective, it did highlight many important issues related to the role played by screening for intimate partner violence in these settings. In particular, the fact that women who are abused by their partners are often reluctant to disclose this violence to their healthcare provider was highlighted as a major challenge that has the potential to leave these women vulnerable and unsupported. It also diminishes the ability of monitoring and surveillance systems to accurately document and identify true prevalence of this form of gender-based violence in the population – a factor that is vital in considering option 2. However, the review showed that, while screening wasn't shown to be effective as a strategy to reduce intimate partner violence when integrated into primary-care settings, the act of screening in and of itself may increase the likelihood that women who are initially reluctant to disclose incidents of violence will be more inclined to do so in a future visit. As such, the integration of this type of screening into primary-care settings may not only

empower women to disclose violence affecting them, but it could also contribute to improving monitoring and surveillance systems within this domain.

Unfortunately, no reviews identified explicitly addressed young men, who are at a heightened risk of engaging in and being victims of interpersonal and self-directed violence in the Caribbean. As such, no equity-related considerations related to the four options could be derived from the identified reviews.

IMPLEMENTATION CONSIDERATIONS

A number of barriers exist that might create implementation challenges if any of the options presented in this brief were to be pursued, either individually or in combination with any of the other options. These barriers need to be factored into any decision about whether and how to move forward with any of the options (Table 8). While barriers exist at the level of patient/citizens, providers, organizations, and the system, the biggest and most challenging barriers are likely cross-cutting. In particular, a comprehensive approach to addressing interpersonal and self-directed violence and injuries will require significant financial investments to bolster the capacity in each sector, and to facilitate additional inter-sectoral collaboration.

Table 8: Potential barriers to implementing the options

Type	Provisional/Draft responses			
	Option 1 – Strengthen efforts to establish ongoing and sustained inter-sectoral collaboration to facilitate the development and implementation of comprehensive violence- and injury-prevention strategies	**Option 2 - Strengthen violence and injury monitoring and surveillance systems at the regional and national levels**	**Option 3 – Focus on addressing the cross-cutting issue of harmful use of alcohol in the Caribbean region through targeted initiatives**	**Option 4 - Strengthen core elements of health systems related to interpersonal and self-directed violence and injury prevention**
General	• Significant investments are needed across all sectors to facilitate the implementation of a comprehensive inter-sectoral strategy			
Option-specific	• Patients/citizen o Patients/citizens may resist inter-sectoral collaboration in service delivery that changes the dynamic of care (e.g. if health and social services were linked with law enforcement, it may interfere with patients' willingness to access services)	• Patient/citizen o Patients/citizens who are victims often under-report instances of interpersonal violence, creating challenges to ensuring accurate estimates of prevalence are obtained	• Patients/citizen o Patient/citizens who have alcohol or substance abuse problems may not adhere to treatment if they perceive providers have negative attitudes towards them o Patients'/citizens' behaviours related to alcohol are likely difficult to change, given behaviours are embedded social and cultural norms in many Caribbean countries (particularly during festivals)	• Patients/citizen o Patients/citizens may be reluctant to access mental health services given stigma and embarrassment
	• Provider o Providers from different sectors may have very different approaches to and views about service delivery	• Provider o Providers on the front-line may not be equipped with the tools and skills required to collect robust data related to violence and injuries	• Provider o Providers may have negative views towards patients requiring treatment for substance abuse	• Provider o Providers may oppose efforts to strengthen the role of the health sector if efforts to improve service delivery fundamentally change processes of care
	• Organization o Traditional lack of communication between organizations	• Organization o Not all organizations are equipped with data collection and	• Organization o Retailers have high staff turnover and poor compliance with	• Organization o Organizations involved in the delivery of health

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from different sectors has created approaches to management and service delivery that may be incompatible o Establishing role clarity may be difficult if there is no clearly articulated plan	management infrastructure, including a lack of robust electronic data-collection mechanisms o Not all organizations have the financial resources required to establish new systems, or to invest in required human resource development and training requirements	alcohol laws, policies and regulation, which reduces the chances of implementing server policies successfully	services may oppose elements that require increased quality and performance measurement
• System o Traditional fragmentation across sectors has created different cultures and approaches to policy development, planning and implementation that may make it difficult to integrate efforts o Unclear lines of accountability may make it difficult to ensure each sector is 'doing its part' o Challenges ensuring budgets are distributed appropriately across sectors	• System o Traditional fragmentation of monitoring and surveillance across sectors has led to the establishment of different approaches, creating challenges for data integration	• System o Alcohol manufacturers, distributors and retailers likely to oppose any policies directly targeted at reducing alcohol consumption o Tax revenue and commerce that is fuelled by the alcohol industry is a major contributor to the economy in many countries	• System o Smaller Caribbean nations have limited health human resources and healthcare infrastructure

Despite these potential barriers, there are also several windows of opportunity that could be capitalized upon in pursuit of the options considered in this brief (Table 9). As with the barriers, these windows of opportunity should be factored into any decisions about whether and how to pursue any of the options alone or in combination. Perhaps the most important window of opportunity relates to the fact that the issue of violence and injuries is high on the list of priorities among regional agencies such as CARPHA, regional intergovernmental organizations such as CARICOM and PAHO, as well as international organizations such as WHO. This attention and emphasis has the potential to provide additional willingness at the national and regional levels to take action.

Table 9: Potential windows of opportunity for implementing the options

Type	Provisional/Draft Responses			
	Option 1 – Strengthen efforts to establish ongoing and sustained inter-sectoral collaboration to facilitate the development and implementation of comprehensive violence- and injury-prevention strategies	Option 2 - Strengthen violence and injury monitoring and surveillance systems at the regional and national levels	Option 3 – Focus on addressing the cross-cutting issue of harmful use of alcohol in the Caribbean region through targeted initiatives	Option 4 - Strengthen core elements of health systems related to interpersonal and self-directed violence and injury prevention.
General	• Much attention is currently being paid to violence and injuries in the Caribbean by national governments, regional agencies such as CARPHA, regional intergovernmental organizations such as CARICOM and PAHO, and international intergovernmental organizations such as UNIFEM/UNWomen, and WHO, suggesting it is a policy priority • Evidence exists about which strategies are promising for reducing interpersonal and self-directed violence			
Option-specific	• Inter-sectoral collaboration is generally viewed as a necessary step in efforts to address the problem • Incorporating health considerations into collaborative decision-making across sectors and policy areas (Health in All Policies) is a recognized and accepted approach for improving health	• The need to strengthen monitoring and surveillance is generally viewed as a vital component of strategies to address the problem	• There is consensus on the harmful effects of alcohol, both in contributing to interpersonal and self-directed violence and injuries, and as an underlying cause of road-traffic accidents in the region, which is also a high-priority issue	• Several influential regional and international intergovernmental organizations promote the health sector as the focal point for comprehensive strategies to address the problem

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124.   Hyde J, Hankins M, Deale A, Marteau TM. Interventions to increase self-efficacy in the context of addiction behaviours: a systematic literature review. *J Health Psychol* 2008; **13**(5): 607-23.

125.   Wang N, Sun X, Yin L, et al. Meta-Analysis of Interventions for Reducing Number of Sexual Partners and Drug and Alcohol Abuse among People Living with HIV/AIDS. *J AIDS Clin Res* 2013; **4**.

126.   Riper H, Spek V, Boon B, et al. Effectiveness of E-self-help interventions for curbing adult problem drinking: a meta-analysis. *J Med Internet Res* 2011; **13**(2): e42.

127.   Calabria B, Clifford A, Shakeshaft AP, Doran CM. A systematic review of family-based interventions targeting alcohol misuse and their potential to reduce alcohol-related harm in indigenous communities. *J Stud Alcohol Drugs* 2012; **73**(3): 477-88.

128.   Rooke S, Thorsteinsson E, Karpin A, Copeland J, Allsop D. Computer-delivered interventions for alcohol and tobacco use: a meta-analysis. *Addiction* 2010; **105**(8): 1381-90.

129.   Ohinmaa A, Chatterley P, Nguyen T, Jacobs P. Telehealth in substance abuse and addiction: review of the literature on smoking, alcohol, drug abuse and gambling. Alberta Institute of Health Economics; 2010. p. 76.

130.   Ker K, Chinnock P. Interventions in the alcohol server setting for preventing injuries. *Cochrane Database Syst Rev* 2006; (2): Cd005244.

APPENDICES

The following tables provide detailed information about the systematic reviews identified for each option. Each row in a table corresponds to a particular systematic review and the reviews are organized by option element (first column). The title of the review is described in the second column. The focus of the review and key findings from the review that relate to the option are listed in the third column, while the fourth column records the last year the literature was searched as part of the review.

The fifth column presents a rating of the overall quality of the review. The quality of each review has been assessed using AMSTAR (A MeaSurement Tool to Assess Reviews), which rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. It is important to note that the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to delivery, financial, or governance arrangements within health systems. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, a review that scores 8/8 is generally of comparable quality to a review scoring 11/11; both ratings are considered "high scores." A high score signals that readers of the review can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the review should be discarded, merely that less confidence can be placed in its findings and that the review needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1):S8.

The last three columns convey information about the utility of the review in terms of local applicability, applicability concerning prioritized groups, and issue applicability. The third-from-last column notes the proportion of studies that were conducted in Caribbean countries, while the second-from-last column shows the proportion of studies included in the review that deal explicitly with one of the prioritized groups. The last column indicates the review's issue applicability in terms of the proportion of studies focused on interpersonal and self-directed violence and injuries. Similarly, for each economic evaluation and costing study, the last three columns note whether the country focus is a Caribbean country, if it deals explicitly with one of the prioritized groups and if it focuses on violence and injury prevention.

All of the information provided in the appendix tables was taken into account by the evidence brief's authors in compiling Tables 4-7 in the main text of the brief.

Appendix 1:   Systematic reviews relevant to Option 1 - Strengthen efforts to establish ongoing and sustained inter-sectoral collaboration

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
Establishing formal multi-institutional linkages across sectors	Inter-sectoral action for health equity: A rapid systematic review (111)	The review found limited evidence on the impact of inter-sectoral action on health equity. 17 studies identified interventions to address health inequities, which included: two upstream interventions (e.g. housing and employment changes at a system level); eight midstream interventions (e.g. employment, working conditions, early childhood development, housing, physical and social environments, and food security at a community level); and seven downstream interventions (e.g. healthcare access at an individual level). There were mixed results on inter-sectoral action to address health inequities. The strongest effects were observed with downstream interventions, such as inter-sectoral action to improve immunization rates and oral health among vulnerable populations. The association between upstream interventions and health outcomes is less conclusive. The authors noted that upstream interventions are likely to have the greatest impact on reducing health inequities as they change the underlying conditions at a system level. Inter-sectoral action and its contribution to health outcomes were not clearly mentioned in the studies. Thus, it is difficult to determine whether the effectiveness of interventions is associated with inter-sectoral action. The review did not identify mechanisms linking inter-sectoral action to observed health outcomes.	2011	7/10 (AMSTAR rating from McMaster Health Forum)	0/17	0/17	0/17
	Assessing the impact and effectiveness of inter-sectoral action on the social determinants of health (57)	The review identified 17 articles (one systematic review and 16 primary studies) on the impact and effectiveness of inter-sectoral action on the social determinants of health and health equity. The systematic review assessed the impact of organizational partnerships on public health outcomes and health inequities. All interventions were multi-sectoral, including: health action zones; health improvement programs; the New Deal for Communities program; health education authority integrated	2012	8/11 (AMSTAR rating from McMaster Health Forum)	0/17	0/17	0/17

47

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		purchasing programs; healthy living centres; and national health school standards. The majority of the studies did not assess the impact of partnerships on public health outcomes such as health equity. There is some evidence that partnerships increased the profile of health inequities on local policy agendas. However, the impact of inter-sectoral action on health equity are mixed and limited. The primary studies evaluated universal and/or targeted programs and policies, categorizing them as upstream (e.g. housing conditions and employment), midstream (e.g. working conditions and employment, early childhood development, housing, physical and social environments, and food security) and downstream interventions (e.g. access to health care or services). Upstream interventions had mixed effects, ranging from moderate to none on the social determinants of health. Provision of housing for disadvantaged populations had a moderate impact in terms of improved housing infrastructure. Midstream interventions generally had mixed results of the impact of inter-sectoral action on social determinants. Support employment that integrated mental health and employment services, incorporated formal communication between sectors and had shared principles, had a positive impact on employment and working conditions. Early childhood interventions had a positive impact in promoting early literacy. There were improved health outcomes when health and social service support was embedded with housing. Supportive environments that promoted access to food had a positive health outcome such as improved oral health. Downstream interventions that focused on access to services are moderately effective in increasing the availability and use of services. Targeted interventions increased access to care, reduced the number of emergency department visits, improved management of existing conditions, and improved immunization rates and mental health. The authors identified difficulties in attributing the					

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		effectiveness of initiatives to inter-sectoral action due to the lack of clarity among the 17 studies.					
Creating opportunities in existing policy development processes to facilitate inter-sectoral stakeholder input	Deliberative dialogues as a mechanism for knowledge translation and exchange in health system decision-making (59)	The review presented a model of the key features of a promising approach (deliberative stakeholder dialogues) to engaging policymakers, stakeholders and researchers in addressing priority health system policy issues using the best available research evidence.(47) The authors suggested that the key features for this type of engagement include an appropriate meeting environment and mix of participants, and an appropriate use of research evidence. The types of effects intended by these initiatives include those that are short term and focused on the individual level, medium term and focused on the community/organizational level, and long term and focused on system-level changes.	2011	5/9 (AMSTAR rating from McMaster Health Forum)	0/17	0/17	0/17

Appendix 2: Systematic reviews relevant to Option 2 – Strengthen violence and injury monitoring and surveillance systems at the regional and national levels

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
Strengthening monitoring and surveillance systems (general focus)	Social media and internet-based data in global systems for public health surveillance: A systematic review (62)	There is a lack of effectiveness studies on the internet and social media as a part of public health surveillance programs, which limits the willingness of policymakers to integrate the internet and social media into official surveillance systems. Social media and internet-based data are important to epidemiological surveillance, yet many technical issues have not been studied. More work in this field can have broad implications for systems that provide early warning and response strategies to health threats and public surveillance.	2011	2/10 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/13	0/13	0/13
	Advances in electronic surveillance for healthcare-associated infections in the 21st Century: A systematic review (61)	Electronic surveillance for healthcare-associated infection outperformed manual methods when compared to a 'gold standard'. The lack of clinical data available in electronic formats reduces the availability of electronic detection of healthcare-associated infection. It is also important to consider the relations between the data keepers, third party users, and senior level administrators when implementing electronic surveillance systems.	2011	5/11 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/44	0/44	0/44
Engage stakeholders from multiple sectors to identify where data are already being collected related to violence and injuries in order to identify opportunities for integration	No reviews identified	N/A	N/A	N/A	N/A	N/A	N/A
Integrate data from across sectors to create	No reviews identified	N/A	N/A	N/A	N/A	N/A	N/A

a comprehensive inventory of violence and injury indicators that can inform national policy development and planning							
Integrate data across the region to inform regional policy development and planning	No reviews identified	N/A	N/A	N/A	N/A	N/A	N/A
Identify gaps in available data to prioritize the development of new data collection mechanisms	No reviews identified	N/A	N/A	N/A	N/A	N/A	N/A

Appendix 3: Systematic reviews relevant to Option 3 – Focus on addressing the cross-cutting issue of harmful use of alcohol in the Caribbean region

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
Develop and implement interventions that reduce the harmful use of alcohol by targeting individual and group behaviours (focus on adolescents and youth)	Australian school-based prevention programs for alcohol and other drugs: A systematic review (112)	Five of seven Australian school-based intervention programs for alcohol and drugs, including the School Health and Alcohol Harm Reduction Project (SHAHRP), climate management and treatment education (CLIMATE), the gatehouse project and health-promoting schools, demonstrated small but significant effects of substance use reduction.	2011	7/11 (AMSTAR rating from McMaster Health Forum)	0/7	0/7	0/7
	Family interventions and their effect on adolescent alcohol use in general populations: A meta-analysis of randomized controlled trials (113)	Findings from nine studies suggested that family interventions (e.g. Iowa's Strengthening Families Program and Preparing for the Drug Free Years program) to delay alcohol initiation and reduce the frequency of alcohol use in adolescents can be effective at 48 months. Attracting and retaining high-risk families for family interventions is challenging.	2006	7/11 (AMSTAR rating from McMaster Health Forum)	0/9	0/9	0/9
	Substance abuse treatment for juvenile offenders: A review of quasi-experimental and experimental research (114)	Interventions to reduce substance use among juvenile offenders demonstrate small to moderate effects. The interventions included life skills training, teaching the family, multi-systemic approaches, and multi-dimensional treatment foster care. Effect sizes were found to be smaller among juvenile offenders, than what is shown in in other meta-analyses of the general population.	2010	2/9 (AMSTAR rating from McMaster Health Forum)	0/9	0/9	0/9
	Face-to-face versus computer-delivered alcohol interventions for college drinkers: A meta-analytic review, 1998 to 2010 (115)	Computer-delivered alcohol interventions are less costly, easier to access, and easier to replicate. Subsequently, it is important to compare effect sizes of studies using face-to-face alcohol interventions with computer-delivered alcohol interventions for college drinkers. Face-to-face alcohol interventions delivered more consistent effects across a number of outcomes and over	2011	7/11 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/48	0/48	0/48

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		periods up to a year, while computer-delivered alcohol interventions showed effects in selected outcomes in the short-term, and had significant variation in efficacy in general. Computer-delivered interventions show promising results in reducing harmful consumption of alcohol among college students, but are less efficacious than face-to face interventions.					
	Internet and mobile phone interventions to decrease alcohol consumption and to support smoking cessation in adolescents: A review (116)	Only available in German**	2009	Not yet available	N/A	N/A	N/A
	The effectiveness of brief interventions in the clinical setting in reducing alcohol misuse and binge drinking in adolescents: A critical review of the literature (117)	The studies varied in intervention type, type of clinical setting, and outcome related alcohol misuse and binge drinking in adolescents and young adults (12 to 25 years of age). Intervention types included motivational interventions, cognitive-behavioural interventions, and alcohol education. Studies also varied between the use of short- (up to six months), medium- (between six and 12 months), and long-term (longer than 12 months) follow-ups. As a result, the generalizability of the findings were limited and the authors made no conclusions about the effectiveness of brief interventions in the clinical setting to reduce alcohol misuse in adolescents. The authors recommend face-to-face, one-session, motivational interviewing-style brief interventions focusing on harm minimization using long-term follow-up.	2008	3/9 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/14	0/14	0/14
	Efficacy of brief alcohol screening intervention for college students (BASICS): A meta-analysis of randomized controlled trials (118)	Studies using brief alcohol screening interventions, including motivational interviewing, personalized feedback, and face-to-face interventions, for college students showed a significant reduction in drinks consumed per week and alcohol-related	2011	5/11 (AMSTAR rating from McMaster Health	0/18	0/18	0/18

53

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		problems.		Forum Impact Lab)			
	A critical review of adolescent substance abuse group treatments (119)	Ten of 13 group treatments to reduce substance abuse in adolescents showed statistically significant reductions for one or more substance in pre-, post-, and follow-up use rates. Only two of these treatments met the methodological standards of the review. Studies of group treatments to reduce substance abuse in adolescents require better methodological design, including long-term follow-ups, and reporting of group-related treatment factors.	2006	4/11 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/13	0/13	0/13
	Motivational interviewing interventions and alcohol abuse among college students: A systematic review (120)	Not included: No free full-text available	N/A	N/A	N/A	N/A	N/A
	Motivational interviewing for alcohol misuse in young adults (64)	A total of 66 studies identifying the effects of motivational interviewing for alcohol misuse in adolescents were included, and 55 were included in the quantitative synthesis. At four or more months follow-up, significant effects were found for quantity and frequency of alcohol consumed, reducing the number of days a week that alcohol was consumed, and reduction in peak blood-alcohol concentration. For all of the above measures, the evidence quality was judged to be moderate. Studies measuring effects of alcohol problems were low quality and found marginal effects. No effects on binge drinking, average blood-alcohol level, or alcohol-related risky behaviours were found (moderate quality evidence). Comparisons between the duration of the intervention and effect sizes did not show any consistent relationships. The authors conclude	2013	10/11 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/66	0/66	0/66

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		that the effect sizes are too small to be relevant to policy or practice.					
	Mentoring adolescents to prevent drug and alcohol use (65)	Four studies in the U.S. that measured the effects of mentoring on drug and alcohol use in adolescents were included in the review. Two of three studies that measured alcohol use were pooled and demonstrated significant but limited effects. Three studies that measured drug use could not be pooled because of different outcome measures, and only one study found that drug use was reduced in the mentored group. One study did not differentiate between drug and alcohol use and found no differences between the intervention and control group. A high-quality study with adequate randomization, complete data, and concealment of allocation and blinding is required.	2011	11/11 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/4	0/4	0/4
	Systematic review of mentoring to prevent or reduce alcohol and drug use by adolescents (66)	Six studies were included in the review. All of the studies measured the effects of mentoring on drug use in adolescents, and four studies measured the effects of mentoring on alcohol consumption. Only two of four studies measuring alcohol use were pooled and showed limited effects of mentoring. Two of six studies provided evidence for reduced drug use in mentored groups. Future mentoring studies should be evaluated more rigorously, compare core elements of mentoring, and compare outcomes between mentees of different gender, culture, social situations, and demographic characteristics	2013	9/10 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/6	0/6	0/6
	Interventions for reducing adolescent alcohol abuse: A meta-analytic review (67)	Interventions, including brief motivational interviewing, cognitive-behavioural therapy (CBT) with 12 steps, CBT with after-care, multidimensional family therapy, brief interventions (BI) with adolescent, and BIs with adolescent in combination with family support,	2008	8/11 (AMSTAR rating from McMaster Health Forum	Not reported	0/16	0/16

55

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		were found to have a large effect on the reduction of alcohol consumption. Interventions with medium effect included behavioural treatment, and triple modality social learning. Multi-systemic therapy demonstrated a small effect on the reduction of alcohol use. Individual counselling had a larger effect on the reduction of alcohol consumption for adolescents with alcohol use disorders than did family-based interventions. Longer follow-up periods were associated with reduced effectiveness of the interventions. The authors suggested adolescents had more opportunities to increase frequency and quantity of alcohol use between the time of post-treatment and the follow-up. However, interventions including behavioural treatment and multidimensional family treatment resulted in significant reductions of alcohol use at 12 months post-treatment.		Impact Lab)			
	A systematic review of school-based marijuana and alcohol prevention programs targeting adolescents aged 10-15 (68)	The review found that marijuana and alcohol prevention programs that utilized anti-drug information combined with refusal skills, self-management skills and social-skills training, resulted in reduced alcohol consumption by 12 days per month and reduced marijuana use by seven days per month among adolescents aged 10 to 15. In comparison, school-based marijuana and alcohol prevention programs that only utilized anti-drug information (knowledge-based only) resulted in an average reduction of two days of alcohol usage per month. The authors could not determine the effectiveness of knowledge-based prevention programs for marijuana. Most of the prevention programs were short term and focused on changes in knowledge and attitudes rather than	2007	8/11 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/6	0/6	0/6

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		actual behavioural changes.					
	Brief emergency department interventions for youth who use alcohol and other drugs: A systematic review (69)	The review found mixed and limited evidence on the use of brief interventions (BI) (e.g. universal or targeted motivational interviewing) with youth who visit the emergency department (ED) for alcohol and other drug-related events. Low-quality studies found increased abstinence from cannabis and reduced alcohol-related consequences (e.g. injury, drinking and driving, physical abuse) from targeted and universal motivational interviewing (MI) that used goal setting, personalized normative assessment feedback (PAF), and treatment referrals. The effectiveness of delivery methods such as computer-based education or peer education was not determined. In order to enable stronger clinical conclusions, the authors suggested minimizing the design biases, clarifying the elements of MI and standardizing outcome measurements. Overall, the benefits of using ED-based BI to reduce alcohol and other drug use remains inconclusive due to methodological limitations.	2013	8/10 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/9	0/9	7/9
Develop and implement interventions that reduce the harmful use of alcohol by targeting individual and group behaviours (general focus or focus on	Effectiveness of guided and unguided low-intensity internet interventions for adult alcohol misuse: A meta-analysis (121)	The review found a small but significant overall effect size in favour of internet-based self-help interventions in reducing adult alcohol consumption and inducing adherence to guidelines for low-risk drinking in adults. Seven studies applied a single-focus therapeutic strategy, including personalized normative feedback (PNF). The other nine studies used combined treatment approaches consisting of motivational interview (MI), PNF and cognitive-behavioural therapy (CBT), and /or behavioural self-control and change principles.	2013	7/11 (AMSTAR rating from McMaster Health Forum)	0/16	0/16	0/16

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
adults)		There was no statistical significance among the subgroup analyses, which included: 1) between guided and unguided alcohol interventions; 2) between single-session interventions and more extended ones; and 3) alcohol consumption outcomes between all-male and mixed gender samples.					
	The effectiveness of interventions to change six health behaviours: A review of reviews (122)	The review of 103 reviews evaluated the effectiveness of interventions to change six health behaviours: tobacco use, physical activity, alcohol misuse, healthy eating, illicit drug use and sexual risk. A total of 48 systematic reviews evaluated interventions to aid smoking cessation. There is some evidence of effectiveness among the following interventions: mass media campaigns, advice from health professionals, aversion therapy, self-help materials, telephone counselling, nurse-delivered interventions, group counselling and oral examination. There is little evidence of effectiveness among: reducing tobacco sales, social support interventions (e.g. family support), relapse prevention, and internet and computer-based interventions. Twenty-four systematic reviews found moderate evidence of effectiveness for curriculum-based activities in schools. The most effective interventions included: printed educational materials, implementation of games during recess, and involvement of family or community. Fifteen reviews found mixed evidence of interventions aimed at reducing alcohol consumption among different groups (e.g. those focused on problem drinkers, on delaying onset of alcohol use in young people, and on reducing dangerous activities associated with drinking).	2008	7/10 (AMSTAR rating from McMaster Health Forum)	Not reported	0/103	0/103

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		There is insufficient evidence to determine the effectiveness of peer organizations and media campaigns to reduce alcohol use. There is some evidence of effect of alcohol interlock programs and brief behavioural counselling interventions. Thirteen systematic reviews found some evidence of effectiveness in individual and community-level changes through stage-based lifestyle interventions, telephone-based interventions and nutritional-counselling interventions. There is inconclusive evidence on the effectiveness of motivational interviewing to change eating behaviours. Four reviews evaluated community-level interventions to prevent illicit drug use among young people, and found positive effects through skill-based programs. However the evidence is limited. Eight systematic reviews evaluated community-based interventions of sexual health promotion. Interventions that promoted condom use were most effective with some success in reducing the number of sexual partners. Interventions that promoted contraception use were more effective than interventions that promoted abstinence, or on reducing or preventing teenage pregnancies. The review of reviews found no evidence about physical activity, alcohol misuse, healthy eating, illicit drug use and sexual risk-taking among young people and marginalized groups. It also failed to find evidence about inequalities in access to interventions to promote change in behaviour, and about the effectiveness of health behaviour interventions. There were more reviews evaluating individual-level interventions than community- or					

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		population-level ones. Overall, there are interventions that are effective in achieving behavioural change.					
	*Effectiveness of brief alcohol interventions in primary care populations (70)	The review found mixed results in the effects of brief interventions (provision of information and advice designed to reduce alcohol misuse) among binge drinkers. There is some weak evidence that a greater length of time spent counselling patients may result in a reduction in alcohol consumption. The content and structure of brief interventions may be more influential than the delivery time. There were more significant reductions in consumption among men than among women.	2006	11/11 (AMSTAR rating from McMaster Health Forum)	0/39	0/39	0/39
	Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: Systematic review (78)	Health professionals such as nurses and anesthesiologists generally had a negative attitude towards patients with substance use disorders, and lacked adequate training and education in working with this patient group. Healthcare professionals attributed their negative attitudes towards this patient group to these individuals being emotionally challenging, potentially unsafe, violent, manipulative and irresponsible. Mental health specialists expressed more positive attitudes as they work more frequently with these patients. Mixed but limited studies have evaluated the consequences of health professionals' negative attitudes towards patients with substance use disorders. Patients that reported greater perceived discrimination by health professionals were likely to have lower treatment compliance. However, another study found no association between negative attitudes of physicians, and patients reporting problems with care. The authors indicated that organizational support may improve attitudes and training among health	2011	6/10 (AMSTAR rating from McMaster Health Forum)	0/28	0/28	0/28

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		professionals.					
	Curbing problem drinking with personalized-feedback interventions: A meta-analysis (75)	The review found that single-session and web-based, personalized-feedback interventions without professional guidance was effective for reducing risky alcohol misuse among young adult problem drinkers. Brief interventions with motivational interviewing and normative feedback also reduced alcohol consumption in comparison to interventions that did not include these features. Further studies are needed to determine the long-term effectiveness of personalized-feedback interventions, and for which age groups they might have a greater or lesser effectiveness.	2008	8/11 (AMSTAR rating from McMaster Health Forum)	0/14	0/14	0/14
	The effectiveness of web-based interventions designed to decrease alcohol consumption: A systematic review (123)	The review identified mixed evidence on the effectiveness of electronic screening and brief interventions for alcohol consumption. When comparing between web-based personalized feedback and additional self-help material with web-based personalized feedback, the latter is generally favoured. Non-personalized educational material delivered electronically has the same effect as traditional modes of delivery. The inconsistencies among the studies made it difficult to determine which elements of personalized feedback aid in the reduction of alcohol consumption.	2006	7/10 (AMSTAR rating from McMaster Health Forum)	0/10	0/10	0/10
	Interventions to increase self-efficacy in the context of addiction behaviours: A systematic literature review (124)	Interventions such as computer-generated tailored letters, self-help information and intensive group-based interventions, were found to be effective at increasing self-efficacy in the context of addiction behaviours. It was not determined which intervention was most effective. Two of the six studies that assessed behaviour change reported these interventions had a	2005	7/10 (AMSTAR rating from McMaster Health Forum)	0/10	0/10	0/10

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		significant positive effect on behaviour. However, it is not known whether the behaviour change was facilitated by changes in self-efficacy or other variables. The authors suggested that self-efficacy may be necessary, but not sufficient for behaviour change. Overall, the association between self-efficacy and behaviour remained unclear.					
	Meta-analysis of interventions for reducing number of sexual partners and drug and alcohol abuse among people living with HIV/AIDS (PLWHA) (125)	The review found that there was no significant impact on the reduction of sexual partners, drug use, needle sharing, or alcohol abuse among PLWHA following an intervention (e.g. cognitive-behavioural therapy, group therapy, harm reduction program, case management, web-based counselling, printed educational material, and theory-based integrated behavioural intervention).	2012	7/11 (AMSTAR rating from McMaster Health Forum)	0/12	0/12	0/12
	Effectiveness of e-self-help interventions for curbing adult problem drinking: A meta-analysis(126)	Among the nine studies, an overall medium effect size was found in reducing alcohol consumption through e-self-help interventions, for up to six to nine months post-treatment. The effects of the interventions beyond nine months could not be assessed. E-self-help interventions were more effective than e-single-session personalized normative feedback interventions. The authors identified questions to consider for future studies such as: 1) whether e-self-help interventions that include professional contacts are more effective against problem drinking than no-contact interventions; and 2) what types of problem drinkers would benefit from the aforementioned intervention (e.g. first-time help-seekers, dependent drinkers).	2010	7/11 (AMSTAR rating from McMaster Health Forum)	0/9	0/9	0/9
	A systematic review of family-based interventions targeting alcohol misuse and their potential to reduce alcohol-related harm in indigenous communities (127)	Eighteen of the 19 family-based interventions, including family and cognitive-behavioural therapy, and multidimensional family therapy, had a positive effect. Decreased alcohol consumption among problem drinkers was the most commonly	2010	6/10 (AMSTAR rating from McMaster Health	0/19	0/19	0/19

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		reported effect. Of the eight studies measuring family functioning, four reported improvement in functioning and coping.		Forum)			
	Computer-delivered interventions for alcohol and tobacco use: A meta-analysis (128)	The overall effect of the interventions (e.g. web-based or offline computer program, normative feedback, chat, entertainment and relapse prevention) was small but significant for reducing alcohol and tobacco use. The review found no significant correlation between treatment effect and number of sessions and weeks of follow-up. However, the reliability of these conclusions is unclear due to the lack of reporting on cost-effectiveness and accessibility of computer-delivered interventions.	2009	6/11 (AMSTAR rating from McMaster Health Forum)	0/34	0/34	0/34
	Telehealth in substance abuse and addiction: Review of the literature on smoking, alcohol, drug abuse and gambling (129)	Telephone-based programs were the most effective telehealth intervention, with 92% of studies showing effectiveness, followed by internet-based programs and computer-based programs. Most of the studies focused on university students and adolescents. Of the 13 telephone-based programs aimed at smoking cessation and reduction of alcohol consumption, 12 showed positive outcomes that were equivalent to conventional methods (e.g. telephone use for mediating advice and therapy by distance). There are few to no studies on the use of telephone-based programs for drug abuse and gambling problems. Internet-based programs had positive outcomes in the reduction of alcohol consumption and smoking. Individualized programs based on the personal characteristics, and increasing the length and frequency of the sessions, improve outcomes. Of the 22 studies that focused on stand-alone computer-based programs (i.e. no internet connection), 16 studies had positive outcomes or	2009	3/9 (AMSTAR rating from McMaster Health Forum)	0/145	0/145	0/145

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		were equivalent to face-to-face outcomes for the reduction of alcohol consumption, smoking and drug abuse. There were no studies that focused on gambling addiction-related computer-based programs. Additionally, computer-based programs were more effective in studies that involved the general population than university student populations. Overall, telehealth interventions, including information sites (e.g. telephone helplines), information websites, personalized feedback and online modules based on an established type of therapy (e.g. cognitive behavioural therapy, motivational intervention) with interactive personalized interface, had varying effectiveness. The most effective interventions were those that included telehealth interventions that mimicked face-to-face therapies. Accessibility was a potential barrier to the utilization of telehealth interventions.					
	The impact of brief alcohol interventions in primary healthcare: A systematic review of reviews (71)	Most of the studies reported that brief interventions (BI) were effective at reducing alcohol consumption in primary healthcare. The findings from one study suggested that the effectiveness of BI increased when it was delivered by primary healthcare practitioners. There is some evidence that indicated BIs are equally effective in men and women. There is insufficient evidence of BI effectiveness in specific age groups (e.g. adolescents and older adults) and among disadvantaged populations. The review found limited evidence on the long-term effectiveness of BI past 48 months post-intervention. There is little evidence to suggest that longer or more intensive BI are more beneficial than shorter and less intensive BI in	2012	6/9 (AMSTAR rating from McMaster Health Forum Impact Lab)	Not reported	0/80	0/80

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		reducing alcohol consumption. The authors suggested that the structure and content of BIs (e.g. feedback, advice, goal-setting) are more influential on the outcome than the total length of delivery. The authors suggested that future studies should focus on the effectiveness of brief alcohol intervention across different settings, population groups, and intervention content, and on the longevity of intervention effects.					
	Can stand-alone computer-based interventions reduce alcohol consumption? A systematic review (76)	The review found that computer-based interventions were more effective than minimally active interventions (e.g. assessment-only, usual care, generic non-tailored information or educational materials) at reducing alcohol consumption and binge frequency among student and non-student populations. A smaller number of studies found no significant differences between computer-based interventions and active comparator group (e.g. brief interventions). Among the computer-based interventions, 15 studies consisted of personalized feedback. Five studies included a variety of interactive games and assignments, motivational feedback and information on risk-taking and refusal skills. Three studies focused on common elements from behaviour change interventions such as decision balance, goal-setting, self-monitoring, strategies for behaviour change, behavioural contracting with rewards and penalties, maintenance of change, and relapse prevention. However, the overall conclusion on the effectiveness of internet-based interventions remains unclear due to the methodological weaknesses among the studies.	2008	8/11 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/24	0/24	0/24

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
	Behavioral counseling after screening for alcohol misuse in primary care: A systematic review and meta-analysis for the U.S. Preventive Services Task Force (72)	Behavioural counselling interventions (e.g. brief advice, feedback, motivational interviews, cognitive behavioural strategies such as self-completed action plans, written health education or self-help materials) delivered by a range of primary care providers (e.g. physician, nurse, physician assistant) improved drinking behavioural outcomes and reduced hospitalization for adults with risky drinking. There is evidence for the effectiveness of brief, multi-contact interventions; however, very brief interventions (up to five minutes, single contact) or brief single contact interventions (up to 15 minutes, single contact) were less effective in reducing alcohol consumption, heavy drinking episodes, and hospitalization. Two studies that focused on long-term outcomes found that individuals in the intervention groups maintained reductions in alcohol consumption longer than the control groups; however, there was no difference among the two groups by 48 months post intervention. Evidence was insufficient to draw conclusions about the effectiveness of behavioural interventions on alcohol-related injuries.	2012	8/10 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/38	0/38	0/38
	Interventions for alcohol and drug problems in outpatient settings: A systematic review (73)	The review found that motivational interviewing may be effective in reducing alcohol consumption among patients with alcohol problems who attend oral-maxillofacial clinics; however, the content and the duration of the intervention are unclear and need further research. Overall, there is insufficient evidence to determine whether or not interventions to reduce alcohol consumption can be generalized to outpatient settings. There is limited evidence to draw conclusions on the effectiveness of interventions (e.g.	2011	8/10 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/7	2/7	0/7

66

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		motivational interviewing, brief intervention delivered by healthcare professionals, educational material, risk reduction counselling) to reduce drug misuse, and on those with combined alcohol-drug problems in hospital outpatient settings. The authors found that the lack of detail and clarity regarding the actual content of interventions, duration, delivery mode and personnel delivering the treatment was challenging in assessing the findings.					
	Interventions for reducing alcohol consumption among general hospital inpatient heavy alcohol users: A systematic review (74)	The findings from single session brief interventions (BI) and self-help literature (e.g. booklets, leaflets) showed no clear benefit on alcohol consumption reduction. Some studies suggested multiple sessions of BIs could be beneficial in reducing alcohol consumption. There is no evidence of superiority of one intervention over usual care, no treatment, or another active intervention, on healthcare utilization. The mixed results from the limited number of studies make it difficult to draw conclusions on the effectiveness of these interventions for reducing alcohol consumption among general hospital inpatient heavy alcohol users.	2012	8/10 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/22	0/22	0/22
	Psychosocial interventions to reduce alcohol consumption in concurrent problem alcohol and illicit drug users (77)	Four studies assessed the effectiveness of six interventions: cognitive behavioural therapy, 12-step facilitation, brief intervention, hepatitis health promotion, motivational interviewing and brief intervention. The primary outcome was alcohol use or abstinence, and the secondary outcome was illicit drug use or abstinence. There was only one study for each comparison and most of these comparisons were not statistically significant. One study found that brief intervention reduced alcohol consumption at three	2011	11/11 (AMSTAR rating from McMaster Health Forum Impact Lab)	4/4	0/4	0/4

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		months and nine months among alcohol users. Motivational interviewing in combination with brief intervention found a reduction in alcohol consumption by seven or more days in the past 30 days at six months' follow-up, compared to the control group. Due to the weak evidence identified in the review, no conclusions can be made from these findings regarding the effectiveness of different types of psychosocial interventions for alcohol and illicit drug users.					
Develop and implement interventions that reduce the harmful use of alcohol by targeting entire communities	Universal school-based prevention programs for alcohol misuse in young people (81)	Among the 53 low-quality studies, there were mixed results on the effectiveness of preventive interventions (e.g. awareness education, social and peer resistance skills, normative feedback, development of behavioural norms, and positive peer affiliations) for alcohol misuse in school-aged children up to 18 years of age. In 39 studies, the generic interventions focused on multiple factors (e.g. alcohol, tobacco, drugs, anti-social behaviour). Eleven studies focused on prevention of alcohol misuse. Three studies focused on alcohol-cannabis or drug-alcohol combinations, or tobacco only. Of the 39 studies that evaluated generic interventions, 24 did not demonstrate statistically significant reductions in alcohol use. The remaining 15 studies found significant beneficial effects, particularly for psychosocial or developmental approaches (e.g. life and social skills, development of behaviour norms and peer affiliation) when compared to standard school curriculum. Six of the 11 studies evaluating alcohol-specific interventions showed some evidence of effectiveness compared to a standard curriculum.	2010	11/11 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/53	0/53	0/53

Evidence >> Insight >> Action

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		Most commonly observed positive effects across these interventions were on drunkenness and binge drinking. However, the studies that evaluated generic programs reported longer-term follow-up evaluations and persistent effects than those that evaluated alcohol-specific interventions. Thus, there is some evidence that supports the use of certain generic prevention programs (e.g. Life Skills Training Program, Unplugged program, Good Behaviour Game) over alcohol-specific prevention programs. The three studies that focused on alcohol-cannabis or drug-alcohol combinations, or tobacco only prevention programs, all found reduced substance use compared to standard curriculum. Due to methodological differences among the studies, it was difficult to assess subgroup effects (e.g. gender, baseline alcohol use, or levels of disruptive behaviour).					
	Universal multi-component prevention programs for alcohol misuse in young people (80)	Twelve of 20 studies of multi-component interventions to reduce alcohol misuse in school children 18 years of age and under demonstrated effectiveness compared to control or other intervention. The aims of the evaluated intervention programs in the majority of the studies included: promotion of awareness in parents an adolescents, resilient behaviour, parental rules, monitoring and supervision, support, and communication. The persistence of effects in these studies ranged from three months to three years. Of the eight studies that compared multi-component interventions with interventions delivered in one setting, only one study showed that the effectiveness of interventions with	2010	11/11 (AMSTAR rating from McMaster Health Forum)	0/20	0/20	0/12

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		multiple components was greater than single-component interventions.					
	Universal family-based prevention programs for alcohol misuse in young people (79)	The review identified the following interventions: Iowa Strengthening Families Program (ISFP), Preparing for the Drug-Free Years Program (PDFY), and social-development model based programs. Common components of the evaluated intervention programs included: promotion of awareness in parents and adolescents, parental rules, monitoring and supervision, conflict reduction, and social networking. Nine of 12 studies of family-based prevention programs for alcohol abuse in youth and adolescents demonstrated significant effects for short-term and long-term measures. Gender specific programs for mothers and daughters can be effective in the short- and medium-term. Such effect sizes are often small, but may be important based on economic models.	2010	11/11 (AMSTAR rating from McMaster Health Forum)	0/12	0/12	0/12
	A review of the effectiveness and cost-effectiveness of alcohol and sex and relationship education for all children and young people aged 5–19 years in community settings (82)	The studies in the review focused on the effectiveness of alcohol and sex education delivered in social, healthcare or community settings, by families or parents, and by involving the wider community or mass media. There were inconsistent findings that focused on interventions targeting alcohol use (e.g. computer-based program, substance-use prevention program, youth development) delivered in social, healthcare or community settings. One study found no impact of an after-school youth development program on drug beliefs. However, another study found reduced alcohol consumption among youth after an interactive computer-based intervention. Moreover, three systematic reviews suggested that the *Strengthening Families* program can produce long-term reductions in alcohol use	2010	8/10 (AMSTAR rating from McMaster Health Forum Impact Lab)	Not reported	0/87	0/87

Evidence >> Insight >> Action

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		among preteen and early adolescent children. There were inconsistent findings among 15 studies that examined programs (e.g. *Strengthening Families*, computer-based interventions) delivered to families. Four of the studies found moderate evidence on short-term positive effects on attitudes, values, communication, parental monitoring and parental rules related to alcohol. One study found no evidence on the effect of programs aimed at families on knowledge of alcohol use. Eleven studies found mixed effects on health outcomes, with only two studies involving a computer-based intervention with parental involvement showing long-term reductions in monthly alcohol use. Three studies found moderate evidence to suggest that interventions (e.g. information postcards, home-delivered educational material) delivered to parents may have a positive short-term effect on parent-child communication about alcohol. However, there is insufficient and inconsistent evidence to determine the effect of interventions delivered to parents on reduced alcohol consumption. There is moderate evidence from three studies to suggest that interventions involving the wider community or mass media (e.g. classes, skills development programs, alcohol- and drug-free events, training videos, and television and radio campaigns) have no effect on alcohol consumption among young people. One economic evaluation study found that programs delivered to families may be cost-effective and cost saving.					
	Reducing harm in drinking environments: A systematic	Of the 39 studies that examined interventions designed to reduce harm in drinking	2008	8/10 (AMSTAR	0/39	0/39	12/39

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
	review of effective approaches (83)	environments, seven focused on server training programs, five on interventions delivered in alcohol outlets, seven on enforcement of laws related to alcohol consumption, and 19 examined multicomponent community-based programs. Reduced alcohol-related harm resulted from multicomponent community-based programs, which combined community mobilization, responsible behaviour training, house policies and stricter enforcement of licensing laws. The effectiveness of other interventions was limited. Server training programs had a small effect on alcohol consumption. Interventions delivered in venues, including brief intervention and promotion of responsible drinking, had limited impact on alcohol consumption and behaviour. Interventions related to enforcement laws (e.g. alcohol sales laws) were ineffective. Inconsistent evidence made it difficult to determine the effectiveness of enforcement laws in reducing alcohol-related incidents.		rating from McMaster Health Forum Impact Lab)			
	* Interventions in the alcohol server setting for preventing injuries (130)	There is insufficient evidence to determine which intervention in the alcohol server setting is effective in preventing injuries. Fourteen studies investigated the effectiveness of server training, including raising awareness of alcohol service laws, recognition of early signs of alcohol intoxication, and tactics to deal with intoxicated customers. One study found that after a state-wide mandated server training policy was implemented, there was a reduction in the number of single vehicle nighttime crashes. There were mixed effects of server training on both patron and server behaviour. Four studies indicated that there was statistically significant improvement in server knowledge and reduced aggression among	2004	9/10 (AMSTAR rating from McMaster Health Forum)	0/20	0/20	3/20

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		patrons. Two studies investigated the effectiveness of delivering health promotion information in serving establishments. These studies found no effect on alcohol consumption by the patrons. One study investigated the effectiveness of a free driving-home service for intoxicated drinkers. Crashes resulting in injuries were reduced by 15% after the implementation of the program; however, there was no statistical significance between the experimental and control groups. The review identified mixed results among two studies that focused on interventions targeting the server setting environment. One study compared the effectiveness of two types of drinking glassware and found injuries among those utilizing the toughened glassware. The other study focused on an environmental design to reduce crime activity (e.g. minimal amount of cash in the till, good visibility, bright interior, escape routes) and found a statistically significant reduction of crime and injury. Only one study focused on a server setting policy intervention, which involved a policy minimizing the movement of drinks between different bars, and alcohol consumption. The intervention implementation found a reduced rate of serious assaults. Barriers to the implementation of these interventions included: high turnover of staff, opposition from the alcohol industry, and poor compliance.					
	Interventions for disorder and severe intoxication in and around licensed premises (85)	This review of 15 studies explores how the evaluation of studies into the effectiveness of interventions in and around licensed premises aims to reduce severe intoxication and disorder.	2011	6/10 (AMSTAR rating from McMaster	2/15	2/15	0/15

73

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		There is limited evidence that shows that interventions in the Night Time Economy (NTE) environments reduce intoxication and disorder. Interventions types include intervening at the point of sale of alcohol, risk assessment training for NTE workers, community-level interventions, police or group enforcement/accords, or multi-level interventions. A definitive conclusion cannot be made on the effectiveness of these interventions due to the variability across studies in respect to intervention type and outcome methods and measures. Complex interactions within this environment are important, so moving forward on multiple outcomes should be used to evaluate interventions in NTE.		Health Forum Impact Lab)			
	Population-level interventions to reduce alcohol-related harm: An overview of systematic reviews (90)	This review of 52 studies provides a summary of support for population-level alcohol interventions including those focused on alcohol server settings, alcohol availability, illicit alcohol, alcohol taxation, alcohol mass media interventions, drunk driving, school settings, and delivered in family, community, and workplace settings. There is evidence-based support for the effectiveness of interventions targeting alcohol consumption or harm when they involve regulatory or statutory enforcement over local non-regulatory approaches targeting specific population groups. Mixed evidence supports the effectiveness of population-level alcohol interventions. Research that explicitly engages with intervention by exploring the influence of social, economic and political elements on intervention effectiveness produce more transferable policy for population-level alcohol interventions.	2012	No rating tool available for this type of document	0/52	0/52	0/52

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
Introduce new, or change existing laws, policies and regulations	Effectiveness of policies maintaining or restricting days of alcohol sales on excessive alcohol consumption and related harms (86)	Eleven studies assessed the effects of adding days of sale, and three studies assessed the effects of imposing a ban on sales on a given weekend day. The review found strong evidence that limiting alcohol availability by maintaining existing limits on the days of sale is an effective strategy for preventing excessive alcohol consumption and related harms. Additionally, the review found that increasing days of sale increased excessive alcohol consumption and related harms, including motor vehicle injuries and deaths, violence-related and other injuries, and health conditions. No studies were found that specifically estimated commercial losses in sales resulting from a policy of restricting days of sale. However, one study conducted in New Mexico found that adding a day of sale on the weekend resulted in an increase of 41.6 alcohol-related fatalities on Sundays over a 5 year period, which translated to more than $6 million of additional cost per year (when applied to the approximate unit cost of $745,285 per motor vehicle fatality). Companies that are involved in the manufacturing, distributing, or selling of alcoholic beverages may oppose any changes due to the potential overall effect on alcohol sales. Thus, this may be a potential barrier to restricting days of sale.	2010	7/9 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/14	2/14	2/14
	Restricting or banning alcohol advertising to reduce alcohol consumption in adults and adolescents (89)	Four studies evaluated the benefits, harms and costs of restricting or banning the advertising of alcohol, among adults and adolescents. One low-quality study found that young men exposed to media (e.g. movies, commercials) with low-alcohol content drank less than men exposed to media with high-alcohol content.	2014	10/10 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/4	0/4	0/4

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		Two low-quality studies that evaluated the implementation of an advertising ban demonstrated an overall non-significant increase in alcohol consumption in the general population. One low-quality study that evaluated the lifting of a total ban on all forms of alcohol advertising found a reduction in alcohol sales. Overall, there is insufficient evidence to recommend for or against banning alcohol advertising.					
	Effectiveness of policies restricting hours of alcohol sales in preventing excessive alcohol consumption and related harms (87)	The studies in the review assessed the effects of increasing hours of sale in premises that sell and serve alcohol in high-income countries. There was sufficient evidence to conclude that increasing hours of sale by two or more hours per day increased alcohol-related harms (e.g. excessive alcohol consumption, liver cirrhosis, alcohol-related vehicle injuries, and crime). The evidence was insufficient to determine whether increasing hours or sale by less than two hours increases excessive alcohol consumption and related harms. Companies that are involved in the manufacturing, distributing, or selling of alcoholic beverages may oppose any changes due to the potential overall effect on alcohol sales. Thus, this may be a potential barrier to restricting the hours of sale. No studies were identified that assessed the economic impact (e.g. commercial losses in sales revenues) of reducing the hours of sale.	2010	7/9 (AMSTAR rating from McMaster Health Forum Impact Lab)	0/10	0/10	3/10
	Effects of alcohol retail privatization on excessive alcohol consumption and related harms: A community guide systematic review (88)	Seventeen studies assessed the impact of privatizing retail alcohol sales on per capita alcohol consumption. Among all the studies, there was a 44.4% increase in the per capita sales of privatized beverages in retail locations. Thus, the	2010	7/9 (AMSTAR rating from McMaster Health	0/17	0/17	0/17

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
		review found that privatization of retail alcohol sales led to increases in excessive alcohol consumption. One study indicated that re-monopolization is associated with a decrease in alcohol-related harms (e.g. excessive alcohol consumption, liver cirrhosis, alcohol-related vehicle injuries, and crime). The studies indicated there were several intermediate consequences of privatization, such as increased number of alcoholic beverage outlets, increased hours and days of sale, increased advertising, greater brand selection, and acceptance of alternate forms of payment. The authors suggested that these consequences would lead to increased alcohol consumption.		Forum Impact Lab)			

Appendix 4: Systematic reviews relevant to Option 4 – Strengthen core health-sector responsibilities related to violence and injury prevention

Option element	Title	Focus of review and key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in a Caribbean country	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on reducing violence and injuries
Improving the coordination and delivery of emergency hospital services, trauma and rehabilitation services	Effectiveness of quality improvement strategies for coordination of care to reduce use of health care services: A systematic review and meta-analysis (91)	The review identified quality-improvement strategies that improved care coordination such as: team changes, case management and self-management, and clinical information systems. Case management, team changes, self-management and patient education reduced hospital admissions among patients with chronic conditions, and emergency department visits among older adults, but were not effective in reducing the use of healthcare services among patients with mental illness. Interventions that had a significant effect were those that included an outreach component. Patient education significantly reduced hospital admissions and was less resource intensive than case-management interventions.	2014	10/11 (AMSTAR rating from McMaster Health Forum)	0/50	0/50	0/50
	Electronic tools for health information exchange: An evidence-based analysis (97)	The review identified three outcomes of interest: primary outcomes of interest (including health services utilizations and disease-specific clinical outcomes), process-of-care indicators, and measures of efficiency. In primary outcomes of interest, moderate-quality evidence demonstrated a reduction in hospitalizations (by 15%), length of stay (by 10%) and emergency department visits (by 25%) following the implementation of an electronically generated laboratory report of guidelines. Based on high-quality evidence, there is no difference in the proportion of patients who experienced a readmission. The outcomes of process-of-care indicators (the frequency at which certain tests or examinations were conducted) were inconclusive. No single	2012	5/11 (AMSTAR rating from McMaster Health Forum)	0/11	0/11	0/11

		disease group, care coordination aspect, or technology contributed more significantly to the observed impacts of eTools. For measures of efficiency, there was some evidence that there was no difference in delivery time between electronic discharge summary and a paper-based discharge summary. The evidence did not demonstrate improved efficiency. eTools may not have the ability to independently improve the quality of outpatient care. Instead, eTools may be used as a support system as there does not appear to be evidence of patient harm.					
	Experienced continuity of care when patients see multiple clinicians: A qualitative metasummary (100)	The qualitative metasummary identified overarching themes which included: connectedness in health case as experiences of security and confidence; connectedness beyond healthcare encounters (between personal lives and healthcare); and patients as active agents. Patients experienced positive care and described them as feelings of security, confidence, safety or support. Two-thirds of the studies attributed feelings of security and confidence to having a trusted clinician who has developed a comprehensive knowledge of the patient and can manage several health conditions. Negative care involved feelings of insecurity, vulnerability or mistrust. Almost two-thirds of the studies indicated a lack of clarity in roles and conflicting advice from healthcare providers' resulted in negative patient experience. Additionally, negative experience in care was experienced during care transitions between inpatient, outpatient and home-care settings. Patients assumed there was coordination among the healthcare providers for their care, and seldom observed the negotiation of roles and actions of their healthcare providers. Many patients indicated they want to be involved in their care, especially in communicating, monitoring, and self-management, but not those patients who are not familiar with the health system, have low health literacy, or who cannot advocate for themselves.	2007	4/9 (AMSTAR rating from McMaster Health Forum)	0/11	0/11	0/11

Comparative effectiveness of care coordination interventions in the emergency department: A systematic review (93)	The review found mixed evidence on the effectiveness of coordination interventions in the emergency department (ED). Of the 19 studies that developed post-discharge ED care and interventions for obtaining follow-ups, 12 studies found improvement in follow-up rates or reducing repeated ED visits. Interventions included: internet-based electronic referral system; appointment scheduling reminders via telephone or email; outpatient appointments made while in ED; information provided by nurses; ED-based educational services; and care coordinators. Assessed outcomes included follow-up with a primary care provider, ED revisits, and use of prescribed medication. Seven studies described an intervention (e.g. internet-based electronic referral system, experienced community nurse, and care coordinators to make follow-up appointments) that led to a decrease in ED visit rates. Four studies developed ED-based educational services designed to assist with continuing care needs after discharge. Only one study reported a significant increase in follow-up appointments being made. Four studies found an increase in the ED visits of patients who dealt with care coordination interventions, particularly for patients without family physicians. Due to the limited evidence, further studies are needed to determine the effectiveness of these interventions.	2010	6/10 (AMSTAR rating from McMaster Health Forum)	0/23	0/23	0/23
Does clinical coordination improve quality and save money? (92)	The review found considerable evidence that lack of coordination is the most common indirect or contributing cause of poor-quality outcomes. This included under-coordination of medications between providers (failure of information transfer from one provider to another), inadequate handovers, transfers and collaborations between shifts, professions and services, and lack of service coordination. Under-coordination resulted in delay or lack of access to necessary services, thus higher emergency costs.	2010	5/10 (AMSTAR rating from McMaster Health Forum)	Not reported	Not reported	Not reported

	Many studies reported that serious hospital adverse events were due to communication failure among healthcare providers. The reported evidence indicated that 40% of medication errors were from inadequate medication reconciliation in handovers during admission, transfer and discharge of patients. The review concluded that co-location or the formation of a team is unlikely to increase quality and reduce waste or costs, unless other procedure changes are made to ensure coordination. The needed changes included improvement of patient handover and transfers, payment systems, regulation and professional education, and some models of care to prevent hospital admissions. The review found that changes and interventions to improve coordination included sequential coordination (e.g. patient handovers from one healthcare provider to another), parallel coordination (e.g. co-working), and indirect influences on provider relations (e.g. internal and external coordination). The strongest evidence of cost and quality improvement was inter-organizational improvements, or was carried out within integrated systems. The interventions with the strongest evidence included multidisciplinary care teams, discharge planning programs with support, nurse-led and team post-hospital interventions, case management, and some disease management. The most effective approaches used reliable data to identify patients most at risk of deterioration, and then ensured the appropriate coordinated care and self-care services. No conclusions about cost savings can be drawn from the evidence. There is limited evidence to make conclusions on the costs attributed to under-coordination.					
	A systematic review of therapy coordination between primary and specialist care (96)	No full text available	2005	2/11 (AMSTAR rating from McMaster Health	N/A	N/A	N/A

81

			Forum)			
	Email for the coordination of healthcare appointments and attendance reminders (98)	No studies met the inclusion criteria for this review. There was insufficient rigorous evidence to evaluate the effects of email for coordinating healthcare appointments and attendance reminders.	2010	4/4 (AMSTAR rating from McMaster Health Forum)	0/0	0/0	0/0
	Closing the quality gap: A critical analysis of quality improvement strategies: Volume 7 — Care coordination (94)	A total of 43 reviews focused on care coordination interventions. Fifteen reviews evaluated the use of multidisciplinary teams, which involved two or more providers from different specialties providing care to a group of patients. Ten reviews evaluated the use of disease management; however, there was no general consensus on the components that should be included in a disease-management program. Nine reviews assessed case management, but the exact duties of case managers were poorly described. Three reviews focused on interprofessional education and three reviews on integration of care. Thirty-two reviews included care coordination among other quality-improvement approaches. The most common targeted conditions were mental illnesses, heart failure and diabetes. Multidisciplinary teams improved care continuity in mentally ill patients, reduced mortality and hospital readmission among heart failure patients, and reduced mortality and dependency in stroke patients. Disease-management programs and case management improved adherence to treatment in patients with mental illness, reduced mortality and hospital readmission in heart failure patients, and improved self-care among diabetics. The authors concluded that the effectiveness of improvement strategies is most likely dependent upon appropriate matching between intervention and care coordination problem. The review found 40 definitions of coordination. Five common elements of these definitions were identified: 1) numerous participants are involved; 2) dependency to carry out disparate activities in a patient's care; 3) adequate knowledge about their own or others' roles and available resources; 4)	2006	7/10 (AMSTAR rating from McMaster Health Forum)	/75	/75/	/75

	participants rely on exchange of information; and 5) integration of care activities has the goal of facilitating appropriate delivery of healthcare services. The review combined the aforementioned elements and developed the following definition: "Care coordination is the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services. Organizing care involves the marshalling of personnel and other resources needed to carry out all required patient care activities, and is often managed by the exchange of information among participants responsible for different aspects of care." Only one review reported that disease-management programs are cost-effective for improving outcomes in patients with depression. The remaining reviews indicated there is insufficient evidence to reach a conclusion regarding the costs and benefits of evaluated care coordination interventions.						
	Review article: Effectiveness of patient care teams and the role of clinical expertise and coordination: A literature review (95)	Eight studies found that the combination of enhanced expertise and coordination had mixed results regarding patient outcomes. Five studies indicated that interventions such as adding a care coordinator or improving communication structures improved patient outcomes. There are limited effects on cost and resource utilization. Ten studies were identified in which the intervention contained both clinical expertise and coordination, and showed mixed results regarding patient outcomes and little effect on costs and resource utilization. There is little evidence to conclude that the combination of enhanced coordination and expertise had more value than just clinical expertise or improved coordination only. No conclusions could be drawn about the determinants of team effectiveness (e.g. characteristics of team members and team processes) due to limited available information.	2008	4/10 (AMSTAR rating from McMaster Health Forum)	0/26	0/26	0/26

83

	Effects of care coordination on hospitalization, quality of care, and health care expenditures among medicare beneficiaries: 15 randomized trials (101)	Fifteen studies on care-coordination programs to reduce hospitalization and health care expenditures, and improve quality of care for Medicare beneficiaries with chronic illness, were included. All but one program used patient education, and seven programs used behaviour change models or motivational interviewing. Thirteen of 15 programs failed to demonstrate significant differences in hospitalizations. None of the studies showed net savings. Care-coordination programs must have strong transitional care to provide net savings. Programs that emphasize in-person contact for moderately to severely ill patients can improve some aspects of care while remaining cost-neutral. The authors conclude that the reviewed coordination programs show little promise for reducing Medicare expenditures.	2009	Not applicable to this type of document	0/15	0/15	0/15
	Audit filters for improving processes of care and clinical outcomes in trauma systems (99)	No studies, controlled clinical trials, or controlled before-and-after studies on audit filters in trauma systems as a quality assurance initiative were included in the review. Three studies that came closest to meeting the inclusion criteria reported effects of audit filters on reducing preventable deaths and time paramedics spent on-scene resuscitating victims of penetrating trauma. The authors identify a critical need to design more rigorous clinical trials that assess the use of audit filters as a means of improving care processes and clinical outcomes.	2009	5/6 (AMSTAR rating from McMaster Health Forum Impact Lab)	N/A	N/A	N/A
Integrating violence (i.e. domestic violence or intimate partner violence) screening	The 'WHO Safe Communities' model for the prevention of injury in whole populations (102)	Seven studies evaluating the 'Who Safe Communities' model for injury prevention for whole populations were included in the review. The studies were controlled before-and-after designs that measured and reported changes in	2008	11/11 (AMSTAR rating from McMaster Health	0/7	0/7	0/7

and prevention into primary-care settings		injury rates in a WHO designated safe community. Data was not pooled due to heterogeneity. The results demonstrated that there is some evidence that the Safe Communities model reduces injuries, and this finding supports further implementation. Evaluation studies in Scandinavia were more successful than the studies in New Zealand and Australia. The authors are cautiously optimistic about the results due to the methodological limitations of several studies included in the review.		Forum)		
	How far does screening women for domestic (partner) violence in different health-care settings meet criteria for a screening programme? Systematic reviews of nine UK National Screening Committee criteria (103)	Partner violence against women is a public health problem for which screening is a promising intervention. Most female patients considered screening or routine questioning about partner violence acceptable (range of 35% to 99%), but some identified that there may be potential harms. In interviews and focus groups, women identify screening as beneficial, but are not comfortable with disclosing abuse. Women who were not comfortable with abuse disclosure still noted that screening is beneficial as it removed perceived stigma, added awareness and provided senses of validation for them around partner violence. Evidence shows that women may not be initially comfortable with abuse disclosure, but screening can facilitate disclosure at a later time. Evidence about the effectiveness of advocacy and psychological interventions is promising, but not necessarily for women through screening. Healthcare professionals have an acceptability of partner violence screening ranging from 15% to 99%. However, there is insufficient evidence to implement a screening program for partner violence against women in general health services or in specific clinical settings. There were no cost-effectiveness studies of these violence-screening interventions, but some evidence shows that they are potentially cost-effective.	2006	8/10 (AMSTAR rating from McMaster Health Forum)	5/117	117/117	117/117
Developing stronger referral systems with the social service sectors	Direct access compared with referred physical therapy episodes: A systematic review	Eight quantitative studies that measure outcomes in patients with musculoskeletal injuries who access physical therapists in outpatient settings through physician referral and direct access were included in the review. Included studies compared physical	2013	7/10 (AMSTAR rating from McMaster Health	0/8	0/8	0/8

85

(105)	therapy by direct access groups with physical therapy by physician referral groups to assess cost, harm or outcomes. Costs to patient or insurance were less in patients who saw a physical therapist without a physician referral. Four of six studies showed that the number of physical therapy visits in groups accessing services directly were significantly less. All studies showed similar or better discharge outcomes and increased satisfaction in direct access groups without any additional risk of harm to patient. Data reporting and dependent variable measures were heterogeneous, and data could not be pooled. None of the included studies had randomization of study participants into the different groups, nor were there any attempts at blinding participants. Despite these limitations, physical therapists practising in a direct access capacity may decrease costs and improve outcomes without prescribing medications and ordering tests in patients with musculoskeletal complaints.		Forum)			
A systematic review of the effect of primary care-based service innovations on quality and patterns of referral to specialist secondary care (104)	Forty-five publications reporting on 44 studies evaluating primary care service innovations on patterns of referral to specialist secondary care were included. The publications consisted of 20 randomized controlled trials, seven reports, seven observational controlled studies, nine interrupted time series designs, and two economic appraisals. The included studies were very diverse in terms of subject, methods, organizational form and evidence quality. Less than half of the included studies measured referral as the primary outcome. Professional interventions generally had the intended impact on referral rates. Organizational innovations in service provision may increase costs associated with referral, yet total costs to the National Health Service need not increase overall. Initiatives in this area that are evaluated well should be supported.	2002	8/11 (AMSTAR rating from www.rxforchange.ca)	0/44	0/44	0/44
Cost-effectiveness of screening and referral to an alcohol health	This cost-effectiveness study assessed a brief screening and referral intervention that refers patients misusing alcohol attending accident and	N/A	N/A	N/A	N/A	N/A

	worker in alcohol misusing patients attending an accident and emergency department: A decision-making approach (106)	emergency departments to alcohol health workers. Lower levels of drinking were found at statistically significant levels at six months follow-up. The authors conclude that referrals to alcohol health workers yields positive results and is more cost-effective than information only in reducing alcohol consumption among accident and emergency department attendees with hazardous levels of drinking.				
Increasing access to mental health services for women and youth who are at risk for violence	Using technology in the delivery of mental health and substance abuse treatment in rural communities: A review (109)	Thirty-eight articles about the use of telecommunications technology for the delivery of rural mental health and substance abuse treatment services were included in the review. Telehealth provides advantages by potentially mitigating the shortage of care providers, and by allowing providers to digitize clinical data. Funding and reimbursement mechanisms are not suitably developed to sustainably support telehealth services. The need for equipment space, adequate training, and clear clinical policies and procedures present additional barriers. Both patients and providers understand telehealth to be an acceptable substitution for in-person treatment. Telehealth has been shown to be an effective mode of training primary-care providers, increasing peer consultation, enhancing knowledge and skills, and reducing isolation from academic input, while increasing practitioner confidence and competence in managing patients in need of psychiatric care. There is a need for studies on this topic, and future research should focus on gaps in the literature, including research on acute psychiatric units, telehealth for consultative psychiatry, and services in nursing facilities for geriatric patients.	2012	2/9 (AMSTAR rating from McMaster Health Forum)	0/38	0/38	0/38
	Young people's views of UK mental health services (108)	Thirty-one studies on the views of young people on mental health services in the U.K. and the reasons behind these views were included in the review. The included studies were a combination of qualitative and mixed methodologies, employing interviews, questionnaires and focus groups. Positive themes that were valued or sought by young people included information, accessibility of services, worker skills and self-reliance. Negative	2011	7/9 (AMSTAR rating from McMaster Health Forum)	0/31	0/31	0/31

			Year	AMSTAR			
	themes that young people found unhelpful were stigma, lack of access to services, medicalization of problems, and lack of continuity of care. Young people share positive and negative views of mental health services, which provides an opportunity to improve the design of services accordingly.						
	Perceived barriers and facilitators to mental health help-seeking in young people: A systematic review (110)	Twenty-two studies of perceived barriers or facilitators to mental health help-seeking in adolescents or young adults were identified. Stigma and embarrassment about seeking help were the most prominent barriers to help-seeking for mental health problems. The review identified other prominent barriers such as: confidentiality and trust; difficulty identifying the symptoms of mental illness; lack of accessibility; self-reliance; concern about characteristics of provider of help (e.g. psychologist, physicians, mental health facilitators); lack of knowledge about mental health services; and the fear or stress about the act of help-seeking itself. There was some evidence that young people perceived positive past experiences, social support and encouragement from others as ways to reduce the stigma of help-seeking. The authors suggested three approaches to address self-reliance: 1) evidence-based self-help material; 2) a program to increase mental health capacity; and 3) provision of programs that are designed to reduce stigma associated with mental illness and mental health help-seeking.	2009	3/9 (AMSTAR rating from McMaster Health Forum)	0/22	0/22	0/22
	Access to mental health in primary care: A qualitative meta-synthesis of evidence from the experience of people from 'hard to reach' groups (107)	Seven key themes emerged from the qualitative review: 1) Illness models: psychological distress was accompanied by problems of physical and social functioning; 2) Illness narratives: mental illness was seen as a process, with trajectories of uncertainty, control, hope and fear; 3) Illness experience: psychological distress was understood as a consequence of difficult personal circumstances. There was	Not reported	6/9 (AMSTAR rating from McMaster Health Forum)	0/20	0/20	0/20

relevance of roles, relationships and social networks. These illness experiences were related to changes in the capacity to perform the roles central to an individual's identity;

4) Stigma: stereotyping, labelling and discrimination were perceived by those with a mental illness, in their day-to-day lives;

5) Self-management and coping strategies: pride, self-esteem and a sense of belonging was an important theme. Self-management strategies could be instituted by the person, but the review found that that incorporation of families, communities and health professionals may be an important facet to the wellbeing of individuals with mental illnesses. Social isolation is a feature of coping mechanisms;

6) Disclosure, reframing and normalizing: a key aim of disclosure was in validating and normalizing their experience;

7) Primary care experiences and perceptions of help-seeking.

Three perspectives emerged in understanding the interplay of mental health problems and must be considered in developing interventions: social withdrawal; resources (e.g. social resources for addressing mental illness); and roles (e.g. patient and professional roles in the primary care mental health consultation).
Significant barriers to patients accessing mental health treatment included inability, reluctance or unwillingness to understand their problems as mental illnesses.