

Evidence Brief

Strengthening Collaboration to Optimize Efforts Addressing Gambling-related Harm in Ontario

27 February 2018



McMaster
HEALTH FORUM

FORUM+



EVIDENCE >> INSIGHT >> ACTION

Evidence Brief:
Strengthening Collaboration to Optimize Efforts Addressing Gambling-related Harm in Ontario

27 February 2018

McMaster Health Forum

The goal of the McMaster Health Forum, and its Forum+ initiative, is to generate action on the pressing health- and social-system issues of our time, based on the best available research evidence and systematically elicited citizen values and stakeholder insights. We aim to strengthen health and social systems – locally, nationally, and internationally – and get the right programs, services and products to the people who need them. In doing so, we are building on McMaster’s expertise in advancing human and societal health and well-being.

Authors

Kerry Waddell, M.Sc., Co-Lead, Evidence Synthesis, McMaster Health Forum

Kaelan A. Moat, PhD, Managing Director, McMaster Health Forum

John N. Lavis, MD PhD, Director, McMaster Health Forum, and Professor, McMaster University

Heather Bullock, M.Sc., Co-Lead, Evidence Synthesis, McMaster Health Forum

Funding

The evidence brief and the stakeholder dialogue it was prepared to inform were funded by the Gambling Research Exchange Ontario (GREO). GREO is funded by the Ministry of Health and Long-Term Care. The McMaster Health Forum and Forum+ receives both financial and in-kind support from McMaster University. The views expressed in the evidence brief are the views of the authors and should not be taken to represent the views of the Gambling Research Exchange Ontario.

Conflict of interest

The authors declare that they have no professional or commercial interests relevant to the evidence brief. The funder played no role in the identification, selection, assessment, synthesis, or presentation of the research evidence profiled in the evidence brief.

Merit review

The evidence brief was reviewed by a small number of policymakers, stakeholders and researchers in order to ensure its scientific rigour and system relevance.

Acknowledgments

The authors wish to thank Fanny Cheng and Puru Panchal for assistance with reviewing the research evidence about elements. The views expressed in the evidence brief should not be taken to represent the views of these individuals. We are especially grateful to Fides Coloma, Simone Rodda, and Jamie Wiebe for their insightful comments and suggestions.

Citation

Waddell K, Moat KA, Lavis JN, Bullock H. Evidence brief: Strengthening collaboration to optimize efforts addressing gambling-related harm in Ontario. Hamilton, Canada: McMaster Health Forum, 27 February 2018.

Product registration numbers

ISSN 1925-2250 (online)

Table of Contents

KEY MESSAGES.....	5
REPORT.....	7
THE PROBLEM.....	9
Gambling-related harms are associated with multiple co-occurring issues	9
Many provincial efforts to prevent gambling-related harms are pursued in isolation from those addressing the broader spectrum of challenges associated with these harms.....	11
Provincial efforts also place greater emphasis on supporting individual problem gamblers, rather than on addressing risks to the public as a whole.....	11
Socio-economic, ethnocultural and geographical factors create unique issues that further complicate our understanding of the problem.....	12
Existing governance and financial arrangements create a number of additional challenges	13
Data and evidence could be better utilized to understand the scope of the problem in Ontario	14
Additional equity-related observations about the problem.....	15
Citizens' views about key challenges related to strengthening collaboration to optimize the efforts addressing gambling-related harms in Ontario	16
THREE ELEMENTS OF A POTENTIALLY COMPREHENSIVE APPROACH FOR ADDRESSING THE PROBLEM.....	19
Table 2. Citizens' values and preferences related to the three elements.....	20
Element 1 – Get the right services to those who need them and bring a public-health perspective to bear.....	21
Element 2 – Align how funds set aside from gaming revenue are used to better support evidence-informed policies and practices	26
Element 3 – Establish governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships.....	27
Additional equity-related observations about the three approach elements	28
IMPLEMENTATION CONSIDERATIONS.....	30
REFERENCES	32
APPENDICES	35

KEY MESSAGES

What's the problem?

Government-operated gambling has grown over the past two decades, with revenues reaching \$6.6 billion in 2015, of which \$2.1 billion was allocated to the Government of Ontario to fund a range of health, education, and other social services in the province. However, while gambling has brought in resources to support much-needed health and social programs and services, the emergence of gambling-related harms have become an increasing concern. This concern is compounded by the uncertainty associated with recent changes in the province, including the expansion of online gambling and the increasing engagement of the private sector in owning and operating gambling venues, both of which have started to significantly change the gambling landscape. While many challenges exist in relation to how the programs and services to address gambling-related harms are delivered, financed and governed in Ontario, six key dimensions of the problem are: 1) gambling-related harms are associated with multiple co-occurring issues; 2) many provincial efforts to prevent gambling-related harms are pursued in isolation from those addressing the broader spectrum of challenges associated with these harms; 3) provincial efforts also place greater emphasis on supporting individual problem gamblers, rather than on addressing risks to the public as a whole; 4) socio-economic, ethnocultural and geographical factors create unique issues that further complicate our understanding of the problem; 5) existing governance and financial arrangements create a number of additional challenges; and 6) data and evidence could be better utilized to understand the scope of the problem in Ontario.

What do we know (from systematic reviews) about three elements of a potentially comprehensive approach to address the problem?

1. Element 1 – Get the right services to those who need them and bring a public-health perspective to bear.
 - Several reviews were identified that address this element, with findings suggesting that:
 - the use of prevention and awareness services are effective at improving knowledge of gambling-related harms, but are inconclusive about their effects in changing behaviour;
 - more research evidence is required to determine best practices for screening for problem gambling, and the expansion of online gaming may prove challenging for existing screening and diagnostic instruments;
 - internet and mobile technologies have potential to be used as accessible modalities for delivering gambling-cessation programs; and
 - there are a range of public-health and harm-reduction approaches which appear effective in reducing gambling-related harms, including: 1) mandatory limit setting when accompanied by reminders; 2) bet limits set at a low monetary value (e.g., one dollar); 3) mandatory shut-down and reduced operating hours; and 4) on-screen clocks and displaying cash rather than credits.
2. Element 2 – Align how funds set aside from gaming revenue are used to better support evidence-informed policies and practices.
 - We found no systematic reviews that directly addressed this element or any of its sub-elements.
3. Element 3 – Establish governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships.
 - We found no systematic reviews that directly addressed this element or any of its sub-elements, although two reviews were found that showed some benefits to inter-sectoral collaboration.

What implementation considerations need to be kept in mind?

While a number of potential barriers have been identified, perhaps the biggest barrier lies in overcoming the policy legacies created by the establishment of health and social systems that traditionally operate separately in Ontario, which may complicate efforts to collaborate and establish cross-sectoral partnerships. However, positive momentum behind the elements of an approach discussed in this brief may serve as a window of opportunity to drive change.

REPORT

Government-operated gambling has grown over the past two decades, with revenues reaching \$6.6 billion in 2014-15, of which \$2.1 billion was transferred to the Government of Ontario to fund a range of health, education, and other social services in the province.⁽¹⁾ However, while the expansion of gambling has brought in needed resources to the province, the emergence of gambling-related harms has become an increasing concern. While many individuals in the province gamble without causing harm to themselves or others, about 2.5% of Ontarians exhibit evidence of a gambling problem.⁽²⁾ However, it is estimated that only 10% of individuals exhibiting problem-gambling behaviours (including high-risk individuals) seek treatment. This means that there is a large segment of the affected group who may be experiencing financial or social distress, or other symptoms associated with problem gambling, who never receive the support they need. However, it is also important to acknowledge that harms can occur at any level of play and may present a complex array of individual-level challenges across a number of dimensions including:

- financial harm;
- relationship disruption, conflict or breakdown;
- emotional or psychological distress;
- decrements to health;
- cultural harm;
- reduced performance at work or study; or
- criminal activity.⁽³⁾

These and other adverse consequences that lead to a decrement to the health or well-being of an individual, family unit, community or population due to engagement with gambling are hereafter referred to as gambling-related harms.⁽³⁾ Like many other health and social challenges, gambling-related harms can also affect those not directly involved in gambling, including family units, broader communities and the population as a whole.

The establishment of gaming as an industry in Ontario is relatively recent. Amendments to the Canadian criminal code in 1969 and 1985 were pivotal in its development and expansion, as they authorized provinces to operate and regulate gambling.⁽⁴⁾ This regulation is primarily made up of two main pieces of legislation in Ontario:

Box 1: Background to the evidence brief

This evidence brief mobilizes both global and local research evidence about a problem, three 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 the partner organization (and/or 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 three elements of a potentially comprehensive approach 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 three elements of a potentially comprehensive approach for addressing the problem were not designed to be mutually exclusive. They could be pursued simultaneously or in a sequenced way, and each element 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

- the *Gaming Control Act, 1992*, which was developed to ensure honesty, integrity, and financial responsibility to participants in gaming, as well as to prevent criminal activity such as lottery scams; and
- the *Horse Racing License Act, 2015*, which governs horse racing and race tracks in the province.

Subsequent to the *Gaming Control Act*, the *Alcohol and Gaming Regulation and Public Protection Act, 1996* and the *Ontario Lottery and Gaming Corporation Act, 1999* established the two agencies responsible for the regulatory oversight of gaming – The Alcohol and Gaming Commission of Ontario (AGCO) and the Ontario Lottery and Gaming Corporation (OLG). These reforms and the development of the legislative framework led to the rapid expansion of gambling across the province, which outpaced the implementation of programs and services that could support those at risk of problem-gambling.(4)

Recently, there has been an increasing shift in the industry (and amongst advocacy organizations) towards a greater consideration of how social responsibility should be integrated into the province's vision for how it manages gambling. This has been operationalized through dedicated initiatives and human resources at both AGCO and OLG.(5) Yet, this shift has not comprehensively addressed gaps that exist in the provision of health promotion, disease prevention and treatment services in the province. Further, a number of changes have been made that are set to significantly change the gambling landscape in the province – most notably the introduction of online gambling (both with regards to regulated-play OLG sites as well as other unregulated games) and the expansion of the role played by the private sector – which create some uncertainty as to whether there are additional challenges that will need to be addressed.

In 2011, the Ontario government released a comprehensive mental health and addictions strategy, 'Open Minds, Healthy Minds: Ontario's Comprehensive Mental Health and Addictions Strategy,' which defined a path towards the improvement of mental health and addictions services.(6) The strategy set out the need to develop and implement a set of core mental health and addiction services across the continuum of needs, from health promotion and prevention to highly specialized intensive services, that are available, accessible and consistently delivered across Ontario.(6) While this initiative has resulted in significant progress in strengthening mental health and addictions services for children, and is expected to demonstrate similar successes for adults, the intersection between the mental health and addictions services identified for inclusion in the core basket, and the gambling services that should be on offer to Ontarians, has largely been overlooked. The strategy pays some attention to the issue of problem gambling, but unlike many other mental health and addictions problems included in the document, it does not identify any particular initiatives aimed at addressing it.

The ongoing changes in the provincial gambling landscape noted above, coupled with relatively recent advancements in mental health and addictions services in Ontario, has created a unique opportunity to consider how the delivery of programs and services to reduce gambling-related harms can be reformed alongside industry changes to better meet the needs of Ontarians.

This evidence brief has been developed within this context, and focuses on improving collaboration in all efforts to strengthen the delivery of health and social services, and reduce gambling-related harms. It reviews the research evidence about: 1) features of the problem related to the current health- and social-system arrangements for gambling services; 2) three elements (of a potentially comprehensive approach) for addressing the problem, and hence contributing to strengthening efforts to address gambling-related harms; and 3) key implementation considerations for moving any of the elements or their sub-elements forward.

The preparation of this evidence brief was informed by two key operational definitions that should be noted by readers. The first key definition is for the term problem gambling. In this brief, problem gambling refers to individuals who display behaviours that are considered low, moderate or high risks for problem gambling, based on the Problem Gambling Severity Index (PGSI).(7) The PGSI is a nine-item, self-assessment or screening tool for which any score above zero out of a possible 27 indicates some risk, with high scores indicating greater risk for problem gambling.(8) While not used frequently in this document, we draw on the fifth version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and define the term

gambling disorder as persistent and recurrent problematic gambling behaviour, leading to clinically significant impairment or distress.

The second key definition that should be noted is the use of the term ‘public-health approach’ throughout the brief, by which we mean the promotion and prevention measures designed to act on the population as a whole to improve health and social well-being, rather than at the individual level. In Ontario, it includes the use of policy levers often under the control of municipal governments that have historically been used with respect to drugs and alcohol to curb use, but have yet to be employed to address gaming or gambling.

THE PROBLEM

There are a number of aspects of the issue that could be considered important to understanding the problem in Ontario, however, following 18 key informant interviews, there was a general consensus that the following six dimensions were important to highlight:

- 1) gambling-related harms are associated with multiple co-occurring issues;
- 2) many provincial efforts to prevent gambling-related harms are pursued in isolation from those addressing the broader spectrum of challenges associated with these harms;
- 3) provincial efforts also place greater emphasis on supporting individual problem gamblers, rather than on addressing risks to the public as a whole;
- 4) socio-economic, ethnocultural and geographical factors create unique issues that further complicate our understanding of the problem;
- 5) existing governance and financial arrangements create a number of additional challenges; and
- 6) data and evidence could be better utilized to understand the scope of the problem in Ontario.

Below, we provide descriptions of each of these dimensions in turn.

Gambling-related harms are associated with multiple co-occurring issues

Gambling-related harms can have devastating effects on individuals and their surrounding communities, and this problem is further complicated by a close association between problem-gambling behaviour and a wide range of co-occurring issues. It is now well established that most people exhibiting problem-gambling behaviour have at least one co-occurring issue, and many have multiple health and social concerns alongside their problem-gambling behaviours.⁽⁹⁾

Box 2: Equity considerations

A problem may disproportionately affect some groups in society. The benefits, harms and costs of elements of a potentially comprehensive approach 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 Ontarians, but (where possible) it also gives particular attention to four groups:

- young adults (i.e., 18-25);
- older adults (i.e., 65+);
- vulnerable populations including those who are precariously housed; and
- ethno-cultural communities (e.g., immigrants and refugees, linguistic minorities, Indigenous peoples).

† 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.

Significant associations have been established for problem gambling with both physical and mental health as well as with substance-use problems. While evidence on comorbid physical conditions is relatively sparse, observational studies have suggested associations between problem gambling and the following physical health conditions:

- cardiovascular conditions;
- chronic bronchitis;
- chronic and severe headaches;
- colds and influenza;
- fibromyalgia;
- gastrointestinal problems;
- heart burn;
- low-back pain; and
- obesity.

Many of these health impacts are suggested to be a result of stress, strain, severe fatigue and sleep problems.(10-13)

The bulk of the evidence focused on gambling-related co-occurring issues assesses the relationship between problem gambling and mental health and/or substance- use problems. Studies using population surveys report a higher prevalence of conditions such as depression and stress, as well as mood, anxiety and personality disorders, post-traumatic stress disorder, and suicide and family violence.(12)

It has also been established that problem gambling is highly associated with substance-use problems and other addictions. Studies indicate that those with gambling disorders are significantly more likely than non-gamblers to have a lifetime diagnosis of alcohol abuse, alcohol dependence, cannabis use, nicotine addiction and drug dependency.(13-15) Some estimates suggests that one in five individuals with problem-gambling symptoms also experience substance-use problems, while other estimates place it as high as 59% for nicotine dependence.(16; 17) It has also been found that the prevalence of substance use increases as the severity of gambling behaviour increases.(17) Estimates suggest that around 14% of patients receiving substance-use treatment demonstrate comorbid pathological gambling, and around 23% suffer conditions that exist along the broader spectrum of problem gambling.(18)

While causal associations between problem gambling and substance use remain difficult to draw, problem gambling and substance use often take place in the same locations (particularly when it comes to the use of alcohol in gambling facilities such as casinos or racetracks,) and therefore some co-occurring issues may stem from availability and social setting. Further, it is thought that many of these conditions have a compounding effect, which may in part dictate the variation in the severity of problem-gambling symptoms. Even though the exact mechanisms that link problem gambling and the main other co-occurring issues listed here are not clearly defined, it is likely that in addition to the behaviours associated with problem gambling (e.g., poor dietary and exercise habits, increased alcohol intake and use of tobacco, cannabis and other drugs), the social determinants of health (e.g., socio-economic status, culture, or geographic location) are important contributing factors.

Overall, it is now widely accepted that the existence of problem gambling and co-occurring issues should be considered the norm rather than the exception, and that the presence of these co-occurring issues appear to exacerbate symptoms of problem gambling, reduce quality of life, and increase functional impairment. Further, they substantially increase the complexity of treating and managing these conditions.

Many provincial efforts to prevent gambling-related harms are pursued in isolation from those addressing the broader spectrum of challenges associated with these harms

The Government of Ontario supports a number of programs and services that focus on preventing or treating individual-level problem gambling, including funding 52 agencies designated to provide problem-gambling treatment across a variety of settings (i.e., hospitals or community agencies). In some instances, such as that of the Centre for Addiction and Mental Health (CAMH) in Toronto, efforts have been made to ensure these programs and services are integrated with other mental health and addictions services, and with a range of other health- and social-system sectors. Additionally, the CAMH Education and Community Resources (ECR) program leads efforts across the province to identify best practices in the treatment of problem gambling, and to build system capacity for addressing the full range of concurrent disorders. This is approached through education and training for those involved in the treatment of problem gambling and the related harms, as well as those working in the gambling industry. ECR also leads an annual forum in which stakeholders collaboratively conduct needs assessments, and facilitates knowledge exchange among those who are involved in the treatment of problem gambling or the co-occurring issues through a number of complementary efforts (e.g., hosting an email listserv, providing online courses, and delivering webinars).

However, despite the promise of initiatives like the ECR program, the province's approach remains characterized by addressing gambling concerns in isolation from the other related health and social concerns that are associated with their problem-gambling behaviours (e.g., family challenges, or mental health and addictions issues). In particular, many existing initiatives place emphasis on the normalization of 'positive play' habits, responsible gambling practices, and take a very traditional approach to health education (e.g., providing individuals with information on responsible gambling), which may be insufficient to target problem gamblers and lags behind accepted public health approaches that have been successfully implemented in other areas of health and social care (e.g., alcohol and tobacco control). The OLG's 'PlaySmart' website is one such example of a traditional approach to health education, providing individuals with assistance managing their personal gambling budget, and information that helps them to better understand how gambling works (including the risks associated with it).

While opportunities exist to expand the current focus through collaborative efforts between the OLG and other key organizations (e.g., the Problem Gambling Institute of Ontario at CAMH, the Ontario Problem Gambling Helpline, the Gambling Research Exchange Ontario, the Responsible Gambling Council and Credit Canada), programs and services that zero in on addressing problem gambling as an isolated condition are still the norm.

Unfortunately, this singular focus does not align with the widely accepted notion that problem gambling should be addressed alongside other co-occurring issues, such as mental health and substance-use problems.^(16; 19) The approaches currently adopted in the province also frequently overlook the wider range of social and familial challenges that are associated with problem gambling.⁽²⁰⁾ For progress to be made on this front, improvements to the process for planning and implementing programs and services to address gambling-related harms and all associated co-occurring issues in an integrated way are needed.^(21; 22)

Provincial efforts also place greater emphasis on supporting individual problem gamblers, rather than on addressing risks to the public as a whole

As described earlier in this brief, conceptualizing the issue of gambling-related harm through a public-health lens can be useful in understanding how to move away from an emphasis on individual-level treatment for problem-gambling behaviours, towards policy approaches that focus on entire populations to promote health and social well-being, while preventing gambling-related harms from occurring. This broader perspective is also conducive to addressing the fuller range of issues associated with gambling-related harms (which as the previous section pointed out, is not currently being done consistently). While the focus on population-level promotion, prevention, harm reduction and improved self-efficacy has been on the radar of some Ontario-based gambling researchers for years,⁽²³⁾ these strategies have yet not been accepted and integrated into

efforts that aim to address problem gambling in the province. Indicative of this is that fact that most programs and services tend to target active gamblers rather than the broader range of communities and populations affected.

Despite this, there are some examples of current efforts that could be considered public-health approaches to address gambling-related harm by targeting the entire population in Ontario. One example is the wide range of education and awareness strategies pursued by the Responsible Gaming Council and the OLG, which have also been the focus of other targeted strategies in the province (e.g., those focused on youth or Indigenous populations).(24) Additionally, a number of the regulatory standards enforced by the Alcohol and Gaming Commission of Ontario could also be considered public-health approaches, given they target the entire population, including:

- legal age restrictions that limit access to gambling and gaming to those 19 and older (although those 18 and older can purchase lottery tickets);
- regulatory standards for all gaming operators and vendors in the province;
- advertising and marketing restrictions (which make it illegal to target minors and self-excluded persons, as well as make misleading claims about the benefits of gambling);
- requirements to educate people about the risks of gambling, as well as where to obtain information and assistance when needed; and
- requirements that all players have the means to track the passage of time.(25)

While these strategies can be considered a foundation upon which to embrace a comprehensive public-health approach that would begin to address a broader range of factors associated with gambling-related harms, there is a wider array of approaches that haven't been pursued in Ontario. These include:

- awareness-raising efforts to reduce stigma about seeking help for gambling;
- additional access restrictions, such as vendor caps targeting regions where priority populations live, or removing 24-hour gaming venues in rural areas;
- efforts to change the environments in which gambling takes place in order to influence players' behaviour, such as changing the lighting in gaming venues, limiting smoking, and the sale of alcohol and tobacco;
- implementing a card-based system for casino customers that would facilitate tracking of player behaviour and expenditure;
- limiting advertising and promotional programs within casinos that encourage repeat play;
- reducing access to ATMs, or prohibiting cash withdrawals from credit accounts in gambling venues;
- restricting sales by limiting hours (or days) of operation;
- taking action to address the blurring lines between gambling and online gaming (for example, online computer games where individuals may spend money to gain an advantage), especially as it relates to youth; and
- using financial levers such as pricing and taxation to influence the demand for gambling products.

Socio-economic, ethnocultural and geographical factors create unique issues that further complicate our understanding of the problem

The diverse population in Ontario combined with the array of underlying factors that contribute to gambling-related harms complicate our understanding of problematic gambling symptoms and how best to address them. Specifically, there are unique socio-economic, ethnocultural and geographic factors that have been identified as predictors of being potentially at risk for gambling-related problems, and that need to be considered.

Gambling behaviour has been found to be associated with a number of socio-economic factors. Specifically, individuals with lower socio-economic status are at the greatest risk for gambling problems. People in lower income brackets have been found to spend a higher percentage of their household income on games and

gambling than those in higher income brackets, and as a result may experience more severe financial consequences as a result of gambling problems.(12) Studies suggest that this may be a result of individuals believing that gambling represents an action they can take to significantly improve their financial situation, despite the chances of success being quite low.(26) Compounding these challenges, however, is that populations with lower socio-economic status generally also have higher rates of mental health conditions, unemployment and poverty, all of which may exacerbate problematic gambling symptoms and result in challenges accessing appropriate programs and services.(26)

With respect to ethnocultural factors, research has also indicated that some communities are at a higher risk for developing gambling problems than the general population.(12) This is particularly true for new immigrants, where difficulties in the process of acculturation can lead to the use of gambling as a coping strategy. Furthermore, some communities are characterized by cultural values and traditions that may encourage gambling, creating supportive social networks that reinforce gambling as an appropriate behaviour, even when potentially problematic.(12; 27) It is also noted that the higher risk of gambling-related harms may stem from challenges in accessing programs and services within this community. For example, language barriers may inhibit some individuals from accessing prevention and treatment services or may limit their effectiveness. Further, cultural beliefs or values may also limit individuals from certain ethnocultural communities from receiving help, particularly where seeking help is stigmatized, shamed or coupled with the concept of severe mental illness.(27)

Finally, geographic factors also play a key role in rates of problem-gambling behaviours and use of treatment programs and services. Evidence generally suggests that problem gambling is associated with proximity to casinos and racetracks, however, ease of access to gambling may also include ease of transportation (e.g., how easy it is to get there) and may therefore impact not only those individuals in surrounding communities, but also those with easy access to the facilities (e.g., highway, direct public transportation, sponsored transportation).(28) However, the impact of a casino can vary significantly between communities. Those with additional risk factors for gambling-related harm (e.g., low socio-economic status) may have greater negative health impacts than other communities where gambling facilities have been introduced.(12) Further, the focus in Ontario on expanding charitable gaming venues, regulated online gambling services and the blurring of online gaming and gambling will make gambling more available to communities that are not currently in close geographic proximity to gambling facilities. While the impact of this is still unknown, it will certainly increase the number of people with direct access to gambling vendors. When combined with the socio-economic and ethnocultural risk factors described above, it has the potential for increasing the number of individuals experiencing problem-gambling related symptoms and gambling-related harms.

Existing governance and financial arrangements create a number of additional challenges

Existing health- and social-system arrangements create additional challenges in getting the right programs and services to those who need them. In particular, existing governance arrangements contribute in two primary ways to limiting the access and effectiveness of existing services. First, it is not clear who is ultimately responsible for ensuring Ontarians have access to programs and services that address the full range of concurrent issues associated with problematic-gambling behaviour. For example, no explicit strategy exists for tackling problem gambling and as previously mentioned, problem gambling has been largely left out of recent mental health and addictions strategies. This lack of clarity leaves the responsibility and ownership to fall on individuals and organizations focused on providing mental health and substance-use services, many of whom do not have the capacity to provide the comprehensive services that are needed. Second, relatively little coordination or communication exists between or across those organizations responsible for the delivery of programs and services for gambling and its related harms. Governance for gambling and the co-occurring issues is dispersed across government ministries (e.g., Ministry of Health and Long-Term Care, Ministry of Community and Social Services, Ministry of Community Safety and Correctional Facilities), government agencies (e.g., OLG) and private sector organizations, that do not consistently coordinate their efforts. This results in considerably different approaches across each of those responsible, with some focused on the

financial aspects of gambling (including revenue generation) and others on the treatment and prevention of gambling-related harms.

Financial arrangements (e.g., how gambling-related programs and services are funded) may also create a number of additional challenges in efforts to address gambling-related harms. For example, relative to the proportion of spending on advertising and promotion, significantly fewer resources are put towards treatment, education, prevention and research of gambling-related harms each year. In 2015-16, advertising and promotion of gambling was funded at eight times the rate of treatment, education, prevention and research, with over \$332 million spent on marketing and promotion, while the government of Ontario allocated only \$38 million towards treatment, education, prevention and research.^(29; 30) Furthermore, this money is used to fund programs and services to reduce gambling-related harms that are separate from the funding for programs and services provided to the same individuals who need to access other health services (particularly mental health and substance-use services) to address one or more co-occurring conditions. This lack of payment bundling and service integration may increase transaction costs and reduce the opportunity for efficiency gains. In addition, a level of uncertainty exists around how to address the conflict of interest arising between revenue generation from gambling (and its use to fund health and social services), on the one hand, and the need to fund programs and services to deter problem-gambling behaviours, on the other hand.

It should be noted, however, that there has been some consideration on how to more effectively use funds to address the entire continuum of services to address gambling-related harms and the co-occurring issues. For example, in 2002 the Government agreed that up to \$5 million of gambling revenues (2% of gross revenue) could be used as 'one-time' funds for substance-abuse treatment, recognizing the co-dependency between addictions,⁽²⁴⁾ and beginning in 2005 the Government of Ontario has annually spent \$10 million of its gambling revenues on substance abuse treatment.

Existing delivery arrangements are also challenging, and have been addressed in discussing the second dimension of the problem (isolation in how programs and services are both planned and delivered) as well as in other sections above. As such, they are not repeated here.

Data and evidence could be better utilized to understand the scope of the problem in Ontario

Two key challenges that underpin the five dimensions of the problem outlined above are limitations in the collection of data and evidence and its use in informing decision-making processes. First, little information is collected in the health system about gambling engagement or problem gambling in Ontario. While some data exists from the Ontario Lottery and Gaming Commission (e.g., on revenues generated, number of individuals gambling), it is not consistently made available to the public, or used in the development or targeting of programs and services. Additionally, the Canadian Partnership for Responsible Gambling operates a dashboard that provides pan-Canadian statistics,⁽³¹⁾ and ConnexOntario reports on the volume and location of calls made to the Ontario Problem Gambling Helpline. While both the Canadian Institute for Health Information and Statistics Canada collect select information that relates to individuals' gambling behaviours, these organizations do not collect data that provide a comprehensive view of behaviour across the full spectrum of gambling activities. The available data also fails to provide a local perspective for how gambling may affect individual communities. In part, the limitations of existing data and evidence may also be a result of how gambling programs and services have been designed. The strong reliance on self-referral and self-help services combined with societal stigma towards those with addictions (as well as lack of awareness that gambling may be categorized as an addiction) may mean that only a small percentage of those individuals experiencing the negative consequences of gambling interact with an organization or professional responsible for collecting data and contributing to the development of the evidence base.

The second key challenge is that limitations in the availability of robust data (particularly at the local level) and high-quality evidence have important implications for the design of services and programs in province. Specifically, in the absence of adequate information, designing the most appropriate and effective health and social programs and services, and ensuring they reach those who need them, is extremely difficult.

Additional equity-related observations about the problem

The risk of problem gambling is not equal across the population. There is a range of individual- and population-level factors that have been associated with problem gambling (and alluded to in previous sections of this document). At the population level this includes select groups that have been identified as being disproportionately affected by problem gambling, including: youth, (and particularly young men); older adults; ethnocultural groups (e.g., First Nations and Inuit, immigrants and refugees, linguistic minorities); and vulnerable populations including those who are marginally housed.

There is a growing concern that youth aged 18-25 represent a high-risk group for gambling and gambling-related harms. According to the Centre for Addiction and Mental Health's Student Drug Use and Health Survey, problem gambling symptoms were found in 2.8% of the sample, however two primary studies observed higher rates among youth.⁽¹²⁾ Systematic reviews examining problem gambling among youth have found that it is more common among: males; those with parents who gamble; those who do not live with both parents; those with older parents; lower socio-economic status; and individuals who win a lot of money early on.^(12; 32; 33)

Older adults have also been identified as a group who are particularly vulnerable to the impact of problem gambling. While the overall prevalence rates among this group are not much higher than the rest of the population,⁽¹²⁾ it has been suggested that among those who gamble – and particularly those who take advantage of select casino services such as casino tour buses – there is a higher rate of moderate to severe gambling. A recent study published by CAMH found that 30.2% of older adults who use casino tour buses have a moderate to severe gambling problem.⁽³⁴⁾ This may increase given the number of baby boomers entering retirement. While many of the risk factors for gambling are similar to other populations, lower levels of social support and limited access to social activities appear to play a larger role among older adults than among other at-risk groups.⁽¹⁴⁾ Additionally, the physical and psychological health effects and social impacts that stem from problem gambling have a particularly debilitating effect among older adults. It is believed that this may be a result of a compounding effect with existing co-occurring issues that may have developed as individuals age, combined with a limited time to recover from the health, social or financial effects of gambling.⁽¹²⁾

This section has also highlighted that select ethnocultural communities are at a higher risk for developing problem-gambling symptoms than the general population, with new immigrants explicitly discussed as one of the groups above. We also acknowledge that Indigenous populations are included among these groups, however, we are not addressing this population in particular. This decision was reached as it is critical to hear from Indigenous leaders about the appropriate types of processes that should be developed to ensure that any reforms (or separate initiatives, whether stand-alone or part of other nation-to-nation agreements) would best address historical legacies and reflect Indigenous ways of knowing, strengths, and governance to address gambling-related harms.

Finally, gambling-related harms may exacerbate existing social inequalities and have a disproportionate effect on already vulnerable populations including those who are marginally housed or homeless, for whom the financial loss typically associated with gambling may be more acute. In addition, for some of these populations, casinos may represent safe spaces in their communities to go late at night. The reliance on casinos for this role however, may encourage gambling behaviour and place these individuals at further risk of gambling-related harms.

Citizens' views about key challenges related to strengthening collaboration to optimize the efforts addressing gambling-related harms in Ontario

During two citizen panels, which were convened on 26 January 2018 (in Hamilton) and 2 February 2018 (in Ottawa), 25 ethnoculturally and socio-economically diverse citizens were provided a streamlined version of this evidence brief written in lay language. During the deliberation about the problem, panellists were asked to share their views and experiences regarding the key challenges in strengthening collaboration to optimize efforts to address gambling-related harm in Ontario. To prompt discussion, panellists were specifically asked to consider gambling-related harms and what risk factors they have observed or experienced that may be of particular concern. We summarize key challenges identified by citizens in Table 1.

Table 1. Summary of citizens' views about challenges related to strengthening collaboration to optimize efforts addressing gambling-related harm in Ontario

Challenge	Description
Stigma and normalization of gambling inhibits access to supports and services	<ul style="list-style-type: none"> • Panellists noted that there is significant stigma attached to problem gambling, making individuals unlikely to admit they have a problem or to seek help for their problem. <ul style="list-style-type: none"> ○ One panellist shared a personal experience, wherein this stigma kept their family from having open discussions about gambling problems, despite one family member struggling with one. • A number of panellists highlighted that while there have been concerted efforts to reduce stigma in other areas of mental health and addictions, such as the Bell Let's Talk campaign, no such efforts have been made for gambling. As a result, panellists suggested there is a prevailing impression that gambling is not a potential source of addiction, but a source of entertainment. • Several panellists agreed that the normalization of gambling, for instance in workplaces and charity events where lottery draws take place, further contributed to a lack of awareness of gambling as a problem or potential risk factor. • Panellists worried that the normalization of gambling may lead to a lack of awareness of their own or loved ones' problem-gambling behaviours. • Normalization was also discussed by panellists as a factor that may deter individuals with a gambling problem from seeking help (because if gambling is normal, those with a problem might fear appearing weak).
Insufficient restrictions on gambling advertisements and 'give-aways' result in skewed messaging that downplays the potential risks associated with gambling	<ul style="list-style-type: none"> • Panellists discussed the large discrepancies between the restrictions placed on alcohol and tobacco advertising and marketing, and those placed on gambling. A number of panellists stated that this has contributed to the normalization of gambling, and has created an unbalanced positive view of gambling among Ontarians, rather than a balanced view that acknowledges the potential risks associated with it. <ul style="list-style-type: none"> ○ In particular, panellists described never having seen negative depictions in advertisements for gambling facilities or lotteries, or even realistic experiences of gambling, with the majority showing 'fantasies' associated with winning large jackpots. • Panellists suggested they were worried that unbalanced and positively biased advertising may communicate messages that are especially attractive to high-risk populations, particularly those of low socio-economic status, who may view gambling as a source of 'hope.' • Panellists also took issue with the many gifts and enticements targeted at gamblers, with one stating they "lure you to spending time and money at casinos." Specific examples discussed included free tickets to shows, free meals at restaurants, free gifts, transportation to and from the facilities, and dedicated staff escorts.
Conflict of interest between revenue generation and delivery of services makes addressing gambling-related harms difficult	<ul style="list-style-type: none"> • Panellists noted two key conflicts of interest that hinder efforts to address gambling-related harms: <ul style="list-style-type: none"> ○ at a population level, the government receives a significant amount of revenue from gambling, of which a large portion comes from those with problem-gambling behaviours or those who are at high risk for developing these behaviours, therefore there is little incentive for

Challenge	Description
	<p>government to put in place meaningful restrictions to curb problem-gambling behaviours; and</p> <ul style="list-style-type: none"> ○ at an individual level, convenience store owners and casino workers (to name a few) have little incentive to intervene when they see individuals regularly purchasing lottery tickets or entering gambling facilities on a frequent basis, because it is good for their business.
<p>Increasingly blurred lines between gambling and online gaming undermines existing restrictions and prevention efforts</p>	<ul style="list-style-type: none"> ● Several panellists were concerned about the amount of time that their friends and family members spent playing computer or mobile games – many of which have components that meet the definition of gambling. <ul style="list-style-type: none"> ○ While the panellists noted that this was not widely considered ‘gambling’ in a traditional sense, they described how real money could be used to purchase goods in online games that would improve an individual’s chance of winning, and therefore shared many of the same qualities. ● Panellists agreed that these online games and the increasing presence of more traditional forms of online gambling was challenging existing restrictions and prevention efforts, explaining, for example, that it is easy for teenagers and young adults to bypass online screens for age restrictions. ● Panellists also described how existing prevention efforts, including information and education, favoured in-person gambling and was geared towards an older audience rather than being tailored towards younger generations. ● Some panellists added that young adults are gambling outside of traditionally regulated online sites and choosing to gamble with cryptocurrencies such as Bitcoin, which may present an array of additional regulatory challenges.
<p>Limited availability and accessibility of gambling supports and services, including promotion and prevention services, means many people who need help aren’t getting it</p>	<ul style="list-style-type: none"> ● One panellist with personal experience assisting a family member to seek support for a gambling addiction detailed their challenges in finding support in their community, including how they initially did not know where to go to begin looking for help. ● Other panellists generally agreed with this, specifically pointing out the need for better screening, intake and referral mechanisms.
<p>Lack of availability and sharing of data results in limitations in its use to inform the development of programs and services</p>	<ul style="list-style-type: none"> ● Panellists described feeling uneasy that playing data were regularly used by casinos to attract new consumers and increase length of play, but the data were not routinely shared across organizations, used to identify individuals with problem-gambling behaviours, or used to design services. ● Panellists also called for publicly available data that compares Ontario to other provinces, as well as for regional data that would allow comparisons to be made across the province. ● A few panellists agreed that without this information, assessing the magnitude of the problem, developing a business case for addressing gambling-related harms, and creating viable solutions to address the full scope of challenges in Ontario would be difficult.

THREE ELEMENTS OF A POTENTIALLY COMPREHENSIVE APPROACH FOR ADDRESSING THE PROBLEM

Many approaches could be selected as a starting point for deliberations about an approach for strengthening collaboration to optimize efforts addressing gambling-related harm. To promote discussion about the pros and cons of potentially viable approaches, we have selected three elements of a larger, more comprehensive approach to addressing the range of problems outlined in the previous section. The three elements were developed and refined through consultation with the Steering Committee and key informants who we interviewed during the development of this evidence brief. The elements are:

- 1) get the right services to those who need them and bring a public-health perspective to bear;
- 2) align how funds set aside from gaming revenue are used to better support evidence-informed policies and practices; and
- 3) establish governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships

The elements could be pursued separately or simultaneously, or components could be drawn from each element to create a new (fourth) element. They are presented separately to foster deliberations about their respective components, the relative importance or priority of each, their interconnectedness and potential of or need for sequencing, and their feasibility.

The principal focus in this section is on what is known about these elements based on findings from systematic reviews. We present the findings from systematic reviews along with an appraisal of whether their methodological quality (using the AMSTAR tool) is high (scores of 8 or higher out of a possible 11), medium (scores of 4-7) or low (scores less than 4) (see the appendix for more details about the quality-appraisal process). We also highlight whether they were conducted recently, which we define as the search being conducted within the last five years. In the next section, the focus turns to the barriers to adopting and implementing these elements, and to possible implementation strategies to address the barriers.

Box 3: Mobilizing research evidence about elements for addressing the problem

The available research evidence about elements for addressing the problem was sought primarily from Health Systems Evidence (www.healthsystemsevidence.org), which is a continuously updated database containing more than 5,200 systematic reviews and nearly 2,500 economic evaluations of delivery, financial and governance arrangements within health systems, and from targeted searches of the nearly 130,000 documents being assessed for eligibility to be included in Social Systems Evidence (www.socialsystemsevidence.org), which will be the world's most comprehensive free access point for systematic reviews and economic evaluations addressing a range of social system program and service areas. The reviews and economic evaluations were identified by searching these databases for reviews addressing features of each of the approach elements and sub-elements. To complement these findings, additional searches were run in Health Evidence and in the Gambling Research Exchange of Ontario database.

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 element 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 element 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.

Table 2. Citizens' values and preferences related to the three elements

Element	Values expressed	Preferences for how to implement the element
Get the right services to those who need them and bring a public-health perspective to bear	<ul style="list-style-type: none"> • Citizens' values and preferences as a basis for the development of services to address gambling-related harms • Empower individuals with information and education about programs and services • Collaboration across the sectors and organizations involved in delivering services for gambling-related harms to ensure health- and social-care providers have all the required competencies and skills • Strong system stewardship to ensure individuals are able to access the right services at the right time • Innovation in supports and services to ensure an emphasis on population-level approaches that complement existing individual-level approaches • Data and evidence as the basis for any new services addressing gambling-related harms • Maintenance of individual privacy 	<ul style="list-style-type: none"> • Use citizens' own values and preferences to inform the supports and services provided to them • Use health-promotion and disease-prevention services to reduce stigma and to empower patients to seek support, as well as to recognize the signs of problem gambling among friends and family • Provide education and training to health- and social-care providers to enhance their competencies in providing care for gambling-related harms and for co-occurring issues • Improve screening, navigation and referral services to ensure individuals get access to the services they need • Implement innovative population-level approaches, including: <ul style="list-style-type: none"> ○ banning sponsored transportation; ○ banning gifts and free give-aways; ○ restricting TV advertising and ensuring that any ads that are aired provide a balanced perspective; ○ regulating gambling environments to reduce distractions (e.g., lights and sounds); and ○ developing a card system for casinos that would allow individuals to monitor their own use and spending • Improve data collection and sharing, and use this to inform the development and location of supports and services • Ensure that any individual-level data that are collected are handled in ways that maintain individual privacy
Align how funds set aside from gaming revenue are used to better support evidence-informed policies and practices	<ul style="list-style-type: none"> • Collaboration across sectors involved in delivering services to address gambling-related harms • Cost-effective use of resources that support collaboration • Accountability of the gaming industry with respect to financing (contributing funds to) initiatives and funding initiatives (choosing which ones to fund) • Empower community organizations with funding for supports and services 	<ul style="list-style-type: none"> • Dedicate additional resources to support collaboration across sectors, and to ensure that available services address the full scope of gambling-related harms and co-occurring issues, but not at the expense of existing programs and services, or in ways that downplay the importance of addressing gambling-related harms as a problem in and of itself • Set a clear timeframe to assess whether the resources dedicated to collaborations are being used effectively • Increase the financial accountability and responsibility of the gaming industry for promoting gambling by requiring that a greater proportion of revenue is dedicated to education, prevention, treatment and research • Increase the financial resources available to community-care organizations and empower them to determine what programs and services should be implemented

Element	Values expressed	Preferences for how to implement the element
Establish governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships	<ul style="list-style-type: none"> • Citizens' values and preferences integrated into processes that inform system governance • Accountability of the government for ensuring individuals have access to supports and services • Data and evidence as the basis for the development of collaborative efforts across sectors 	<ul style="list-style-type: none"> • Adjust system governance processes and procedures to include insights from individuals with lived experience to ensure that decisions are informed by citizens' values and preferences • Improve accountability by appointing a lead organization or agency (many agreed on the Ministry of Health and Long-Term Care) to be responsible for ensuring Ontarians have access to services and supports for gambling-related harms and associated co-occurring issues • Increase data collection and sharing about gambling behaviours, as well as about the use and effectiveness of services and supports for gambling-related harms, and use it to inform decisions about the integration of services and settings

Element 1 – Get the right services to those who need them and bring a public-health perspective to bear

This element focuses on the need to improve the availability and accessibility of existing services to address gambling-related harms and the co-occurring issues. It recognizes that existing efforts are important, but have traditionally emphasized services for problem gamblers (rather than providing support for reducing the potential for gambling-related harms for anyone who gambles), and have largely taken an individual approach (rather than a population-based approach). As such, this element focuses on providing the full range of programs and services to address gambling-related harms and the co-occurring issues, and seeks to move away from the traditional individual approach to prevention and treatment by employing a public-health perspective to reduce risks at the population level. Public-health interventions seek to alter behaviour in the population through a number of approaches, such as restricting sales and reducing access to gambling or other potentially risky activities, changing prices and taxation to affect demand for gambling products, or eliminating environmental facilitators such as bank machines at gambling facilities. Other comparator jurisdictions including Australia and New Zealand have successfully implemented these approaches, which in the case of Australia emphasize: public awareness, education and training; responsible gambling environments; intervention, counselling and support services; and national research and data collection. By comparison the strategy implemented in New Zealand, which included an official recognition by the government that gambling was a public-health concern, emphasized: harm minimization; health promotion; and political determinants (e.g., altering conflicted relations that form between gambling profits and government through public-health advocacy, mechanisms of surveillance and structural accountability).(13)

This element may include a number of sub-elements, such as:

- include the full range of cost-effective approaches to reduce gambling-related harms – education and awareness raising, prevention, and treatment (all grounded in a social-determinants-of-health approach) – in the set of core mental health and addictions services being supported in Ontario, which would also help to:
 - expand the focus of support from concentrating on problem gamblers to include all gamblers as harms may occur at any level of play,
 - expand screening in health- and social-care settings to ensure the full range of risk factors for gambling harms are identified' and
 - ensure services are available equitably across the province, responsive to geographic considerations (e.g., in close proximity to gambling establishments), and tailored to the needs of particular at-risk populations (e.g., ethnocultural and linguistic differences);

- enrich these approaches with others that address co-occurring issues (and that are also grounded in a social-determinants-of-health-approach);
- embrace a public-health perspective to develop complementary population-level approaches for reducing gambling-related harms (e.g., restricting access, changing prices and altering gambling environments to support healthy behaviours); and
- support the use of the best available research evidence in each of these areas to inform policies and practices.

In total, we identified 14 systematic reviews (Table 3) that related to the sub-elements above. With respect to the first sub-element – include the full range of cost-effective approaches to reduce gambling-related harm in the set of core mental health and addictions services being supported in Ontario – we found seven systematic reviews ranging in quality. Three of these reviews focused on the delivery of prevention and awareness-raising services, with two focused specifically on school-based programs. The reviews found that school programs employing multi-media interventions combined with classroom activities improved students' knowledge on the harms of gambling, changed students' attitudes, and addressed common misconceptions. However, relatively few studies in either review included behavioural outcomes, so it is unclear whether this knowledge translated into changes in students' actions in relation to gambling. The third review focused on the delivery of family-based prevention interventions and found that they can be effective at reducing stress, improving coping behaviours and enabling positive changes in family functioning. Two recent medium-quality systematic reviews focused on the use of internet and mobile technology to deliver treatment services for problem gamblers. The reviews found that gambling-cessation modules delivered through the web or by mobile phone were time- and cost-effective, reduced engagement with gambling-related activities, and improved levels of psychological distress and psychopathology. However, the reviews noted that there were limited face-to-face comparisons and so cautioned the use of the findings. Finally, two recent systematic reviews, one of high quality and one of medium quality, focused on screening instruments used to diagnose problem gamblers. One review found five instruments all of which were found to have moderate-to-high internal consistency, accuracy and sensitivity to change, however the review was unable to draw a conclusion about which of the screening instruments was preferred. The other systematic review examined online poker players and determined that due to demographic and playing differences between online and in-person gaming, existing screening instruments (e.g., South Oaks Gambling Screen) could not be relied upon to diagnose problem gamblers.

We only identified one systematic review addressing the second sub-element – enriching approaches with others that address co-occurring issues (and that are also grounded in a social-determinants-of-health-approach) – which focused on the prevalence of co-occurring issues among problem gamblers, rather than on how effective the integration of a broader range of approaches to address co-occurring issues can be. The review found that problem and pathological gamblers have high rates of co-occurring issues with the highest being a nicotine dependence, followed by substance-use disorders, any type of mood disorder and any type of anxiety disorder. While there weren't any reviews identified that could inform this brief about which approaches are most promising in the context of addressing the full range of gambling-related co-occurring issues, a significant body of literature devoted to the delivery of collaborative care for comorbid mental health conditions, as well as for comorbid mental and physical health conditions, does exist. In general, these approaches have been found to be more effective than either usual care or other approaches. In particular, collaborative-care models which seek to treat comorbid conditions alongside one another, in a manner that acknowledges the intersections and exacerbating effects of the conditions, are promising. A review by the American Psychiatric Association found that collaborative-care models had four critical features:

- 1) team driven;
- 2) population focused;
- 3) measurement guided; and
- 4) evidence-based.(35)

With respect to the third sub-element – embrace a public-health perspective to develop complementary population-level approaches for reducing gambling-related harms – we found three relevant systematic reviews. The first was a recent low-quality systematic review that focused on the elasticity of gambling and gaming (i.e., the change in demand given a small change in the price of playing). The review found that casino-based gambling is relatively inelastic (i.e., there is little change in playing habits when the price is increased), whereas horse racing and lottery tickets were found to be close to being perfectly elastic (i.e., playing habits change at the same rate as price increases). Given these findings, public-health approaches which change the cost or level of taxation associated with gambling may be effective at deterring use for horse racing and lottery tickets, but may serve to increase the financial challenges experienced by those with symptoms of problem-gambling who use casinos as their primary modality. The second recent medium-quality review found that warning messages can effectively be used to reduce risky gambling behaviours. The review found that warnings are most effective when they popped up on the centre of the screen, created an interruption in play, and required active removal by the player. Similarly, the messages themselves were found to be most effective when they were brief, easy to read, and direct. Finally, the third recent medium-quality systematic review found four additional harm-reduction approaches (of six that were evaluated) that were effective in supporting healthy behaviour changes:

- mandatory limit setting when accompanied by reminders;
- bet limits when set at a low value amount (e.g., one dollar);
- mandatory shut-down or reduced operating hours; and
- on-screen clocks and displaying cash rather than credits.

Finally, one older high-quality systematic review was identified that focused on the fourth sub-element (improving the use of systematic reviews by health-system managers, policymakers and clinicians). The review found that mass mailing a printed bulletin that summarizes systematic review evidence may improve evidence-based practice when:

- there is a single clear message;
- the change is relatively easy to accomplish, and
- there is a growing awareness that a change in practice is required.

A summary of the key findings from the synthesized research evidence is provided in Table 3. For those who want to know more about the systematic reviews contained in Table 3 (or obtain citations for the reviews), a fuller description of the systematic reviews is provided in Appendix 1.

Table 3: Summary of key findings from systematic reviews relevant to Element 1 – Get the right services to those who need them and bring a public-health perspective to bear

Category of finding	Summary of key findings
Benefits	<ul style="list-style-type: none"> • Include the full range of cost-effective approaches to reduce gambling-related harms in the set of core mental health and addictions services being supported in Ontario <ul style="list-style-type: none"> ○ Two recent medium-quality systematic reviews found that online and technology-based cessation modules were both time-efficient and cost-effective. Further, the review found they were effective at reducing engagement with gambling-related activities and showed improvements in psychological distress and psychopathology. <ul style="list-style-type: none"> ▪ The review cautions these findings, noting that there were few comparison groups available to evaluate the findings against.(36; 37) ○ One recent medium-quality review examined the effectiveness of a variety of interventions for family members of those with addictions. Interventions were fairly consistent in delivery, and the results found that the use of group work and self-help manuals can be effective at reducing stress, improving coping behaviours and enabling positive changes in family functioning, but there is a need for the wider inclusion of family members such as siblings.(38) ○ One older medium-quality systematic review examined gambling-prevention interventions for children and youth. Interventions included those designed to increase knowledge about gambling and modify misconceptions, and those that also address skills, and found that both were generally effective at increasing knowledge and changing attitudes in children and youth. <ul style="list-style-type: none"> ▪ The same review found that family-focused interventions (e.g., those that are tailored to meet the needs of the whole family) are most effective, notably at reducing the risk of problem-gambling symptoms as well as reinforcing the family unit, building resilience, and problem solving.(39) ○ One recent medium-quality review examining the use of school-based gambling education programs, which employed a range of multi-media tools and classroom activities, found these interventions were effective in improving beliefs, knowledge and attitudes, including reducing common erroneous beliefs and creating more negative attitudes towards gambling.(40) • Enrich these approaches with approaches that address co-occurring issues (and that are also grounded in a social-determinants-of-health-approach) <ul style="list-style-type: none"> ○ One older-medium quality review found that problem and pathological gamblers have high rates of other comorbid conditions, with the highest being nicotine dependence, followed by substance-use disorders, any type of mood disorder, and any type of anxiety disorder.(16) • Complement these approaches with a public-health perspective on reducing gambling-related harms <ul style="list-style-type: none"> ○ One recent low-quality review found that the demand for casino gaming tends to be less responsive to price compared to the demands for horse racing and the lottery, which is almost unit elastic. <ul style="list-style-type: none"> ▪ Given this understanding, public-health approaches of changing the cost of gambling through taxation may change the behaviour of those who buy lottery tickets or bet on horse races, but may result in additional financial hardship on those who regularly use casinos.(41) ○ One recent medium-quality systematic review found that warning messages can reduce risky gambling play. The review found that messages demonstrated optimal impact when: they popped up on the centre of the screen; created an interruption in play; and required active removal by the player. Similarly, messages themselves were found to be most effective when they were brief, easy to read and direct.(42) • Support the use of the best available research evidence in each of these areas to inform policies and practices

Category of finding	Summary of key findings
	<ul style="list-style-type: none"> ○ One older high-quality systematic review examining interventions to improve the use of systematic reviews by health-system managers, policymakers and clinicians found that mass mailing a printed bulletin that summarizes systematic review evidence may improve evidence-based practice when there is a single clear message, the change is relatively easy to accomplish, and there is a growing awareness that a change in practice is required.(43)
Potential harms	<ul style="list-style-type: none"> ● No systematic reviews were found that addressed potential harms
Costs and/or cost-effectiveness in relation to the status quo	<ul style="list-style-type: none"> ● No economic evaluations or costing studies were identified that provided information about costs or cost-effectiveness
Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the option were pursued)	<ul style="list-style-type: none"> ● Uncertainty because no systematic reviews were identified <ul style="list-style-type: none"> ○ Not applicable ● Uncertainty because no studies were identified despite an exhaustive search as part of a systematic review <ul style="list-style-type: none"> ○ Not applicable - no 'empty reviews' were identified ● No clear message from studies included in a systematic review ● Include the full range of cost-effective approaches to reduce gambling-related harms in the set of core mental health and addictions services being supported in Ontario <ul style="list-style-type: none"> ○ Inconclusive evidence was found in one recent medium-quality systematic review for the use of telephone helplines to reduce gambling-related harms.(36) ○ One recent high-quality systematic review examined five instruments to measure problem gambling among youth, and while all five were found to have moderate-to-high internal consistency and accuracy, insufficient evidence was found to suggest the use of one instrument over another.(44) ○ One recent medium-quality systematic review examined screening for online poker players and found that the typical screening instruments used to diagnose problem gamblers are not suitable for online poker players, many of whom are much younger, less experienced and less able to deal with their emotions when gambling, therefore additional research is required to determine how to effectively screen online gamblers for problem-gambling symptoms.(45) ○ One recent medium-quality review examining the use of school-based gambling education programs, which employed a range of multi-media tools and classroom activities, found only nine of the 19 studies evaluated behavioural outcomes and therefore it was not possible to determine whether students changed their behaviour.(40)
Key elements of the sub-element if it was tried elsewhere	<ul style="list-style-type: none"> ● No systematic reviews were identified that provided information on the sub-element if it was tried elsewhere
Stakeholders' views and experience	<ul style="list-style-type: none"> ● No systematic reviews were identified that provided information on stakeholders' views and experiences

Element 2 – Align how funds set aside from gaming revenue are used to better support evidence-informed policies and practices

This element focuses on the need to align funding in order to support the coordination between (and, when necessary, the integration of) existing programs and services focused on reducing gambling-related harms and the full range of other required supports (e.g., mental health and addictions services and supports). This is done with the intention of reducing the existing silos in the mental health and addictions sectors in efforts to better support individuals experiencing gambling-related harms and the co-occurring issues, as well as to reduce transaction costs and capitalize on any possible efficiencies. The element also considers the need to use evidence, including that on cost-effectiveness, to support decision-making about what additional services and supports to fund, and whether any additional gaming revenue should be made available to spend on prevention and awareness, education or treatment.

This element may include the following sub-elements:

- ensure that earmarked provincial gaming revenue (and any increase in this amount) can be allocated in ways that promote the integration of gambling-specific services with other types of mental health and addictions supports and services; and
- expand the use of earmarked funds, and any increases to advance cost-effective strategies that:
 - address co-occurring issues; and
 - build capacity to use a public-health approach.

We were unable to find any systematic reviews that directly addressed either of the sub-elements above.

A summary of the key findings from the synthesized research evidence is provided in Table 4.

Table 4: Summary of key findings from systematic reviews relevant to Element 2 – Align how funds set aside from gaming revenue are used to better support evidence-informed policies and practices

Category of finding	Summary of key findings
Benefits	<ul style="list-style-type: none"> • No systematic reviews were identified that provided information about benefits
Potential harms	<ul style="list-style-type: none"> • No systematic reviews were identified that provided information about potential harms
Costs and/or cost-effectiveness in relation to the status quo	<ul style="list-style-type: none"> • No economic evaluations or costing studies were identified that provided information about costs and/or cost-effectiveness
Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the option were pursued)	<ul style="list-style-type: none"> • Uncertainty because no systematic reviews were identified <ul style="list-style-type: none"> ○ Ensure that earmarked provincial gaming revenue (and any increase in this amount) can be allocated in ways that promote the integration of gambling-specific services with other types of mental health and addictions supports and services ○ Expand the use of earmarked funds, and any increases to advance cost-effective strategies • Uncertainty because no studies were identified despite an exhaustive search as part of a systematic review <ul style="list-style-type: none"> ○ Not applicable – no ‘empty’ reviews were identified • No clear message from studies included in a systematic review <ul style="list-style-type: none"> ○ Not applicable
Key elements of the sub-element if it was tried elsewhere	<ul style="list-style-type: none"> • No systematic reviews were identified that provided information about key elements of the sub-element if it was tried elsewhere
Stakeholders’ views and experience	<ul style="list-style-type: none"> • No systematic reviews were identified that provided information about stakeholders’ views and experiences

Element 3 – Establish governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships

This element focuses on establishing governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships across organizations and agencies involved in the governance of gambling services and mental health and addictions services. It aims to clarify who is ultimately responsible for ensuring that Ontarians have access to programs and services that address the full range of concurrent issues associated with gambling-related harms. It is also a mechanism that could work to increase the coordination and communication between organizations responsible for the services and supports for gambling and the co-occurring issues, and across government ministries and private-sector organizations that touch this issue.

In particular, this may include the following sub-elements:

- create an arm's-length advisory group to define and periodically update the range of services to be integrated, the settings in which services should be integrated, the sectors involved, and the public-health approaches that should be used;
- include leaders with expertise in gambling-related harms in future provincial advisory and/or governance structures for mental health and addictions and other areas of policy where gambling impacts may be felt.

We were unable to find any systematic reviews that directly addressed either of the sub-elements above. However, two systematic reviews based on the same large project – one high-quality (22) and one medium-quality (46) – were identified on the topic of inter-sectoral collaboration in addressing the social determinants of health. Although these reviews did not specifically address the impact of inter-sectoral collaboration for addressing gambling-related harms, the findings could be considered relevant given the focus of element 3. The reviews found that adopting an inter-sectoral approach during the development and implementation of interventions had generally mixed results (in part due to challenges isolating the influence of inter-sectoral collaboration on outcome of interest), but that collaborative efforts focusing on 'downstream' issues were associated with stronger positive outcomes. Despite this, 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.

Details from these reviews are summarized below in Table 5.

Table 5: Summary of key findings from systematic reviews relevant to Element 3 – Establish governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships

Category of finding	Summary of key findings
Benefits	<ul style="list-style-type: none"> 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) (22; 46)
Potential harms	<ul style="list-style-type: none"> No systematic reviews were identified that provided information on potential harms
Costs and/or cost-effectiveness in relation to the status quo	<ul style="list-style-type: none"> No economic evaluations or costing studies were identified that provided information about costs and/or cost-effectiveness
Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the option were pursued)	<ul style="list-style-type: none"> Uncertainty because no systematic reviews were identified <ul style="list-style-type: none"> Create an arm’s-length advisory group to define and periodically update the range of services to be integrated, the settings in which services should be integrated, the sectors involved, and the public-health approaches that should be used Include leaders with expertise in gambling-related harms in future provincial advisory and/or governance structures for mental health and addictions and other areas of policy where gambling impacts may be felt Uncertainty because no studies were identified despite an exhaustive search as part of a systematic review <ul style="list-style-type: none"> Not applicable – no ‘empty’ reviews were identified No clear message from studies included in a systematic review <ul style="list-style-type: none"> Not applicable
Key elements of the policy option if it was tried elsewhere	<ul style="list-style-type: none"> No systematic reviews were identified that provided information about key elements of the sub-element if it was tried elsewhere
Stakeholders’ views and experience	<ul style="list-style-type: none"> No systematic reviews were identified that provided information about stakeholders’ views and experiences

Additional equity-related observations about the three approach elements

While only a small number of reviews were identified that addressed the elements considered in this brief, two specific sub-elements of element one warrant additional focus given the four groups that we have identified as requiring particular attention (i.e., young adults, older adults, ethnocultural communities and vulnerable populations, notably those who are marginally housed). The first sub-element is to include the full range of cost-effective approaches to reduce gambling-related harms in the set of core mental health and addictions services being supported in Ontario. It is critical that these services and support are responsive to the many ethnocultural and linguistic differences that exist across the province. In particular, one systematic review noted that it is not only the geographic access to services that hinders individuals’ ability to receive care, but for many of these communities it may be that language barriers restrict the effective use of these services, or that individuals from select ethnocultural background feel shame in seeking help. These barriers may unintentionally serve to worsen problem-gambling related harms and leave many without adequate care.

The second sub-element is to complement other approaches with a public-health perspective on reducing gambling-related harms. The evidence found discusses the use of a number of public-health strategies that aim to make making healthier decisions easier. These strategies include changing prices or taxation, mandatory limit setting, and imposing maximum bet limits, among others. Two of these approaches require particular attention, the first being any changes to the pricing or taxation of gambling. While this approach shows some promise for its use among those who bet on horse racing or use lottery tickets, one systematic review found that individuals who use casinos operate on an almost inelastic curb, meaning many would be

willing to spend large amounts of money to continue using these facilities. Given that individuals with low socio-economic status already spend a larger proportion of their income on gambling as compared to those of higher socio-economic status, implementing such a policy has the potential to further financial loss among vulnerable groups, and as a result exacerbate other gambling-related harms. The second public-health approach that requires particular attention is reducing the operating hours of gambling facilities. While it may appear that such a policy would limit an individual's time spent at casinos, and by extension their time spent gambling, for a small proportion of the population these facilities are used as a safe space for individuals who are precariously housed or are seeking escape from domestic disputes. Without other adequate facilities to fill this role in a community, the unintended consequences of reduced operational hours may be that these individuals are forced back on the street or into unsafe circumstances.

IMPLEMENTATION CONSIDERATIONS

A number of barriers might hinder implementation of the three elements of a potentially comprehensive approach to strengthening collaboration to optimize efforts addressing gambling-related harms in Ontario, which need to be factored into any decision about whether and how to pursue any given element (Table 4). While potential barriers exist at the levels of patients and citizens, providers, organizations and at the level of systems, perhaps the biggest barrier lies in overcoming the policy legacies created by the fact that health and social systems have traditionally operated separately in Ontario. These historical legacies (which have entrenched a number of administrative capacities and resource channels) may complicate efforts to collaborate and work towards cross-sectoral partnerships in addressing the full scope of issues associated with gambling-related harms. Despite these potential barriers, Table 7 highlights that there are also potential windows of opportunity that could help to drive change. Most notably this includes the fact that there is positive momentum behind moves towards comprehensive and collaborative approaches to address gambling-related harms in the province.

Table 6: Potential barriers to implementing the element

Levels	Element 1 – Get the right services to those who need them and bring a public-health perspective to bear	Element 2 – Align how funds set aside from gaming revenue are used to better support evidence-informed policies and practices;	Element 3 – Establish governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships
Patients/citizens	<ul style="list-style-type: none"> • Citizens who are gambling safely may feel that public-health measures intrude on their individual autonomy 	<ul style="list-style-type: none"> • Not directly affected by this element 	<ul style="list-style-type: none"> • Patients may be dissatisfied without clear mechanisms to engage them in decision-making and program planning
Professionals	<ul style="list-style-type: none"> • Professionals may believe that expanding the range of programs and services provided will add to their workloads, particularly if new expectations for greater coordination and collaboration (across providers and settings) are set • Providers may not be equipped to address the full range of co-occurring issues associated with problem gambling • Professionals providing social services outside of the health system may be alienated by a public-health framing of solutions 	<ul style="list-style-type: none"> • Professionals may perceive the alignment of funds to support the expansion of programs and services as adding to existing workloads 	<ul style="list-style-type: none"> • Professionals may resist changes to existing governance arrangements, particularly if it involves formal accountability structures that impede their independence
Organizations	<ul style="list-style-type: none"> • Organizations delivering social services outside of the health system may not perceive solutions framed within a public-health approach as relevant to their mandate • Gambling vendors may be negatively affected financially by certain elements of a public-health approach (e.g., access restrictions) 	<ul style="list-style-type: none"> • Organizations delivering programs and providing services may not agree on funding allocation decisions 	<ul style="list-style-type: none"> • Organizations may resist changes in governance, leadership or movements towards cross-sectoral integration, particularly if they perceive these changes as reducing their own role in program delivery and service provision
Health and social system	<ul style="list-style-type: none"> • Training and education programs do not provide health- and social-system service providers with the full range of knowledge and skills required to provide a wide range of gambling supports, particularly in an integrated manner 	<ul style="list-style-type: none"> • Funding streams across sectors, ministries and the full range of organizations and providers responsible for delivering services have traditionally been separated, creating potential integration and/or alignment challenges 	<ul style="list-style-type: none"> • Health and social systems have traditionally operated separately in Ontario, creating a range of challenging policy legacies to overcome

Table 7: Potential windows of opportunity for implementing the elements

Type	Element 1 – Get the right services to those who need them and bring a public-health perspective to bear	Element 2 – Align how funds set aside from gaming revenue are used to better support evidence-informed policies and practices;	Element 3 – Establish governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships
General	<ul style="list-style-type: none"> Recent changes and success in establishing a province-wide mental health and addictions strategy, transitions in the gambling landscape (e.g., internet gambling and private sector engagement), and an increasing emphasis on social responsibility in the industry have created positive momentum that would support efforts to strengthen collaboration in addressing gambling-related harms 		
Element-specific	<ul style="list-style-type: none"> The full range of gambling-related harms and associated co-occurring issues are now widely acknowledged as issues that ought to be addressed simultaneously A public-health approach has been successfully adopted to address a range of mental health and addictions issues 	<ul style="list-style-type: none"> Opportunities to reduce transaction costs and capitalize on possible efficiencies by better aligning funding streams will be of interest to many policymakers and stakeholders 	<ul style="list-style-type: none"> Efforts already exist to build on collaborative approaches in addressing gambling-related harms, which provide a platform for the more extensive engagement in cross-sectoral partnerships

REFERENCES

1. Ontario Lottery and Gaming Corporation. 2014-15 Annual Report. Toronto: Ontario Lottery and Gaming Corporation; 2015.
2. Centre for Addiction and Mental Health. Gambling policy framework. Toronto: Centre for Addiction and Mental Health; 2014.
3. Langham E, Thorne H, Browne M, Donaldson P, Rose J, Rockloff M. Understanding gambling related harm: a proposed definition, conceptual framework, and taxonomy of harms. *BMC Public Health* 2016; 16(1): 80.
4. Smith G. The nature and scope of gambling in Canada. *Addiction* 2014; 109(5): 706-10.
5. Ontario Lottery and Gaming Corporation. Responsible gambling. Toronto: Ontario Lottery and Gaming Corporation; 2017. <https://about.olg.ca/responsible-gambling/> (accessed 16 November 2017).
6. Ministry of Health and Long-Term Care. Open minds, healthy minds: Ontario's comprehensive mental health and addictions strategy. Toronto: Queen's Printer for Ontario; 2011.
7. Canadian Consortium for Gambling Research. Canadian Problem Gambling Index. Toronto: Canadian Consortium for Gambling Research; 2017. <http://www.ccgr.ca/en/projects/canadian-problem-gambling-index.aspx> (accessed 13 February 2017).
8. Problem Gambling Institute of Ontario. Assessment. Toronto: Problem Gambling Institute of Ontario; https://learn.problemgambling.ca/PDF_library/assessment-pgsi-en.pdf (accessed 6 February 2018).
9. Kessler RC, Hwang I, LaBrie R, et al. The prevalence and correlates of DSM-IV pathological gambling in the National Comorbidity Survey replication. *Psychological Medicine* 2008; 38(9): 1351-1360.
10. Afifi TO, Cox BJ, Martens PJ, Sareen J, Enns MW. The relationship between problem gambling and mental and physical health correlates among a nationally representative sample of Canadian women. *Canadian Journal of Public Health* 2010; 101(2): 171-5.
11. Bergh C, Kuhlhorn E. Social, psychological and physical consequences of pathological gambling in Sweden. *Journal of Gambling Studies* 1994; 10(3): 275-85.
12. Dalton A, Stover A, Vanderlinden L, Turner N. The health impacts of gambling expansion in Toronto: Technical report. Toronto: Toronto Public Health; 2012.
13. Elton-Marshall T, Wijesingha R, Veselka L, et al. A public health approach to gambling: A report prepared for Gambling Research Exchange Ontario. Toronto: Centre for Addiction and Mental Health; 2017.
14. Subramaniam M, Wang P, Soh P, et al. Prevalence and determinants of gambling disorder among older adults: A systematic review. *Addictive Behaviors* 2015; 41(Supplement C): 199-209.
15. Hartmann M, Blaszczynski A. The longitudinal relationships between psychiatric disorders and gambling disorders. *International Journal of Mental Health and Addiction* 2016: 1-29.
16. Lorains FK, Cowlishaw S, Thomas SA. Prevalence of comorbid disorders in problem and pathological gambling: systematic review and meta-analysis of population surveys. *Addiction* 2011; 106(3): 490-8.
17. Rush BR, Bassani DG, Urbanoski KA, Castel S. Influence of co-occurring mental and substance use disorders on the prevalence of problem gambling in Canada. *Addiction* 2008; 103(11): 1847-56.

18. Cowlishaw S. Comorbid problem gambling in substance users seeking treatment. Victoria: Victorian Responsible Gambling Foundation; 2014.
19. Mental Health Commission of Canada. Turning the key: Assessing housing and related supports for persons living with mental health problems and illnesses. Ottawa: Mental Health Commission of Canada; 2013.
20. Dowling N, Suomi A, Jackson A, et al. Problem gambling and intimate partner violence: A systematic review and meta-analysis. *Trauma, Violence Abuse* 2016; 17(1): 43-61.
21. Centre for Addiction and Mental Health. Improving our response to older adults with substance use, mental health and gambling problems: A guide for supervisors, managers and clinical staff. Toronto: Centre for Addiction and Mental Health; 2008.
22. National Collaborating Centre for Determinants of Health. Assessing the impact and effectiveness of intersectoral action on the social determinants of health and health equity: An expedited systematic review. Antigonish: St. Francis Xavier University; 2012.
23. Korn D, Lombardo C, Murray M. Adolescent gambling problems: Public health intervention using the internet. Edmonton: Alberta Gambling Research Institute; 2005.
24. Sadinsky S. Review of the problem-gambling and responsible-gaming strategy of the Government of Ontario. Toronto: Queen's Printer for Ontario; 2005.
25. Alcohol and Gaming Commission of Ontario. Registrar's standards for gaming. Toronto: Ontario Alcohol and Gaming Commission of Ontario; 2017.
26. Hahmann T, Matheson F. Problem gambling and poverty. Toronto: Gambling Research Exchange Ontario; 2017.
27. Young M, Sztainert T. The treatment and prevention of problem gambling in Ontario ethno-cultural communities: Report to the Ontario problem gambling research centre. Toronto: Ontario Problem Gambling Research Centre; 2010.
28. Rush BR, Veldhuizen S, Adlaf E. Mapping the prevalence of problem gambling and its association with treatment accessibility and proximity to gambling venues. *Journal of Gambling Issues* 2007; 20: 193-213.
29. Ontario Lottery and Gaming Corporation. Corporate social responsibility report 2015-16. Toronto: Ontario Lottery and Gaming Corporation; 2016.
30. Ontario Lottery and Gaming Corporation. 2015-16 Annual report. Toronto: Ontario Lottery and Gaming Corporation; 2016.
31. Canadian Partnership for Responsible Gambling. Toronto: Canadian Partnership for Responsible Gambling; 2017. <http://www.cprg.ca/Digests/ViewMainCards?yearId=507db81e-e5bf-e611-b52a-1abbb38a3094> (accessed 13 February 2017).
32. Calado F, Alexandre J, Griffiths MD. Prevalence of adolescent problem gambling: A systematic review of recent research. *Journal of Gambling Studies* 2017; 33(2): 397-424.
33. Hayatbakhsh M, Clavarino A, Williams G, Bor W, Najman J. Early life course predictor of problem gambling. *International Gambling Studies* 2012; 19-36.
34. Maas Mvd, Mann RE, McCready J, et al. Problem Gambling in a Sample of Older Adult Casino Gamblers: Associations With Gambling Participation and Motivations. *Journal of Geriatric Psychiatry and Neurology* 2017; 30(1): 3-10.
35. Bullock H, Waddell K, Wilson M. Rapid synthesis: Identifying and assessing core components of collaborative-care models for treating mental and physical health conditions. Hamilton: McMaster Health Forum; 2017.

36. Chebli JL, Blaszczynski A, Gainsbury SM. Internet-Based Interventions for Addictive Behaviours: A Systematic Review. *Journal of Gambling Studies* 2016; 32(4): 1279-1304.
37. Danielsson AK, Eriksson AK, Allebeck P. Technology-based support via telephone or web: a systematic review of the effects on smoking, alcohol use and gambling. *Addictive Behaviours* 2014; 39(12): 1846-68.
38. Spice C. The effectiveness of interventions and social support for families affected by addiction. Birmingham: University of Birmingham; 2014.
39. Kourgiantakis T, Stark S, Lobo D, Tepperman L. Parent problem gambling: A systematic review of prevention programs for children. *Journal of Gambling Issues* 2016; 33.
40. Keen B, Blaszczynski A, Anjoul F. Systematic review of empirically evaluated school-based gambling education programs. *Journal of Gambling Studies* 2017; 33(1): 301-25.
41. Gallet C. Gambling demand: A meta-analysis of the price elasticity. *The Journal of Gambling Business and Economics* 2015; 9(1): 12-22.
42. Ginley MK, Whelan JP, Pfund RA, Peter SC, Meyers AW. Warning messages for electronic gambling machines: Evidence for regulatory policies. *Addiction Research & Theory* 2017; 25(6): 495-504.
43. Murthy L, Shepperd S, Clarke MJ, et al. Interventions to improve the use of systematic reviews in decision-making by health system managers, policy makers and clinicians. *Cochrane Database of Systematic Reviews* 2012; (9).
44. Edgren R, Castrén S, Mäkelä M, Pörtfors P, Alho H, Salonen AH. Reliability of instruments measuring at-risk and problem gambling among young individuals: A systematic review covering years 2009–2015. *Journal of Adolescent Health* 2016; 58(6): 600-615.
45. Moreau A, Chabrol H, Chauchard E. Psychopathology of online poker players: Review of literature. *Journal of Behavioural Addictions* 2016; 5(2): 155-68.
46. Ndumbe-Eyoh S, Moffatt H. Intersectoral action for health equity: a rapid systematic review. *BMC Public Health* 2013; 13: 1056.
47. Callan MJ, Shead NW, Olson JM. The relation between personal relative deprivation and the urge to gamble among gamblers is moderated by problem gambling severity: A meta-analysis. *Addictive Behaviours* 2015; 45: 146-9.
48. Dragicevic S, Percy C, Kudic A, Parke J. A descriptive analysis of demographic and behavioral data from Internet gamblers and those who self-exclude from online gambling platforms. *Journal of Gambling Studies* 2015; 31(1): 105-32.
49. Luo H, Ferguson M. Gambling among culturally diverse older adults: A systematic review of qualitative and quantitative data. *International Gambling Studies* 2017; 17(2): 290-316.
50. Nowak DE, Aloe AM. The prevalence of pathological gambling among college students: A meta-analytic synthesis, 2005-2013. *Journal of Gambling Studies* 2014; 30(4): 819-43.
51. Suurvali H, Hodgins DC, Cunningham JA. Motivators for resolving or seeking help for gambling problems: a review of the empirical literature. *Journal of Gambling Studies* 2010; 26(1): 1-33.

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 element (first column). The focus of the review is described in the second column. 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 Canada, 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 gambling. Similarly, for each economic evaluation and costing study, the last three columns note whether the country focus is Canada, if it deals explicitly with one of the prioritized groups and if it focuses on young adults, older adults, vulnerable populations including those who are marginally housed, and ethnocultural groups.

All of the information provided in the appendix tables was taken into account by the evidence brief’s authors in compiling Tables 1-3 in the main text of the brief.

Appendix 1: Systematic reviews relevant to the problem

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on gambling
Determine the prevalence and predictors of adolescent problem gambling (32)	<p>The paper focused on studies reporting on the current generation of youth, as it is the first generation to grow up in a society where gambling is accepted, readily available, and widely promoted. Forty-four studies were identified. Studies estimated that 0.2% to 12.3% of the youth meet the diagnostic criteria for problem gambling. Studies focusing on North America had estimates ranging from 2.1% to 2.6%. Some of the variation seen between countries may be explainable by the differences in the country's gambling legislation, access to gambling venues, and extent of welfare services and health benefits.</p> <p>There were consistent demographic trends across the studies. Adolescent problem gambling is more common among males, ethnic minorities, those with parents who gamble, those who do not live with both parents, and those with older parents. Other predictors include lower socio-economic status, and winning a lot of money early on.</p> <p>Adolescents were not necessarily motivated to gamble for money, but rather to escape present circumstances. Problem gamblers also were more likely to report an inability to resist temptation. The most problematic gambling activities tended to involve high event frequencies and short intervals between stake and payout (e.g., slot machines).</p> <p>It was difficult to compare studies given the differences in sample size, timeframes and instruments. The review's authors called for increased collaboration between researchers of different countries to standardize instruments and cut-offs to improve comparability and better elucidate the effect of legislation on the prevalence of problem gambling. An additional limitation was the strong possibility of the social desirability bias, as most studies employed self-reporting measurement tools.</p>	Not reported in detail	4/9 (AMSTAR rating from McMaster Health Forum)	1/44	22/44	44/44
Examine problem gambling severity as a moderator of the relationship between personal relative deprivation and gambling urges (47)	<p>This meta-analysis included eight published and unpublished studies written by the same authors of this paper. Though additional searches were conducted, no further studies were identified.</p> <p>The meta-analysis found a positive association between personal relative deprivation and gambling urges. Personal relative deprivation is defined as the resentment that one feels when they believe that they are unfairly deprived of a desired outcome. One potential explanation is that those experiencing personal relative deprivation may view gambling as a method to obtain the outcomes that they feel they deserve, but are unable or unwilling to achieve through conventional means.</p> <p>This association is moderated by problem gambling severity, with a stronger association seen in more severe cases of problem gambling. Personal relative deprivation may have a</p>	2014	4/11 (AMSTAR rating from McMaster Health Forum)	Not reported	5/8	8/8

	<p>stronger effect among problem gamblers because problem gamblers tend to experience more negative affect, act more rashly, and are less able to control gambling behaviour.</p> <p>Based on these findings, the authors recommend that decision-makers focus on treatments that can help problem gamblers overcome feelings of personal relative deprivation. This may help prevent gambling urges and relapses.</p> <p>The meta-analysis was unable to determine the causal direction of this relationship. Additionally, the average level of problem gambling severity was low across studies, making it difficult to determine whether the findings can be generalized to pathological gamblers.</p>					
Determine the characteristics of those who self-exclude from online gambling platforms (48)	<p>Those who would like to limit their gambling can voluntarily bar themselves from entering a gambling venue to prevent themselves from gambling. This method of player protection is called self-exclusion, and can be used for both in-person and online platforms.</p> <p>The paper examined 347 self-excluding gamblers and compared their characteristics to 871 non-self-excluding gamblers from the same online gambling platform. Self-excluders tend to be younger than the control group. Prior to self-exclusion, self-excluders were more likely to adopt riskier gambling positions and suffer losses. There was little difference between groups in mean gambling hours per month or minutes per sessions.</p> <p>Other examined literature suggests that most self-excluders are problem gamblers. Those who self-exclude tend to feel that they have gambled excessively in terms of time or money. However, some self-excluders are non-problem gamblers who use it as a responsible gambling tool rather than a tool of last resort.</p> <p>Proximal behavioural markers include staking behaviour, chasing losses, and increased net expenditure. Distal markers include betting patterns of high activity and variability. Generalized factors include betting with greater frequency, placing larger bets, and having more active betting days.</p> <p>The paper notes that there is a lack of robust evidence to determine whether self-exclusion programs are effective. The paper suggests that future research should distinguish between different types of self-excluders (e.g., those who return to gambling after a short period versus a long period of self-exclusion).</p>	Not a systematic review	No rating tool available for this document	Not a systematic review	Not a systematic review	Not a systematic review
Identify the enabling and buffering factors of gambling problems among seniors, as well as barriers to obtaining professional help (49)	<p>The review identified six qualitative studies and 12 quantitative studies.</p> <p>Environmental enabling factors to gambling include cultural acceptance of gambling, supportive social networks, accessibility to gambling platforms, and external cues (e.g., advertisements). Personal motivating factors include the desire for excitement, stress relief, and social interaction. Older adults are particularly motivated by a desire to alleviate boredom, given the large amount of discretionary time they have.</p>	2016	7/9 (AMSTAR rating from McMaster Health Forum)	2/18	18/18	18/18

	<p>Buffering factors include cultural disapproval, financial restrictions, the availability of other social activities, reduced levels of stress, and high levels of life satisfaction.</p> <p>The review cautions that seniors may hide gambling problems due to hopelessness or shame. Sometimes, gambling problems manifest as somatic symptoms, like weight loss, which can be misinterpreted as a part of the natural process of ageing. The rate of seeking professional intervention is often low, with few seniors knowing where or how to seek help.</p> <p>The review recommends that healthcare workers and social service workers explore childhood and family histories to identify proximal factors that may contribute to problematic gambling behaviour. As well, centres for seniors should offer low-cost or free trips to gambling sites to better monitor and educate seniors who gamble. Additionally, community organizations can help meet senior socialization needs in alternative ways to gambling. Other interventions include educating healthcare providers on detecting and treating gambling problems, implementing helplines, and enacting public education campaigns.</p>					
Examine familial influences on adolescent gambling behaviours (49)	<p>This literature review included 21 studies. The review examined five domains of familial influences on adolescent gambling behaviour.</p> <p><u>Family socio-demographic characteristics</u> There has been little research devoted to the relationship between family socio-demographic characteristics and gambling behaviour. In general, structural characteristics are weaker correlates than relational characteristics.</p> <p><u>General family climate</u> Higher levels of family cohesion are associated with decreased levels of problematic gambling. There is contradictory evidence on whether familial support increases or decreases the risk of developing a gambling problem.</p> <p><u>Parenting practices</u> More parental monitoring is associated with lower levels of adolescent gambling frequency. On the other hand, inadequate disciplinary practices are associated with higher levels of adolescent gambling problems.</p> <p><u>Family members' attitudes and behaviours</u> The perception that one or more of their family members gamble problematically is associated with increased self-perception of having a gambling problem. While there is a well-established association between parental gambling and adolescent gambling behaviour, there is limited empirical evidence on the effect of the gambling behaviour of siblings and extended family members.</p> <p><u>Family relationship characteristics</u> Adolescents are less likely to gamble if they have a close, supportive and trusting relationship with their parents. These variables are stronger predictors of gambling</p>	2008	No rating tool available for this document	12/21	12/21	21/21

McMaster Health Forum

	<p>behaviour for females than males. The causal relationships between these factors have not yet been established.</p> <p>In general, the studies included in this review are limited as they often relied on self-reports of gambling activity. Additionally, many of the studies relied on active parental consent, which means that information was likely more often collected on adolescents with parents who are invested in their child's well-being. Future research is needed to address these limitations, and explore other under-studied areas, like ethnically diverse families.</p>					
Determine the prevalence of pathological gambling among college students (50)	<p>This meta-analysis focuses on problem gambling among college students, who are particularly susceptible because of their age, the availability of gambling platforms, the acceptability of gambling, their exposure to advertising, and their access to monetary funds. Despite this, college students are often given limited attention with respect to this issue, as college students are usually considered an intermediary group between adolescents and adults. Among college students, gambling can substantially decrease academic behaviour, promote physically and socially isolating behaviour, and exacerbate other detrimental health behaviours (e.g., unsafe sex and alcohol abuse). In particular, pathological gambling is more often a predictor of the onset of substance issues than vice versa.</p> <p>Nineteen studies were identified. Estimations of the prevalence of pathological gamblers ranged from 3% to 32%, with a median of 8.7% and a weighted average of 10.23% (95% CI 7.17%-13.29%).</p> <p>There was substantial heterogeneity between studies, making it difficult to compare results. This may have been due to differences in study location and methodology. Prevalence estimates from studies conducted in the U.S. and Canada were, on average, a percentage higher than the overall percentage. School type, age and year of publication did not influence prevalence estimates.</p> <p>In comparison with the results of previous meta-analyses, there has been a rise in the prevalence of problem gambling. The paper recommends that colleges and universities implement strategic gambling education, harm-reduction programs, and screening protocols in order to limit problem gambling.</p>	2013	6/11 (AMSTAR rating from McMaster Health Forum)	1/19	19/19	19/19
Critique Canada's legislations and policies for addressing problem gambling (4)	<p>Prior to 1969, gambling was mostly a restricted and illegal activity in Canada. This changed when the <i>Criminal Code of Canada</i> was amended in 1969 and 1985 to decriminalize certain gambling platforms and shift the responsibility of regulating gambling from the federal to the provincial level. The paper argues that these changes resulted in a rapid spread of gambling across Canada, which outpaced the implementation of programs that deal with problematic gambling.</p> <p>Since these changes, provinces have each adopted their own methods to deliver gambling. There are differences in terms of the gambling platforms considered legal, the operation and management of services, the degree of private sector involvement, the allotment of proceeds, and the regulation of gambling.</p>	Not reported	No rating tool available for this document	Not reported	Not reported	Not reported

	<p>Though Canada commits more funding per-capita to problem-gambling prevention and treatment programs than most other nations, problem-gambling prevalence rates remain moderately high. Currently, Canada is fourth worldwide in average annual gambling losses per adult (\$568). Ontario spends \$39.4 million a year on prevention and treatment programs, more than any of the other provinces.</p> <p>The paper argues that the development, implementation and evaluation of problem-gambling prevention programs are rarely informed by empirical evidence. Rather, the most widely employed programs are also among the least effective, like awareness-education efforts and self-exclusion contracts. This reflects the substantial gap between empirical findings and gambling public policy.</p> <p>The paper recommends that Canada adopt more rigorous measures found in other jurisdictions, like low maximum bet limits, mandatory pre-commitments of time or money, and the elimination of bank machines from gambling venues. However, the author speculates that provincial governments will likely hesitate to implement the aforementioned measures for fear of losing gambling revenues. Ultimately, the author finds the dual roles of the provincial governments as gambling promoters and health and wellness monitors to be particularly problematic for minimizing problem gambling.</p>					
Determine the prevalence and determinants of problematic gambling among older adults (14)	<p>Twenty-five studies were identified. Estimates of the prevalence of lifetime problem or pathological gambling ranged from 0.01% to 10.9%. This variation is partly attributable to differences in methodology, studied jurisdictions and gambling platforms.</p> <p>The prevalence of gambling is higher among younger seniors compared to older seniors, and among males compared to females. Those with gambling disorders are more likely to be single or divorced, and belong to an ethnic minority. Other risk factors for gambling include pessimism, fewer social-support networks, limited access to other social activities, greater number of stressful life events, and motivations to experience excitement and win money. There were contradictory findings in terms of the effect of education on problematic gambling behaviour.</p> <p>Co-occurring issues include substance use, psychiatric illnesses, and poorer physical, social and emotional functioning. Those with problematic gambling behaviours tend to have lower levels of subjective well-being and perceived control over their future health. The relationship could run either way; either gambling tends to attract those who are more physically unfit due to its sedentary nature, or it increases stress and contributes to the development of said co-occurring issues.</p> <p>Limitations include the self-reported nature of most of the collection methods, and the inability to generalize findings beyond Western cultures. The review also emphasized the need to develop a measurement instrument that is tailored to older adults living in the community.</p>	2013	5/10 (AMSTAR rating from McMaster Health Forum)	2/25	25/25	25/25

Appendix 2: Systematic reviews relevant to Element 1 – Get the right services to those who need them and bring a public-health perspective to bear

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on gambling
Internet-based interventions for addictive behaviours (36)	Sixteen studies were included in this systematic review, nine of which addressed the effects of internet-based interventions on smoking cessation, four of which focused on gambling, two of which focused on alcohol and one on opioid dependence. All studies demonstrated positive treatment outcomes for their respective addictive behaviours. For smoking cessation, internet-based interventions were positively associated with quitting outcomes; participants who were interested in using internet interventions were more likely to complete said programs and abstain from smoking. Additional communication methods may have been beneficial in helping clients continue to maintain abstinence. Internet-based interventions also resulted in favourable changes to pathological gambling; treatment effects were the result of consistent phone conversations, face-to-face treatment methods and other time/cost-efficient methods. Regarding alcohol consumption, face-to-face consultations proved to be more effective than internet-based intervention only for one domain of treatment outcomes, suggesting that reducing the mean number of drinks consumed per day is still largely achievable through internet-based interventions. Only one randomized controlled trial (RCT) addressed opioid dependence; the quality of evidence and six-week follow-up in this study, however, are not recognized in the paper as being appropriate to addressing opioid abuse. Instead, longer follow-up times are recommended.	2016	6/10 (AMSTAR rating from McMaster Health Forum)	0/16	2/16	4/16
Internet- and mobile-based support for cessation of smoking, alcohol use and gambling (37)	Studies showed mixed results regarding internet interventions and smoking behaviours; studies that showed the greatest mitigation of addictive behaviours included internet, mobile phone and email interventions. However, large attrition rates undermine the quality of this evidence. Internet interventions showed inconclusive results with respect to alcohol abuse and similar problems with attrition were observed. One RCT assessed the effect of internet interventions on gambling addictions, with internet interventions demonstrating a favourable change in pathological gambling, anxiety, depression, and quality of life. These results were sustained for a follow-up period of 36 months. There is inconsistent evidence regarding the effects of telephone or internet-based interventions to reduce smoking, alcohol use or gambling. Studies suffered from poor setup of control groups and a lack of information on possibly short follow-up periods and high attrition rates.	2013	5/10 (AMSTAR rating from McMaster Health Forum)	4/74	16/74	3/74

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on gambling
Instruments to measure problem gambling in young adults (44)	This systematic review sought to assess which instruments measuring at-risk and problematic gambling (ARPG) among youth are reliable and valid in light of reported estimates of internal consistency, accuracy of ARPG classification and other psychometric properties. Most of the 50 identified studies evaluated the South Oaks Gambling Screen Revised for Adolescents. It was found that the Gambling Addictive Behaviour Scale for Adolescents was the only novel instrument; the Gambling Addictive Behaviour Scale for Adolescents and the Canadian Adolescent Gambling Inventory (CAGI) were the only instruments developed for youth. All studies but one were population based. However the review suggests that ARPG instruments for youth have not yet been rigorously evaluated, with further research suggested for instruments affecting clinical practices.	2015	8/10 (AMSTAR rating from McMaster Health Forum)	10/50	50/50	50/50
Motivators to seek help for gambling-related harms (51)	This review summarized reasons why disordered gamblers, through treatment or self-initiative, try to resolve their gambling problems. It was found that factors such as age, ethnic group affiliation, socio-economic status, gender, mental health, substance abuse and marital status play roles in gambling problems in adults. It was also found from the literature that of those who gamble, relatively few with gambling difficulties seek treatment. Analyses from two large national surveys revealed that 7-10% of American pathological gamblers sought professional help in resolving their issues. In Canada, 29% of pathological gamblers and 10% of problem gamblers were found to have accessed treatment options. Motivators for addressing gambling issues include financial difficulties, relationships with others, negative emotions, decision-making capacities, work and legal difficulties. Motivators among those who seek professional help to overcome chronic gambling issues primarily include work, physical health issues and feeling like “hitting rock bottom”.	1999	5/9 (AMSTAR rating from McMaster Health Forum)	8/19	16/19	19/19
Family interventions for those affected by addictions (38)	This literature review examined the effectiveness of interventions for family members affected by relatives’ addictions problems, namely substance misuse and gambling. RCTs examined in this thesis literature review suggested that effective interventions are associated with improvements in stress, coping behaviours and positive changes in family functioning. These changes were found to be sustainable in the RCTs examined. Mixed methods and qualitative studies suggested similar findings, however, many suffered from clear limitations regarding follow-up time and methodological rigor. “5 step” methods were found to be effective in certain studies for families; the integration of siblings was found to be a developing area in the context of family support. The review also points out a low number	2014	5/9 (AMSTAR rating from McMaster Health Forum)	6/17	17/17	17/17

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on gambling
	of effective interventions for family members affected by gambling. Furthermore, no group differences in relation to personal and relationship functioning were identified with existing care models. The review concludes by suggesting a need for future interventions to consider all elements of social systems, including spiritual, economic and environmental considerations that affect families influenced by gambling.					
Prevalence of co-occurring issues in problem gambling (16)	All studies selected in this systematic review included participants who were assessed by a validated screening tool to determine if they were pathological and/or problematic gamblers. Results from the studies included found generally high prevalence rates for many comorbid conditions in representative samples of problem and pathological gamblers. The condition with the highest mean prevalence rate was nicotine dependence, followed by substance abuse disorders, mood disorders and anxiety disorders. One study found high life-time prevalence for these co-occurring issues. High levels of comorbidity were found to characterize pathological gamblers at large, not only those seeking treatment. The review suggests that prevalence of co-occurring issues across the various included studies should be considered in light of moderate heterogeneity across study samples.	2010	7/11 (AMSTAR rating from McMaster Health Forum)	2/11	11/11	11/11
School-based gambling education programs (40)	The review suggests that the difficulty in assessing preventive measures focused on youth who gamble is that relatively small numbers of youth gamble at problematic or pathological levels, making large reductions in gambling frequency difficult to ascertain with school-based intervention programs. Many of the studies reviewed demonstrated that changes in knowledge, beliefs and attitudes do not necessarily translate into changes in behaviour. Nonetheless, it was found that the studies which evaluated behavioural outcomes over a period of six months or more demonstrated deteriorating effects of problematic gambling. The review suggests that longer follow-up periods are necessary in determining changes in problematic gambling. Few school programs assessed in this review emphasized learning more complex aspects of preventive gambling education, including mathematical concepts like randomness and expected value. Only four of the nine studies that evaluated behavioural changes made such efforts. It was found that promoting a negative viewpoint of gambling and its effects were not sufficient to prevent gambling problems.	2016	6/9 (AMSTAR rating from McMaster Health Forum)	2/69	69/69	69/69

Appendix 3: Systematic reviews relevant to Element 3 – Establish governance structures that clarify leadership, strengthen collaboration, and promote cross-sectoral partnerships

Focus of systematic review	Key findings	Year of last search	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada	Proportion of studies that deal explicitly with one of the prioritized groups	Proportion of studies that focused on gambling
Assessing the impact and effectiveness of inter-sectoral action on the social determinants of health (22)	<p>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.</p> <p>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 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 impacts of inter-sectoral action on health equity are mixed and limited.</p> <p>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 healthcare or services).</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>The authors identified difficulties in attributing the effectiveness of initiatives to inter-sectoral action due to the lack of clarity among the 17 studies.</p>	2012	8/11 (AMSTAR rating from McMaster Health Forum)	0/17	0/17	0/17



McMaster
HEALTH FORUM

>> Contact us
1280 Main St. West, MML-417
Hamilton, ON, Canada L8S 4L6
+1.905.525.9140 x 22121
forum@mcmaster.ca

>> Find and follow us
mcmasterforum.org
healthsystemsevidence.org
mcmasteroptimalaging.org

• • • mcmasterforum

FORUM+

