The *Lancet Public Health* Commission on gambling

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Executive summary

The global gambling industry

The global gambling industry is rapidly expanding, with net losses by consumers projected to reach nearly US$700 billion by 2028. Industry growth is fuelled by the rise of online gambling, widespread accessibility of gambling opportunities through mobile phones, increased legalisation, and the introduction of commercial gambling to new areas. Recent expansion is most notable in low-income and middle-income countries, where regulatory infrastructure is often weak. Gambling, in some form at least, is now legally permitted in more than 80% of countries worldwide. Online gambling, given its borderless accessibility, is available everywhere via the internet.

Digitalisation has transformed the production and operation of commercial gambling, but the consequences of this shift and its effects on consumers have not yet been fully recognised. The production of online gambling is interconnected with an ecosystem of software, information technology infrastructure, and financial technology services. The commercial gambling industry has also developed strong partnerships in media and social media. Sponsoring and partnering with professional sports organisations provides gambling operators with marketing opportunities with huge new audiences. This far-reaching and interdependent corporate ecosystem collectively wields substantial influence over policy and has multiple points-of-contact through which to leverage the behaviour of consumers.

Online gambling products are designed to be rapid and intensive, characteristics that are associated with higher risk of harm for consumers. The introduction of in-game betting during live matches has made online sports betting instantaneous and increased both its frequency and prevalence. Traditional gambling products, such as lotteries and bingo, now have faster cycles and are continuously accessible through smartphone apps. The boundaries between digital gaming and gambling are becoming blurred, with gaming increasingly acting as a conduit into gambling.

Leveraging online digital infrastructures and surveillance data, gambling companies now have unparalleled capabilities to target consumers, including through the use of social media and influencers to engage individuals and online user data to tailor marketing to individuals, cross-sell products, and prolong user engagement.

To safeguard their interests, stakeholders in the commercial gambling ecosystem deploy a range of strategies, many of which are similar to those used by other industries selling potentially addictive or health harming products. To shape public and policy perceptions, and as they lobby policy makers directly to further their commercial interests, the industry portrays gambling as harmless entertainment and stresses the economic benefits (including tax revenues) and employment opportunities that the industry provides. The gambling industry particularly stresses the social benefits that accrue when some portion of gambling profits are used to fund education, health services, or other worthwhile social causes. According to industry narratives, responsibility for gambling harm is attributed to individuals, particularly those deemed as engaging in problematic gambling, which deflects attention from corporate conduct. The gambling industry also exerts considerable influence over research into gambling and gambling harms, which helps it to retain control of the framing and messaging surrounding these issues.

Industry messaging has substantially influenced gambling policy and regulation. Most policy solutions to gambling harms rest on the notion of individual responsibility. Providing support services, treatments, and protections for at-risk individuals is, of course, important. Improving these remedies further and making protective supports broadly available remains a priority. However, framing the problem in this way and narrowly focusing policy attention on a small subset of the people who gamble draws attention away from industry practices and

Key messages

- Commercial gambling is a rapidly growing global industry and is becoming increasingly digital.
- The harms to health and wellbeing that result from gambling are more substantial than previously understood, extending beyond gambling disorder to include a wide range of gambling harms, which affect many people in addition to individuals who gamble.
- Evolution of the gambling industry is at a crucial juncture; decisive action now can prevent or mitigate widespread harm to population health and wellbeing in the future. Thus far, globally, governments have paid too little attention to gambling harms and have not done enough to prevent or mitigate them.
- Stronger policy and regulatory controls focused on harm prevention and the protection of public health and wellbeing, and independent of industry or other competing influences, are now needed. Given the increasingly global and boundary-spanning nature of the industry, international coordination on regulatory approaches will be necessary.

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corporate behaviour. We must also seriously examine the structures and systems that govern the design, provision, and promotion of gambling products.

Gambling harms

Gambling can inflict substantial harm on individuals, families, and communities. Beyond the obvious danger of financial losses and financial ruin, these harms can include loss of employment, broken relationships, health effects, and crime-related impacts. Gambling can heighten the risk of suicidality and domestic violence. Research evidence and firsthand accounts from individuals affected by gambling corroborate the association between gambling and these many and various detrimental effects.

A substantial proportion of harm is suffered by those individuals who fall below the threshold for gambling disorders outlined in the International Classification of Diseases-11 or the American Psychiatric Association's Diagnostic and Statistics Manual-5. Therefore, examining the effect of gambling across the entire spectrum of consumption is crucial. As with other harmful commodities, adverse effects are often felt not just by the person gambling, but also by significant others, families, and friends, and can result in both tangible and intangible costs to communities and societies. Although some harms might be short-lived, others are long lasting and can affect subsequent generations.

This Commission conducted a systematic review and meta-analysis of the global prevalence of gambling participation, including any risk gambling (defined as occasional experience of at least one behavioural symptom or adverse consequence from gambling), gambling disorder, and problematic gambling in adults and adolescents. We estimate that 46·2% of adults and 17·9% of adolescents had engaged in gambling of some form within the preceding year, globally. 10·3% of the adolescents had gambled online, which is noteworthy given the widespread agreement that commercial gambling among adolescents should be prohibited. Approximately 5·5% of women and 11·9% of men experience any risk gambling. Extrapolating these findings globally would suggest that approximately 448·7 million adults worldwide could be similarly affected. Of these, an estimated 80 million adults experience gambling disorder or problematic gambling.

Moreover, we estimate that gambling disorder could affect 15·8% of the adults and 26·4% of the adolescents who gamble using online casino or slot products, and 8·9% of the adults and 16·3% of the adolescents who gamble using sports betting products. These findings underscore the potential harmfulness of products (eg, online casino or slot games and sports betting) that are now driving the global expansion of the gambling industry.

Our systematic review also uncovered substantial deficiencies in the global monitoring of gambling harms. Monitoring has relied primarily on population surveys, despite recognised methodological issues with these approaches, which are likely to produce conservative estimates. Moreover, in many countries, even general population surveys are unavailable. Consequently, the evidence base remains fragmented and clearly incomplete given the global scale of the issue.

Policy response and regulation

This Commission stresses that gambling is a public health issue. A public health approach to regulating the gambling industry and preventing and responding to related harms should underpin policy design, implementation, and review. The Commission assessed the gambling policy process by scrutinising policy framing, adoption, and enforcement, acknowledging the importance of each stage in influencing public health outcomes.

Policy framing, also known as agenda setting, has a crucial role in shaping policy objectives. The Commission conducted an empirical study examining the global framing of new gambling legislation from 2018 to 2023 across 80 jurisdictions. New legislation during this period mainly focused on legalising online gambling. The most common rationales for changes in gambling legislation included transparency and integrity of gambling products, economic growth, and crime prevention. Although a third of jurisdictions cited some health-related rationales, these often focused specifically on prevention of gambling addiction or gambling disorder, rather than broad public health protections. Regional variations in regulatory motivation were evident, with economic rationales being more prevalent in North America, whereas public health rationales were more common in Europe. Many legislative texts incorporated competing rationales, with health juxtaposed with economic considerations. The resulting tension between competing policy priorities manifests throughout the policy cycle.

Effective policy tools exist to prevent the broad range of harms associated with gambling. Evidence indicates that universal measures targeting entire populations are the most effective when implemented consistently and comprehensively, aligning with a public health approach. Measures with increased effectiveness include enforcing legal age limits, restricting gambling availability and accessibility, prohibiting or substantially limiting advertising, implementing universal and mandatory limits for gambling consumption, and placing controls on gambling product characteristics known to be harmful.

In addition to such population-level measures, selective and targeted interventions are necessary to support individuals who are at risk of gambling harms, or who are already experiencing or recovering from them. These measures encompass self-exclusion policies, personalised messaging and feedback on gambling consumption, interventions based on tracking data, and therapeutic services. This Commission views both classes of

interventions—population level and individual level—as essential, but argues that it is the population-level, public-health interventions that have had insufficient attention from policy makers, have lagged behind other measures in terms of design and implementation, and which now need special emphasis.

Even where jurisdictions have prioritised public health concerns in their policy framing, effective population-level measures remain inconsistently implemented. Regulation of gambling harms still revolves primarily around the so-called responsible gambling paradigm, which keeps the focus on individuals deemed to be gambling problematically and diverts attention away from the nature and conduct of the commercial gambling ecosystem.

Policy framing also influences the choice of regulatory priorities and the regulatory structures used to deliver them. Available regulatory structures include rules-based (prescriptive) regulation and self-regulatory practices. Although rules-based standards are common in areas such as gambling product integrity, taxation, and crime prevention, the control of gambling harms has relied on a mixture of prescriptive and self-regulatory approaches. Self-regulatory approaches work best when public and private commercial interests are closely aligned, whereby private motivations are sufficient to serve public interests. With respect to the control of gambling harms—which, if effective, would reduce corporate profits to some degree—the assumption of alignment is fundamentally unreliable.

Regulating an increasingly global gambling industry presents substantial challenges, but they are not insurmountable. The global nature of the industry necessitates strong international regulatory collaboration. Additionally, increased levels of research and improved monitoring systems are required to produce credible, independent, non-industry-driven, and therefore reliable, evidence on gambling harms and the efficacy of various control methods.

Without adequate oversight, profit-driven corporate behaviours in the gambling industry will pose ever greater risks to a widening circle of consumers and to public health worldwide.

Recommendations

The Lancet Public Health *Commission on gambling* convened a multidisciplinary group of experts in gambling studies, public health, global health policy, risk control, and regulatory policy; along with contributors who have firsthand experience of gambling harms. Our conclusion is clear: gambling poses a threat to public health, the control of which requires a substantial expansion and tightening of gambling industry regulation. Timely response to this growing worldwide threat necessitates concerted action at intergovernmental, national, and regional government levels. Our full recommendations are shown in panel 1.

Panel 1: Key recommendations

1 Gambling is a public health issue; in setting policy, governments should prioritise protecting health and wellbeing over competing economic motivations.

2 In all countries—irrespective of whether gambling is legally permitted—effective gambling regulation is needed; we recommend:
  • Reductions in population exposure and the availability of gambling, through prohibitions or restrictions on access, promotion, marketing, and sponsorship.
  • Provision of affordable, universal support and treatment for gambling harms.
  • De-normalisation of gambling via well resourced social marketing and awareness campaigns.

3 Jurisdictions that permit gambling need a well resourced, independent, and adequately empowered regulator, focused on the protection of public health and wellbeing; at a minimum, regulatory protections must include:
  • Protection of children and adolescents from gambling, by enforcing minimum age requirements, backed by mandatory identification.
  • Provision of effective consumer protection measures, such as universal self-exclusion, and user registration systems.
  • Regulation of products proportionate to the risk of harms, based on their characteristics.
  • Enaction of mandatory measures limiting gambling consumption, such as enforceable deposit and bet limits, and universal precommitment systems.

4 Gambling-related policy, regulation, treatment, and research must be protected from the distortionary effects of commercial influence; we advocate for a rapid transition away from industry-funded research and treatment, coupled with and enabled by increased levels of investment from independent sources.

5 At the international level, UN entities and intergovernmental organisations should incorporate a focus on gambling harms into their strategies and workplans for improving health and wellbeing broadly.

6 There is a need to develop an international alliance—including civil society, people with lived experience of harms related to gambling, researchers, and professional organisations—to provide thought leadership, advocacy, and convening of interested parties.

7 This Commission recommends the instigation of the process to adopt a World Health Assembly resolution on the public health dimensions of gambling.

Introduction

"No matter how you think you can outsmart the thing, they always win. Even if you think you've won some money, they've still won…"

Male sports bettor, aged 19 years

Gambling transformation and commercialisation

The worldwide expansion of the gambling industry has been propelled by technological advancements that lie at the core of the so-called digital revolution.[1,2] Digital and mobile technologies integrated into gambling products result in more immersive and portable games and broader availability to vast global audiences, traversing previous physical barriers. Traditional gambling products, such as casino games and slot machines, have been digitised and made available online. Simultaneously, the almost ubiquitous availability of mobile phones, as a means to access the internet, has contributed to the surge in online gambling availability, creating a so-called casino in your pocket 24/7.[3,4] Many lotteries can now be

played continuously via a smartphone app, which is a radical departure from their traditional format (ie, the weekly purchase of a physical ticket). Developments, such as in-play betting, allow wagering not only on the outcome of sporting contests, but also on multiple moments throughout a match. Sports betting thus acquires a rapid and continuous format.

Digitisation has enabled the emergence of expansive international gambling markets.[5] Online gambling is the fastest growing sector of the industry, with estimates that the gross online gambling yield (the amount lost by consumers) will grow to US$205 billion by 2030;[6] gambling yield for all forms of commercial gambling is projected to grow to nearly $700 billion by 2028.[7] Many global commercial gambling companies exist as digital-only entities. Other gambling operators adopt digital-first business models as they aim to integrate both land-based and online offerings. Responding to the vast supply-side competition inherent in the online market, businesses and brands have consolidated, forming large, powerful groups.

Simultaneously, gambling companies have directed their attention towards innovative marketing approaches rooted in data surveillance. Gambling applications allow direct and real-time communication between gambling operators and consumers. Operators use consumer data to profile behaviours and personalise marketing offers. Partnerships with other commercial entities broaden the reach of the gambling industry, allowing it to contact or influence consumers through sporting arenas and social media platforms.

Digital expansion has increased the gambling industry's geographical reach, notably into low-income and middle-income countries (LMICs), many of which have little previous exposure to commercial forms of gambling activity (eg, expansion into countries in sub-Saharan Africa[8]). Digital transformation of gambling poses novel challenges, such as penetration of offshore-based gambling operations into countries where all forms of gambling are banned. In Indonesia, for example, commercial gambling is illegal, but online gambling products are readily available to the public.

The distinction between gaming and gambling has also been blurred. Gambling features have now been incorporated into online games, further exposing children and adolescents to gambling and gambling-like activities.[9]

The growth of the gambling industry can be viewed from several different perspectives. From an economic perspective, this growth represents increased commercial activity and additional employment opportunities in the industry. Commercial firms satisfy their fiduciary obligations to generate returns for shareholders by maximising profits. From a revenue perspective, gambling also provides means for governments (national, state, or local) to generate income, most commonly by operating lotteries. Proceeds can be used to supplement general tax revenues or can be earmarked for specific social purposes.

The Commission, however, seeks to emphasise and elevate the public health perspective on gambling by focusing on harms resulting from gambling activities. These harms include financial losses, health consequences, both physical and mental, and impacts on wellbeing, equity, social justice, and crime. Harms affect not only those who gamble, but also their families, friends, and communities. In adopting a public health perspective, we focus on the protection of populations from gambling harms.

Historically, economic and financial perspectives have heavily influenced policy discussions, taking priority over considerations of public health protection. This Commission now seeks to redress this balance, at what is an important moment in the evolution of the gambling industry.

Gambling harms and public health

Commercial gambling is associated with a range of harmful effects for individuals, families, communities, and societies.[10] Gambling increases risks of suicide and domestic violence[11–13] and is associated with financial destitution and family rupture, which can have long-lasting consequences for individuals and their families.[14] These harms might last lifetimes and have consequences that span generations.

Gambling disorder (panel 2) is a recognised health disorder and is classified both within the International Classification of Diseases-11 (ICD-11)[16] and the American Psychiatric Association's Diagnostic and Statistics Manual-5 (DSM-5)[17] as a disorder due to addictive behaviours. Epidemiological studies have focused primarily on measuring rates of disordered gambling, which are expressed as percentages of the total population (including those individuals who do not gamble). Estimates for rates of disordered gambling vary across regional studies, from 0·1% to 5·8% of the relevant populations.[20] However, harms are experienced across the entire spectrum of consumption, affecting many other individuals who gamble, but would not be classified as having disordered gambling. The ICD-11[16] additionally identifies so-called hazardous gambling as: "a pattern of gambling that appreciably increases the risk of harmful physical or mental health consequences to the individual or to others around the individual". Hazardous gambling describes patterns of gambling behaviour that warrant "attention and advice from health professionals but does not meet the diagnostic requirements for gambling disorder".

International guidelines indicate that individuals who gamble more than four times a month or engage in more than two different types of gambling activities are subject to substantially heightened risks of gambling harms.[21]

The global prevalence of hazardous or harmful gambling is unknown. However, harm from gambling is

Panel 2: Key terms and language

Gambling: the staking or risking of money or something of material value on an event that has an uncertain outcome in the hope of winning additional money or material goods.[15]

Commercial gambling: the commercial provision of gambling by companies and entities established to provide these products at scale for profit. The commercial gambling sector might be supported by governments through systems of licensing or governments themselves might be providers of commercial gambling through monopoly arrangements. Profits might be retained by the company or redistributed for social causes. Commercial companies can operate in settings where there is no regulation, where there is little oversight, or as illegal operators where prohibitions exist.

Gambling products: includes a diverse range of products, including lotteries and related products (eg, scratch cards), betting, bingo, electronic gambling machines, and casino table games, all of which are offered in a range of contexts and across a range of formats, including online and mobile provision.

Gambling harms: the adverse effects from gambling on the health and wellbeing of individuals, families, communities, and society.

Hazardous gambling: term used in the International Classification of Diseases-11[16] (ICD-11) to describe a pattern of gambling that appreciably increases the risk of harmful physical or mental health consequences to the individual who gambles, or to others around the individual, which might require intervention or monitoring, but which is not considered a disorder.

Gambling disorder: a recognised disorder in the two major classifications of mental and behavioural disorders—the ICD-11 and the American Psychiatric Association's Diagnostic and Statistics Manual-5 (DSM-5).[17] The DSM-5 states that gambling disorder is identified by a pattern of repeated and ongoing betting and wagering that continues despite creating multiple problems in several areas of an individual's life. The ICD-11 states that gambling disorder is characterised by a pattern of persistent or recurrent gambling behaviour, manifested by impaired control over gambling (eg, onset, frequency, intensity, duration, termination, context), increasing priority given to gambling to the extent that gambling takes precedence over other life interests and daily activities, and continuation or escalation of gambling despite the occurrence of negative consequences. The pattern of gambling behaviour might be continuous or episodic and recurrent. The pattern of gambling behaviour results in substantial distress or impairments to personal, familial, social, educational, occupational, or other important areas of functioning.

Problem or problematic gambling: a commonly used term to describe gambling practices that create multiple problems that disrupt personal, family, financial, and employment circumstances; this term is sometimes used interchangeably with gambling disorder.

Any risk gambling: this term is used to include individuals who meet the thresholds for problematic gambling or gambling disorder, but also includes individuals who, at a minimum, report sometimes or occasionally experiencing at least one behavioural symptom or adverse personal, social, or health-related consequence from gambling; this group represents the full range of risk severity.

Language: policy makers, regulators, and academics increasingly refer to gambling harms to describe wide-ranging decrements to health and wellbeing associated with gambling. However, measurement instruments in gambling research often use terms, such as problem gambling, which can be stigmatising.[18] In this Commission, guided by input from our lived experience contributors (appendix pp 3, 4), we adopt a person-centred approach, referring to people who gamble, people with gambling disorder, and people experiencing gambling harms.[19] Where possible, we avoid the term problem gambling, except when we are describing data where its inclusion is necessary to be clear about the outcome measure used within the cited studies.

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experienced not just by those classified as suffering gambling disorder. The proportion of the overall population affected by harmful gambling will be higher still when considering the effect on families, friends, and relatives of those who gamble.[22] Thus, the true scale and scope of harms generated by gambling remain uncertain, though the actual scale exceeds currently available estimates.

Specific groups face an elevated risk of gambling harms. These include children and young people, now routinely exposed to gambling product advertising and industry messaging and sponsorship, in ways that were unprecedented before the digital revolution.[23] Exposure to industry messaging and product advertising influences young people's propensity to gamble and normalises gambling within their peer groups.[24] The effect is especially potent among sports fans.[24,25]

Moreover, the distribution of gambling harms is not equal across society. Some gambling products draw a substantial proportion of overall revenues from those least able to afford their losses—ie, from socioeconomically disadvantaged individuals who have an increased likelihood of suffering harm due to financial losses.[26–28]

Governments supporting the expansion of commercial gambling rarely acknowledge the potentially regressive inequities in the generation of gambling revenues, and tend to overlook how the growth of gambling might exacerbate social inequity by generating corporate profits at the expense of individuals most likely to experience harm.

Panel 3: Gambling—not an ordinary commodity

Many gambling products have features that make them unlike most other commercially available commodities; these include the:

Continuous and open-ended nature of product

Unlike many other products (eg, food, alcohol, tobacco), for which there is a natural or physical limit to how much can be consumed in a set period, consumption of gambling can be repeated continuously, and with online provision can continue for 24 hours per day, with the only real limit on consumption being access to funds.

Uncertainty of price

Although a single bet has a single unit cost, an overall session of gambling does not have a fixed price because of the way that game structures and odds work. The true price of a gambling session is often unknowable to the consumer. In some forms of gambling, such as spread betting, the price can be higher than the original bet and unknown at the time the bet is placed. Odds and structures of gambling are opaque, and it is not always clear to consumers exactly what they are purchasing. This uncertainty sets gambling apart from other products.

Product design

Some gambling products are designed with particularly harmful features. The high speed, continuous, and seamless operation of many gambling products can generate immersive states that have been described as the experience of the zone—a state in which players are oblivious to the outside world, the passage of time, and the amount of money that they are spending.

Asymmetry of insight

Online gambling operators hold good data on consumers' practices and preferences, and on the profitability of specific products. These data afford operators substantial potential to tailor products, adjust algorithms, and target their marketing. However, consumers do not have similar data on gambling products, often lacking basic information about key characteristics, such as price.

Advocacy groups representing people with first-hand experience of harms have effectively drawn attention to the health and wellbeing risks associated with gambling. In Georgia, for example, advocacy groups raised concerns about the impact of gambling on children, resulting in the legal age limit for gambling being raised to 25 years.[29,30] In England, people bereaved by gambling-related suicide have raised the political and public profile of gambling harms, resulting in the inclusion of gambling as a potential risk factor for suicidality within the English Suicide Prevention Strategy 2023–2028.[31] Such efforts have created some momentum for action. However, there remains an urgent need for stronger public health responses, with greater attention paid to the nature, prevalence, and distribution of gambling harms.

Global outlook on the gambling industry and the importance of this moment

Widespread digitisation and the global spread of gambling pose an escalating international challenge. The industry's current growth trajectory is not only enabled by technological and financial advancements, but also by strong ties to regional and national governments. Advocates for industry expansion and legalisation stress that gambling operations can promote economic growth, generate tax revenues, and counter losses of domestic revenue to so-called black-market and offshore provision.[32] Following these narratives, jurisdictions worldwide are increasingly legalising commercial gambling, choosing to regulate it rather than prohibit it. However, the manner of regulation needs to accommodate the reality that—to paraphrase Babor et al[33]—gambling is no ordinary commodity (panel 3) and its expansion comes with substantial risk. Consequently, there is an urgent need to design regulatory controls and international frameworks sufficient to address public health risks associated with the ongoing expansion of the gambling industry.

The need for effective regulatory controls and coordinated international frameworks is particularly acute in relation to the growth of online gambling in regions (notably LMICs) that are ill equipped to protect communities from gambling harms and not prepared to deal with ancillary risks, such as the infiltration of criminal syndicates into gambling operations.[34]

Another high-priority area for attention—particularly considering risks for young people and the penetration into LMICs—arises from extensive gambling industry interdependencies and partnerships with sporting, leisure, and other affiliated services.[35,36] Partnerships between professional sport and commercial gambling are now integral to the design of business practices and marketing strategies on both sides of the partnership, with each sector leveraging the other to drive growth. A newly pervasive social reality seems to be settling in: increased interest in sports now means increased exposure to gambling.

Aims of the Commission

To address the challenges posed by gambling, this Commission assembles a global team of experts in public health, gambling studies, global health policy, risk control, and regulatory policy; along with contributors with lived experience of gambling harms (appendix pp 3, 4). Contributions from people with lived experience enriched our perspectives on harms and reinforce the importance of such engagement for future studies. We set out a framework to understand the commercial and legal determinants of the modern commercial gambling industry. We explore how the industry is embedded

within the wider political economy, and the implications for population health.

Our examination encompasses the known harms associated with commercial gambling and the substantial threats to societal development and community health posed by the growth and expansion of the industry. We explore the commercial determinants of gambling and locate commercial products and practices within wider political–economic systems. We then review the existing knowledge on the prevalence of gambling disorder and on gambling harms, acknowledging the incomplete and partial evidence base. Finally, we review the gambling policy cycle, tracing how gambling legislation is framed, which preventive actions are adopted, and the strengths and weaknesses of different regulatory and enforcement regimens. In conclusion, we provide recommendations on policy, policy processes, and regulation.

This Commission has two key objectives: first, to raise awareness of the public health risks associated with current trends in commercial gambling development; and second, to provide a set of recommendations for international, national, and regional actors to help prevent the global proliferation of gambling harms. The changes we document are fast moving. Our Commission is forward looking and thus focuses most closely on recent technological changes in commercial gambling and the specific challenges that they pose.

We also offer readers—who might not be experts in the area—a primer that outlines how the existing gambling ecosystem works and highlights general trends and developments that we consider to be of crucial importance.

Based on the evidence presented in this Commission, our aim is to emphasise the importance of prioritising public health concerns over competing policy agendas when formulating gambling policies and regulations. The protection of public health should now take precedence when it conflicts with economic interests, commercial profitability, and governments' interest in revenue generation.

The Commission argues the need for a public health approach to prevent gambling harms. What this means, and how it compares with the dominant responsible gambling paradigm, will be discussed first.

Gambling as a public health issue
Key features of a public health approach to gambling
Awareness of the risks of gambling to the health of the public has a long lineage. Gambling disorder was recognised within the ICD in 1977, followed by the American Psychiatric Association DSM in 1980. By 1994, gambling scholars were calling for the public health community to be alert to the threat of expanding gambling legalisation, highlighting the need for funding to prevent and treat gambling harms.[37] In 1999, Korn and Shaffer went further and argued that a whole-systems approach was required to reduce gambling harms.[38] This perspective has continued to attract support since its introduction,[39–44] but this has largely failed to translate into policy action.[45,46]

In addition, medicalised perspectives—which focus on intra-individual factors, such as co-occurring mental disorders, cognitive issues, and poor impulse control as the source of gambling harms—have dominated gambling scholarship. As a result, research-informed policy initiatives have remained mostly focused on encouraging individuals to control their own behaviours by emphasising individual responsibility (termed the responsibility model).[47,48]

However, a growing body of epidemiological evidence has highlighted patterns of increased risk of gambling harms among population sub-groups, such as children, young people, minority ethnic groups, and individuals who are the most socially and economically disadvantaged, as well as the association of particular products and product features with increased risks of harm.[28,49] Such findings and patterns resemble those discovered in relation to other potentially harmful products (eg, alcohol, tobacco, drug use, unhealthy diets, etc). Epidemiological analyses and a system-level perspective draw attention to the important role of the social, commercial, political, and legal determinants of gambling harms.[50,51] The relevance of a public health approach, and the parallels with challenges relating to other unhealthy products, also motivate calls by gambling researchers for gambling harms to be deeply embedded within the public health community's broader harm prevention agenda.[40–44]

The expansion and digitalisation of the gambling industry, coupled with increased sophistication of gambling products, has added greater urgency to these calls. Gambling industry business practices, which are somewhat similar to those used in other unhealthy commodity industries (often referred to as the so-called corporate playbook), cause concern.[52,53] Growing attention to the commercial determinants of health[50] has also generated the impetus for gambling harms to be viewed from a public health perspective.

Numerous scholars have outlined frameworks for examining determinants of gambling harms to health.[39–44,54] These scholars emphasise the need to recognise commercial, political, and economic factors that generate gambling harms, as well as social, interpersonal, and demographic characteristics—including age, gender, ethnicity, and psychological and socioeconomic factors—which influence their distribution throughout populations. Although gambling harms might affect anyone, a heavy burden falls on individuals who are socially disadvantaged. The social gradients along which gambling harms might unequally fall can reproduce and reinforce inequalities.[55–61] Scholars emphasising determinants of gambling harms have pressed for increased attention to actions by commercial entities that can affect the extent and distribution of harms by influencing societal norms and policies and regulations governing product design, promotion, accessibility, and
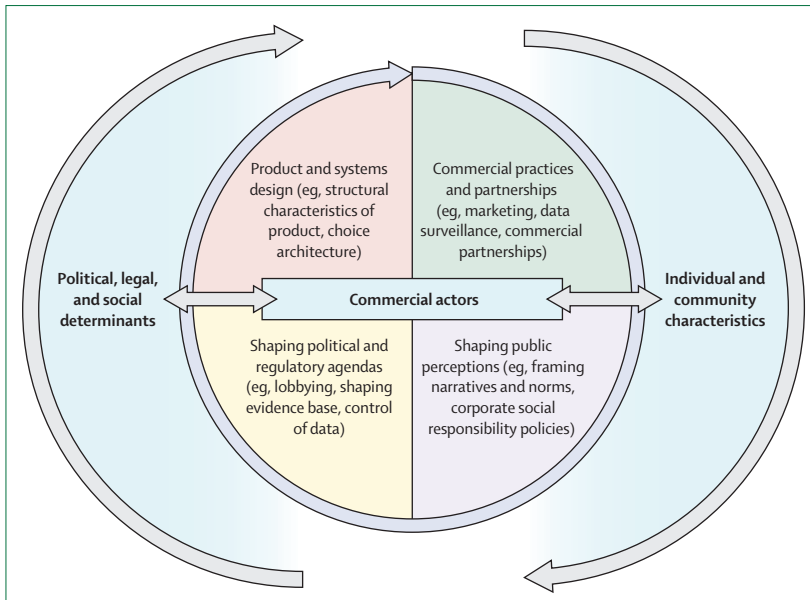
Figure 1: The determinants of gambling and gambling harms

geographical distribution. These factors, alongside others, influence individual and community behaviours and the distribution of gambling and gambling harms. The inter-relationship of commercial, political, and social determinants of gambling and gambling harms, highlighting the central actions of commercial actors, are visualised in figure 1.

Adopting a public health approach to the prevention and control of gambling harms would require government policy to give precedence to the protection of public health and wellbeing over other competing economic, financial, and commercial interests. Policy making processes, to preserve their central focus on public health, would need to be guarded or protected against influence from commercial interests. Academic research, to preserve its independence and credibility, would similarly need to be insulated or protected from the distortionary effects of commercial influence. Increased emphasis would be given to population-focused harm prevention approaches, such as restricting advertising and marketing practices to reduce exposure, and deliberately counteracting industry attempts to normalise gambling behaviours. Although policies targeted on specific individuals clearly remain an important part of a comprehensive approach to harm prevention and reduction, such policies are by themselves insufficient to address the systemic and powerful commercial determinants of gambling harms.

These features of a public health approach are not unique to gambling but reflect consolidated learning regarding what a public health approach means in general, in improving and protecting population health. As in other similar areas, one consequence of the application of this approach would probably be a reduction in corporate profits to some degree. The WHO Global Alcohol Action

Plan 2022–2030, endorsed by the 75th World Health Assembly,[62] includes many similar precepts and actions, including a strong focus on protecting policy processes and research from commercial influence. A summary of how the public health framework, applied to gambling harms, would differ from the prevailing responsible gambling paradigm is presented in table 1.

Public health: precaution and evidence

The application of public health frameworks to the understanding of gambling harms has started to gather pace in the past decade.[10,40–45] Nevertheless, the quality of the available evidence base, for now, remains suboptimal, particularly in relation to high-quality epidemiological studies and reliable determinations of efficacy for specific interventions.[63] However, there is already ample evidence of clear relationships between readily accessible, high-intensity commercial gambling opportunities and a range of mental and physical health conditions.[64–81] Also, the fact that gambling harms befall other people who do not gamble themselves, including domestic partners and children, has been well documented.[11,22,82]

Taking a public health approach requires embracing two key principles: the precautionary principle, and the use of the best available evidence.

With regards to the precautionary principle, Pearce argued that "the concepts of precaution and prevention have...always been at the heart of public health practice".[83] As technological change outstrips scientific knowledge, the possibility of consequential damage to health and wellbeing must be considered and prevented.

For WHO, "irreparable mistakes must be avoided, such as those related to tobacco or asbestos, when people waited for definitive evidence far too long before springing to action".[84]

There are four key components of the precautionary principle: "taking preventive action in the face of uncertainty; shifting the burden of proof to the proponents of an activity; exploring a wide range of alternatives to possibly harmful actions; and increasing public participation in decision making".[85]

The issue of what constitutes evidence is debated, but there is clearly a hierarchy of evidence, ranging from meta-analyses of randomised controlled trials as the gold standard, to what is called tacit evidence, including expert opinion, the values and habits of policy makers, or the views of those with experience of an issue. Such information can be useful in evidence-informed decision making, as WHO proposes,[86] and is particularly relevant to research involving unhealthy commodity industries, where openness to multiple sources of evidence is important. For Knai and colleagues,[52] "there is a shared strategy across unhealthy commodity industries to shape both scientific evidence and narratives about a sub-optimal public health evidence base, to suit their interests...a broader conception of what constitutes 'good' or 'good enough'

	Responsible gambling framework	Public health framework
Focus	On individuals who gamble: so-called problem gamblers	Focus on population: gambling harm
Scope	Regulation of individual behaviour	Regulation of systems, products, and environment
Disorder model	Disease model	Commercial determinants of health, social determinants of health, and legal, political, and environmental determinants of health
Main emphasis	Freedom of choice, consumer sovereignty, caveat emptor regulation	Freedom from harmful commodities, consumer protection regulation
Range of interventions	Largely downstream, individual-level interventions and treatment; some education programmes	Uses a range of interventions; focuses on upstream determinants of harms and also includes midstream and downstream efforts
Where effort and resources are maximised	Much effort on treatment and some education and social marketing	Incorporates treatment effort, but also emphasises the importance of harm prevention, early intervention, and harm minimisation
Characteristic interventions	Education, social marketing, signage, referral to therapies, codes of conduct, self-exclusion options	Limiting accessibility and availability, pricing (where applicable), focus on product characteristics, mandatory precommitment, limiting or prohibiting marketing and advertising
Evidence base	Modest or poor for responsible gambling tools; evidence base developed for efficacy of cognitive behavioural therapy for treatment and some other therapies (but note issues with high attrition)	Well developed in analogous areas (eg, alcohol), though requires adaptation to apply to gambling harms; emerging evidence of effective population-level interventions
Regulatory orientation	Self-regulation with little oversight, industry self-reporting, and voluntary codes of practice	Regulatory specificity and effective enforcement
Ecological frame	The so-called problem gambler	Environment, commercial determinants of health, social determinants of health, operators, and multiple government agencies
Priority focus	Responsible users	People with lived experience of harms, communities, and societal impacts

Table 1: Comparison of gambling policy paradigms

evidence in this field is required, one which embraces a wider range of research. This will require the integration of mixed methods from diverse sources and disciplines including quantitative and qualitative traditions."

As Weiss[87] has argued, the need for more research can be exploited by the industry for tactical purposes, mainly to delay action. Public health actors need to enhance their own playbook to counter this tactic where unhealthy commodity industries are concerned.[88] "The key feature of science is not measurement (this is just a tool) but understanding", noted Pearce.[89] This enhanced understanding includes specific focus on the products and practices deployed by the commercial gambling industry and how these actions fit within wider political, economic, and legal determinants of gambling. The following sections consider these aspects in detail.

The commercial determinants of gambling

Kickbusch and colleagues defined the commercial determinants of health as the influence of corporate activities on individual and social wellbeing.[50,90] Applied to gambling, the term functions as an umbrella for various commercial practices that the gambling industry shares with other unhealthy commodity industries, such as alcohol and highly processed foods.[91]

The commercial determinants of gambling are increasingly well understood. These determinants include various corporate practices designed to influence consumer behaviour, such as marketing and product design. The commercial determinants of gambling also include strategies described as a corporate playbook, including political framing, lobbying, and industry influence over research.[91–93] Corporations have a fiduciary responsibility to maximise profits for their shareholders,[36,94] but the consequences of profit maximising behaviours by commercial gambling operators can include substantial harm (externalities) that is borne by consumers and their families, communities, and society generally.

The business model of commercial gambling relies disproportionately on a small proportion of users who consume a substantial proportion of the products and generate the majority of industry profits.[95,96] The so-called addiction surplus[97] is particularly apparent in connection with the most harmful gambling products and formats, including, but not limited to, electronic gambling machines (EGMs) and casino style games (especially the online versions).[26,98] Pareto estimates of Canadian gambling company data showed that the top 20% of most active people who gamble account for 92% of sports bets or 90% of online casino activity.[99] A US study showed that in sports betting, 5·7% of people who gamble accounted for 80% of spending, whereas for online casinos, 4·9% of those who gamble accounted for 80% of revenues.[100] Similar concentration effects were recently evidenced in Connecticut, USA.[101]

These so-called vital few are generally also the most disadvantaged and the most likely to experience gambling harms.[26] Multiple studies have shown that both gambling consumption and the tax revenues associated with

gambling are regressive in nature.[28,55–60,102–104] The capacity for gambling to exacerbate or entrench disadvantage creates substantial ethical challenges for governments.[105,106] Even though governments recognise the need to regulate gambling for public interest purposes (as discussed in the legislative analysis section in this Commission), they frequently develop some degree of dependence on gambling revenues, whether directly through taxation, or via use of gambling revenues for public or social purposes.

In the following sections, we discuss practices used by gambling operators and the gambling industry to shape individual gambling behaviours, as well as regulatory action, and wider societal framings of gambling issues. We begin with the broad ecosystem surrounding the commercial gambling industry. We then examine gambling products and commercial practices, and finally turn to the broader political–economic and policy contexts that shape the ways the gambling ecosystem operates and how these contexts are in turn shaped by the gambling ecosystem.

The commercial gambling industry and its ecosystem

The growth and existence of the commercial gambling industry depends on its relationships with a wide network (or ecosystem) made up of other commercial actors and surrounding structures. These include financial services firms, communication systems, and information technology, media, and sports organisations and charities, as well as legal, regulatory, and administrative systems.[35,36] The commercial gambling ecosystem thus extends far beyond the operators that make up the industry itself.

Gambling operators buy software and hardware from game designers and manufacturers. Gambling software development is a rapidly growing industry, such that some software companies represent some of the largest corporations in the gambling sector globally.[107] Gambling software includes various products ranging from gambling apps to supporting software, streaming technologies (eg, live casinos) and their control programmes, betting software, payment software, random number generators, and programmes related to result determination (displaying results, determining bonuses, determining results, calculating winnings).[108,109] In some jurisdictions, including the UK and Sweden, gambling software developers are required to obtain a Business to Business license.

The ecosystem also includes producers of information and communications technologies, as well as marketing and data systems that are not directly linked to gambling products. International financial systems are crucial for the instantaneous transfer of funds—often across platforms and jurisdictions—between people who gamble and operators. Fintech companies provide online banking and use new technologies (eg, artificial intelligence [AI] algorithms) to produce personalised financial services. These companies might also use decentralised

finance banking apps and blockchain technology to decentralise and anonymise transactions. The online gambling industry uses such technologies widely for payment intermediation.[110,111] Financial services companies provide credit for individuals who gamble. At the same time, financial institutions might connect with gambling corporations by investing in them as shareholders.[36,110,112] Banking data shows a strong connection between gambling consumption and the uptake of high-cost instant loans or pay-day loans—another segment of the financial services industry.[113]

The gambling ecosystem involves relationships with mass media, social media, and strong ties to the sports industry for product promotion and partnerships. Sports leagues, teams, and individual athletes are widely sponsored by the gambling industry.[114,115] Gambling advertising is disseminated across social media platforms and promotes both traditional and emerging gambling products (eg, betting on e-sports).[116]

Influencers are online personalities that have "the power to affect the purchasing decisions of others because of his or her authority, knowledge, position, or relationship with his or her audience".[117] Influencer marketing is particularly prevalent in sports betting promotion, where the boundaries between promotional and entertainment content are often unclear.[118,119] Such forms of influencer marketing, as well as broader social media advertising, are particularly visible to children and young people.[116]

Governments and their administrative agencies, including regulators, associate with gambling operators in various ways and thus function as a part of the ecosystem. Governments can have multiple roles: as regulators, as providers, and as beneficiaries of gambling. State-owned gambling companies often contribute over 50% of their gross gambling revenue back to the state or to other earmarked public causes.[35] Privately owned licensed companies pay a share of their gross gambling revenue back to shareholders, while also contributing to state revenues through taxation and license fees.

Weak regulatory controls are often observed where governments have developed vested interests in commercial gambling operations.[105,120,121] Regulation is further undermined by the paucity of resources available to regulatory bodies, and their resulting inability to adequately address technological developments in the industry (as discussed later in the section on regulation). The task of regulatory oversight is further complicated by the presence of third-party regulatory structures (eg, test houses that ensure compliance with product standards), which have become increasingly commonplace and function as intermediaries between the gambling industry and regulators.[122] The focus of these third-party regulatory structures is often narrow. For example, test houses focus on product standards in relation to transparency and fairness, but are not deployed to focus on safety.

An example of the complex inter-relationships within the commercial gambling ecosystem is provided by in-play betting, which offers bets on a range of events while a sports match is underway. This intensive form of betting is facilitated by an online infrastructure whereby real-time information is fed from commercial sporting data companies, supported by sports leagues and teams, to bookmakers and then from bookmakers to consumers via smartphone-based or web-based applications. Contemporary sports betting is thus transformed into a high-speed, continuous form of betting, which is likely to be associated with increased risk of harms (panel 4).[128] The range of financial and commercial partnerships that are involved in delivering this in-play product creates a network of commercial co-dependencies tied to maintaining and promoting the interests of the commercial gambling sector.

The interdependencies that make up the gambling ecosystem expand the power and reach of the gambling industry itself, making its products widely accessible and its practices deeply embedded. We will now turn to these products and practices.

Commercial gambling products
Product type and characteristics
Commercial gambling is provided in a range of different products, some of which incorporate features that generate more harm than others (panel 4). These products can be provided in land-based as well as online formats. Major forms of commercial gambling include: casino-style forms, including table and card games, such as baccarat, blackjack, sic bo, fan tan, roulette or boule, craps, and poker; table games are also offered in fast, automated electronic formats that enable continuous use, as with electronic gambling machines (EGMs); EGM forms, such as video poker, video lotteries, slots, and poker machines; sports betting on a range of activities, such as football, cricket, rugby, and horse and dog racing, but also on some newer forms of activity, such as electronic sports (e-sports), and any other competitive game; lotteries, such as national or sub-national lotteries, regularised subscription or automated entry lotteries, keno, scratch tickets, prize draws; and bingo, traditionally a number game operated for charity, but increasingly commercialised and digitised.

Facilitated by its commercial ecosystem, the gambling industry is increasingly shifting towards digital-first products. Substantial segments of the industry are migrating land-based products to online formats and mobile platforms, as well as developing entirely new digital offerings (eg, in-play betting, hourly lottery draws). Online and app-based casino, EGMs, and sports betting products are the fastest growing industry sectors globally, with revenues forecast to grow from US$75·4 billion in 2021 to $205·6 billion in 2030.[6] Given the association between online gambling formats and gambling harms, these trends should be seen as important.

> **Panel 4: Features associated with high-risk gambling products**[95,123–127]
>
> - High speed and high event frequency
> - High intensity and uninterrupted rhythm, including continuous or in-running play, high payout intervals, and multiple stake opportunities
> - Sensory characteristics, such as visual and auditory stimuli
> - Reward characteristics or reinforcement, such as intervals of paybacks, jackpots, bonuses, return to player ratio, in-game features, or odds of winning
> - Payment or monetary characteristics, including bet sizes or forms of payment, automated subscriptions, depositing and withdrawal systems, and access to money
> - Near misses and losses disguised as wins (eg, winning back less than the original stake)
> - Information characteristics, such as player involvement, messages suggesting control of chance, or ease of gambling
> - Availability-related characteristics, including both temporal and geographical availability and accessibility

Product development and design
To maximise profits, gambling corporations aim for their products to be used by the largest possible number of users for the greatest timeperiod.[129,130] Gambling companies also compete for market share, particularly in online environments. Intense competition over the small but profitable proportion of consumers who gamble at high levels pushes companies to compete on the attractiveness of the products that they provide.[130,131] Gambling companies engage in a continual process of product development to attract customers and hold their attention for long periods.[130]

The drive for profit results in the production of faster, more intense, opaque, and (for the operators) profitable forms of gambling.[132] As outlined in panel 4, many gambling products include design mechanics that encourage repeated and continued engagement. Termed "addiction by design",[130] many of these features are most evident within continuous forms of gambling products, such as EGMs and casino-type formats (both online and land-based versions). The aim of this design is to maximise the time spent on each product or device. Some have argued that EGM products are designed to encourage so-called play to extinction, the point at which users have exhausted all available funds.[130] Introduction of these features has made traditionally less harmful products more intensive. The frequency of lottery draws has increased. Similarly, bingo has been transformed into a highly intensive online product, as have hybrid products, such as slingo (a combination of bingo and slots).[133] Corporate bookmakers offer increasing personalisation of sports bets and betting combinations, as well as shifting their offers more towards in-play betting.[131]

Digitisation has accelerated the development of products and extended their reach. In particular, the migration of gambling products onto mobile devices, such as smartphones, has made them more broadly accessible than ever before and at any time of day. In digital environments, platform design has an important role in making gambling products accessible and attractive. Persuasive design techniques and interfaces are used to shape consumer behaviour and to maximise user engagement. Data-driven algorithms are used to target the promotion of more attractive content to specific users.[134,135] Software design features can include ease of use and attractiveness, and might include functionality enabling those who gamble to communicate with operators (eg, live chats).[134,135] In contrast to other areas of product safety regulation, there are no universal technical standards or consumer protection regulations to govern the safety of gambling products, despite increased understanding of product characteristics associated with higher risks of harm.

Boundary spanning products and consolidation
The industry's need to attract new customers, coupled with innovations in technology, has driven the production of hybrid forms of gambling products. Gambling-like products are emerging from outside the traditional gambling industry.[9] Emerging hybrid formats include products that converge with other sectors, such as financial investment and gaming. Gambling is often embedded, directly or indirectly, into the architecture of many video games. Loot boxes are an in-game randomised reward mechanism within video games that involve a purchase and a chance-based outcome. Rewards can include in-game currency, power ups, or customisation features.[136] Loot box purchasing is common among gamers and is associated with problematic gambling.[136] Alongside loot boxes, skin betting is another emerging gambling-like product. Skin betting consists of digital items won or bought within video games (ie, skins) being used as collateral for wagers on websites outside the original video game architecture. These practices are popular among young people.[137,138] A longitudinal study of young adults found that skin betting was strongly associated with long-term continuance of problematic gambling behaviours.[137]

The rapid growth of online video gaming tournaments has also enabled the propagation of e-sports betting, through which consumers are able to bet on the performance of professional player. E-sports bets are commonly broadcast live and are accompanied by intense virtual advertisements in chatrooms or social media platforms that are designed to appeal to young people. Engagement in e-sports betting is associated with high rates of traditional gambling and high rates of problematic gambling.[139,140] E-sports betting is available for various forms of payment, ranging from real-world currency to site-specific currencies, including skins, and cryptocurrency.[9] In addition to their use as a source of betting currency, crypto markets can also function as betting-like interfaces.[141]

Cross-selling (ie, marketing additional products to existing customers) is a common practice deployed by gambling corporations. However, cross-selling now also straddles the divide between gambling-like products (eg, gaming products with some gambling-like features) and gambling products. The evolution of sports betting within the USA provides an example. Before the extensive legalisation of sports betting, the USA had an important market for daily fantasy sports betting (an extension of fantasy sports competitions), led by companies such as FanDuel and DraftKings, with as many as 9% of Americans taking part in daily fantasy sports.[9,142] As sports betting became legalised in many states in the USA (from 2018 onwards), FanDuel and DraftKings converted their business models towards for-money sports betting, with both becoming leaders in the US-sports betting market. Their success attracted the attention of more traditional gambling conglomerates, some of whom have added these firms and products to their rostrum.[143] The key commodity held by FanDuel and DraftKings was their database of sport-interested Americans who could be converted to sports betting for-money as soon as it was legalised.[9]

Social casino games follow a similar model. Social casino games are played online for digital rather than fiat currency. These products generate profit via in-game purchases and advertising revenue, but also reinforce brand-recognition and loyalty, providing the potential to convert customers into real-money casino gamblers if the operator, or their commercial partners, were to push the business in that direction.[9] In Australia, where online sports betting is legal, but online casino games are not, gambling operators have developed social casino games based on their most popular slot machine brand titles, arguably acting as a form of surrogate marketing, whereby the brand, but not the product, is promoted.[144] These forms of emerging and gambling-like products are increasingly well established, but poorly regulated globally,[145,146] with little enforcement and inadequate provision of standard consumer protections, such as age verification.

Commercial gambling practices
Marketing: advertising and sponsorship
Like other industries, marketing, advertising, and sponsorship are key for the growth of commercial gambling. Marketing expenses are among the main cost elements in gambling companies' income statement reporting.[35] Advertising is particularly important in jurisdictions with licensed and competitive markets, where companies vie for customer recruitment and retention. In the USA, spending on online gambling advertising was USD$1 billion in 2021, and was projected to grow in line with the rapid expansion of the industry.[147]

Several reviews have assessed the impact of product and brand advertising and gambling marketing on behaviours.[23,148,149] Collectively, these reviews suggest that

exposure to gambling advertising and marketing is positively correlated with gambling behaviour and gambling intentions; there is evidence of a dose–response relationship and that exposure to marketing promotes high-risk gambling behaviours.[148] Population-level studies confirm that exposure to advertising and marketing is associated with increased rates of problematic gambling[25,150–152] and that advertising and marketing can prompt unplanned spending, particularly among those who are experiencing gambling harms.

Analysis of marketing content shows that the following features are commonly used: displaying gambling in a positive light, promoting narratives of gambling as leisure, and normalising gambling; appealing to children or young people, including through the use of cartoons or celebrities; promoting odds or complex bets with higher potential payoffs; and advertising financial incentives, such as bonuses or free bets.[153] Many jurisdictions regulate gambling marketing content, especially messaging deemed to be harmful (eg, content with direct appeal to children).

Commercial gambling companies have developed global commercial partnerships with the sporting sector. These commercial relationships are analogous to those formed between sports organisations and the tobacco and alcohol industries, where sponsorship of sports by those industries has long been acknowledged to obscure the harmful impacts of their products, to enable targeting of the youth market, and to circumvent advertising bans on broadcast media.[154,155]

A review published in 2021 identified sport as a major target for gambling operators, with various social media strategies seeking to influence gambling behaviour.[156] Gambling companies are now primary sponsors for major sports teams and leagues, using the profiles of teams and players for promotional purposes.[155] In the English Premier League, 40% of shirt sponsors during the 2022–23 season were gambling companies.[157] Public attention has focused on mainstream sports, but sponsorship extends to all sports, including professional e-sports leagues and championships that have distinct appeal to young audiences.[158] In Australia, research has documented the effect of such arrangements, highlighting normative changes to young men's perspective on gambling.[152]

In many jurisdictions, increased broadcast advertising and sports sponsorship by gambling companies has met resistance and calls for increased restrictions. Public pushback was evident in Canada where polling data showed that 48% of Canadians supported reductions in gambling advertising after advertising became widespread following the federal legalisation of single-game sports betting in 2021.[159] Public concerns about the impacts of advertising and marketing have also seen several European jurisdictions take action to ban or restrict advertising and sponsorship, including Belgium, the Netherlands, Germany, Spain, Italy, Georgia, and Romania.[160] In Spain, gambling sponsorship for football teams in the Spanish LaLiga or Secunda Division was banned, starting from the 2021–22 season.[157]

Social media and influencer culture
The gambling marketing is now intertwined with social media, influencer, and streaming culture. Legal definitions and frameworks have typically lagged behind developments in social media marketing, complicating the task of regulating advertising and marketing.[119] Gambling companies and marketing affiliates use social media accounts to advertise specific products and offers, and to promote brand identity and awareness. This practice can complicate accountability to existing regulations on advertising and marketing. Analysis of 417 Twitter accounts belonging to commercial gambling companies and their partners found that these accounts posted 536 339 tweets advertising specific bets or gambling opportunities over a 9-month period in 2018.[116] A further 350 000 content marketing tweets, which aim to stimulate interest in products and brands without marketing them directly, were sent from these same accounts. This study found that the five biggest operators in the UK each post, on average, 78 tweets per day, with substantial increases around key sporting events.[116] Young people often interact with this type of content. A UK study showed that 161 (73%) of 222 individuals aged 18–24 years and 140 (63%) of 221 individuals older than 25 years reported having seen gambling advertisements on social media at least once a week.[161] Another UK study found that 317 (28%) of 1132 children aged younger than 16 years engaged with e-sports gambling advertising on Twitter.[116]

Social media advertising can be paid for directly or can be organic (and not paid for). Paid advertising uses data analytics on consumer preferences to target and personalise marketing communications. Targeted groups might be those who follow gambling-related content or specific demographic groups, such as young males, who can then be continuously exposed to gambling advertising content.[162] Organic advertising consists of posts on social media accounts (often corporate accounts), designed to be appealing enough for users to share within their own contact networks, and with the hope that such posts might go viral.[119] These forms of social media advertising increase product visibility while blurring the lines between advertising and other content.

Gambling companies use influencer culture to promote their brands and products. For example, an emerging Brazilian online casino brand partnered with a famous footballer, who live streamed a betting session via his account with a leading streaming service,[163] despite the fact that this streaming service had theoretically banned casino and slot streaming. Such is the importance of influencer and live streaming in promoting gambling products that gambling industry executives have developed platforms which continue to allow such services.[164] Other macro influencers include

sports betting tipsters or affiliates who are paid by gambling operators or bookmakers to drive new customers to their platforms. Popular tipster channels can have over 100 000 followers.[165,166]

Gambling companies also pay nano-influencers and micro-influencers (ie, small-scale influencers) as slot and casino streamers on social media platforms. Concerns have been raised about gambling streaming cultures, especially the risk that children might be exposed to age-inappropriate content.[167] In Indonesia, several small-scale influencers have been arrested for their links to illegal advertising of online gambling sites through social media or messaging services. All gambling activities are illegal in Indonesia, and the activities of these influencers have been linked to international organised crime.[168]

Regulators are attempting to deal with the phenomenon of influencer marketing. In 2023, France banned influencer marketing of harmful products, including gambling.[169] In Finland, the gambling regulator, National Police Board (Poliisihallitus), ran a publicity campaign on TikTok, Instagram, and YouTube to raise awareness of illegal influencer marketing of gambling.[170] In Denmark, the gambling regulator, Danish Gambling Authority (Spillemyndigheden), partnered with Facebook to block posts and groups illegally promoting gambling.[171]

Profiling, targeting, and direct marketing

Digitisation has enhanced the ability of gambling operators to capture detailed data about the performance of their products and the behaviour of their customers. Online gambling companies precisely target consumers using predictive algorithms, personalisation, and persuasive technologies, and train sophisticated algorithms to enhance an individual's user experience.[156,172] Targeted forms of marketing include capitalising on sports fandom and promoting bonuses and other financial incentives with messaging, varied across users and user groups according to their revealed preferences.[23,173]

Data on consumers are shared widely across the gambling ecosystem and are used to profile customer behaviours. Some data sharing practices help to satisfy licensing obligations, such as fraud prevention and detection. Other practices serve purely commercial interests. An investigation in 2022 revealed that one British online gambling operator had shared personal consumer data with 44 third-party organisations (including companies specialising in fraud prevention analytics, in marketing, personalisation and profiling as well as social media companies).[174] Gambling companies and affiliate marketers can use third-party data houses to identify new potential customers and target them.[175] Researchers have also found data sharing practices between and within commercial parent groups, where registration with one brand results in automatic sign-up for another brand or product, or triggers direct marketing from other companies within the same parent group.[176]

Gambling regulators, concerned about the effects of digital surveillance infrastructures,[177] have sought to restrict the ways in which gambling operators deploy data to target individuals or groups. In 2022, Belgium announced prohibitions on gambling marketing that targets young individuals, excluded players, and any individuals who have gambled in the past but not for some time.[178] In the Netherlands, legislation prohibits the targeting of marketing offers using data on player preferences.[179] Several countries, including Norway, now require gambling companies to obtain customer consent before they use any personal data for marketing purposes.[180]

Online choice architecture

Online gambling companies deploy online choice architecture to promote their products and encourage consumers to spend and keep spending.[176,181,182] Online choice architecture includes design features for websites and apps that influence consumer choices and make it more difficult for consumers to stop or limit their engagement. Such features become especially harmful when they use so-called dark patterns and manipulative personalisation. Dark patterns are user interfaces that exploit cognitive biases and manipulate consumers into making choices against their best interests.[183,184] These design features are particularly harmful when applied to high-risk online gambling. Reviews published over the past 5 years[176,181,182,185] have found evidence of nagging behaviours—which include frequent pop-ups inviting play, invitations to deposit more at log out, repeating bets, and prompts to keep gambling after a round or session ends. Other manipulative practices include seeking to manipulate a consumer's emotions in communications, and making the acceptance of offers or placing of bets look appealing. Sludging involves making it difficult for the consumer to take certain actions, like unsubscribing from marketing, closing an account, or making withdrawals from gambling accounts (while making deposits to those accounts remains easy and straightforward).

The European Commission Directorate-General for Justice and Consumers argues that the outcome of such commercial practices is degradation of trust in digital markets and exploitation of consumer vulnerabilities.[182] Gambling regulation needs to take account of the opportunities afforded to gambling operators by digital infrastructures and advanced analytics, and to monitor closely the novel ways in which gambling corporations capitalise on these technologies to produce faster and more intense gambling products and more effective ways to market them. Keeping up, as a regulator in this field, is made harder by the rapid pace at which the industry designs and promotes new digital products and by the appearance of hybrid products that do not fit easily within traditional product categories and legal definitions.

The political economy of commercial gambling

The commercial gambling ecosystem operates within a broad political and economic system that sets the limits for what it can and cannot do. Neoliberal policies designed to encourage economic growth, competition, and privatisation, and that are based on light-touch, self-regulatory systems[90,91,186] have facilitated the growth of a small number of immensely powerful transnational corporations, not least within unhealthy commodity industries.[53] This environment has also provided considerable impetus to the growth of the commercial gambling ecosystem and facilitated the digital transformation of industry products and practices. In this system, consumer protection is assumed to rely on consumer choice, rather than on strong regulation; and the emphasis on consumer responsibility and consumer sovereignty act to deflect attention away from the products and practices of the gambling industry and the nature of the wider commercial environment within which it operates.[91,186] In this environment, the gambling industry has been able to reinforce and consolidate its power and influence.

The corporate playbook

The gambling industry and its ecosystem partners use their collective political and economic power to engage in strategies that protect their own business interests. The collection of such methods has been termed the corporate playbook.[88,91,186] Research across a range of unhealthy commodity industries outlines deployment of the following tactics to protect business interests:[88] attack and undermine legitimate science (eg, fund counter-studies, plant doubt, insist on the complexity of the issue, distort evidence and data, encourage research that aligns with industry narratives, etc); frame and reframe discussion and debate (eg, promote narratives of individual responsibility and consumer freedom over so-called nanny state regulation, and the idea that business is part of the solution to the problems generated by commercial activity); intimidate and vilify critics (eg, threats, smear tactics, lawsuits); camouflage actions (eg, create the appearance of independence, use front groups as spokespersons for the industry); influence the political process (eg, lobbying, political donations, block and weaken regulation, keep the revolving door turning); develop and propose corporate alternatives to government policies (eg, promote voluntary self-regulation and codes); deploy corporate social responsibility (eg, donations to good causes) to improve corporate image; and contest, avoid, or evade regulation and restrictive policies (eg, challenging policies in courts, exploiting legal loopholes, and committing violations).

Such strategies have been deployed by the gambling industry. These strategies have sought to frame public and policy perceptions of gambling, shape the evidence on which policy is based, emphasise the role of corporate social responsibility, exercise political influence, and promote self-regulation over prescriptive regulation.

Framing

Framing is a powerful aspect of commercial influence and is used to shape normative understanding of gambling. The industry frames its activities in ways that favour commercial and shareholder interests. The industry presents gambling as a source of employment and state revenue and a form of leisure and harmless fun for the majority who gamble responsibly.[43,187–190] In this responsible gambling paradigm, harms are framed as the consequence of poor choices or individual deficits in self-control experienced by a minority of vulnerable individuals, rather than arising from the nature of products and commercial practices.[186] This kind of framing is used across several unhealthy commodity industries—such as alcohol and ultra-processed foods—as a means of aligning harm with consumption patterns rather than supply patterns. Such framing serves to divert "attention from the corporate practices, economic systems and political decisions that produce harm in the first place".[186,190]

Stressing what are presented as the benefits of gambling, as well as the problems, influences how governments think about trade-offs involved in gambling regulation, and the options for control that they are likely to consider. A review of European gambling policy found four competing framings for gambling: public health perspective; consumer protection-related perspective; economic benefits, and entertainment value of gambling.[191]

Industry narratives stressed the economic benefits and entertainment value.[191] Tension arises when policies simultaneously aim to protect public health and promote revenue generation—especially given that industry revenues and profitability rely disproportionately on those individuals who are harmed.

By arguing that restrictions on corporate practice would restrict the freedoms of the so-called responsible majority to protect the so-called vulnerable few, the gambling industry can label additional governmental controls as the (unwelcome) exercise of paternalism, articulated in the pejorative term nanny state. This kind of framing is a common tactic across unhealthy commodity industries.[52]

As a counter to such labelling, gambling regulations seldom, if ever, lay down restrictions on what individual consumers can and cannot do. Rather, they restrain corporations in terms of what products they are allowed to offer, and to whom, and what means and methods they might use in so doing. Restraining corporate behaviour should not be confused with removing individual freedoms.

Bearing in mind the role of the state to protect citizens from harm, it is important to note that policy choices relating to the protection of populations almost never

lead to binary, all-or-nothing, responses. Societies choose degrees of intervention, or protection, which some interests might portray as paternalistic. Societies seek to balance freedoms of action (for some) with freedoms from harm (usually, for others). British philosopher Isiah Berlin distinguishes negative freedoms, the license to act in unrestrained ways, from positive freedoms, freedom from harm or potential harm. Applied to gambling, negative freedom relates to freedom for the industry to act in unrestrained ways, free from regulation, whereas positive freedom relates to the freedom of the population not to be harmed by gambling.[192,193]

Mature democracies all exercise degrees of so-called paternalism with respect to virtually every major public health risk. Consumer protection law operates to remove dangerous products from the marketplace, especially under conditions of information asymmetry wherein consumers could not be expected to know just how dangerous some products might be. The policy puzzle in controlling gambling harms involves finding an appropriate or judicious balance: allowing some freedom of action for corporations and providing some level of protection from harm for individuals and communities. Outright rejection of so-called paternalistic interventions would leave corporations totally unrestrained, and lead to substantial avoidable harm.

Shaping the evidence base

Shaping the evidence base is an important feature of the corporate playbook. Industry actors fund academic projects, formulate research questions and agendas that align with their perspectives and preferences, and attempt to discredit findings that are critical of their practices.[194] The paucity of independent funding for gambling research has exacerbated this situation by creating a funding gap into which the industry has moved. As a result, the body of evidence that informs policy and regulation remains at best partial, and at worst biased or misleading.

All these activities have helped develop an understanding of gambling that is built on two key propositions: that gambling is a productive and beneficial form of economic activity, and that gambling is a harmless recreational pursuit with only a small minority of so-called problem or disordered gamblers experiencing problems.

Choices among research disciplines and research methods can reinforce these assumptions. For example, research informed by clinical and psychological perspectives focuses on individual characteristics of people experiencing problems with gambling, exploring cognitive, emotional, and personal characteristics that appear to increase the likelihood or severity of harms suffered.[48]

Research that measures the prevalence of gambling disorder, or so-called problematic gambling, throughout populations or population segments can be used by industry to keep the focus on individual and consumer behaviour.[195] Population estimates of gambling disorder or problematic gambling from prevalence studies, based on diagnostic screens, find rates of gambling disorder of around 1% of the population.[196] Such estimates are repeatedly used by the gambling industry to conceptualise harms as affecting a tiny minority of people. But this so-called tiny minority of people is not a tiny minority of the people who gamble. Many people do not gamble at all, or gamble only occasionally; so entire population estimates conceal the extent of harms among those who do actually engage in gambling, which is much greater.

For these reasons, the Australian Productivity Commission concluded that using population estimates for policy purposes was essentially misleading.[197] In addition, population-level studies only measure the small subset of harms directly and immediately experienced by those who gamble, generally omitting measurement of harms to others and long-term effects experienced over the course of a lifetime. A focus on population prevalence estimates of gambling disorder, as currently conceived, poorly articulates the full scale of the harms of gambling and the risks associated with specific gambling products.[195] As discussed in the next section, comprehensive means of monitoring the impacts of gambling throughout populations, using approaches that capture the full extent of its harms and the differential impacts of product types, are required. Current approaches, with all the shortcomings described above, have failed to provide an adequate counterpoint to the responsible gambling framing. As a result, industry framings retain their power and continue to deflect attention away from commercial practices and harmful products.

The gambling industry also exercises control over the types of data made available for research purposes. Gambling operators hold vast amounts of consumer data, but are not generally required to pass them along to researchers seeking to monitor patterns and trends.[160] The gambling industry, therefore, might choose to make data available to selected researchers and for selected research projects—an arrangement that might preclude research that challenges industry narratives or criticises their practices.[194,198]

Asymmetries of information make it difficult for researchers and policy makers to gain a clear understanding of costs and benefits in relation to the gambling industry. Economic benefits are apparent and readily quantifiable. Data on tax revenues, employment figures, and financial contributions to earmarked causes are both available and persuasive.[199,200] Commercial entities often stress that strengthening regulation of the industry would have negative effects on the economy by reducing gambling revenues (despite evidence suggesting that the impact might be somewhat mitigated by substituted expenditure in other entertainment sectors[201]). In comparison with the economic benefits, the social costs of gambling are much harder to estimate and quantify.

Attempts to quantify costs have largely focused on the social cost of disordered gambling which, for all the reasons previously cited, necessarily and substantially underestimates the full impact.

In the UK, the costs associated with problematic gambling were conservatively estimated at £1·4 billion, not accounting for the effects felt by individuals who do not gamble, on communities, or on society more broadly.[202] In 2010, the Australian Productivity Commission estimated the social costs of so-called problematic gambling in Australia to be at least AUD$4·7 billion, to be weighed against benefits (eg, tax revenue and enjoyment of so-called recreational gamblers) of at least $12·1 billion.[197] Estimates of the societal costs of so-called problematic gambling from other countries range between 0·3% and 1·0% of gross domestic product.[203] In the Australian state of Victoria, a 2017 study estimated the social costs of gambling to be $7 billion,[204] substantially higher than previous estimates of the social costs of problematic gambling alone and higher than estimates of state revenues from gambling taxes.[79,197] Attempts to capture a more complete picture of social costs will naturally result in substantially higher estimates than those produced with a narrow focus on problematic gambling. More realistic estimates should, in turn, change the picture and shift perceptions about the significance of the costs.

Political influence

Framing gambling as an enjoyable leisure activity with minimal risks provides the gambling industry license to engage vigorously in lobbying and other political activity. Research has documented gambling industry influence across the policy cycle, affecting policy formulation, adoption, and implementation.[191] Gambling industry actors have enormous financial resources at their disposal.[205]

Wide ranging lobbying efforts in the USA were used successfully in campaigns to legalise sports wagering and reduce tax rates, as reported by Lipton and Vogel in their 2022 *New York Times* report.[206] In 2010, in Australia, the gambling industry claimed to have an AUD$40 million campaign budget to resist reforms to EGMs, describing proposed changes as "un-Australian".[207,208] In the UK, gambling companies, broadcast media and sporting governing bodies made substantial representations to the UK Government regarding the damage that bans on gambling advertising would do to their businesses.[209] The value of gambling industry donations, gifts, and offers of advisory and employment posts to British politicians also increased during a substantial review of gambling regulations.[210]

In the USA, a former regulator warned of the risks of regulators accepting industry hospitality, gifts, and prizes, stating that the industry is well aware that an "important tactic in grifting the system is to co-opt the regulators".[211]

The so-called revolving door (eg, offers of employment within the industry for retired or retiring politicians) increases links between the worlds of public policy and commerce.[212] This phenomenon is evident in the UK for example, where in 2020, a former MP and campaigner for gambling reform joined one of the largest online betting companies as an adviser.[213] The WHO Framework Convention on Tobacco Control article 5.3 outlines the need to insulate policy making from commercial and other vested interests.[214] Implementation guidelines of article 5.3[215] include recommendations to develop clear policies for holders of public office to openly declare any current or previous ties to the tobacco industry and to declare any intentions of engaging professionally with the tobacco industry after leaving service (recommendations 4.4–4.5). An Australian study by Robertson and colleagues focusing on the revolving door phenomenon in gambling and other harmful commodities industries showed that over one third of registered Australian Government lobbyists were previously government representatives.[212] As the authors state, direct relationships to the government gave these industry lobbyists better access to political decision making than that available to public health experts.

Promoting industry self-regulation and individual responsibility

Globally, gambling policy has focused mostly on interventions aimed at individuals who gamble, rather than regulating harmful industry practices, products, and systems.[160] Individual self-regulation interventions, based on the notion of informed choice, include voluntary limit setting, voluntary self-exclusion policies, and signposting to sources of help. This individualisation of responsibility[216] in turn becomes a key mechanism in the perpetuation of shame and stigma associated with the experience of gambling harms, which negatively affects the rates at which people seek help, even when help is widely available.[217,218]

Our analysis of regulatory and legislative initiatives in countries that have substantially changed their governance of gambling since 2018 reveals that most of these initiatives replicate or perpetuate the responsible gambling framing, extending options available to individuals that they can choose to take up, or not.[160]

The gambling industry also actively promotes a self-regulatory approach for corporate conduct, emphasising reliance on industry-generated codes of conduct as a means for tackling gambling harms. Industry trade associations (eg, American Gaming Association, Australian Gaming Association, Remote Gambling Association, eCOGRA) have had a key role in generating codes of conduct or codes of practice. A recent analysis of these codes[219] showed that industry stakeholders use them to shape and influence the legal and regulatory environment, while promoting industry legitimacy. In line with industry interests, these codes emphasise individual responsibility for harms with provision of options

for consumer self-help and serve to deflect attention away from harmful products and industry practices.[219]

In addition, gambling industry actors highlight corporate social responsibility measures to gain political and public legitimacy. Corporate social responsibility practices include steps to address environmental or social concerns, including gambling harms. A common pillar of corporate social responsibility policies for the gambling industry is the promotion of so-called responsible gambling.[220,221] Reviews have examined the gambling industry's corporate social responsibility practices, highlighting how gambling operators use corporate social responsibility "only as a tool to further their own interests",[221] use dark nudges,[222] and frame corporate social responsibility materials, campaigns, and public education efforts to focus on individual rather than corporate behaviours.[223] Hence a focus on corporate social responsibility ends up serving the industry's marketing objectives, reinforcing commercial-friendly norms, and avoiding any increase in regulation by authorities.

Conflicted interests
Through these many and varied tactics, the gambling sector and its affiliates promote attitudes, narratives, and policies sympathetic to their own interests, and resist change detrimental to their commercial activities. Economic power thus translates into political power. As is the case with other unhealthy commodity industries, it is vital to unravel conflicts of interests, block improper channels of influence, and expose corrupt or corrupting relationships between the gambling industry and policy makers. In panel 5, we outline our recommended approach to managing conflicts of interests in gambling research and in the policy process.

The epidemiology of gambling and gambling harms

Drawing on a systematic review conducted for this Commission,[224] we outline what is known globally about how many people gamble. We also provide estimates of engagement in any risk, and rates of problematic or disordered gambling for individuals who engage with different gambling formats, thus illuminating the risks associated with different types of gambling. We synthesise what is known about gambling harms, including the potential impact of gambling on progress towards the UN Sustainable Development Goals (SDGs).

Our understanding of these issues is nevertheless limited by the extent and forms of data currently available. Gambling prevalence surveys remain the primary method of collecting data about gambling and gambling behaviours globally, with a range of attendant methodological issues. Estimates produced from these direct methods are lower-bound estimates of actual engagement in any risk and problematic or disordered gambling (panel 2). In other fields, such as illicit drug

research, indirect methods of estimating prevalence are preferred, and have been useful in studying stigmatised forms of drug use. Indirect methods exploit alternative types of objective data—eg, the rates at which people who use drugs seek help or exhibit specific and observable health effects—and then develop estimates of the proportion of people who use illicit drugs who manifest these observable outcomes. These methods produce more robust prevalence estimates and have not yet been applied to gambling research (panel 6).

Prevalence of gambling
We conducted a systematic review of existing population surveys that used random probability sampling methods to derive estimates of the prevalence of gambling behaviours, and of problematic or disordered gambling.[224] The review identified 380 distinct representative samples, covering 68 countries and territories and a total of 3 441 720 individuals.

Overall, 46·2% (95% CI 41·7–50·8) of adults engaged in gambling activity in the preceding 12-month period, with rates higher in men (49·1%, 45·5–52·6) than women (37·4%, 32·0–42·5).[224] Projecting these rates worldwide (and acknowledging the possible distortionary effect of regional variations not captured within existing data), this would lead to global estimates of approximately 2·3 billion adults gambling in the past year, with participation being higher in men than women.

Gambling within the past year was also prevalent among adolescents, despite gambling being age-restricted in many countries.[224] In aggregate, we estimate that 17·9% of adolescents had gambled in the past 12-month period (95% CI 14·8–21·2). Projecting globally (with the same caveat about regional variation), this would equate to roughly 159·6 million adolescents gambling in the past year. There were only 39 studies reporting gender-specific gambling data among adolescents and these showed that prevalence was substantially lower among girls than boys.[224]

Despite the patchiness of regional data available, gambling participation rates do vary by region, both for adults and adolescents.[225] Among adults, rates were highest in Australasia and North America and lowest in Latin America (although only two studies were available from Latin America). This pattern was the same for both men and women. For adolescents, gambling participation rates were highest in North America and lowest in Australia, both for boys and girls.

Engagement in specific gambling activities
We identified 299 studies that reported on the prevalence of specific gambling activities.[224] Although definitions of gambling activities varied between studies (eg, studies in North America often include raffles within their definition of lotteries whereas studies from the UK do not) activities were grouped into common types.[224] Prevalence

Panel 5: Conflict of interest recommendations

The fiscal resources and corporate political activities of the gambling industry provide actors within this industry capacity to exert considerable influence over research and policy agendas. Although the extent of this influence differs between jurisdictions, conflicts of interest (real or perceived) must be well managed to ensure independence, integrity of, and trust in research and policy development; these issues also apply to other public health fields, including alcohol and tobacco. The Framework Convention on Tobacco Control emphasises the importance of protecting policies from commercial and other vested interests. This Commission urges governments to prevent gambling industry actors from exercising influence over policy deliberations or decisions.

Blocking such influence involves the removal of representatives of the gambling industry and its commercial partners from policy making roles; it also requires the development of robust systems to protect all aspects of the policy making cycle—from consultation and formulation to implementation—from distortionary commercial interests.

Governments should further this ambition by developing and implementing wholly independent structures and systems for funding gambling research activity; in many countries, such independent structures are absent. Given the generally low levels of available funding, researchers might be drawn to alternative sources, including funds directly or indirectly provided by the commercial gambling industry.

In line with the Framework Convention on Tobacco Control principles, industry funding of research (whether directly or indirectly via industry bodies or otherwise) is contrary to public health principles. Such funding, along with other types of collaboration, creates conflicts of interest that are difficult or impossible to manage. Any perception that researchers rely on industry for research funding, data, or information undermines trust and confidence in the independence of research outcomes. To overcome these issues, we recommend:

Transparency
All sources of funding, collaborations, data sources, and other support must be comprehensively, accurately, and publicly declared at all stages of research development, reporting, and utilisation of results; a declaration should also be made per the requirements of clinical trial registries and publication guidelines, such as the Committee of Publication Ethics, the International Committee of Medical Journal Editors, or the International Society of Addiction Journal Editors.

Independence
Ensuring that research is independent and trusted requires careful management of research funding, collaborations, and interactions with industry.

Funding
Accepting funding from the gambling industry (directly or indirectly) creates a conflict and presents a serious risk of dependence. In our view, researchers should not accept funding for research from the gambling industry, including from organisations or charities where gambling industry actors have influence. Provision of independent resources for gambling research and treatment is the responsibility of governments or independent governmental agencies that apply clear and transparent guidelines regarding sourcing and application of funds. Funding that derives from levies and hypothecation of gambling revenues should be protected through legally binding statutes from any form of industry influence. Such provisions are necessary to ensure that the industry cannot claim to have made charitable contributions or donations when referring to the ways in which levies, fees, or taxes were used. In many jurisdictions, gambling research and treatment services are funded in part from industry revenues; in such cases, transition to transparent and publicly accountable funding arrangements is necessary, where funds first pass to governments and are then dispersed by governments through health or academic funding agencies.

Collaboration
Researchers and treatment providers should avoid collaboration with gambling industry actors. Where collaboration with an industry actor is necessary (eg, where gambling operators are legally mandated to share data for research purposes), it should be transparently brokered and overseen by independent third parties, such as research funding providers or regulators.

Interaction
Researchers and treatment providers should be aware of the risks associated with interaction with gambling industry actors; these interactions range from receipt of data to co-attendance at events. To minimise the risk of creating dependencies through such interactions, the obligation to provide data to inform research should be required as a condition of gambling operator licensing, and data requests from researchers should be managed transparently and independently by third parties, such as funding bodies, regulators, or relevant government departments; such a system has already been implemented in several countries including Spain, France, and the Netherlands. Co-attendance at events might be necessary or unavoidable in some circumstances. Examples include participation in government consultations, where industry representatives are also present, and attending conferences or other events during legitimate research activities. Interactions of this nature should be declared, and caution exercised to avoid the development of dependent relationships with gambling industry actors. Most conflict of interest forms do not include declarations for these types of interactions; however, we have included them within our own declarations for this Commission, by way of example, as well as good practice, and we encourage others to do the same.

Panel 6: Future opportunities and challenges for monitoring and surveillance of gambling and gambling harms

There are substantial challenges in obtaining robust estimates of the prevalence of and harms related to gambling and problematic gambling using standard representative population survey approaches. Much can be learned from other areas of public health where analogous challenges have been identified and efforts made to respond to them using alternative research methods. Particularly in the fields of alcohol and illicit drug use, orthogonal or independent methods are used to test the robustness of survey-based estimates.

Indirect measurement of the prevalence of gambling and problematic or disordered gambling:
Indirect measurement has been used to estimate the number of individuals who use illicit drugs and the number of individuals who are dependent on illicit drugs.[225] The recommended strategy is to investigate convergence of results from different indirect methods of estimation.[225] These methods use multiple and separate sources of data to indirectly estimate the prevalence of behaviours and experience of harms.[226] Ideally, researchers identify convergence of independent estimates, supporting more reliable inference.

A simple approach to indirect measurement is the multiplier method, which involves multiplying the number of people who receive treatment for gambling in a year (the indicator) by an estimate of the proportion of people who gamble who receive treatment in a year (the multiplier), to estimate the total size of the population who gamble. Other indirect methods include capture-recapture and back-projection estimates.[226]

Indirect methods are less expensive than surveys because they use existing data. The major limitations of these methods include uncertainty about the quality of indicator data and the validity of the multipliers. These problems are usually addressed by making multiple indirect estimates using different indicators of gambling-related behaviours and harms (eg, deaths, number of individuals in gambling treatment, arrests, treatment for complications of gambling), different multipliers, and different methods of estimation. Often a combined estimate is produced from these different sources.[227] This approach requires a data capture infrastructure that can unite disparate sources for integration and analysis. In many countries such data already exist. For example, in many Asian countries (eg, Indonesia) data on interventions for gambling disorder are available within the medical treatment system. Freedom to use such data for research purposes would be beneficial.

Opportunities for monitoring and surveillance:
As in other fields of public health, a broad range of data sources might be used to further elucidate gambling behaviours and related harms. These data sources include: financial data (eg, anonymised banking data); industry data on users and patterns of usage (ie, akin to data obtained from the alcohol industry in many countries) both at the aggregate level and at (anonymised) individual levels; health system data (eg, hospital stays where gambling is noted as an issue, gambling treatment episodes, the results of screening for gambling harms within relevant health-care contexts); and other government data sources where gambling activity might appear as a relevant factor (eg, arrests for gambling-related offences, child protection services data, mortality data, and data on criminal activities). Systems for gathering multiple sources of data to enhance surveillance for tobacco, alcohol, and illicit drug usage already exist in several countries. These systems can act as models for an equivalent system to be developed for gambling and gambling harms. In some cases, these existing systems (eg, on tobacco usage) might already be capturing some data relevant to gambling issues, despite not having been focused on this area of concern. Existing data collection systems might be usefully augmented to capture more information on gambling behaviours and consequences.

rates for participation in different activities varied for adults and adolescents (figure 2). For both groups, lotteries and instant-win lottery products were the most prevalent activities, with nearly half of all adults globally estimated to have bought lottery tickets at least once in the past year (44·7%, 95% CI 42·0–47·4).

Among adults, using EGMs and betting on races or sports were the next most popular activities, although they were estimated to be undertaken by less than one in nine people globally. Our global estimate of online gambling (ie, any gambling conducted online) among adults was 7·8% (95% CI 6·2–9·5). This estimate is likely to be conservative given the recent expansion of online gambling globally (eg, prompted by legalisation across North America from 2018 onwards) and the fact that many of the studies available were conducted before 2016. Current estimates would therefore probably be higher than reported.

Our global estimates show a substantial proportion of adolescents taking part in theoretically age-restricted products.[224] 10·3% (95% CI 9·3–11·4) of adolescents reported gambling online and 9·1% (7·9–10·4) reported betting on sports.

The impacts of gambling
Gambling harms are defined as adverse consequences attributable to gambling that affect individuals, families, communities, and society.[10] On the individual level, gambling harms encompass more than gambling use disorders as defined by the ICD-11[16] or DSM-5.[17] As with other addictions, heavy burdens fall on others, as well as on the person with the disorder. Emerging evidence suggests that a substantial burden of harms results from the activities of those who are below the clinical threshold for gambling disorder.[228] In other fields, this phenomenon—where the burden of harm falls largely outside
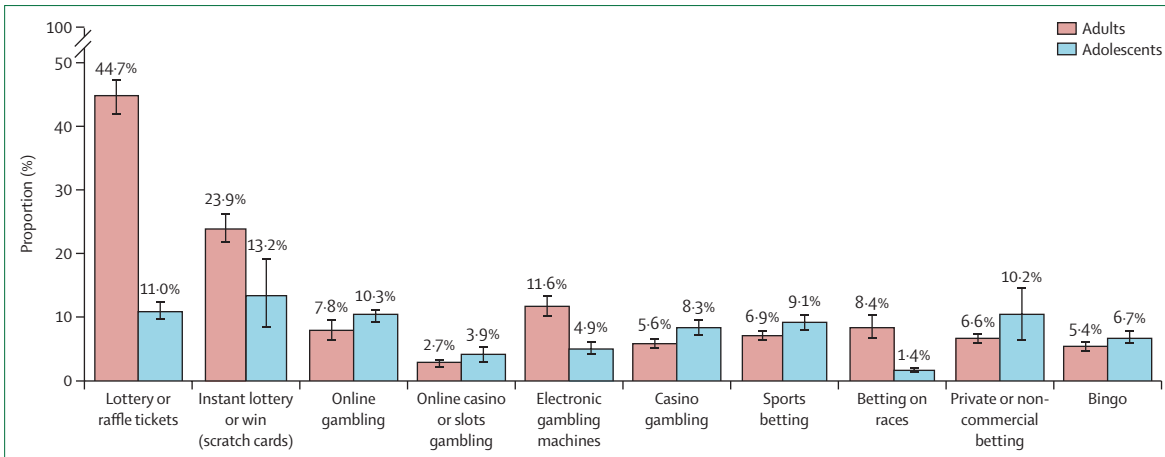
Figure 2: Past year participation in specific gambling activities, among adults and adolescents

Activity descriptions are not mutually exclusive: online gambling refers to any online gambling, with online casino as a sub-set of this. Sports betting is any sports betting, whether online or otherwise. Electronic gaming machines often account for the largest share of gambling in casinos. Data from Tran and colleagues.[224]

a core group who suffer the most serious disorders or addictions—is called the prevention paradox, on the grounds that reactive treatment for the core group cannot address the broad distribution of harm. Therefore the impact of gambling has to be considered across the whole spectrum of consumption levels and gambling behaviours.

Looking beyond individuals who gamble and their immediate families, conceptual frameworks for gambling harms also emphasise societal impacts. Such effects include the costs of health care and social welfare, diversion of spending from other more productive economic activities, and costs associated with crime. Less tangible perhaps, but important nonetheless, are the effects of commercial gambling on inequality, principles of social justice, and challenges to ethical governance.[10,229] In the sections that follow, we outline evidence relating to impacts on individuals who gamble, to others directly affected, and to society more broadly.

Impacts of gambling: gambling disorder and any risk gambling

In epidemiological terms, our current understanding of the gambling landscape is limited. Existing evidence is patchy and incomplete, so there remains much unknown about gambling harms and their distribution across society and across the spectrums of individual behaviours. The bulk of epidemiological research currently available has focused on the measurement of so-called problematic gambling or gambling disorder and relies primarily on cross-sectional surveys of varying quality. Some studies have included measurement of any risk gambling, which includes those individuals who experience low-level behavioural symptoms of gambling disorder, or adverse consequences from gambling. Our systematic review paid attention to estimates of any risk

gambling as well as problematic gambling or gambling disorder.[224]

Population estimates of any risk gambling and problematic gambling or gambling disorder

We identified 131 studies that provided estimates of the proportion of adults experiencing any risk gambling, and 121 studies that provided estimates of the proportion of adults experiencing problematic gambling or gambling disorder.[224] From these studies, we estimate that among women (those who gamble and those who do not), 5·5% (95% CI 2·5–8·5) experienced any risk gambling, whereas 1·0% (0·5–1·8) experienced problematic or gambling disorder. Estimates were substantially higher among men: 11·9% (8·2–16·5) experienced any risk gambling and 2·2% of the population (0·9–3·9) experienced problematic or gambling disorder. Projecting these rates worldwide would suggest that 308·7 million men (211 757 000–428 663 500) and 140·0 million women (62 032 500–215 573 000) experience any risk gambling, and of these, 54·7 million men (23 403 500–99 583 500) and 25·3 million women (11 483 000–44 607 000) experience problematic or gambling disorder.

The highest estimates for any risk gambling, conditional on gambling, for both men and women were for east Europe (figure 3). The proportion of those individuals who gamble who experience problematic or gambling disorder were highest for men and women in North America (figure 4).[224]

Because of the paucity of studies, global estimates of adolescent any risk and gambling disorder were not produced.[224] Rates of problematic gambling or gambling disorder varied from 0·5% (95% CI 0·2–0·9) for girls and 4·7% (4·0–5·6) for boys in west Europe, to 4·9% (3·7–6·3) for girls and 14·5% (12·7–16·4) for boys in North America. Although caution should be applied
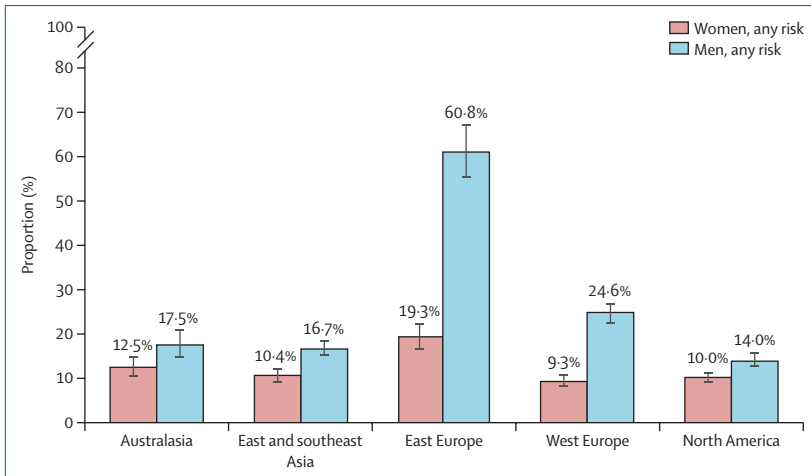
Figure 3: Prevalence of any risk gambling among people gambling in the past 12 months, by region and sex or gender
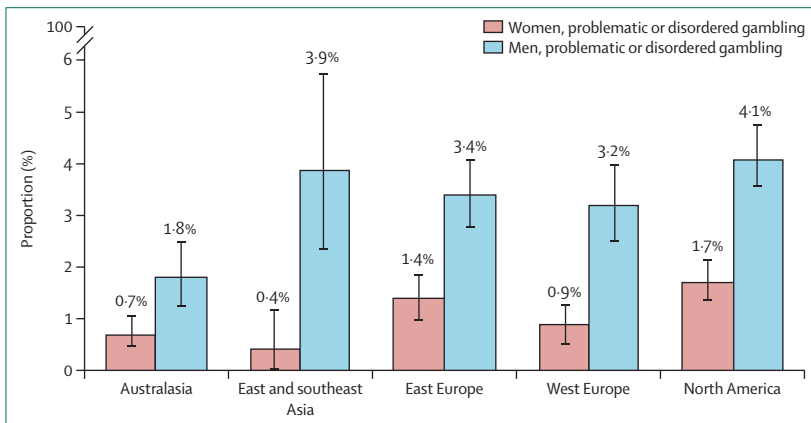Data from Tran and colleagues.[224]

Figure 4: Prevalence of problematic gambling or gambling disorder among people gambling in the past 12 months, by region and sex or gender
Data from Tran and colleagues.[224]

though over 80% of jurisdictions worldwide legally permit some form of gambling,[160] for most of these, the nature and extent of gambling is not being assessed. Insights are consequently based on direct data collection methods (eg, population surveys) when these exist, with minimal use of indirect and sophisticated methods that are commonly used in other areas of public health concern [panel 6]). With respect to the study of gambling and gambling harms, monitoring and surveillance systems remain in their infancy.

Evidence about adolescent gambling behaviours is notably incomplete, and probably outdated. We observe surprisingly high rates of adolescents engaging in forms of commercial gambling, especially online, which should be age restricted.[224] The gambling environment for adolescents is changing rapidly, and hence existing studies might not have captured recent developments, such as hybrid products, gambling-adjacent gaming formats (eg, loot boxes), and new forms of gambling, such as skin betting or e-sports betting. New or updated studies are needed, and future syntheses of evidence will probably reflect rapidly changing patterns of adolescent behaviour and experience. Children and young people face particular risk from gambling harms, not only because of direct and immediate consequences, but also because of the risk of longer-term effects on their life trajectories, loss of financial and employment prospects, and damage to their relationships, health, and wellbeing.[230]

Impacts of gambling: gambling harms
Numerous frameworks exist for disaggregating and categorising the effects of gambling on the health and wellbeing of individuals, families, and communities.[229] Categories include financial and employment harms, relationship harms and harms to others, health harms (including suicidality), and crime. Some frameworks also include cultural harms (which are not discussed here as a separate domain, but which we acknowledge as having conceptual importance).

We briefly summarise the evidence supporting each class of harm, focusing when possible on longitudinal data and studies with objective outcomes, supplemented with insight from our lived experience contributors. Though we use these broad classes or domains of harm to organise the evidence, we recognise the cross-cutting and mutually reinforcing nature of intersecting harms. Harms extend beyond the person engaged in gambling activities to families, communities, and society. Harms might be short-term or long-lasting. Several lived experience contributors described ongoing legacy impacts of gambling in their own lives (panel 7).

Financial and employment-related harms
Gambling-related financial harms occur when individuals and families cannot meet other financial

given the low number of studies identified, these findings suggest that there might be substantial numbers of adolescents experiencing any risk gambling worldwide.

Figure 5 shows the rates of problematic gambling or gambling disorder among those engaging in different types of gambling activity, for adults and adolescents. Among adults, those individuals engaging with online casino or slots gambling had the highest rates of problematic gambling or gambling disorder.[224] Around one in six adults (15·8%, 95% CI 10·7–21·6) gambling on online slots in the past year experienced problem gambling or gambling disorder.[224] Among adolescents, high rates of problematic gambling or gambling disorder were evident for those playing online slots, casino games, and betting on races, although some caution should be applied due to the small number of relevant adolescent studies.

There are notable gaps in global systems for monitoring and tracking trends in gambling behaviours. Even

www.thelancet.com/public-health **Published online October 24, 2024 https://doi.org/10.1016/S2468-2667(24)00167-1**
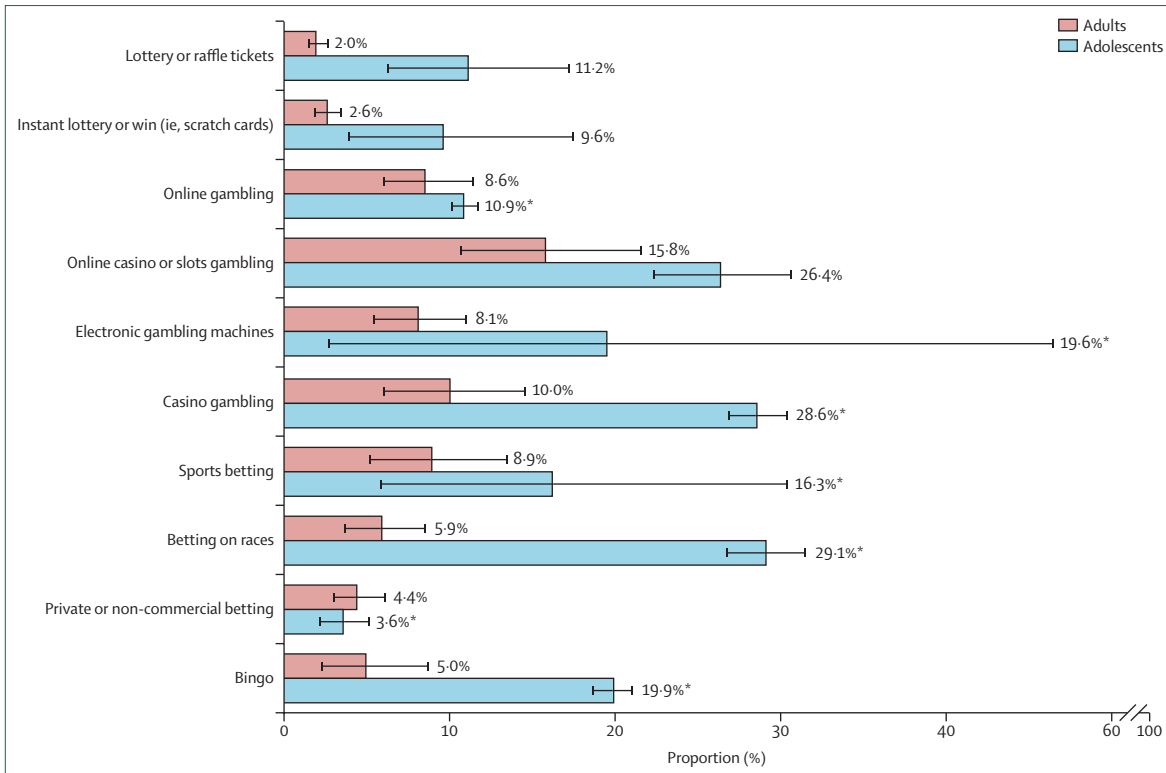
Figure 5: Prevalence of problematic gambling or gambling disorder by activity for adults and adolescents
Activity descriptions are not mutually exclusive: online gambling refers to any online gambling, with online casino as a sub-set of this. Sports betting is any sports betting whether online or otherwise. Electronic gaming machines often account for the largest share of gambling in casinos. Data from Tran and colleagues.[224] *Less than three studies included in analyses.

commitments due to gambling, or when gambling leads to indebtedness. General population studies show financial strain and hardship disproportionately reported by people experiencing gambling disorder.[14,61,231] Financial strain and hardship are also widely reported by those who seek treatment for gambling disorder.[14] A 2021 longitudinal analysis[113] of banking transactions found that a 10% point increase in spending on gambling was associated with a 51·5% increase in payday loan uptake and increased the likelihood of missing a mortgage payment by 97·5%. Increased gambling spending was negatively associated with saving rates or payment of pension contributions.[113] Higher gambling spending rates were associated with greater risk of future unemployment and subsequent receipt of disability payments.

A longitudinal study in Sweden found similar results, showing that individuals with gambling disorder had a 4-year increased risk of long-term work disability (ie, number of sick days or receipt of disability benefits) compared with a matched case–control cohort.[232] Longitudinal data in New Zealand found that cohort members with a history of disordered gambling had worse credit scores, were more likely to be struggling financially in mid-life, and spent more time receiving social welfare benefits than those who did not have a history of disordered gambling.[233] In other studies,

problematic gambling and underage gambling have been associated with a high degree of unemployment.[61]

Financial harms can aggravate other gambling harms, including physical and mental health issues, relationship problems, and suicidality. These financial harms extend beyond those borne by the individual who gambles, and include a broad range of costs to society, such as costs of health care, social welfare payments, the costs associated with crime and crime control, and economic damage due to lost productivity.[113,203,234,235]

Impact on others
Gambling harms affect families and others personally connected to the individual who gambles and can often damage relationships between them (panel 7). Estimates suggest that at least six other people, on average, are negatively affected by one person who is experiencing problematic gambling.[22] Estimates of the population prevalence of being a concerned significant other vary between 2% and 21%, depending on definitions used and choice of study methodologies.[236]

The effect of gambling on relationships with concerned significant others is well recognised. Diagnostic criteria for gambling disorder include risking an important relationship or lying to family members, or others, about gambling behaviours. Negative effects on relationships

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Panel 7: The experience of gambling harms

Josh, Australia

"In the foreseeable, next 5 to 10 years like, I'm not going to be able to buy a new car. I'll live month to month. I earn above average wage as well. So, realistically I shouldn't be struggling. But the gambling. There's a legacy gambling there…I constantly can't move past it like that is the long-lasting effect of gambling…I'm 40 and I don't see a future for me at all."

Jacqueline, USA

"The [financial harm associated with gambling] is probably going to impact me for the next 2 or 3, 4 years…the system here is pretty brutal when you mess up it takes a long time to right itself."

Todd, Sweden

"I participated in many things [while gambling]. I remember. But it was hard for me because I couldn't focus. I wasn't really there. I was there physically, but not mentally."

Tina, UK

"There's no one I could turn to and ask for help or tell them what I was doing. I was very, very alone. I've never been so alone in all my life."

David, UK

"[When I was young], I was proper determined, motivated, had on my wall a hundred things that I wanted to achieve before I was 30…and then gambling just…remember just ripping [the list] off the wall one day and thinking you're never gonna do that. You just want to gamble. So, it did literally and metaphorically strip all of my career prospects away from me."

Samuel, Nigeria

"You need to talk to yourself and…say hey, this thing you're doing is taking much even though you don't consider it big money, but over time, when you calculate the money is huge."

Margaret, USA

"The self-loathing is just overpowering. And I can remember walking around the casino saying I hate it here, but why didn't I leave? I don't know. I couldn't, the addiction was there."

Sonja, Finland

"Even though I didn't succeed in my suicide…I thought that the only way that this is going to end is that I'm going to die."

The impact that gambling had on others close to them:

Sonja, Finland

"Of course, it affected on my parents, on my brother, and they had…they couldn't sleep, had had all kind of health issues because they were so worried about me. It interfered with my motherhood. [My children] have been affected by my mood swings and me being here, but never like I was there."

Jacqueline, USA

"My mom and my sister were probably the most impacted by my gambling. Mmm, because they were who I borrowed money from…I really just put them through the wringer when it would come to borrowing money."

Josh, Australia

"I had [a] dire relationship with my kids. You know, I didn't speak to my daughter for 5 or 6 years in that time."

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might include increased conflict, erosion of trust, inattention or absenteeism to family responsibilities, role distortion, family and interpersonal violence, as well as breakdown of relationships.[236–238]

Longitudinal data from Canada showed that problem gambling or moderate risk gambling predicted subsequent decreases in family functioning and social support.[239] Qualitative evidence shows that the strain that gambling places on relationships can lead, in some cases, to familial violence.[82,238] Individuals living with people experiencing gambling problems have reported increased levels of emotional or psychological distress.[240,241] Longitudinal analysis has shown evidence of a potential causal link between living in a household with someone experiencing problem gambling and low levels of social and financial wellbeing.[242]

Gambling has been associated with intimate partner violence, which can be both a cause and a consequence of gambling.[11,243] A meta-analysis estimated that 37% of people experiencing a gambling problem have perpetrated physical intimate partner violence.[11] All the studies included in that analysis showed a relationship between gambling and increased rates of intimate partner violence. Studies have also found a relationship between problem gambling and intimate partner violence victimisation: evidence from Australia suggests that 20% of people experiencing problem gambling have been victims of intimate partner violence.[244]

Children of people with gambling disorder are particularly vulnerable. Family dysfunction has been linked to parents engaging in problem gambling.[245] In addition, children of parents experiencing problematic gambling have higher levels of emotional distress and an elevated risk of suicide than children whose parents do not experience problematic gambling.[245] These children also have a high risk of experiencing gambling problems later in their own lives.[246] Longitudinal evidence shows that problematic gambling by parents elevates the risk of depression in teenager offspring.[247] Recent data from England estimates that as many as 912 805 children in England could be living in households with adults who would benefit from help, support, or treatment for gambling harms.[248]

Concerned significant others also bear a substantial burden in providing support and treatment,[249] often providing help to family members experiencing problematic gambling at the cost of their own mental and financial wellbeing. A longitudinal study from Sweden showed that

concerned significant others who did not identify as concerned significant others 1 year later, reported improved mental health, as well as fewer financial, legal, and relationship problems.[250] Recognising the burden of harms on concerned significant others has led to some countries offering bespoke treatment and support for them.

Physical and mental health harms

Problematic gambling can co-occur with mental health conditions, including anxiety and mood disorders, and with physical health issues, such as headaches and high blood pressure.[95,251,252] A Swedish longitudinal study of registry data showed that among people with gambling disorder, rates of premature all-cause mortality were 1·8 times higher than for the general population. Among individuals aged 20–49 years, the rates were 6·2 times higher.[75] A longitudinal analysis of banking transaction data[113] showed that people gambling the most heavily (ie, those spending 30% or more of their monthly income on gambling) have a higher 5-year mortality rate, with high levels of gambling associated with a one-third higher likelihood of mortality within 5 years.

Longitudinal evidence from the USA shows that past year disordered gambling at baseline (year 2000) was associated with the subsequent occurrence (2004–05) of axis 1 psychiatric disorders, mood disorders, alcohol and other substance use disorders, and a range of other psychiatric conditions.[253] A scoping review of longitudinal studies on comorbidities between psychiatric disorders and gambling disorders suggests that psychiatric disorders could be a precursor, as well as a consequence, of problematic gambling.[254] These associations might be bi-directionally causative or share a common cause.

Problematic gambling can also be associated with problematic substance use. A meta-analysis found that 57·5% of individuals experiencing problematic gambling also had a substance use disorder of some kind, whereas 28·1% specifically had an alcohol use disorder.[251] A longitudinal Norwegian study using health registry data showed that although the overall comorbidity of substance use disorder and gambling disorder was low, it was more likely for individuals with gambling disorder to subsequently develop substance use disorder (22·5% of individuals) than for individuals with substance use disorder to be later diagnosed with gambling disorder (0·7% of individuals).[255] This suggests any causative link is stronger in one direction than the other. The precise nature of relationships between and among mental disorders will vary for different people in differing circumstances. Nonetheless, there appears to be substantial co-occurrence. Reflecting this reality, mental health and treatment settings have been identified as helpful locations to screen and intervene with those experiencing gambling harms.[241]

Suicidality

The experience of gambling disorder is associated with suicidality. A small but emerging body of longitudinal research has examined this association, finding a relationship between gambling disorder and either increased risk of suicide mortality or suicide attempt. In Sweden, a nationwide register study found a 15-fold increase in suicide mortality among those with gambling disorder compared with those without gambling disorder.[75] A study in young adults in the UK[256] found that any increase in Problem Gambling Severity Index scores was associated with an increased rate of suicide attempts. A study using coronial data in Victoria, Australia, estimated that 4·2% of suicides in that state between 2009 and 2016 were gambling related.[79] Finally, Slutske and colleagues,[257] in their analysis of discordant twins, suggested that there was potential evidence of a causal influence of disordered gambling on suicide attempts, albeit for men and not for women (though this study was probably underpowered to examine this effect fully for women). Drawing on available research evidence, the recent English Suicide Prevention Strategy states that "although reasons for suicide can be complex, we do know that gambling can be a dominant factor without which the suicide may not have occurred".[31] Individuals with lived experience of gambling harms often cite suicidality as a feature of their experience (panel 7).

As with the relationship between gambling and other mental health conditions, the temporal sequencing between gambling and suicidality is unclear and the link between gambling and suicidality might be partly explained by underlying comorbidities or other conditions.[258] However, qualitative research evidence clearly links suicidal behaviour or suicidal ideation to gambling, suggesting that gambling might precede many comorbidities, such as depression.[234] Furthermore, qualitative evidence shows that gambling contributes to suicidality through the mechanisms of indebtedness and shame. These conditions function as barriers to help seeking, which again points to the importance of preventive public health interventions.[234]

Crime

Crime also has strong associations with gambling. Crimes might be committed by those experiencing gambling disorder. The supply side of gambling operations might also be affected by corruption and criminal involvement. Gambling can be used for criminal purposes, such as money laundering, match fixing, or extortion.[259] In 2021, the UN Office on Drugs and Crime estimated that up to US$1·7 trillion dollars were wagered worldwide on illicit gambling markets controlled by organised crime.[260] The UN Office on Drugs and Crime for Southeast Asia noted that in their region, "casinos and junkets represent a crucial piece of the underground banking and money laundering infrastructure, serving the needs of transnational organised crime groups operating in the region and globally".[34] Even where gambling itself is legal, sustained oversight and enforcement is needed to control the risk of criminal involvement.
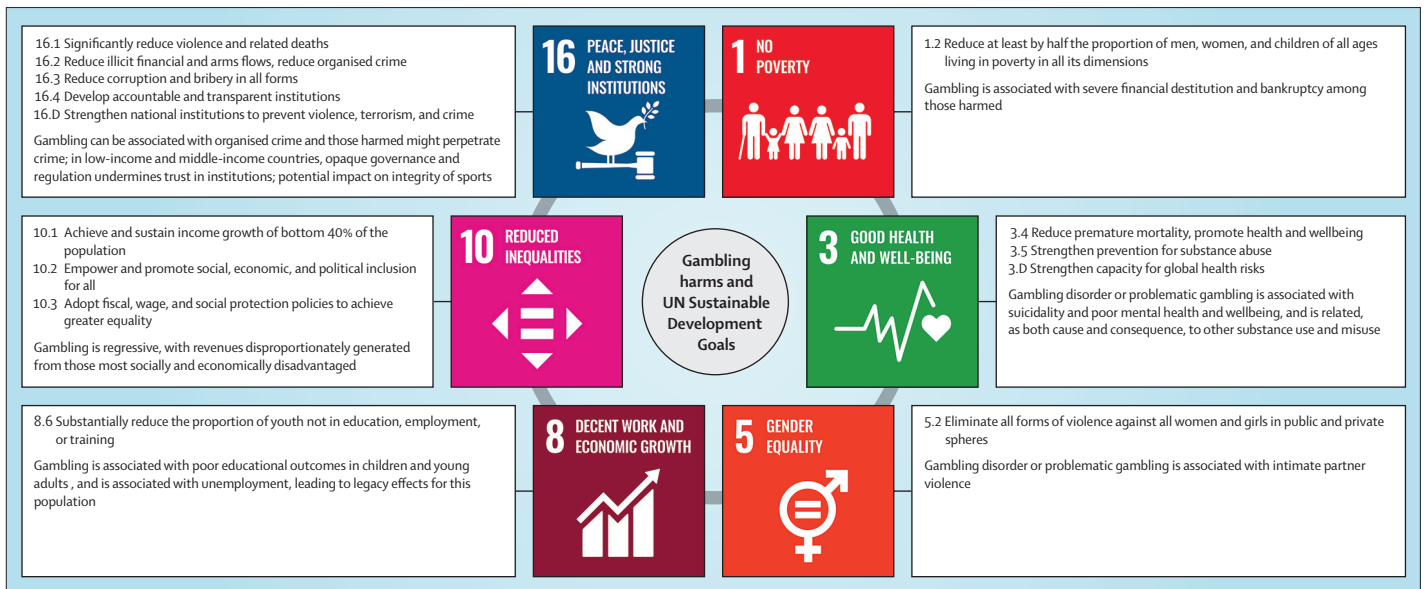
Figure 6: Gambling harms and the UN Sustainable Development Goals and related targets

In relation to the perpetration of crime by those experiencing problematic gambling or gambling disorder, two reviews concluded that there is a relationship between gambling disorder and the commission of crime.[261,262] Evidence suggests that gambling is particularly related to income-generating crimes intended to fund gambling activities. The nature of these crimes varies widely—from financial crime to ordinary thefts from other people in the local community, or violent crimes.[261]

The causal relationships are uncertain, and links between crime and gambling disorder often co-occur with other disorders.[262,263] One longitudinal study found that the relationship between gambling and crime was rendered non-significant once other socioeconomic factors were taken into account.[263] Slutske and colleagues' longitudinal analysis of adults in New Zealand suggested that low self-control in childhood could explain this association.[233] Despite these uncertainties, committing crime to fund gambling remains a feature of some people's experience of gambling disorder and, until 2013, formed part of the DSM's diagnostic criteria for pathological gambling.

Impacts of gambling: gambling and socioeconomic disadvantage

A substantial body of evidence shows that gambling harms are socially and economically patterned. A 2021 systematic review of health inequities and gambling suggested that gambling harms were dependent on "specific social, demographic and environmental conditions" and concluded that health inequity is evident in the experience of gambling harms.[28] Numerous studies have found an increased prevalence of people experiencing disordered gambling among those living in deprived areas, among those with low levels of education, and among those who are unemployed or have low incomes.[28,60,61,264]

There is emerging evidence of a so-called harms paradox for gambling, mirroring patterns observed in alcohol studies,[265] whereby specific groups are less likely to gamble than others, but are more likely to suffer adverse consequences if they do. In the UK, this potential paradox has been highlighted for individuals in young age groups (including individuals aged 18–24 years), individuals from non-White ethnic groups, including migrants, and individuals with poor mental health and wellbeing.[266] As with alcohol use, various factors might contribute to these effects. Plausible reasons might include variation in the accessibility of high-risk gambling products. Indeed, several studies note an increased density of EGMs in socioeconomically deprived areas, and the fact that high densities of EGMs are associated with elevated rates of gambling harms.[104,267]

Specific cultural and contextual factors can also have a role. In some countries, such as the UK, gambling has a long cultural heritage within some communities.[268] The rise of sports betting and sports sponsorship by gambling companies reinforces and normalises gambling among sporting enthusiasts and within sports fan cultures.[25] Likewise, the experience of disadvantage or of mental illness might represent a harm-reinforcing mechanism, where low levels of interpersonal support and socioeconomic capital are available to draw on for those individuals experiencing harms.[61] Evidence from Africa shows that a key motivation for gambling is attempting to escape poverty, but gambling losses exacerbate, rather than reduce, poverty.[269] In Sweden, longitudinal data show that low income is a predictor of gambling disorder and that individuals experiencing

Panel 8: The challenges commercial gambling pose to the UN Sustainable Development Goals (SDGs) in African countries

SDG 1: No poverty
Individuals harmed by gambling can experience financial destitution, including bankruptcy. The experience of gambling harms can have a lasting effect on financial security and exacerbate both relative and absolute poverty, with resources diverted from essential household expenditure.[271] Gambling should be recognised as a risk factor for poverty. Across the African continent, gambling has been described as a response to poverty (eg, as individuals pursue funds to fix storm-damaged property[272]) and an attempt to alleviate financial strain.[271,273–275] The impact of gambling harms can also exacerbate financial problems for individuals and their families.

SDG 3: Health and wellbeing
Gambling has known risks for health and wellbeing, with the impacts being severe for individuals harmed by gambling. Gambling-related suicidality has been reported in east and south Africa,[276] including in individuals younger than 18 years.[277] For some individuals, gambling harms co-occur with addiction-related criminal activity and substance use, as both cause and consequence.[278–280] Research across African countries shows that money intended for food can be diverted to gambling, driving negative nutrition-related health outcomes.[272,281]

SGD 5: Gender equality
In African countries, gambling can disproportionately reduce resources available to women who are economically dependent on men.[272] Association between disordered gambling and the perpetration of intimate partner violence has been observed in Tanzania.[282] As disordered gambling is more prevalent among men, intimate partner violence is more likely to be directed against women.[283]

SDG 8: Work and economic growth
Gambling harms are associated with poorer educational outcomes among young people compared with those who do not gamble, with legacy effects for their future prospects. Gambling is widespread among young people across diverse African countries;[269,284] this pattern could have a negative impact on educational attainment.[285,286] Gambling is also associated with unemployment.[269,284]

SDG 10: Reduce inequalities
Gambling revenue generation rests heavily on those most socially and economically disadvantaged. A Ugandan study[271] found that the poorest people spent the largest proportion of their personal income on gambling, a finding that was also reported in South Africa.[287] These distributional effects impede progress towards improved social and economic inclusion and can exacerbate inequalities.

SDG 16: Peace, justice, and strong institutions
All of the following observations run contrary to the SDGs that focus on peace, justice, and strong institutions. Gambling disorder or problematic gambling are associated with suicidality and intimate partner violence. In some regions, gambling is strongly associated with crime, including organised crime; crimes perpetrated by those harmed by gambling have been observed in Malawi.[278] The gambling industry lobbies governments and the public, emphasising economic and financial benefits and deflecting attention away from consumer protections, social injustice, targeting of the vulnerable, and other corporate behaviours.[288] Low-income and middle-income countries in particular might not have effective, transparent, and accountable institutions governing commercial gambling. Research on the regulation of gambling in some African countries suggests that only two countries in the region (out of 41 countries where gambling is legal) publish routine regulatory reports on the industry.[278,288,289] Sports are deeply embedded within African culture and these nations are therefore deeply affected by the rapid growth of sports-related gambling opportunities, and by increased risks of betting-related corruption in sports.

gambling disorder have consistently low incomes across an 11-year period (ie, lower than the national average income).[270] Accumulating evidence supports that individuals living in circumstances of socioeconomic disadvantage are more likely to experience gambling disorder and that gambling behaviours can then compound other mental and physical health conditions, entrench or exacerbate existing inequities, and negatively affect life trajectories.

Impacts of gambling: societal impacts and UN SDGs
One powerful legislative rationale for expanding commercial gambling is to reap the associated economic benefits. Focusing on revenue generation, economic development, and investment and employment opportunities, some governments might view an expansion of gambling as a mechanism to help to deliver progress towards the UN SDGs. However, given the harms associated with gambling, this Commission highlights multiple ways in which commercial gambling might seriously undermine progress towards SDGs in all countries and pose additional and special threats in LMICs. Figure 6 identifies relevant elements from the UN SDGs, and the aspects of gambling and gambling harms that affect them. We discuss these effects further, with particular reference to evidence from Africa in panel 8.

Prevention of gambling harms: evidence of effectiveness
Tackling the range and variety of gambling harms described in this Commission demands a systematic examination of the full range of preventive interventions, and rigorous evaluation of their comparative and collective efficacy.

Effectiveness	
Universal measures	
Caps on number of venues or EGMs	Effective if reductions are sufficient to reduce consumption[95,290,291]
Pricing, taxation, low-return percentages	Potentially effective, but risk increasing the offshore market[95,291]
Reduced opening hours for venues	Potentially effective, but evidence base limited[291]
Legal age limit	Effective, but depends heavily on stringency of implementation[291]
Limiting accessibility to venues	Potentially effective, but depends on stringency of implementation[95,291]
Restricting advertising	Potentially effective, but evidence base limited[95,290,291]
Information and awareness campaigns	Potentially ineffective, no evidence of associated decreases in gambling[95,291]
Limiting speed and intensity of products	Effective if reductions substantial enough[95]
Limiting bet sizes	Potentially effective, if reductions substantial enough[95,292]
Limiting sensory effects in game design	Effective for EGMs, insufficient research on other products[95]
Selective measures	
Restricting access to cash or payment options	Potentially effective where ATMs are removed, and when note acceptors are removed from EGMs[95,291,292]
Situating venues away from at-risk populations	Effective[291]
Location of EGMs	Inconsistent evidence, both visibility and isolation might be problematic;[291] visibility can be problematic because it normalises gambling availability; isolation can be problematic because dedicated gambling spaces are often immersive
Land-based venue design features (eg, lights, clocks)	Potentially effective, but depends on implementation[95,291]
Smoking bans and alcohol restrictions at gambling locations	Effective[291]
Venue employee training	Effective in terms of staff capabilities, but insufficient evidence on effects for customers[95,291]
School-based programmes and programmes targeting youth	Potentially effective, but contradictory evidence[63,95,292,293]
Pop-ups or other interactive warnings	Effective, but depends on implementation[95,290,294,295]
Personalised feedback or personalised normative feedback	Potentially effective, but most available evidence based on short timeframes (ie, 3–6 months), insufficient evidence on long-term effects[292–294]
Warning labels on products or warning signs	Potentially effective, but depends on implementation[63,290]
Providing details of helplines	Inconsistent evidence[290]
Voluntary limit-setting	Mostly ineffective but inconsistent evidence[95,291–294]
Mandatory limit-setting	Effective[291]
Self-exclusion	Potentially effective, but depends on stringency of implementation[95,291–294]
(Table 2 continues in next column)	

Effectiveness	
(Continued from previous column)	
Targeted measures	
Educational interventions and priming analytical thinking	Potentially effective, but depends on implementation[291,295]
Interventions based on tracking	Effective[95]
Personalised feedback and motivational interview	Effective[295]
CBT and other therapeutic approaches	Potentially effective[63,293]
Motivational interviewing interventions	Effective[63]
Brief interventions	Small effect (particularly with an educational element)[63]
Internet-based CBT therapies	Effective (but high rates of attrition)[63]
Self-help interventions	Mixed evidence due to diversity of interventions[63]
Mutual support groups (including Gamblers Anonymous)	Small effect[63]
Pharmacological interventions	No conclusive evidence and no evidence to recommend a specific drug treatment[63]

ATMs=automatic teller machines. CBT=cognitive behavioural therapy. EGMs=electronic gambling machines.

Table 2: Summary of umbrella or systematic reviews on harm reduction measures

From a public health perspective, universal measures, as well as selective and targeted interventions in high-risk areas, are needed to prevent and reduce harms.[172] We reviewed nine umbrella or systematic reviews on harm reduction measures in gambling, published in 2019–23. Table 2 lists the interventions that have been evaluated, with a summary of the respective assessments. Overall, evidence available on the efficacy of various interventions remains patchy.[294] However, synthesis of these reviews does show promise for some of universal prevention measures, particularly those aimed at reducing access, restricting advertising, limiting bet sizes, and limiting the speed and intensity of gambling products.[296] Some measures aimed at changing individual gambling behaviours have also been shown to be effective. These include therapeutic approaches, cognitive behavioural therapy (in person and online), personalised feedback, tracking, education, and motivational interviewing. These interventions, of course, only work for those individuals who seek help and have access to it.[297,298]

Nearly all the data included in our review focused on prevention measures in land-based (as opposed to online) gambling. Currently, there is a paucity of research on the efficacy of interventions relating to online gambling. New legislation increasingly requires online operators to collate and make use of consumer data in support of prevention activity. The data exist and could be

made available for research, but an evidence gap on the vital question of what works in the context of online gambling remains. For now, operators are being asked to assume primary responsibility for gambling harm prevention, with little independent oversight and little evidence regarding the efficacy of the interventions that they are willing and able to implement.

Finally, in closely related fields, such as alcohol, debate about the types of prevention efforts required is underpinned by examination of the relationship between consumption and the risk of harms. Understanding the nature of this relationship (often visualised using risk curves) provides insight into the type of prevention activities that are most likely to be efficacious.[299] Linear risk curves, for example, suggest that even small amounts of gambling activity increase risk of gambling harms. Thus, prevention activity targeted at reducing population consumption might be most effective. Exponential risk curves imply that individuals with excessive consumption account for most harms, with prevention activity thus focusing on those with excessive consumption. R-shaped curves suggests that risk of harm increases at low levels of consumption and then decreases, or stabilises after a point, again suggesting that prevention activities focused on reducing population consumption might be best.[300] Within gambling studies, the production of high-quality evidence on risk curves has been limited by a paucity of appropriate data or methodological issues with visualisation methods.[301,302] Only a small number of studies free from these issues have examined risk curves for gambling harms, and these studies tend to suggest R-shaped risk curves.[300] Further investigation into this relationship is needed, but this small evidence base lends further support that universal prevention approaches show promise in reducing harms.

The gambling policy cycle: legislation, adoption, and enforcement

Protecting public health from the risks of gambling harm requires clear legislative priorities built less on commercial and economic interests and more firmly on public purposes and societal goals. The following sections describe our international review of recent legislative initiatives in this area, and the varying legislative framings that underpin them. We have also examined the extent of follow-through, so as to discern how rigorously regulations enacted are actually enforced.

Legislative framing of policy priorities

Law is a crucial tool in public health responses to global health challenges. International, federal, national, and state-level legislation can be motivated by different, even contradictory, ideas and objectives. The extent to which legislation might support or undermine public health objectives depends on how issues are framed within the law. Legal framing governs subsequent policy actions by establishing a purpose and a legal and regulatory context,

which then influences the criteria considered as detailed policies are formulated and adopted, and determines how policy actions are implemented and how their success is evaluated.[191]

Framing of legislative intent is influenced by various factors, including domestic political debates, international pressure, technological and economic changes, and lobbying by commercial stakeholders. Legislative framing is therefore dynamic, responding to changing commercial, societal, and political norms. Gambling legislation is no different. Francis and Livingstone, as well as others, describe gambling policy transition, documenting how gambling, once described as a "pariah pastime", has now become normalised as a recreational pursuit.[303] To our knowledge, a global assessment of changing legislative framings for the governance of gambling has not previously been undertaken. This Commission addresses this gap by gathering extensive and international data on changes in gambling legislation since 2018. We sought to develop a clear understanding of the ways in which government framings are moving on this issue, and the effects of these trends on policy.

Legislative framings for gambling

We analysed all jurisdictions that had implemented major legislative change (eg, legalisation or prohibition of one or more types of gambling) between January, 2018, and October, 2023 (appendix pp 8–26). We identified 80 jurisdictions, including 39 states within the USA, that had passed legislation implementing major gambling policy changes during this period. We then examined the primary legislation governing these changes to discern the framing enshrined within these legal texts.

Using Framework Analysis,[304] all the legal texts were systematically reviewed to map the main rationales underpinning the implemented legislative change. After initial reading and discussion, a code frame outlining thirteen different rationales was created (figure 7). Sections of text within each piece of legislation were then classified according to which of the 13 legislative rationales they seemed most strongly to support. We then analysed the overall frequencies and distribution of the different rationales, both quantitatively and qualitatively.

Most of the legislative initiatives that we identified move in the direction of increased legalisation of gambling. Of the 80 jurisdictions covered, 71 had expanded legal gambling opportunities, whereas eight had restricted them. One jurisdiction, Florida (USA), restricted greyhound racing but expanded sports betting. 39 states in the USA had expanded the scope of legal gambling, mainly in response to the revocation of a federal ban on sports betting in 2018. In the jurisdictions that are not in the USA, 34 (83%) of 41 had expanded legal gambling. These 34 jurisdictions comprised seven European, nine Asian, six African, and 12 central or South American jurisdictions.

Legislative rationales	Thematic codes
Potential for addiction or gambling disorder	Health
Protection of public health	
Consumer protection	Integrity and consumer protection
Gambling integrity, transparency, and fairness	
Sporting integrity protection	
Reducing or eliminating unlicensed or black-market provision	Crime
Crime prevention and anti-money laundering	
Revenue raising (general)	Revenue
Revenue raising (earmarked)	
Economic growth (including tourism)	
Equality of opportunity	Other
Religious rationales	
Other	

Figure 7: Code frame for legislative rationales

Specific policy rationales were explicit in 65 (81%) of 80 legislative texts. Most of these texts laid out more than one motivating rationale. Only 11 legislative texts expressed a single rationale for change. On average, these 65 texts drew on 3·4 (SD 1·8, N=65) different legislative rationales.

Transparency, integrity, and crime prevention

The most common motivating frame for legislative change was gambling integrity, transparency, and fairness (mentioned by 38 [58%] of 65 jurisdictions where policy rationales were outlined). The specific focus of this framing was to provide assurance to consumers that gambling products (many of which were being newly legalised) were fair, honest, and trustworthy. For example, in Peru in 2022, the legislation establishing a licensing regime for online gambling stated that a key objective was to guarantee that remote games of chance and remote sports betting is conducted with integrity, honesty, transparency, and equal treatment.[305] In Angola in 2023, the objective of a law legalising online and land-based bingo was to ensure that gaming activities are carried out in a fair, honest, and responsible manner, which involves creating a legal framework with clear principles and standards that regulate this activity.[306,307] In Ukraine in 2020, legislation ended a gambling ban, stating its objective was to ensure fairness and objectivity when carrying out activities in the field of gambling and to prevent the possibility of external influence on the outcome of a gambling game.[308] In this way, promoting gambling integrity was often linked with preventing fraudulent practices and crime. The prevention of crime and money laundering was explicitly mentioned by 24 (37%) of 65 jurisdictions.

Economic framings

Viewing gambling as a source of economic growth was common and apparent as a motivation in 26 (40%) of 65 jurisdictions that were explicit about underlying framing. Where legislative changes enabled or supported the growth of casino-gambling, reference was often made to tourism alongside other forms of economic growth. Japanese laws enabling the development of resort casinos in 2018 stated that "the purpose of this Act is, in consideration of the increasing importance of promoting the visitation and stay of domestic and international tourists, to enhance Japan's economic and social vitality and sustainable development".[309] Similar motivations were evident in Viet Nam, with a law piloting the legalisation of land-based casino gambling for residents.[310]

Revenues raised from casinos and from other forms of gambling are expected to provide financial support to a range of public sector priorities. Revenues were earmarked for specific purposes in 20 (31%) of 65 jurisdictions, and 14 (22%) other jurisdictions emphasised contribution to general revenues. In Illinois, USA, the expansion of casino and riverboat gambling was described as "intended to benefit the people of the State of Illinois by assisting economic development, promoting Illinois tourism, and increasing the amount of revenues available to the State to assist and support education, and to defray State expenses".[311] In both Costa Rica and El Salvador, the legalisation of online gambling was explicitly linked to producing revenues in support of social development or social protection. State-level legislative changes (especially those in the USA) frequently earmarked revenues for health care, education, infrastructure projects, horseracing, and sports development, among others.

Health framings

21 (32%) of 65 jurisdictions mentioned the protection of public health as a rationale for legislative change. 19 (29%) of 65 jurisdictions specifically mentioned prevention of gambling disorder or addiction. In some cases, protection of public health was conceptualised more broadly, as reducing or managing the social impact associated with gambling. For example, as the legal text introducing a licensing system for online gambling in Sweden in 2018 stated, negative consequences of gambling should be limited.[312] In El Salvador in 2021, legislation allowing online gambling pointed out that the advance in communication services and different types of games, whether lottery or others, has brought with it the need to begin a new path in the regulation of the sector, ensuring greater efficiency in meeting the unavoidable objectives of social protection.[313] In North Dakota, USA, legislative text referred to a requirement to respect the "sovereignty of both the Tribe and the State while ensuring the protection and wellbeing of the citizens of each".[314–318] Typically, where protection of public health was mentioned, it was broadly or vaguely specified, with commitments to protect public health, safety, and welfare (as evidenced in the states of Montana, Mississippi, Kentucky, Louisianna, and North Dakota, USA).
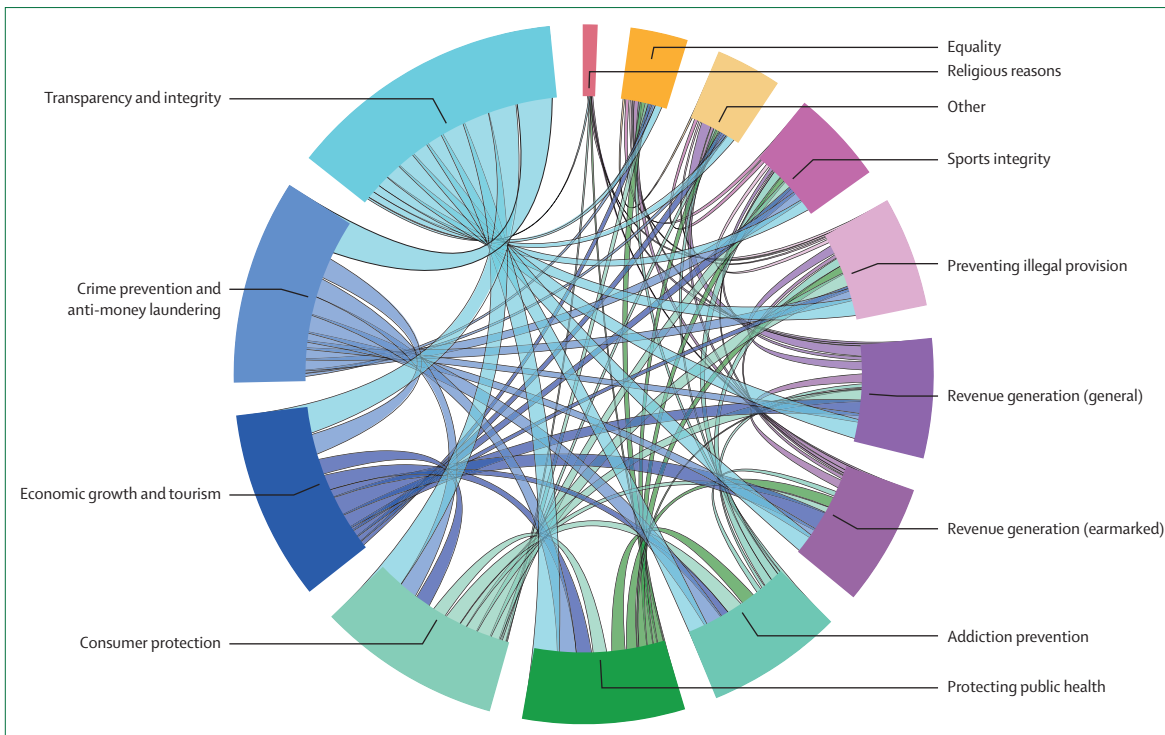
Figure 8: **Associations between motivations for legislative change**
A chord diagram showing the strength of associations between different legislative motivations. The data are based on original qualitative coding of legislative rationales in 65 jurisdictions with major gambling policy changes between 2018–2023 (appendix p 14).

In some jurisdictions, the legislation was more specific about the range of health and wellbeing effects associated with gambling, showing a stronger awareness of the public health impacts of gambling. In Japan in 2018, the Basic Act on Countermeasures against Gambling Addiction, enacted shortly after the legalisation of casino gambling, explicitly recognised that "gambling addiction has not only constituted an obstacle to the daily or community life of persons who have been or suspected to be addicted to gaming...and their families but caused critical social problems, such as multiple loans, poverty, cruelty, suicide, crimes, and so on".[319]

Strong public health-oriented framings were particularly typical of jurisdictions that banned or restricted gambling, such as in Bangladesh which enforced a ban on gambling to protect the wives and children of those gambling or in Tamil Nadu, India, which recognised the links between gambling and financial distress and suicidality.[320,321]

Regional variations

Deployment of different legislative framings varied by region (appendix pp 12, 13). Jurisdictions in North America were more likely than any other region to cite revenue generation as a primary rationale for gambling-related legislative change (16 [49%] of 33 jurisdictions in North America *vs* one [14%] of seven jurisdictions in Europe, p=0·011). European jurisdictions were more

likely than others to cite the protection of public health as a motivation for change (four [57%] of seven jurisdictions, p=0·018). In North America, only five (15%) of 33 states cited the protection of public health as a legislative rationale.

Co-occurrence of framings

Jurisdictions rarely rely solely on one legislative rationale. Only Paraguay (implementing a ban on EGMs outside casinos in 2020) and Myanmar (legalising casinos for non-residents only in 2019),[322,323] cited public health reasons alone as a justification for policy change. Health motives, where they appeared, were more often part of a wider set of rationales. Public health motivations were modestly, but positively, correlated with revenue and economic growth concerns (phi=0·43, p<0·001) and with crime prevention (phi=0·34, p=0·005). These associations can be visualised in a chord diagram (figure 8). In addition to these associations, figure 8 shows that the chords with the strongest connections are transparency and integrity with crime (N=21) followed by transparency and integrity with economic growth and tourism (N=17). Transparency and integrity are linked strongly with consumer protection (N=16). Different economically oriented framings tend to cluster together, which suggests that jurisdictions that legalise gambling often see it as a tool to raise revenues and boost the economy on many different levels.

Panel 9: Emerging public health-based prevention approaches to gambling harms

Restrictions of advertisement and marketing of gambling products:

Several jurisdictions have restricted advertising and marketing. Such restrictions range from rules on content and placement to partial bans and complete bans. In Belgium, a ban on all gambling advertising across traditional and social media came into force on 1 July, 2023. The Netherlands prohibits advertising by professional athletes and other role models. Ontario, Canada, prohibits algorithm-based advertisements containing gambling inducements, bonuses, and credits. Regulators in Ontario have issued fines relating to breaches of these provisions. In some jurisdictions, fines for violations of advertisement and marketing restrictions are written into the law. Other jurisdictions have voluntary codes of conduct, but these can be breached with little action taken against those who do not comply.

Reductions in the accessibility of gambling by location, density, and operating hours:

Some jurisdictions restrict the proximity of gambling venues to educational institutions (eg, Namibia, Belarus). Some jurisdictions limit the number of casinos permitted or in specific geographical areas (eg, Sweden). Some jurisdictions limit operating hours (eg, Germany), and some have banned electronic gambling machines (EGMs) outside casinos (eg, Paraguay).

Restrictions on game features and designs:

Some jurisdictions are considering standards for game design. Germany's 2021 Interstate Treaty on Gambling specifically bans "special addictive impulses from rapid repetition".[325] The 2022 Registrar's Standards on Internet Gaming from Ontario, Canada, prohibit game features that facilitate parallel play (eg, split screens). In Panama, messages about future wins (or proximas ganancias) on EGMs are explicitly banned. Losses disguised as wins are banned on EGMs in the Australian states of Queensland and Tasmania.

Mandatory registration or account-based gambling:

Requiring consumers to set up accounts before they can gamble enables a range of prevention measures, such as setting maximum loss limits. In Germany, a monthly deposit limit across all providers has been set at €1000. In Sweden, people who gamble online are now required to set their own binding loss limits before play. Spain has set mandatory loss limits since first introducing online gambling in 2012, and Norway implemented similar requirements in 2009 for land-based EGMs and in 2016 for online gambling.

Mandating the use of gambling revenues, or otherwise requiring gambling operators to provide financial support, for prevention and treatment:

In Trinidad and Tobago, the Rehabilitation Fund should receive 5% of operators' gambling revenues annually. Similar policies have been introduced in Massachusetts (USA), Illinois (USA), Virginia (USA), Pennsylvania (USA), and Namibia. However, the precise mechanisms for collection and dispersal of funds needs some review as early reports from states in the USA suggest that contributions have fallen substantially short of anticipated levels.

Mandated data sharing for research purposes:

While the mechanisms governing access to industry data need careful consideration, mandates for data sharing in support of research have already been enacted in Germany, the Netherlands, and Switzerland. Data sharing is also a legal requirement in Massachusetts (USA), although the mechanism for making data available to researchers is still being developed nearly 10 years after the legislation was passed in 2011. There remain important design issues, not least the establishment of independent infrastructures and suitable governance arrangements for data sharing and access. Such arrangements need to be practical and efficient, but they must also reliably insulate researchers from commercial pressures and prevent them from becoming dependent in any way on the data providers.

Implications of the legal determinants of gambling

Our analysis of legislative framing shows that the global expansion of gambling is accompanied by a less-than-adequate level of attention to public health and wellbeing and to the social costs associated with gambling. Few legislative changes are framed primarily in terms of protecting public health. Instead, the focus is on the need for gambling products to be fair and transparent, for gambling operations to be crime free and, in the USA specifically, for gambling to generate revenues.

Reviews of existing gambling legislation reveal similar patterns in underlying motivations and framing. In 2020, the terms of reference for a review of the British Gambling Act 2005 contained a dual framing: seeking to minimise harm while allowing the industry to provide economic contributions. There was no explicit recognition of the tension between these ambitions.[324] Similar patterns of framing are evident across Australia and other European countries. By contrast, Norway and a small number of other countries are giving greater weight to public health protections.

The body of new primary legislation (enacted between 2018 and 2023) that we reviewed here now becomes the foundation for policy in the relevant countries for the foreseeable future. Those foundations might endure for the next 10 to 20 years. Policy changes move slowly. Most policy adjustments are incremental and do not alter the underlying legal premises.

From policy framing to policy adoption

Framings influence the choice of policy instruments and interventions, as well as the nature of the underlying primary legislation. Ukhova and colleagues[160] explored

this aspect for our Commission, analysing countries that had implemented major legislative change for gambling between 2018 and 2021. Overall, the policy choices made reflected some awareness of the impact of gambling on public health, but retained a dominant emphasis on individual-level, as opposed to system-level or industry-level, controls.[160] In line with the responsible gambling paradigm, solutions focused on activities aimed at encouraging individuals to change behaviours—offering opportunities for self-exclusions and limit-setting, providing information on treatment, and training staff to recognise those at risk. The same was true for technologically enabled solutions, which include operator-developed systems for monitoring player behaviour and identifying opportunities for intervention. These systems similarly reflected a focus on managing how individuals play, rather than changing the structural environment of gambling provision.

The review of policy choices and interventions did find some cases where emerging public-health oriented and preventive approaches were being implemented.[160] These are summarised in panel 9.

Most jurisdictions showed commitment to prohibiting gambling by minors (the age definition of which also varies between countries), reflecting a near universal consensus that children and adolescents should not be allowed to gamble. Regrettably, policy on prohibition gambling by minors, along with other regulatory policies, are not always enforced rigorously and, in some jurisdictions, not at all.

A minority of jurisdictions adopted policies that focused on visible structural causes of (or factors affecting) gambling harms (eg, product availability, marketing, venue locations).[160] Compared with other regions (ie, Asia, Africa, North America, and South America), European jurisdictions appeared more likely to introduce greater regulatory restrictions, with a somewhat increased focus on structural approaches for prevention (eg, restrictions on advertising and marketing). This difference might reflect market maturity in Europe, where gambling (including online gambling) has been commonly available for many years, coupled with growing recognition of its public health consequences. Where gambling or types of gambling are being legalised for the first time (eg, online betting in the USA), concern for public health consequences seems poorly developed and harm-prevention policies focus on individual consumer behaviour. This situation is concerning, as the efficacy of many individually focused prevention measures in gambling has been queried, and analogous interventions in other public policy areas have been shown to be minimally effective or completely ineffective.[326]

Overall, most jurisdictions that have recently reformed their gambling policies rely on weak policy solutions to prevent gambling harms. When legislative framing and policy choices perpetuate the focus on individual consumer behaviours, the effect is to foreclose the
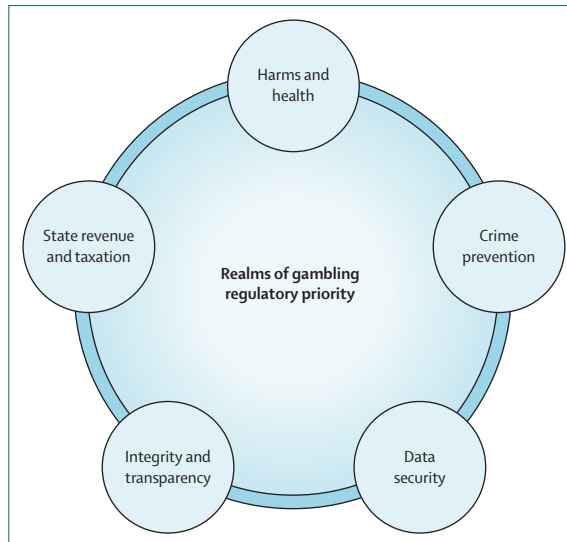
Figure 9: Realms of regulatory concern

opportunity to introduce a much broader range of public health-oriented controls, which would address system-level and population-level factors. The responsibility falls on policy makers and legislators to stop focusing on narrow, individual-level prevention policies and start to think much more seriously about population-level and system-level interventions.

Regulation

Gambling legislation and regulations are only effective if they are enforced. Hence the need to pay attention to the resources available and the systems deployed to procure compliance. In this section, we provide an overview of the current approaches to regulation and regulatory implementation.

Regulatory realms and regulatory approaches

Various regulatory regimes are used to govern gambling provision. Regulatory controls specific to the gambling industry range from establishing state-controlled monopolies to (more commonly) the use of licensing systems. Public policy relating to gambling harms, however, extend far beyond the regulation of the gambling industry itself and into several other key policy areas, including social welfare, mental health, economic policy, and crime control.

Within regulatory systems, we see five major and often interconnected realms of regulatory concern (figure 9). The addition of data security to the other four more traditional areas of concern—health, crime, integrity, and revenue—reflects the digital transformation of the industry. Regulatory regimes do not always address all five realms, nor assign equal priority to them. At the intergovernmental level, organisations, such as the EU, are also concerned with issues related to competition policy, which is not included among the principal five areas in figure 9.

The growth, globalisation, and digitalisation of the gambling industry has heightened regulatory risks across all of these realms and intensified the need for effective regulatory practice and for intra-jurisdictional and inter-jurisdictional collaboration. Traditional legal definitions and jurisdictional boundaries have been blurred or confounded by the expansion of offshore provision, uses of AI, cryptocurrency payments, and new hybrid products, such as social casino gambling, skin betting, and cryptocurrency betting.

The choice of regulatory structures varies across these five realms. Prescriptive (or rules-based) regulation is typically used for crime control, to preserve gambling integrity and transparency, to ensure compliance with anti-money laundering and counter-terrorist financing rules, and for enforcing tax obligations. Prohibitions on gambling by minors are also enacted through rules-based requirements on operators and their staff. To preserve fairness and integrity, gambling products are subject to (and tested against) technical standards, including result determination, random outcome generation, and detection and prevention of cheating. Other standards govern data security, including certified compliance with the international ISO/IEC 27001:2013 standards on data management.[327,328] Compliance is assessed via test houses (conformity assessment bodies), which test and certify gambling software and security management systems against international and national technical and security standards.[122]

Some jurisdictions use centralised EGM monitoring systems to ensure that operators comply with legal requirements. The Global Lottery Monitoring System and the International Olympic Committee Betting Monitoring System are designed to detect fraudulent or suspicious player activities. Threats of money laundering and terrorist financing are controlled, in part, by provider-based transaction monitoring systems, customer due diligence procedures, and active collaboration with financial institutions. Gambling operators must comply with national and international anti-money laundering and combating the financing of terrorism regulations, including MONEYVAL (a monitoring body of the Council of Europe) and the Financial Action Task Force (a global money laundering and terrorist financing watchdog). Compliance with these requirements is typically monitored by relevant authorities with audits, investigations, and enforcement.

By contrast, the management of gambling harms relies more on self-regulatory approaches; gambling operators are expected and trusted to implement and exercise their own controls. Relying on self-regulation allows commercial actors to conduct their own risk analyses and then implement industry-agreed standards using codes of conduct that are usually voluntary and might be vaguely specified, thus providing substantial room for interpretation.

In many jurisdictions (eg, The Netherlands and Sweden), gambling operators are required to monitor the risk behaviours of their consumers with the aim of identifying those at potential risk of harms and intervening to protect them (so-called duty of care policies).[329] Regulators state this need for action but often leave the specific details, design, and implementation of the policy in the hands of the industry.[160] Duty of care policies vary both in terms of legal definition and practical application. Although some regulators have offered guidelines on how consumer risk assessments should be conducted, most industry-led risk-identification approaches have never been independently evaluated for efficacy and are not subject to in-depth scrutiny by the regulator.[329] Gambling operators have considerable latitude for subjective interpretation of their obligations, and plenty of room to interpret requirements in a manner that least impacts their profitability.

Reliance on self-regulation for harm prevention stands in stark contrast to the prescriptive regulatory approaches deployed for the management of most other gambling-related threats.

Compliance and regulatory failure

Recent examples of regulatory non-compliance have exposed the disinclination of gambling companies to take seriously their responsibilities for consumer protection, even when subject to unambiguous prescriptive requirements. Corporate and regulatory priorities do not align. Regulatory responsibilities are often at odds with the fiduciary responsibility of a corporation to maximise returns for their shareholders.

A recent UK coroner's inquest into a gambling-related suicide highlighted multiple instances where the company involved could and should have intervened with a particular individual player who displayed increasingly risky patterns of behaviour, but that they did not do so in a meaningful way.[330]

Countries, such as Great Britain and Sweden, do have mandatory procedures in relation to responsible gambling (known as RG policies). Analysis of these countries' regulatory enforcement actions that resulted in the issuance of fines shows that by far the greatest proportion of fines issued to operators were for failures in this particular area (figure 10). Responsible gambling violations related mainly to unauthorised bonus offers, breaches of advertising regulations (these are reported in the data both as responsible gambling violations and as advertising violations), failures in reporting, and inadequate provision of responsible gambling tools to consumers.[331]

In Great Britain and Sweden, enforcement actions were also undertaken for anti-money laundering and counter-terrorist financing-related violations. In Sweden, eight of the 15 fines coded under "other" were issued because operators offered bets on under-18 football matches (appendix pp 27, 28). The number of fines

issued overall appears to be growing. Since 2016, the UK regulator has issued financial penalties or fines totalling over £140 million, with some companies penalised multiple times for the same category of failure (appendix pp 27, 28).

Examination of violations detected, and especially of repeat violations, suggests that commercial interests are seriously misaligned with harm prevention objectives (appendix pp 27, 28). Gambling operators place great weight on their own commercial interests, and very little weight on harm prevention objectives, unless or until firm and effective enforcement action is taken against them.

Failure by regulators to control wilful non-compliance by gambling operators can seriously undermine public confidence in the regulatory regime, as well as the reputations of the operators. Such failure was exemplified in Australia, where the actions of Crown Casino were described by Royal Commissioners as compromising the trust placed in the licensee and its affiliates.[332] Failures in the casino's responsible gambling policy and practice have been identified.[333,334]

Regulatory failure has also been recognised across African countries, where regulatory bodies often do not have the capacity or will to enforce rules. The most prominent example of unenforced regulation in African countries relates to minimum age gambling. Although 40 of 41 African countries in which gambling is legally permitted have specific age restrictions,[289] underage gambling remains prevalent, with little enforcement action.[284] Major gaps exist between regulators' and industry's understanding of licence conditions. For example, in Malawi, where, according to the regulator, digital roulette cannot be offered in sports betting premises; leading sports betting operators are offering digital roulette.[272,335]

Regulatory challenges

Effective regulation of gambling faces many challenges, with knowledge asymmetries and serious imbalances in resource levels between regulators and the industry that they regulate. These challenges are intensified by the borderless nature of the digital gambling ecosystem, the fast pace of technological innovation, and the ability of gambling companies to shape products and manipulate behaviours. Under-resourcing of regulators and insufficient and inadequate regulatory action in LMICs is particularly concerning given the rapid expansion of the gambling industry into these countries.

Distinct regulatory challenges, faced everywhere, include the following characteristics. First, there is a paucity of research evidence on the effectiveness of regulatory measures, especially when it comes to preventing harms and protecting public health. This knowledge gap is perpetuated by an absence of, or poorly specified, policy surveillance systems. These factors limit progress in, and opportunities for,
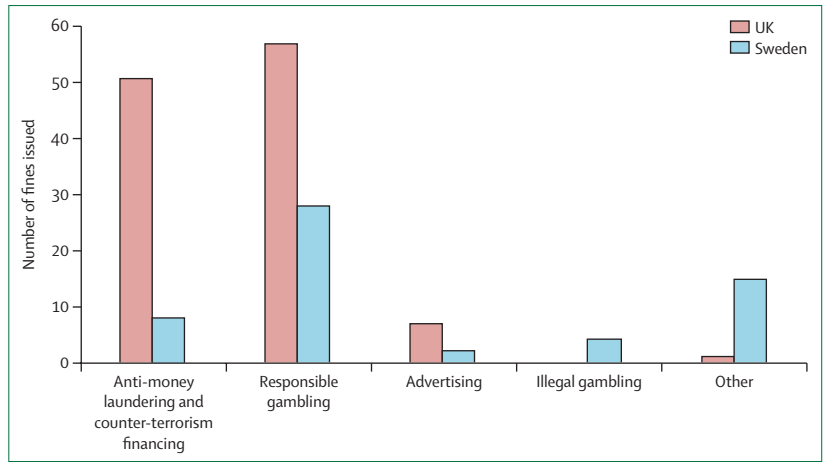
Figure 10: **Number of fines issued to gambling operators, by reason of fine, in the UK and Sweden in 2018–22** Data sourced from Vixio Gambling Compliance, further details available in appendix (pp 27, 28).

improving regulation. While research evidence remains thin, regulatory and governance bodies should adopt precautionary principles, exercising caution with respect to new products or commercial practices posing plausible danger of increased public harm, at least until the risks are fully understood. Thorough evaluation of alternative regulatory approaches and structures will in time provide more guidance for regulatory development than currently observed.

Second, in many regulatory domains—such as consumer protection and product safety—public and commercial interests diverge to a substantial degree.[336] Where private and public interests do not align, rules-based regulation and enforcement are generally needed. The independence of regulatory authorities needs to be protected and reliance on industry's interests and motivations is untrustworthy. Strong, rules-based regulation is required in such areas. The Commission therefore calls into question the reliance in many jurisdictions on self-regulatory approaches to the control of gambling harms.

Third, offshore gambling provision poses special challenges for national regulators. In most contexts, gambling is not regulated at the point of consumption, but at the point of sale. Jurisdiction-specific regulations cannot adequately address a borderless industry. When dealing with transnational organised crime, money laundering, or terrorism-financing, the need for international collaboration is already well established. The need for cross-border and intersectoral regulatory collaboration is also urgently required in tackling risks of gambling harm.

Gambling regulation needs to be well resourced and well networked to be effective. Regulators need to be proactive and vigilant in identifying emerging risks and both swift and skilful in mitigating them. Regulators need to move quicker than currently, to keep pace with

technological change. Legislation and regulations governing the gambling industry must now prioritise the protection of public health over other competing interests.

Recommendations

Based on the risks associated with gambling and their probable trajectory, this Commission recommends urgent, coordinated action—by intergovernmental agencies, national, and local governments—to tackle the challenges that we have outlined. We have formulated specific recommendations that are feasible, achievable, and likely to be effective in reducing gambling harms.

First, gambling is a public health issue. In setting policy, governments should give priority to protecting health and wellbeing over competing economic motivations.

Second, in all countries—whether or not gambling is legally permitted—effective gambling regulation is needed. We recommend the reduction of population exposure and availability of gambling, through prohibitions or restrictions on access, promotion, marketing, and sponsorship; the provision of affordable, universal support and treatment for gambling harms; and the denormalisation of gambling via well resourced social marketing and awareness campaigns.

Third, jurisdictions that permit gambling need a well resourced, independent, and adequately empowered regulator, focused on the protection of public health and wellbeing. At a minimum, regulatory protections must include the protection of young people from gambling by enforcing minimum age requirements, backed by mandatory identification; the provision of effective consumer protection measures, such as universal self-exclusion and user registration systems; the regulation of products proportionate to the risk of harms, based on harmful characteristics, such as intensity, immersivity, and continuous play; the enaction of mandatory measures limiting gambling consumption, such as enforceable deposit and bet limits, and universal pre-commitment systems.

Fourth, gambling-related policy, regulation, treatment, and research must be protected from the distortionary effects of commercial influence. We advocate for a rapid transition away from industry-funded research and treatment, coupled with and enabled by increased levels of investment from independent sources.

Fifth, at the international level, UN entities and inter-governmental organisations should incorporate a focus on gambling harms into their strategies and workplans for improving health and wellbeing.

Sixth, with regard to gambling harms, there is a need to develop an international alliance—including civil society, people with lived experience of harms related to gambling, researchers, and professional organisations—to provide thought leadership, advocacy, and convening of interested parties.

Seventh, the Commission recommends the instigation of the process to adopt a World Health Assembly resolution on the public health dimensions of gambling.

Acting on these recommendations (panel 1) offers governments a range of benefits. These recommendations assist governments in carrying out their constitutional and ethical duty to protect the health and wellbeing of their citizens. Enhancing protections brings the regulation of gambling more closely in line with controls on other addictive and harmful products.

Our recommendations provide most people who never gamble, or do so only very occasionally, with protection against corporate practices designed to coerce them into activities in which they would otherwise have little interest. By restricting advertising and marketing practices, governments can provide protections for those who need it most, such as children and young people.

In the long term, our recommendations should reduce the burden of public costs associated with gambling by preventing and reducing harms. While governments readily appreciate revenues from the gambling industry and might even use gambling products for their own fund-raising purposes, they generally underestimate the prevalence and seriousness of social harm done and the associated public costs.

Finally, as the scale of commercial gambling increases and its reach extends across the globe, and as novel offerings proliferate, governments need to demonstrate that their legislative approach and regulatory structures are effective. When scandals occur in the industry or exploitative business practices are revealed, these are quickly branded as regulatory failures. Faith in government can be undermined by such scandals just as much as industry reputations are damaged. The public need to know that regulatory oversight of the gambling industry is appropriate and effective.

This *Lancet Public Health* Commission should mark the beginning of a serious and sustained effort to apply public health logic as countries and communities respond to the rapidly increasing threat of gambling harms. We acknowledge that implementing these recommendations might take time, will not be easy, and will require sustained effort and co-operation from multiple international actors. We hope to establish a clear direction for future action that will lead to effective policy design and implementation.

Tracking and assessing progress on the recommendations of the Commission will require independent and robust global and national monitoring of the situation, using relevant indicators. The Commission report lays the foundations for the development of global monitoring systems, but substantial further work and research is required to develop a set of indicators and an accompanying accountability framework. Models from which to draw include the NCD Countdown 2030[337] and the Countdown for Global Mental Health 2030 dashboard,[338]

which bring together reliable, valid, and feasible indicators to monitor global and national progress.

In the long term, success would mean more jurisdictions adopting policies known to be effective in preventing harms. As a community, we need to foster strong relationships with civil society and those with lived experience of harms and support the integration of their perspectives and contributions within the gambling policy cycle. Success would also mean having more civil society organisations adopt issues of gambling harms and include them within their portfolios.

We urge governments at all levels to adopt our recommendations and to commit themselves to substantial improvements in the protection of public health and welfare from harms associated with gambling.

Contributors

The Commission report was co-ordinated by the Commission Co-Chairs (HW, LD, and SS) and supported by the members of the Commission Research Support Group (LTT, BB, DU, and VK). All authors were responsible for conceptualisation. HW, LD, LTT, DU, and VM were responsible for data curation. HW, LD, LTT, DU, and VM were responsible for formal analysis. HW, LD, SS, and MF were responsible for funding acquisition. HW, LD, LTT, DU, and VM were responsible for investigation. HW, LD, LTT, DU, and VM were responsible for methodology. HW, LD, SS, BB, and DU were responsible for project administration. LD, LTT, DU, VM, and HW were responsible for software (analytical code, programming, and analysis). HW, LD, GR, SS, CL, and MF were responsible for supervision (oversight and leadership). LD, VM, and HW were responsible for data verification and replication. HW, VM, and LTT were responsible for data visualisation. HW, GR, VM, CL, AR, LD, KS, CB, JSY, DU, BB, MSp, JR, SS, and MF wrote the original draft. All authors contributed to the revised drafts. MSp, VM, and HW edited the revised drafts. Further details on author expertise and contributions are available in the appendix, pp 2–4. LTT, LD, MF, and HW had access to all data supporting the systematic review of gambling behaviours reported in this Commission. VM, DU, and HW had access to all data supporting the global review of gambling legislation. All authors accept responsibility to submit for publication.

Declaration of interests

In the past 5 years, HW received grant funding for gambling-related research by the Economic and Social Research Council, National Institute for Health Research, Wellcome Trust, the Gambling Commission (including their regulatory settlement fund), Office of Health Disparities and Improvements–Public Health England, Greater London Authority, Greater Manchester Combined Authority, Blackburn with Darwen Local Authority, and the Department of Digital Culture Media and Sport; received funding from GambleAware for a project on gambling and suicide in 2018–19; received consulting fees from the Institute of Public Health, Ireland, and the National Institute for Economic and Social Research; received payment for delivery of seminars from McGill University, the University of Birmingham, Johns Hopkins University, and from the British Broadcasting Corporation; has been paid as an expert witness by Lambeth and Middlesborough Borough Councils; received travel costs paid by Gambling Regulators European Forum, the Turkish Green Crescent Society, Alberta Gambling Research Institute, the REITOX Academy (administered through the Austrian National Public Health Institute), and the University of Helsinki; served as Deputy Chair of the Advisory Board for Safer Gambling between 2015 and 2020, remunerated by the Gambling Commission; is a Member of the WHO panel on gambling (ongoing) and provided unpaid advice on research to GamCare for their Safer Gambling Standard (from 2019 until mid-2021); runs a research consultancy for public and third-sector bodies only; has not, and does not, provide consultancy services to gambling industry actors; in researching the gambling industry and their practices, HW declares occasional attendance at events where gambling industry actors are present (including industry-sponsored conferences); as part of her work on the Gambling Survey for Great Britain, HW is required by the Gambling Commission (the funder) to participate in events disseminating research findings to their stakeholders, which includes the industry; her attendance at events where industry is present is independently funded and does not involve collaborations or partnerships with industry. AR discloses grant funding for gambling-related projects from Suicide Prevention Australia, The Winston Churchill Memorial Trust, Australia's National Research Organisation for Women's Safety, Victorian Responsible Gambling Foundation, Federation University Australia, and membership of the WHO panel on gambling; received funding for travel for the 2019 WHO meeting by the Turkish Green Crescent Society; received consultancy funding from WHO to prepare a factsheet on Gambling and conducted a paid peer reviews for Auckland University of Technology and the British Academic Forum for the Study of Gambling, administered via Gambling Research Exchange Ontario and funded through regulatory settlements. VM discloses grant funding for gambling-related projects from the Academy of Finland (projects 349589, 31834), the Finnish Ministry of Social Affairs and Health, and the Finnish Ministry of Justice; as a member of the Gambling Harms Evaluation Committee (2021–ongoing) and the Indicators for Gambling Harms work group (2019–21) under the Finnish Ministry of Social Affairs and Health, she interacts with the Finnish gambling monopoly to evaluate company products and practices and to analyse company data; discloses a fee for delivering a webinar from Bochum University, paid peer review from Routledge, and funding for travel from the Finnish Foundation for Alcohol Studies, University of Bergen, and the Council of Europe; provides consultation for public and third-sector actors, but not the gambling industry. CL discloses funding in the past 5 years for gambling-related research from the Royal Society for Public Health, Australian Research Council, Foundation for Alcohol Research and Education, and Victorian Responsible Gambling Foundation; provided a paid consultancy report on electronic gambling machines gambling for a 2023 appeal against a decision of the Northern Territory (Australia) Licensing Commission to expand electronic gambling machine availability in venues in Alice Springs; received travel support from the Turkish Green Crescent Society to attend a WHO meeting in 2019 and travel support from Monash University to attend the Fourth WHO Forum on Alcohol, Drugs and Addictive Behaviours and to attend a Commission meeting in London; is a member of the WHO panel on gambling and was engaged as a consultant in 2023 to prepare a WHO Technical Brief on gambling and gambling disorder; is an Editorial Board Member of Critical Gambling studies; provided submissions to Royal Commissions and Inquiries into casinos and electronic gambling machine venues in the Australian states of Victoria, New South Wales, and Western Australia, and has been consulted by Ministers and Ministerial staff for the governments of New South Wales, Victoria, and the Australian Government in relation to reform of gambling regulation, in an unpaid capacity; provides policy advice to local governments and non-governmental organisations in relation to reform of gambling regulation (unpaid); does not provide advice to the gambling industry or members of its ecosystem. GR discloses funding for gambling-related projects from The British Academy, the Economic and Social Research Council, the National Institute for Health Research, The Medical Research Council, the Glasgow Centre for International Development, the Department of Culture Media and Sport; acted as an advisor for a project on gambling advertising carried out by the Institute of Social Marketing at the University of Stirling in 2018, funded by GambleAware; was a Commissioner on the Howard League for Penal Reform's Commission on Crime and Gambling Related Harms 2019–22; is currently a member of the WHO panel on gambling and an Associate Editor of the journal Critical Gambling Studies; and received travel and accommodation expenses paid by the Turkish Green Crescent Society, the University of Helsinki Centre for Research on Addiction, Control and Governance–Finnish Ministry of Social Affairs and Health, the University of Sydney (via the Australian Research Council), the University of Bremen, the Ruhr Universität, Bochum, Scottish Parliament, the UK Society for the Study of Addiction, and the Howard League for Crime and Penal Reform's Commission on Crime and Gambling Related Harms (via the Gambling Commission). CB discloses grant funding for gambling-related projects from The British Academy, The Economic and Social Research Council, the National Institute of Health Research, Blackburn with Darwen Local Authority, and the Department of Culture Media and Sport. KS discloses grant funding

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