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Framing a public health approach to gambling harms in Wales: Challenges and opportunities

Robert D. Rogers, Heather Wardle, Catherine A. Sharp, Simon Dymond, Timothy J. Davies, Karen Hughes & Gaynor Astbury



Framing a public health approach to gambling harms in Wales: Challenges and opportunities

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Terms of Reference

In 2018, the Chief Medical Officer for Wales highlighted gambling harms as an important health challenge for Wales and added his voice to calls for a public health approach, noting that gambling harms are *'an issue that cannot tackled by interventions solely aimed at individuals'*. This call resonates with the increasing concerns of policymakers, public health professionals and the third sector about the social, health and economic costs of harmful gambling in Wales. The authors were commissioned by the Policy, Research and International Development Directorate of Public Health Wales to consider the challenges and potential benefits of a public health perspective, scope the likely distribution of harms across Wales, and outline some policy options that might be offered by a public health approach for Great Britain (pending regulatory changes) and for Wales specifically.

In this report, we:

- (i) Summarise the expansion of the gambling industry in the context of the current regulatory framework as set out in the Gambling Act 2005 and Wales Act 2017 (Chapter 1);
- (ii) Briefly consider three salient features of the current public and policy debate: machine gambling, the impacts of advertising and technological development (Chapter 2);
- (iii) Review the benefits of moving away from clinical conceptions of gambling problems (as essentially an addictive illness) towards the consideration of broader patterns of harms accruing to individuals, families and communities (Chapter 3);
- (iv) Consider the pros and the cons of the existing academic public health frameworks for gambling harms and the arising policy reliance upon 'responsible gambling' measures as a way to address these harms (Chapter 4);
- (v) Review the efficacy of harm-minimisation measures for gambling (Chapter 5);
- (vi) Summarise what we know about the social and economic factors that drive the unequal distribution of gambling harms across communities (Chapter 6);
- (vii) Provide a secondary analysis of data from the Wales Omnibus Survey 2015 to illustrate the unequal distribution of gambling harms across Wales (Chapter 7);
- (viii) Provide a geo-spatial risk-index map to illustrate the likely distribution of vulnerable groups across Wales; using four case studies (Cardiff, Pontypridd, Rhyl and Brecon) to illustrate how risk is driven by different factors in different places (Chapter 8); and
- (ix) Discuss how the regulatory framework of the Gambling Act 2005 constrains policies to address gambling harms across Great Britain, but offer suggestions for using existing health frameworks to address gambling harms in Wales (Chapter 9).

This report was commissioned and funded by Public Health Wales. Public Health Wales is an NHS organisation providing professionally independent public health advice and services to protect and improve the health and wellbeing of the population of Wales. Production of this report was funded by Public Health Wales. However, the views in this report are entirely those of the authors and should not be assumed to be the same as those of Public Health Wales.

Executive Summary

Introduction

- Recent years have seen substantial increases in the availability of gambling. In Great Britain, the gambling industry's annual Gross Gambling Yield (GGY; that is, the difference between bets paid in and bets paid out) has increased to £14.4bn in 2017/18. This suggests that either more people are gambling or that those who do gamble are spending more money gambling than previously. These observations, along with rapid technological changes that now provide gambling products and services through online and mobile platforms to more sectors of the population, have heightened concerns about the numbers of people at-risk of experiencing gambling harms and associated social costs.
- In Wales, 1.1% of adults aged 16 years or over were identified as problem gamblers in 2015, which equates to around 27,000 Welsh adults, with a range of 19,000 to 38,000 people. The rate for 2016 was 0.8% (and not significantly different from 2015). In 2016, estimated health, welfare, employment, housing and criminal justice costs incurred by problem gamblers fell between at least £40m-£70m in Wales alone. However, beyond these headline figures, it is likely that many more individuals (including partners and children) experience harms either from their own gambling or from the gambling of others.

...it is likely that many more individuals experience harms either from their own gambling or from that of others.

- The Gambling Act 2005 heralded a comparatively liberalised gambling market in Great Britain, and gambling has become a salient feature of its culture and economy. However, British regulatory policy has shown a fluctuating quality with legislative adjustments to address specific public and political concerns. Current public attitudes to gambling show increasing negativity. Under the Wales Act 2017, the Welsh Government has additional powers to set limits on the number of machines in new gambling premises.
- One indicator of the liberalised market in Great Britain is the increased salience of gambling marketing and promotions; for example, in the context of sports coverage. Between 2006 and 2012, the number of television advertisements for gambling products increased from ~152,000 to 1.39m per annum. In 2012, adults viewed on average two gambling adverts per day, while children viewed on average four per week.
- Technology is driving the accessibility of gambling products and services. In 2017/18, remote betting revenues (mostly football and horse racing) came to £2.3bn. In 2017, 18% of adults gambled online.

...18% of adults gambled online.

Laptops were the most popular devices to access online gambling services (50%) but use of tablets and mobile phones to gamble increased, with 51% of individuals using either device. Among users of online gambling services, 97% gambled online at home and 13% gambled online while at work. Of 18-24 year olds who gambled online, 22% gambled while at work, ~22% while commuting and ~10% in a pub or club.

These trends indicate easy and continuous access to gambling services across multiple settings of the home, work or while travelling, raising the possibility that technology may act as an ‘accelerator’ to increase risk of harms among vulnerable individuals.

- The Chief Medical Officer for Wales highlighted the importance of recognising and addressing gambling harms as an emerging and pressing public health concern. Gambling is increasingly recognised as a public health issue. However, aside from limited public budgets, there are significant challenges to developing an effective and durable public health framework for reducing gambling harms. These are: (i) a conception of gambling harms that over-emphasises an individual (and addictive) psychopathology; (ii) at a policy level, an over-reliance upon harm-minimisation for individuals and a failure to address adequately social and cultural factors that mediate the incidence and experience of harms in individuals and social groups; and finally (iii) a legislative framework that does not (yet) adequately reflect a consensus between policymakers (on the one hand) and public (on the other hand) about the balance to strike between addressing gambling harms (and protecting vulnerable groups) and individuals’ liberty to gamble.

Gambling is increasingly recognised as a public health issue.

...balance to strike between addressing gambling harms... and individuals’ liberty to gamble.

- This report responds to the Chief Medical Officer for Wales’ call and outlines the major issues and challenges associated with developing a cohesive public health approach to gambling harms. It outlines factors that are linked to gambling harms; demonstrates how risk of harms varies between social groups and places; and explores policy actions to better meet the needs of individuals, families and communities in relation to harms.

A public health approach that broadens its policy targets to include social, economic and cultural process can offer opportunities to address gambling harms more effectively.

The definition of gambling harms

In order to address gambling harms and develop (and then assess) effective policy responses, a coherent understanding of what is meant by the term is needed. To date, gambling problems have been specified by the particular behaviours and symptoms of an addictive illness as specified by psychiatric diagnostic systems. However, while helpful in the context of matching more severely affected individuals against treatments, this approach fails to capture the broader social and health harms associated with gambling.

This report distinguishes between, on the one hand, ‘gambling disorder’, ‘problem gambling’, ‘pathological gambling’ and ‘gambling problems’ as the presence in individuals of sufficient behaviours or symptoms to satisfy formal diagnosis by psychiatric diagnostic systems, and, on the other hand, ‘gambling harms’ as the broader adverse consequences of gambling that can impact on individuals and society. We adapt the pragmatic definition of gambling harms offered in the Welsh Government’s alcohol and substance misuse strategy for Wales 2008-

2018 and joint work completed simultaneously with this report by the Responsible Strategy Gambling Board (RGSB).

To address gambling harms as a public health target, we advocate adopting the RGSB definition of gambling harms as **‘the adverse impacts from gambling on the health and wellbeing of individuals, families, communities and society’**.



- For individuals, gambling harms can relate to loss of more money than is affordable, disrupted work performance, mental and physical health problems, lowered living standards, debt, bankruptcy and criminal-justice problems. They can include disrupted and ruptured partnerships, as well as social and emotional isolation.



- For families, gambling harms can include household financial pressures, foregone shared activities, loss of trust between family members, resentment and stigma, and the breakdown of relationships between partners, caregivers and children.



- For communities, gambling harms can include the burden of resources borne by the wider medical, social and judicial infrastructures and, arguably, the erosion of community cohesion, especially within disadvantaged or marginalised groups.

- Gambling harms can be occasioned by either short-lived or extended patterns of gambling but will tend to endure and involve longer-term adverse consequences that can offer appropriate and measurable policy targets.
- Gambling harms exist on a continuum from minimal to severe; the latter amounting to a behavioural addiction. They frequently co-occur with mental and physical illnesses and there is an unequal distribution of gambling harms across different social groups.
- Public health strategies should be aligned to provide effective treatments for individuals suffering with gambling problems but also to prevent broader gambling harms, and to support affected individuals and families in improving their health and well-being. Policies and interventions should be rigorously tested against evidence.
- To date, in Great Britain as elsewhere, policy measures to address gambling harms have tended to focus on interventions with individuals, leading to an over-reliance upon harm-minimisation measures involving ‘responsible gambling’ that are intended to ‘fix’ erroneous beliefs about gambling products and offer ways to support ‘healthy’ gambling.
- However, these measures fail to address broader social and economic determinants. People’s decisions to gamble, in what ways and which circumstances, are profoundly conditioned by their social and cultural contexts. These determine the experience of gambling harms. Interventions to reduce harms need to consider these perspectives.

Harm-minimisation measures

- Current policy tends to focus upon harm-minimisation or ‘responsible gambling’ measures such as limit-setting and self-exclusion. These are best understood as forms of consumer-protection; the most helpful of which have value by (i) providing individuals with accurate information about products that carry risk of harms, and by (ii) offering means to manage

use of gambling products within desired limits (as intended at time of purchase).

- Harm-minimisation measures take diverse forms. Primary (universal) measures, such as public information and awareness campaigns, are likely to make a difference only among individuals who already have concerns about their gambling. Secondary (selective) measures, such as self-exclusion and limit-setting, hold the most promise but their efficacy is likely to depend upon their consistency of use and regulatory adjustments to reduce opportunities to switch between operators and venues.
- Public awareness campaigns can be a cost-efficient means of disseminating information about gambling harms and 'responsible gambling' messages to large numbers of people. However, there has been little research into their efficacy.

At the time of publication, the evidence suggested that:

- Information campaigns do not substantially increase awareness of gambling harms among the population generally; and
- Multi-faceted information campaigns (involving co-ordinated television, radio and newspapers) can increase contacts with support groups and treatment services by individuals with concerns about their gambling, suggesting that campaigns can assist individuals who have particular reasons to engage with the material. However, as with alcohol use, many vulnerable individuals are unaware of the harms arising from their gambling as they are affected by them, limiting the impact of information campaigns.
- Educational programmes (primary measures) in young people could improve knowledge about gambling risks but there is little evidence that they alter or reduce gambling behaviour.
- In the context of machine gambling, integrated secondary measures such as on-screen warnings, and limit-setting (e.g. losses), have been offered to support individuals when deciding whether to prolong or terminate their gambling sessions. For example, on-screen warnings can increase the likelihood of session termination; and limit-setting can sometimes moderate betting behaviour. However, only a minority of individuals engage with these measures, limiting their efficacy.
- Self-exclusion programs (secondary measures) offer individuals ways to preclude future opportunities to visit gambling venues or use online gambling services. These interventions can bring significant, albeit, sometimes temporary benefits.

These include, but are not limited to:

- (i) Reductions in gambling expenditure;
- (ii) Diminished urges to gamble;
- (iii) Improvements in individuals' perceived control over gambling; and
- (iv) Improvements in mood and well-being, rather than just problem gambling symptoms.

- The multiplicity of commercial gambling and the likely episodic contacts of individuals with harm-minimisation measures mean they can have only marginal effects upon aggregated harms in the social groups most at-risk. An integrated public health approach for harms should consider other universal interventions that could be appropriate.

Which groups are vulnerable to harm?

- Much of the existing research base has focused upon the characteristics of individuals that increase their vulnerability to gambling problems or, less frequently, harms. However, these characteristics – gender, minority ethnic status, unemployment, mental health problems – coalesce around larger-scale social, cultural and economic processes that mediate their contribution to gambling harms. Thus, the ‘individual’ is embedded in the ‘social’ in the generation of gambling harms, and a substantive part of the evidence-base demonstrates that the incidence of harms varies by socio-economic and cultural factors, reflecting broader patterns of health inequalities.
- In 2018, 14% of 11-16 year olds had spent their own money on (age-restricted) gambling in the previous week. Young people can be vulnerable to gambling harms directly through their own gambling activity or indirectly through the gambling of parents or caregivers. Possibly, engagement with now rapidly developing technologies associated with gaming or social free-to-play online gambling games can facilitate the transition to commercial gambling. However, the evidence that this happens is mixed.
- Impacts and harms which young people can experience include heightened conflict with parents and friends, disrupted school work, strong feelings of guilt, skipping school/work, unpaid debts and stealing money to gamble. Young people problem gamblers reported low self-esteem, elevated rates of anxiety and depression and increased rates of alcohol and substance misuse. These individuals were more vulnerable to suicide ideation and reported more suicide attempts compared with young people who were not problem gamblers.
- Students are likely to be at an elevated risk during the transition of leaving home, due to access to legal gambling, and possibly limited financial resources. In 2016, 1.2m or two thirds of students at British institutions had gambled in the last month, with 54% of those reporting their motivation to be to make money; with one in four gambling more than they could afford. A 2008 Scottish study found 4% of college students were problem gamblers.
- Some ethnic groups, and especially minority groups, tend to gamble less but show elevated rates of problem gambling, indicating the ‘harm paradox’. Gambling and its harms may reflect socio-economic characteristics of urban areas in which ethnic groups are often situated as well as patterns of low pay and shift-based patterns of employment.
- Individuals in constrained economic circumstances are also significantly more vulnerable to gambling harms, reflecting experiences of unemployment, unstable or under-employment, financial difficulties and debt. Overall, in the 2007 Adult Psychiatry Morbidity Survey, 8% of English adults had experienced debt but, among problem gamblers, this number spiked to 38%. Problem gamblers (7%) use of short-term and payday loans credit was more than double that of non-problem gamblers (3%).



- Rates of problem gambling prevalence tend to be highest among those living in most deprived areas (i.e. those with low income households, low levels of employment, poor health, education, skills and training, barriers to housing and services, poor living environment and increased crime). This could reflect a number of social and economic processes including the greater availability of gambling opportunities (such as the unequal and disproportionate number of B2-category gambling machines (Fixed Odds Betting Terminals) and licensed betting offices located in areas of greater deprivation).
- Individuals in constrained economic circumstances are also significantly more vulnerable to gambling harms...
- Gambling behaviours and gambling problems can show divergent associations with periods of unemployment. In 2010, 3.3% of unemployed individuals scored as problem gamblers compared with 0.9% of employed individuals.
 - There are strong associations between some mental health problems and gambling harms. However, the causality of the association is highly complex. Samples of problem gamblers show very high rates of alcohol and substance use disorders (over 57% in a recent systematic review), along with mood and anxiety disorders (38%); depression and other mood-related illnesses. In 2007, problem gambling in England varied from 6% among individuals with probable psychotic illnesses to 1.5% among those with evidence of anxiety/depressive disorders. These estimates were at least twice the rate of problem gambling among the general population.
 - Current problem gamblers are especially vulnerable to harms because of the way that individuals' gambling and gambling problems fluctuate over time. The strongest predictor of past year gambling problems is previous gambling problems, highlighting how people with past or current gambling problems remain vulnerable to 'relapse' and further harm.
 - Homelessness may be a marker for vulnerability to gambling harms, reflecting economic disadvantage and social isolation. In 2012, interviews conducted with homeless individuals in Westminster shelters estimated that 12% were problem gamblers, compared with prevalence rates of 0.4% among individuals living in private households.
 - Other social groups at-risk include military veterans, ex-prisoners or individuals on probation; groups characterised by social exclusion.

Evidence for social patterning of gambling harms across Wales

- Secondary analyses of the Welsh Omnibus Survey 2015 showed that:
 - (i) Fewer Non-White individuals (39%) reported past year gambling than White individuals (63%). (Whilst rates of problem gambling could not be estimated, there is no reason to suppose that they differ from those observed for minority ethnic groups in England and Scotland, which show higher rates in these groups than those from white backgrounds);
 - (ii) More unemployed individuals (52%) in Wales gambled and had more gambling problems than employed individuals (38%). Rates of problem gambling were also higher among unemployed individuals (2%) than employed individuals (1%);
 - (iii) More individuals in manual occupations (64%) gambled and had more gambling problems, than individuals in supervisory, managerial, administrative or professional

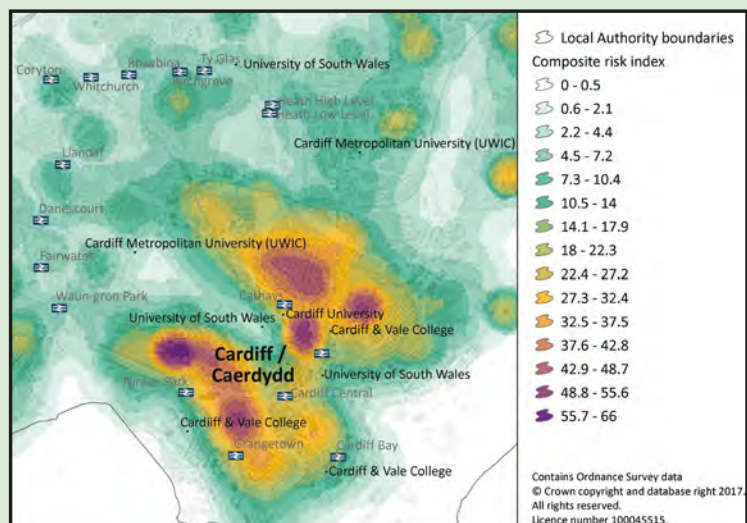
occupations (57%). Similar patterns were clear for problem gambling (1.4% for those in manual occupations compared with 0.6% in the remaining occupations);

- (iv) More individuals living in the most deprived areas (48%) gambled than those living in least deprived areas (35%). However, rates of problem gambling were eight times higher among those living in the most deprived areas compared to the least deprived areas;
- (v) Gambling participation hardly differed by residence in urban compared to rural areas of Wales (62% and 61%, respectively), moreover, problem gambling rates were significantly higher among those living in urban areas (1.4%) than rural areas (0.4%).

- These findings confirm that gambling harms (captured here as problem gambling) are socially-patterned and distributed across Wales in ways that are consistent with existing knowledge of the social-patterning of gambling harms in England and Scotland.

A new illustrative geo-spatial risk-index map of gambling harms across Wales

- Using a variety of indicators – unemployment, financial hardship and debt, minority ethnic status, age – we offer a ‘risk-index’ map to show how social, health and economic risk factors for gambling harms might be distributed across Welsh communities, and the variety of risk factors that warrant different policy interventions in different places.



- The risk-index shows the likely risk of gambling harm at given locations. *It does not show where gambling problems are occurring.* It shows areas in which there are relatively higher numbers of people with characteristics linked to gambling harms. It is likely that some of these characteristics, such as youth and constrained economic circumstances, synergise to generate gambling harms in different communities.
- Four case studies (Cardiff, Pontypridd, Rhyl and Brecon) demonstrate that risk of gambling harms will likely differ across Welsh urban and rural communities, reflecting both convergent and divergent social and economic characteristics. For example, risk of harms varies in ways that reflect concentration of young people in some places but, in addition, poverty and vulnerable minority ethnic groups in other places; while, within smaller urban areas, risk of harms can be driven by unemployment, poverty and mental health problems.

Risk in rural areas is weaker but likely reflects characteristics of the resident population and involve unemployment, minority ethnic groups and poor mental health. In other places, risk may reflect the presence of individuals with health issues linked to gambling harms such as alcohol or drug misuse; or are else drawn into the area by the provision of treatment services for these problems. In this way, the presence or arrival of individuals with characteristics linked to gambling harms might help to constitute places with heightened risk, requiring policy interventions.

- These case studies illustrate how risk of gambling harms can involve varying social and economic characteristics. In public health terms, this diversity of risk argues for a combination of universal measures to address harms but also additional measures designed to address the social and economic facilitators in particular communities. Further, risk-indices of this kind can facilitate the cost-effective allocation of limited public funds and resources in communities at increased risk of gambling harms.

Framing the policy space and options for Wales

- The Chief Medical Officer for Wales called for a public health approach stating that gambling harms are *'an issue that cannot be tackled by interventions solely aimed at individuals'*.
- The range of action that can be taken to address gambling harms across Great Britain, not just in Wales, is constrained by the Gambling Act 2005. Critically, the issue of proportionality has not been addressed by policymakers, regulators or the public; that is, there has been no resolution of the balance to be struck between the level of gambling harms that the public is prepared to tolerate (or that requires policy intervention) and individuals' freedom to gamble. Failure to resolve this issue means that the range of (universal) policy options is likely to remain underspecified and ineffective.
- Effective public health frameworks involve universal but proportionate actions to address the broader gambling harms distributed across communities, alongside the provision of harm-minimisation measures and treatments for severely affected individuals. Lessons from other public health areas (e.g. smoking and alcohol misuse) tell us that, while interventions targeted at vulnerable groups have a place in the policy repertoire, it is often universally applicable responses that have most impact in terms of changing behaviour. The May 2018 announcements by the Department for Digital, Culture, Media & Sport (DCMS) of reduced maximum stakes of £2 for B2-category machines, alongside a review of age-restrictions for some National Lottery products and proposals to consider spending limits pending affordability checks for online gambling, indicate a possible shift towards policies with universal elements that offer protections for vulnerable groups.
- There are some areas of concern that require universal policies to address particular risks. We provide two examples:
 - (i) *Impacts of advertising upon children:* The Gambling Act 2005 is intended to protect children from harm or exploitation. However, current voluntary codes of practice do not go far enough to protect children from being exposed to, and potentially harmed or exploited by gambling advertising and marketing. Age-verification on social media works through self-report, making it is easy to circumvent these restrictions. Policies might include arrangements by which 'in-app' marketing (and free-to-play games) is

accessible through these media only once full third party, age-verification processes have been completed. However, the data analytical systems that distribute gambling promotions across social media pose significant – perhaps, insuperable obstacles – to implementing such measures effectively. Thus, the development of effective policy will require consideration of universal (and mandated) restrictions to the distribution of gambling advertisements and promotions on technological platforms that are very likely accessed by children.

- (ii) *Access to credit in gambling:* Restricting access to further funds while gambling is a key harm-minimisation intervention that includes removal of gambling on credit cards at the point of sale and the removal of ATMs as key actions in this area. In May 2018, the DCMS asked the Commission to consider the introduction of spending limits, pending affordability checks when individuals open accounts with online gambling services. However, spending limits pending affordability checks are temporary restrictions on expenditure and do not necessarily address the broader challenge of harms that can accumulate as individuals continue to gamble against established lines of credit. As such, a review of the broader role of credit in online gambling and more restrictive policy options is required.
- Addressing gambling harms effectively as a public health challenge requires a broad debate about the role of gambling in our lives, and a resolution of an appropriate balance of policies to protect the vulnerable against people’s rights to gamble that is neither imposed by legislation or grounded in moral censure. Rather, the risks to public health need to be measured against what we now know about gambling behaviour, the way technology is developing and then think through a proportionate regulatory approach.

Taking things forward in Wales

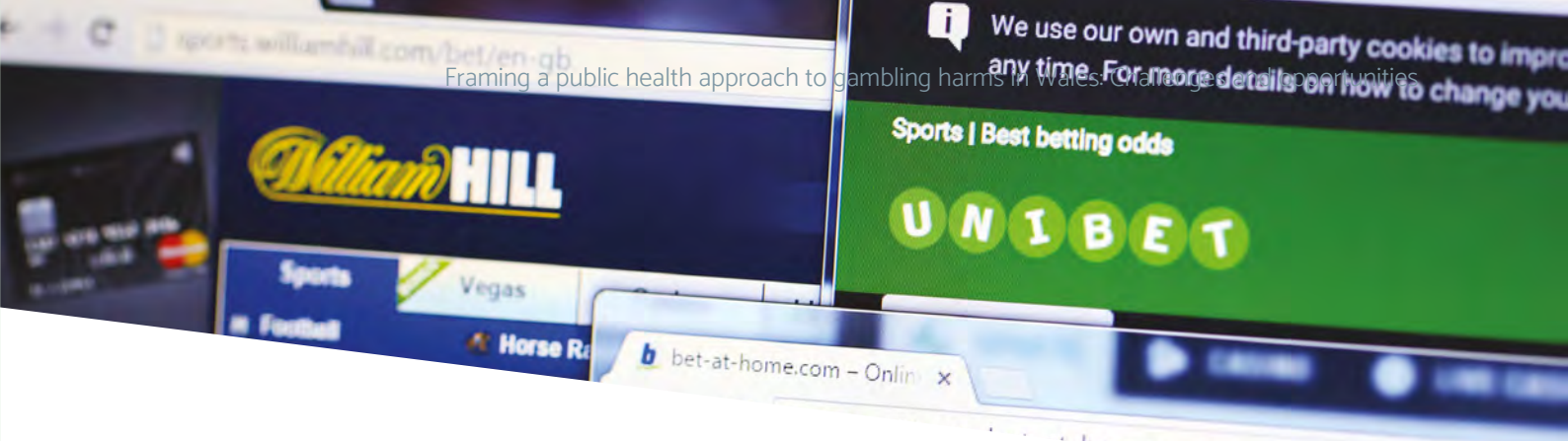
- Gambling regulation remains a reserved power. However, a public health approach for Wales could still be enacted to help address the socially unequal distribution of gambling harms. We suggest a number of inter-locking recommendations to raise awareness of gambling harms in Wales and begin the process of addressing their effects:
 - (i) A public health framework for gambling harms will need a life-course perspective that reflects how individuals who gamble can drift towards and away from gambling harms. The framework also needs to align with the Well-being of Future Generations (Wales) Act 2015 to adopt population-level policies that promotes a healthier Wales; promotes a more equal Wales; builds a prosperous Wales; and promotes a Wales of cohesive communities.
 - (ii) The definition of gambling harms as *‘the adverse impacts from gambling on the health and wellbeing of individuals, families, communities and society’* could be adopted in Wales to complement and promote other public health objectives around well-being and health, affording measurable outcomes against which policy interventions can be assessed.
 - (iii) The incorporation of gambling harms into the next iterations of the ‘Together for Mental Health’ strategy, ‘Working Together to Reduce Harms’ strategy, and ‘Prosperity for All: National strategy’ as several priority action areas (such as reducing isolation and self-harm) have direct resonance with gambling harms. Public Health Wales could

consider incorporating gambling harms into its framework for adverse childhood experiences (ACEs) and assessing gambling harms in its next ACEs surveys. Broader Welsh Government policies, for example, 'A Healthier Wales' - could address gambling as a driver of health inequalities, requiring an integrated policy response.

- (iv) Use the Healthy and Sustainable Colleges and Universities Framework to provide calibrated messages to raise awareness of gambling harms among young people and strengthen links with Further Education colleges, Welsh universities and National Union for Students (NUS) for awareness campaigns targeted at students.
- (v) The Welsh Government and Public Health Wales could consider a Public Guide to gambling harms for parents and school pupils, alongside the inclusion of content on gambling harms, resilience and well-being in the All Wales Schools Liaison Core Programme.
- (vi) Engage with Police and Crime Commissioners to include content on gambling harms in the educational material offered by police services, National Offender Management Service (NOMS) and Youth Justice Board, and assist in the education about gambling harms for public and third sector bodies working with vulnerable groups such as homeless people, domestic abuse cases, military veterans.
- (vii) The Welsh Government could work with the Royal College of General Practitioners and the Deanery to upskill primary care professionals in identifying individuals vulnerable to gambling harms and appropriate care pathways.
- (viii) Reflecting the Chief Medical Officer for Wales' call for a comprehensive repertoire of treatment services, the Welsh Government could consult with existing services (e.g. National Problem Gambling Clinic in London) to consider the merits of a specialised national service in Wales for individuals who experience severe difficulties with their gambling. Treatment services could also include provision of family-based support approaches and cognitive behavioural therapeutic and family-based intervention.
- (ix) In line with recommendations of the Chief Medical Officer for Wales, the Welsh Government could engage with gambling operators to assist provision of consumer protection and harm-minimisation measures in Welsh alongside English.

Gambling harms are now recognised as a significant public health issue. Policies need to be developed for Wales (as elsewhere) and appropriate actions taken to prevent broadly distributed harms. Addressing gambling harms effectively will contribute to the resolution of other inter-locking social and health challenges in Wales and beyond.

More broadly, rapidly developing technology and the fluid marketing and provision of gambling products by operators requires a fuller and better informed debate about the role of gambling in our lives, and a consensus about what level of harms the public and policymakers are prepared to accept against the protection of individuals' right to gamble. The outcome of such a process can provide a firm set of guidelines against which future policy (regulatory and corporate) can be judged for efficacy.



1 Introduction

Opportunities to gamble have increased substantially over the last few decades [1, 2]; a trend that reflects both relaxing regulatory frameworks across jurisdictions and rapid technological developments that offer consumers a diversified range of gambling products delivered over a multiplicity of online and mobile platforms [3, 4]. In the British context, and reflecting the revised regulatory framework established by the Gambling Act 2005 [5], these changes have unarguably increased the accessibility of gambling products and services to multiple population sectors and increased the salience of gambling across British culture and the economy [6, 7]. In Great Britain, the Gross Gambling Yield (GGY; the difference between bets paid in and paid out¹) has continued to increase; amounting to £14.4bn for the year to March 2018 [8]. This suggests either that more people are gambling or that those people who do gamble are spending more money on gambling than previously.

Opportunities to gamble have increased substantially over the last few decades.

Beyond the immediate damage to the lives of affected individuals and their families, gambling harms involve significant and largely unacknowledged health and social costs [9]. Calculating the relative consumer benefits against the public costs of gambling in economic terms is notoriously difficult [7, 9, 10]. However, the most recent conservative estimates of the health, welfare, employment, housing and criminal justice costs incurred by problem gamblers fall between at least £260m and £1.16bn for Great Britain as a whole, and between £40m and £70m for Wales specifically [11]. Since harms arising from gambling do not only attach to problem gamblers but are also experienced by their partners and children [12-16], and are likely to be experienced in weaker forms by a larger proportion of the population [17-21], these cost estimations are very likely to be significant underestimates.

In the second of two surveys [22, 23], the Wales Omnibus Survey 2016 reported that 55% of individuals resident in Wales aged 16 years and over have purchased gambling products within the last year (40% once National Lottery only purchases were excluded), with an estimated 3% showing at least moderate risk of gambling problems, and 0.8% of individuals counting as problem gamblers [23]. The Wales Omnibus Survey 2015 reported rates of 1.1% of adults as problem gamblers, from which we can estimate that there are around 27,000 affected individuals, with a range of between at least 19,000 and at most 38,000 [22]². These headline figures have prompted significant public and political debate about the health and social impacts of gambling in Wales [24], and highlight the need to understand the distribution of gambling harms across Welsh communities and, given limited public resources, the opportunities and obstacles to address gambling harms as a public health challenge. In his 2018 annual report, the Chief Medical Officer for Wales called for an invigorated policy response to this hitherto unappreciated health challenge [25].

- 1 GGY is the summed profits made directly from the bets, once payouts are accounted for. GGY does not include business costs; it is the total of all money paid in as bets minus the payout of winning bets.
- 2 The estimated prevalences of problem gambling in the Wales Omnibus Surveys for 2015 and 2016 are not significantly different one from the other. The full data for 2016 survey, including confidence intervals, have not been published by the Gambling Commission, precluding estimation of numbers of affected individuals.

An evolving industry

In an international context, the last several decades have seen a marked expansion of the gambling industry to one that generates annual global revenues of around \$385bn in 2016 [26]. Alongside its GGY of £14.4bn for the year to March 2018, the British gambling industry employed around 107,940 people [8]; betting and gaming taxes raised £2.9bn [27]. Recent years has seen growth across all sectors, with the National Lottery, bingo and arcades now remaining steady or showing some increase in revenues. Remote gambling was the largest sector, constituting 37% of the British market at £5.4bn GGY; a 12.8% increase on the previous year [8] (see Chapter 2).

...the last several decades have seen a marked expansion of the gambling industry...

...spurred by rapid technological development...

The expansion of gambling opportunities has also been spurred by rapid technological development (through online and mobile platforms), bringing significant innovation in the types of products available. Such changes enhance the accessibility of gambling across community sectors, potentially increasing the number of people that might be affected by hazardous or harmful gambling behaviours. Additionally, the sometimes blurred distinction between gambling and 'facsimile gambling games' offered through social media as well as some chance-based features of gaming applications (such as 'Loot Boxes' [28]³ linked to hazardous patterns of gambling [29]) may further increase the diversity of routes into commercial age-restricted gambling for young people [4, 30, 31].

The regulatory system

Taking a longer view, the regulation of gambling in Great Britain, as elsewhere, has moved from relative prohibition (at end of the 19th Century) to relative liberalisation (over the course of the 20th Century) [2, 6, 32, 33]. However, regulation has also shown a fluctuating quality with successive legislative adjustments to address specific public and political concerns (e.g. the Gaming Act 1968 to address links between casino gambling and crime). Hence, it may be mistaken to suppose that the current regulatory framework is fixed or that aspects of it are unlikely to be reversed. The recent controversy over maximum stake values for B2-category gambling machines or so-called Fixed Odds Betting Terminals (FOBTs), alongside hardening attitudes to gambling [34], may be an indication that the public appetite for regulation is growing, increasing the pressure for further regulatory adjustments.

Undoubtedly, the regulatory framework set down in the Gambling Act 2005 [5] heralded a significant liberalisation of the gambling market in this country [2, 6, 32, 33]. The Act established the Gambling Commission with three specific objectives:

1. Preventing gambling from being a source of crime or disorder, being associated with crime or disorder or being used to support crime;
2. Ensuring that gambling is conducted in a fair and open way; and
3. Protecting children and other vulnerable persons from being harmed or exploited by gambling.

3 Loot boxes are 'items in video games that can be paid for with real-world money and contain randomised contents'. Zendle D & Cairns P (2018). Video game loot boxes are linked to problem gambling: Results of a large-scale survey. PlosOne 13(11): e0206767. <https://doi.org/10.1371/journal.pone.0206767>

The Gambling Commission receives advice from the Responsible Gambling Strategy Board (RGSB) in relation to harm-minimisation, as set out in the National Responsible Gambling Strategy [35, 36]. Overall, ministerial responsibility is held by the Department of Digital, Culture, Media & Sport (DCMS). The 2005 Act was updated by the Gambling (Licensing and Advertising) Act 2014 that amended the licensing arrangements for online operators and restricted advertising to holders of Gambling Commission licenses [37]. Since April 2018, under the Wales Act 2017 [38], the Welsh Government – like the Scottish Government – has additional powers to limit the number of gambling machines (FOBTs) in newly established gambling premises including licensed bookmaker offices (LBOs).

The argument

In this report, we argue that implementing a coherent public health approach to gambling harms in Wales, as elsewhere, involves challenges but also offers significant opportunities. Gambling harms reflect the joint contribution of individual risk factors and powerful socio-economic facilitators. While current theories about the causes of gambling problems clearly acknowledge both kinds of risk factors, regulatory policy in Great Britain (and elsewhere) has disproportionately relied upon harm-minimisation measures that focus upon the promotion of *'responsible gambling'* for (vulnerable) individuals. The efficacy of responsible gambling measures, while helpful as forms of consumer protection, is likely to depend upon the consistency of their use by individuals (i.e. be dose-dependent) and be linked to specific gambling forms and contexts. Lessons from other areas of public health are useful here. While targeted interventions for alcohol use and smoking have brought benefits, it is often universally applicable policies that have had most impact upon behaviour [39, 40].

Here, we argue that the unequal distribution of gambling harms across communities requires a multi-faceted approach that includes raising awareness of harms, the promotion and rigorous testing of harm-minimisation measures and evidence-based treatments for the most severely affected individuals, alongside *universally proportionate* measures to address the social, cultural and economic drivers of gambling harms at the community and population levels. In the British and wider context, there remain three inter-related obstacles to developing an effective and durable public health framework for gambling harms.

These are:

- (i) The dominance of conceptions of gambling harms that over-emphasise individual psychopathology as specified, for example, in clinical/psychiatric diagnostic criteria;
- (ii) As a consequence, a policy focus upon harm-minimisation measures for (vulnerable) individuals and a failure to address adequately the social and cultural factors that mediate the incidence and experience of gambling harms in individuals and communities; and
- (iii) A legislative framework built that does not (yet) reflect a consensus between policymakers and public about the level of gambling harms that communities are prepared to tolerate, and the balance to be struck between addressing these harms through policy (and protecting vulnerable groups) against individuals' liberty to gamble.

To inform policy development in Wales, we first draw upon the conception of harm adopted in Welsh Government frameworks for addressing alcohol and substance misuse [41] and work completed simultaneously with this report by the RGSB [42] to adopt a pragmatic definition for gambling harms that can be used as a basis for policy development and assessment (see Chapter 3). Gambling harms, like other health outcomes in Wales [43], are likely to show substantial inequalities across communities. Therefore, we provide a secondary

analysis of the Wales Omnibus Survey 2015 [22] to illustrate some of these inequalities (see Chapter 7) and provide a geo-spatial risk-index of the distributed risk factors within urban and rural areas (see Chapter 8). We use four case studies to show how risk of gambling harms reflects convergent but also divergent factors within urban centres (Cardiff and Pontypridd) compared with a rural area (Brecon) and a coastal resort (Rhyl).

We finish with a discussion of universal policy options and, in the Welsh context, consider the merits of locally-led initiatives including campaigns and education programmes, upscaling of treatment provision, and primary care training. Policies will need to be integrated within the Welsh Government's frameworks to promote mental health and address alcohol and substance misuse ('Together for Mental Health' strategy [44] and 'Working Together to Reduce Harms' strategy [41]) and to promote well-being across the life-course in accordance with the Well-being of Future Generations (Wales) Act 2015 [45].

2 Three salient issues

To start with, we consider three salient issues of the current public and policy debate. These are (i) the impacts of *machine gambling*; (ii) the role of *advertising* in gambling harms; and (iii) access to gambling products and services through *technology*. Some of the emerging research in these areas point to the need to incorporate social factors in policy.

2.1 Machine gambling

Much of the public and political debate about gambling regulation in Great Britain, as elsewhere [9], continues to focus upon machine gambling. Undoubtedly, there is a strong and consistent association between machine gambling and gambling problems; frequently indicated by the high proportion of individuals seeking treatment who report difficulties with machine gambling [46]. While, arguably, the strength and consistency of the association between machine gambling and gambling problems over time and place is consistent with at least some conceptions of causality in epidemiology [47], the precise underlying mechanisms remain uncertain [48]. On the one hand, the structural characteristics of games offered on machines – their speed of play [49], the opportunities to place high stakes [50], the availability of large prizes and volatile prize structures [51, 52] – may encourage greater expenditure and longer sessions of play, increasing the likelihood of harms. On the other hand, the association with gambling problems could reflect the accessibility and use of machines by individuals at-risk of gambling problems for other reasons [48, 53, 54].

In fact, demonstrating that any one form of gambling (e.g. machine gambling) causes gambling problems or is *more addictive* than other forms of gambling is challenging. The oft-cited description of gambling machines as analogous to ‘crack cocaine’ was taken from the title of an academic paper that discussed the technical challenges of such an exercise [53]. For example, in 2015, the highest rates of problem gambling were found among individuals who had participated in generally less popular gambling forms, such as spread betting (20.1%), betting exchanges (16.2%), playing poker in private games (15.9%), or betting offline on events other than sports (15.5%) [55]. Problem gambling among individuals who gambled on machines in licensed bookmaker offices (LBOs) ran at 11.5%. In large surveys, the number and frequency of gambling forms played – that necessarily tend to include the least popular forms – can be stronger predictors of problem gambling than any one gambling form by itself [56-58]. However, there are also at least a few reports describing that machine gambling (and its frequency) is associated with higher rates of, and more severe, gambling problems once the number of gambling forms played has been accounted for statistically [57, 59].

Further, experimental research into the particular structural features can tell us about the psychological processes that might prolong machine play or increase expenditure in vulnerable individuals [49-51, 60-65]. However, this work has not yet been matched by comparative field studies demonstrating the operation of these processes to increase harmful play in commercial settings. However, elegant simulations show how the prize

structure of games can be used to skew the distribution of high prizes and inflate players' peak credit balances [66], and how the prize volatility of some machine games can mask net losses [52].

In Great Britain, regulatory focus has fallen upon B2-category machines (Fixed Odds Betting Terminals; FOBTs), mostly situated in LBOs. In May 2018, the Department of Digital, Culture, Media & Sport announced plans to reduce the maximum stake on FOBTs from £100 to £2 [67]. The link between betting at maximum stakes and gambling harms is likely complex and non-linear. However, inspection of betting patterns in bookmaker loyalty cardholders showed that individuals with gambling problems tended to stake more money per play than those without gambling problems (£7.43p vs £4.27), although there was wide variability between individuals [68]. Further, at higher staking levels, there were more problem gamblers. Of cardholders with average stakes of £2 or less, 19% were problem gamblers but, of cardholders with average stakes of £20 or more, 42% were problem gamblers [69].

We also know that manipulating the value of maximum stakes can influence patterns of machine use in settings other than LBOs. In 2014, the maximum stake and prizes available on B1-category machines (typically in casinos) was increased from £2 and £4,000 to £5 and £10,000 respectively, with maximum jackpots of £20,000 on machines linked within premises [70]. Subsequent to this change, the amount staked on B1-category machines in casinos increased by approximately 10%, with an increase in the average stake per play from 79p to about 88p. The proportion of casino visits involving losses of £300 or more on B1-category machines also increased from 2.7% in 2013 to 3.3% in 2014. The proportion of visits with unusually long session times (more than four hours) on B1-category machines was stable between 2012 and 2013 at 5.1% but then showed some increase to 5.7% between 2013 and 2014. Further supportive (if limited) evidence for restricting high stake betting is available from Australian findings that reductions from \$100 to \$20 (across Victoria State) produced a 15-20% reduction in (self-reported) expenditure, time spent, bet size, and number of visits; especially in individuals at high risks of harms [71]. Further evaluative work is needed to assess the impacts of the reduced maximum stake for B2-category machines of £2 on both player behaviour and patterns of expenditure once this change is enacted.

Most likely, the impact of stake and prizes on gambling behaviour reflects complex interactions involving the whole configuration of structural characteristics in machine games, and the social and cultural context of their use [48, 70, 72]. Data from bookmaker loyalty

...problem gamblers were more likely to place maximum stake bets than non-problem gamblers...

cardholders show that problem gamblers were more likely to place maximum stake bets than non-problem gamblers, as were those who were unemployed or from Non-White ethnic groups [73]. Analysis of the effects of alterations in maximum stake and prizes on B1-category machines showed evidence of individuals switching from table games to machines with the higher stakes and prizes but only in casinos located in relatively deprived areas [70]. Research into the structural characteristics of machine games tends to assume that game features heighten risk of harms by engaging psychological processes whose variability can be accounted for solely by individual risk factors for gambling harms. By contrast, the above evidence suggests that the risks of harms carried by maximum stake values, as just one structural characteristic of machine games, may also be moderated by broader social factors.

From a public health perspective, the link between machine gambling and gambling harms may be better approached in terms of the broader social and economic risk factors that can help to account for the unequal patterning of harms across communities. International research indicates that machines tend to be clustered in areas of comparatively high socio-economic deprivation associated with elevated rates of gambling problems [74, 75]. Moreover, the distribution of machines is linked to fluctuating risk of gambling problems

[54], with the greatest monetary losses being highest among individuals living in the most disadvantaged areas [76]. In Great Britain, areas with a high-density of machines (one or more per hectare) tend to be located in areas of greater social and economic deprivation, with higher numbers of economically inactive people and a younger age profile compared with other areas [77, 78]. Further, rates of problem gambling were higher in areas with a high-density of machines, for example, 28.1% of loyalty cardholders living within 400m of a LBO were problem gamblers compared with 22.1% of those living more than 400m [79].

Finally, from a regulatory point of view, the impact of restricting the availability of machines or removing them altogether are unclear. Relevant evidence is provided by the uncertain results of a natural experiment in gambling regulation conducted in Norway [80]. Panel studies showed mixed effects on gambling frequency following the removal of machines [81,82]. There were also some reports that the numbers of individuals seeking treatment for gambling problems also fell [81]. Changes in rates of problem gambling are also hard to assess because only substantial policy effects will be detectable [83].

2.2 Advertising

For many people, the most obvious indicator of the liberalised British gambling market is the increased number of gambling advertisements; for example, bingo site advertisements shown on television mid-morning or successive bookmaker adverts during half-time breaks in football coverage. However, assessing the causative relationship between advertising (as expenditure by operators or number of ‘impacts’⁴) and gambling behaviours is difficult [84].



In the context of alcohol advertising, the evidence shows associations of varying strengths [85-87]. The low prevalence rates of problem gambling makes it hard to demonstrate connections between varying advertising activity within and across jurisdictions and gambling problems. However, one study of regulatory frameworks noted that restrictions on advertisements for online gambling was linked to reduced rates of at-risk gambling [88]. More likely, the marked social patterning of gambling harms raises the possibility that, as with alcohol and tobacco [89, 90], vulnerable groups such as young people and individuals with gambling problems already are particularly affected by gambling advertisements.

Advertising may contribute to gambling harms in a number of ways:

- (i) Advertising may facilitate individuals to begin or increase their gambling [84];
- (ii) Consistent with gambling problems as an addictive disorder involving craving states and loss of control [91, 92], advertisements might prompt urges to gamble (or resume gambling) in vulnerable individuals;
- (iii) More arguably, advertisements may help to shape and promote permissive social attitudes to gambling over extended periods of time [93]; and indirectly, promote gambling participation and harms, especially in vulnerable groups [94].

Gambling advertising is overseen by the DCMS, Ofcom and the Gambling Commission, through the Code for Socially Responsible Advertising run by gambling operators themselves [95]. This involves voluntary compliance with the UK Code of Broadcast Advertising (the

4 An ‘impact’ is a single exposure of gambling related material in one or the same individuals.

BCAP Code) [96] and the UK Non-Broadcast Advertising, Sales Promotion and Direct Marketing Code (CAP Code) [97], administered by the Advertising Standards Authority (ASA). In line with the third objective of the Gambling Act 2005 [5], these codes aim to ensure that (i) gambling advertisements ‘do not portray, condone or encourage gambling behaviour that is socially irresponsible or could lead to financial, social or emotional harm; (ii) exploit the susceptibilities, aspirations, credulity, inexperience or lack of knowledge of children, young persons or other vulnerable persons; suggest that gambling can be a solution to financial concerns; (iii) link gambling to seduction, sexual success or enhanced attractiveness; (iv) be of particular appeal to children or young persons, especially by reflecting or being associated with youth culture; and (v) feature anyone gambling or playing a significant role in an advert if they are under 25 years old (or appear to be under 25)’.

In addition, the operators’ Code for Socially Responsible Advertising requires the inclusion of socially responsible gambling messages in all television and radio advertisements, with signalling of ‘Gambleaware.co.uk’ and the inclusion of ‘No under 18s’ message on all print and television advertisements. A consortium of operators (<http://senetgroup.org.uk/>) have also committed to a set of measures that include voluntary bans on sign-up offers before the 9pm watershed, withdrawal of machine advertisements from LBO windows, and an allocation of 20% of LBO window advertising to responsible gambling messages and responsible gambling social media campaigns such as ‘#WhenTheFunStopsStop’ and ‘#BadBetty’.

A 2014 review of BCAP and CAP concluded that existing codes of practice are effective in protecting people from harms arising from gambling advertising and are broadly aligned with public opinion [98]. However, other factors suggest caution. First, there has been a very substantial increase in gambling advertising since the enactment of the Gambling Act 2005 [5]. Between 2006 and 2012, the number of television gambling advertisements increased from approximately 152,000 per annum to 1.4m [99]. During 2012, gambling constituted about 4% of all television advertisements with (on average) adults viewing about two gambling adverts per day and children viewing about four per week (though these numbers conceal substantial variation between individuals). In the same year, children and adolescents (aged 4-15 years) experienced 1.8bn commercial gambling ‘impacts’; over 200 impacts each.

Second, studies consistently report stronger responses to gambling advertisements in individuals at heightened risk of gambling harms. Among young people, memory for gambling advertisements is positively associated with gambling participation and vulnerability to gambling harms [100, 101]. Similarly, individuals with gambling problems, or a history of gambling problems, reported that advertisements prompt urges to gamble [102, 103]. There is also at least some evidence that the effects of gambling advertisements can differ across ethnic groups in relation to some gambling forms [104]; for example, that initiation of gambling in response to advertisements has been found to vary between European and Pacific groups in New Zealand [105, 106].

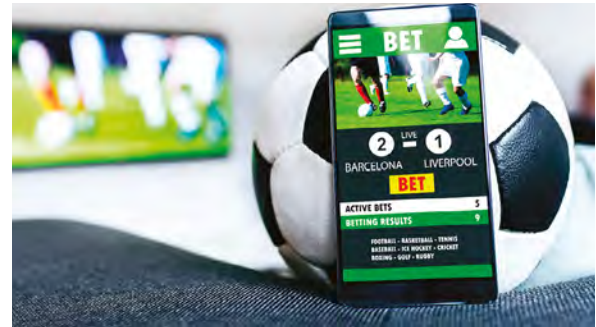
...studies consistently report stronger responses to gambling advertisements in individuals at heightened risk of gambling harms.

In general, most of the evidence presented about the effects of gambling advertisements is based upon self-report data derived from surveys or interviews. Given that peoples’ self-assessment of how much their consumer behaviour is influenced by advertising tends to be unreliable [103], these findings should be viewed with caution. Nonetheless, gambling harms are distributed unequally across social and economic groups, and there is no reason to suppose that the impacts of gambling advertisements across different media do not show a similar patterning. To take one example, the Gambling Commission (2018) suggested that 66% of 11-16 year olds had ever seen a gambling advertisement on television (43% at least once a week); 59% had ever seen them on social media (27% at least once a week); and 12% follow gambling companies on social media [107]. Of the latter group, 34% had spent their own

money on gambling in the last week. These 11-16 year olds were more than three times more likely to have done so compared with those who did not follow gambling companies on social media. These observations raise concerns that the provisions of the Gambling Act 2005 [5] and existing codes of practice [95-97] place too much emphasis upon the communicative intent of operators in their advertising and promotional material rather than the impacts of content on vulnerable groups, especially in the lightly-regulated online space [108].

2.3 Gambling through technology

Underlying the increased accessibility of gambling opportunities and their more vigorous promotion is accelerating technology that furnishes the diversity of gambling products over multiple online and mobile platforms [3, 4, 109]. For the year to the end of March 2018, online casinos in Britain generated £2.9bn Gross Gambling Yield (GGY), mostly through slots games at £2.0bn. Remote betting revenues (mostly football and horse racing) came to



£2.3bn [8]. The total number of activities (i.e. products) permitted by remote gambling licenses came to 888, accessible by 33.6m active customer accounts. In 2017, 18% of adults gambled online (within the previous four weeks) [34] and there were 35.4m new account registrations with UK-registered remote operators who held £784.8m of customer funds [8].

Increased connectivity through a range of devices allows more people to use gambling services at any time of day in a greater variety of locations. In 2017, laptops were still the most popular devices to access online gambling services (50%). However, use of tablets and mobile phones to gamble increased, with 51% of online gamblers using either device (an 8% increase from 2016) [34]. In the same period, use of mobile phones to gamble also increased across all age groups, but was most frequent in 35-44 year olds at 51% (a 16% increase), and in 45-54 year olds at 33% (a 15% increase). Men were more likely than women to gamble online using a desktop, whilst use of other devices were similar between the genders. Of users of online gambling services, 97% had gambled online at home and 13% had gambled online while at work. Furthermore, of 18-24 year olds who gambled online, 22% had gambled while at work, ~22% while commuting and ~10% in a pub or club. Users of online gambling services subscribed to an average of four accounts with gambling operators. The growth in mobile gambling is likely to continue for the foreseeable future [110] and some operators are now building product offerings around keystone mobile platforms, then adjusting their corresponding desktop computer and laptop platforms to have similar layouts.

These changes though reflect broader changes in our relationship with mobile technologies in general. Ofcom reports showed declining usage of desktops as a method to access the Internet, contrasting with a sharp rise in the use of smartphones [111, 112]. In 2017, only 13% and 21% of adults resident in Wales reported using a desktop and laptop, respectively, as their most important device for accessing the Internet [113]. 74% of adults in Wales owned a smartphone; a marked 39% increase since 2012 [113] and 61% owned a tablet; an 8% increase. More than a third of the sample (36%) reported their smartphone as their primary means of accessing the Internet; 58% among 16-34 year olds. This means that, in 2018, the most prevalent Internet-enabled device in the UK was the smartphone [112].

These dramatic trends allow almost continuous access to gambling services in multiple settings of home, work or while travelling, raising the possibility that technology can act as an 'accelerator' to increase risk of harms. However, online gambling can also support player-

tracking and provide behavioural feedback about money and time expenditure as harm-minimisation measures, the potential of which is highlighted in the National Responsible Gambling Strategy ([35]; see Chapter 7). In principle, player-tracking can offer ways to identify individuals at-risk of harms using the behavioural signatures implicit in their betting patterns [114], offering opportunities for customer protection [115-117]. There are though significant technical obstacles to delivering these discriminative forms of behavioural analytics at scale. To date, we know of no large-scale published cross-validating studies.

From a public health perspective, it is critical to understand that the impacts of technological developments upon gambling harms are not simply additive, as new technologies augment or replace old technologies, one after another. Technology extends beyond engineering and manufacturing of new products to include a range of marketing, investments and managerial processes [118]. When we talk about technological change and innovation in gambling services, we are not just talking about the platform on which they are provided (e.g. the servers, the smartphones) but all of the processes that sit around and form part of its infrastructure and, critically, the user's experience of the product or service. For gambling, the most obvious processes to influence the consumer use and experience of new products are operator marketing, customer acquisition, product promotion and retention strategies.

Looking ahead, operators are increasingly looking to learn from other online sectors in their development of '*persuasive technologies*'. Persuasive technologies are interactive methods that either overtly or covertly change users' attitudes and/or behaviours through persuasion and social influence, but not through coercion or deception [119]. For example, Amazon suggests other purchases based on what their customers have previously ordered. Persuasive technologies are now embedded into our digital lives and gambling operators are starting to think about how they can use and learn from these strategies [120]. This is particularly pertinent to mobile gambling, where 'app' functionality can allow seamless communication through 'push' notifications. Monitoring the development and impact of these and other innovations (such as virtual reality [121]) in gambling behaviour will be important, especially as the products 'pushed' are risk-based commodities with the potential to cause harms.

3 Defining and measuring gambling harms

Gambling problems have traditionally been described from a medical perspective in terms of problematic behaviours and symptoms, rather than harms themselves. The latest version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) specifies the 12-month presence of 'gambling disorder' as '*persistent and recurrent problematic gambling behavior leading to clinically significant impairment or distress*' [122]. Gambling disorder is identified against nine criteria, and cut-off scores that indicate levels of severity (mild, moderate or severe). The preceding DSM-IV criteria used a similar method to identify 'problem gambling' (as a minimum of three or more items out of 10 criteria) and 'pathological gambling' (minimum five out of 10 criteria) [123]. The International Statistical Classification of Diseases and Related Health Problems (ICD-10) offers a comparable system [124].

The DSM-5 criteria items themselves – for example, previous failures to control gambling; preoccupation with gambling; gambling with increasing amounts of money to achieve desired excitement – describe an essentially *addictive* disorder, reflecting at a theoretical level, the frequent co-occurrence of gambling problems with alcohol and substance use disorders [125, 126], similar sets of individual characteristics as risk factors [127] and a common pathophysiology in neural and neurochemical circuits [91, 92, 128].

Typically, rates of problem gambling are estimated through prevalence surveys [129, 130], often by using the DSM-IV criteria to count numbers of people in population samples who are experiencing gambling problems. In the last two British Gambling Prevalence Surveys [56, 58], a second instrument was included: the Problem Gambling Severity Index (PGSI) that identifies individuals at low risk, moderate risk and problem gamblers [131]. Prevalence studies have been conducted across Europe and rates of problem gamblers vary between 0.5% and 2.0% [132]. For 2015, the Gambling Commission reported rates of problem gambling in Great Britain (by either the DSM-IV or PGSI) at 0.8% [55]. Prevalence rates for England and Scotland have been estimated through the Health Survey for England and the Scottish Health Survey since 2012 [55, 133]. However, prevalence rates for Wales have only been measured twice through Wales Omnibus Surveys in 2015 and 2016 [22, 23].

Conceptualising gambling problems in terms of behaviours and symptoms, and estimating percentages of problem gambling 'cases' within a population can be useful for informing decisions about regulation or healthcare provision, or understanding differences in prevalence rates across sectors of the community [130]. It is also helpful as a way to identify those severely affected individuals that might benefit from formal treatments involving, for example, cognitive behavioural therapies (CBT) [134]. There are though serious limitations.

First, difficulties arise when trying to assess fluctuations in prevalence following regulatory adjustments since the low rates of problem gambling in absolute terms means that only substantial changes will be detectable [81]. Second, for many individuals, gambling problems are episodic but can be recurring [135-137]. Consequently, the relatively stable rates of problem gambling over successive prevalence surveys in the UK and elsewhere [56, 58, 130] may mask the exchange of previously and currently affected individuals. The only quantitative British study of changing gambling behaviours among the same group

of individuals over time showed that, while problem gambling prevalence rates were the same across each survey, there was significant fluctuation within individuals, and individuals from minority ethnic groups and the lowest household incomes were most likely to become problem gamblers [138]. Focusing upon population-level rates alone misses these nuances.

Third, and most fundamentally, specifying gambling problems in terms of the behavioural or symptom-based conceptualisations of the DSM-IV or the PGSI fails to capture the broader harms associated with hazardous gambling [9, 17-21, 139-141]. Rather, like other health-related behaviours such as alcohol misuse which can also amount to an addiction [142], gambling can be linked to a broad range of adverse experiences that cause significant distress and produce enduring adverse effects on health and well-being [143]. As with alcohol [142], there are likely to be a significant number of people who experience harms as a result of their gambling but do not consider themselves to have a gambling problem. Similarly, consistent with the ‘Harm-to-Others’ approach to alcohol misuse [144], thinking about gambling harms more widely allows us to think about adverse impacts upon partners, children and families. The DSM-IV and PGSI criteria applicable to individuals miss these broader harms.

Accordingly, we make the following distinction. On the one hand, ‘gambling disorder’, ‘problem gambling’, ‘gambling problems’ and ‘pathological gambling’ involve the presence in individuals of some or enough of the specified behaviours or symptoms to satisfy formal categorisation by diagnostic systems. On the other hand, ‘gambling harms’ involve broader adverse consequences of gambling that accrue to individuals, families and wider society.

The diversity of the harms that individuals experience through their own gambling can be seen from the content of calls to GamCare service for the year 2017/18 [145]:

Table 1: Harms experienced by affected individuals (gamblers calling GamCare)

Harms	% reporting each
Financial difficulties	28%
Anxiety/stress	26%
Family/relationship difficulties	18%
Isolation	8%
Mental health problems	9%
General health problems	3%
Work problems	3%
Housing problems	2%
Alcohol misuse	2%
Criminality	1%

Strikingly, these impacts are broadly comparable to those reported by partners and/or children of the affected gamblers. For these, family/relationship difficulties were the most commonly reported (35%), followed by anxiety/stress (32%) and financial problems (21%). These data highlight the shared experience of gambling harms among individuals (who may or may not reach ‘caseness’ by the DSM-IV or PGSI) and their families [16].

Several definitions of gambling harms have been proposed; some quite similar [21, 146] with one in particular offering a taxonomy of harms as categories [140]. However, taking a harms-based perspective upon policy and action is already well-recognised in Wales and, in fact, is already embedded within the Welsh Government’s strategy for alcohol and substance misuse as a straightforward and direct working definition (‘Working Together to Reduce Harm, 2008-2018’) [41]. The definition of alcohol and other substance use harms is:

'...harm to their own physical and mental health and well-being, and possibly to their ability to support themselves. They may harm their families' lives by damaging the health and well-being of their children and place a burden of care on other relatives (including their children). There is also harm to the communities in which they live through the crime, disorder and anti-social behaviour associated with substance misuse'.

In turn, this definition informs the Welsh Government's policies to (i) prevent harm, (ii) support substance users to improve their health and aid and maintain recovery, (iii) support and protect families; and (iv) tackle availability and protect individuals and communities via enforcement. (The latter policy is less relevant for the present discussion of gambling harms). Here, reflecting extensive cross-consultation with work completed simultaneously with this report by the Responsible Gambling Strategy Board (RGSB), we adopt the straightforward and pragmatic definition of gambling harms as

'the adverse impacts from gambling on the health and wellbeing of individuals, families, communities and society' [42].

Rather than specifying a list of harms, we acknowledge that gambling harms are diverse and likely to reflect an interplay of individual, family and community processes.



For individuals, gambling harms relate to loss of money and 'indirectly' opportunities to engage in other activities, disrupted work performance/productivity, resultant mental and physical health problems, lowered or reduced living standards and opportunities, incidence of debt and, occasionally, bankruptcy and involvement with the criminal-justice system [20, 92, 143]. Other harms include disrupted and even ruptured partnerships, family and occupational relationships, as well as emotional and social isolation from family and friends.



For families, gambling harms can include broader household financial pressures and the opportunity costs in terms of foregone shared activities, loss of trust and feelings of resentment, relationship breakdown, shame and stigma [12-16, 147, 148].



For communities, the aggregated harms experienced by individuals draw upon the resources of wider medical, social and judicial infrastructures [7, 9, 11]; in addition, and arguably, the proliferation of gambling opportunities may cumulatively erode community cohesion, especially in disadvantaged or marginalised groups [9, 93].

In all of the above, gambling harms can be occasioned by single, short-lived or extended patterns of gambling activity but the harmful effects of this activity will tend to endure as longer-term adverse consequences. For example, poor educational attainment and/or mental health problems can be linked to hazardous gambling in adolescence and the younger adult years, restricting longer-term life-chances and undermining well-being in adulthood.

...the harmful effects of gambling can endure as longer-term adverse consequences.

Re-orienting research and policy development in terms of broader harms rather than the prevalence of problem gambling 'cases' offers several advantages [17, 140]. First, it offers

opportunities to arrive at a more comprehensive understanding of the health and social costs of gambling; for example, factoring in socio-cultural impacts [7, 9-11]. Hazardous gambling can also produce financial pressures upon individuals and their families [12-17, 20, 147, 148]. However, the diversity of people's circumstances means that the experience of gambling harms will reflect a complex interplay of individual characteristics, familial and socio-economic resources, and the influence of broader cultural factors [20, 149].

Second, a tenet of much existing research is the proposition that the benefits of gambling as a leisure activity – its 'consumer surplus' – accrue to many individuals while the social and economic costs are borne by only the minority of gamblers with problems [7, 9]. However, from a public health perspective, focusing upon harms in this way opens up the investigation of the distributed small adverse effects among individuals that aggregate to significant social costs [7]. The straightforward and direct conception of gambling harms offered here, based upon the definition offered in the Welsh Government's alcohol and substance misuse strategy ('Working Together to Reduce Harm, 2008-2018') [41, 150], offers broader targets for a public health approach to gambling harms. Next, we summarise the available public health frameworks for gambling harms, and provide a rationale for shifting focus away from harm-minimisation measures targeted at individuals, and towards universal and proportionate measures targeted at the groups and communities at heightened risk of harms.

4 Challenges for public health approaches to gambling harms

Discussion of gambling problems as a public health concern has increased in recent years [151-155]. Public health can be defined as *‘the science and art of preventing disease, prolonging life, and promoting health through the organised efforts of society’* [156]. In this context, health is defined, not just in terms of the absence of disease but the promotion of well-being [157]. The requirement for a public health approach to gambling harms is indicated by (i) the evidence of continuity of gambling harms from minimal to severe, impacting upon a significantly greater proportion of the population; (ii) the co-occurrence of gambling harms with other mental and physical illnesses [125, 126]; (iii) the unequal distribution of gambling harms among disadvantaged social groups [19, 56, 58, 76], consistent with broader health inequalities [43, 158]; and (iv) the profound adverse impacts upon families and children and associated broader social costs [9, 11-16, 147, 148].

The Responsible Gambling Strategy Board (RGSB) 2016-2019 strategy states that gambling harms should be seen as a public health challenge, requiring the co-ordinated efforts of governments, regulators, operators, public health bodies (including Public Health Wales), and treatment providers to formulate an integrated strategy that *‘encompasses products, environments, and marketing and the wider context in which gambling occurs’* [35]. To date, resultant policies have been limited to local initiatives; specifically, the requirement that, under the Gambling Commission’s Licensing Conditions and Codes of Practice, operators identify local risks of gambling harms and demonstrate how these risks can be mitigated. In addition, local authorities have also been encouraged to create local area risk profiles [77], and now have powers to influence decisions about opening new licensed betting offices (LBOs) in their areas. As noted already, the Wales Act 2017 provides the Welsh Government powers to limit the number of Fixed Odds Betting Terminals (FOBTs) in new premises [38].

...there are inter-related obstacles to developing an effective and durable public health framework for gambling harms.

By their nature, public health policies address challenges at the community and population levels, and not just at the level of the individual. However, we believe there are inter-related obstacles to developing an effective and durable public health framework for gambling harms. Two of these are (i) the conceptualisation of gambling harms solely in terms of an individual psychopathology as specified, for example, in the clinical DSM-5 criteria [122]; (ii) a predominant policy focus upon harm-minimisation as ‘responsible gambling’ at the cost of addressing the social and cultural factors that mediate the incidence of harms both in individuals and social groups. In addition, (iii) the legislative framework of the Gambling Act 2005 [5] that does not reflect a consensus (between policymakers and public) on the balance to be struck between protecting people from harms and protecting people’s liberty to gamble.

At the current time, public health frameworks to address gambling harms are not well developed and their use across jurisdictions is inconsistent (see [159] for review). However, the dominant academic framework is provided by Korn and Shaffer's (1999) setting of problem gambling within a traditional public health triad analogous to that of a communicable disease but embedded within a socio-cultural setting [151, 152]. In the original version of the model, the triad involved (i) individuals and their characteristics acting as 'hosts'; (ii) the totality of *'both the gambling venue and the family, socio-economic, cultural and political context within which gambling occurs'* as the 'environment' and then (iii) gambling products themselves acting as 'agents'. In addition and, more arguably, money can act as a 'vector' [151]. The original model envisaged that assessments of gambling harms will be needed for host communities [151] but later iterations linked population, biological, social or behavioural vulnerabilities as hosts, and included developing technologies as 'agents' [160].

...public health frameworks to address gambling harms are not well developed and their use across jurisdictions is inconsistent.

Alongside this triad, Korn and Shaffer's framework presents gambling problems along a continuum from absent to severe, requiring policies that narrow from primary prevention measures (e.g. public education and awareness campaigns; responsible advertising and marketing) through secondary harm-reduction measures to tertiary-level interventions for individuals with gambling problems [151, 152]. (Recent public health thinking has replaced terminology about 'primary', 'secondary' and 'tertiary' with 'universal', 'selective' and 'indicated' interventions that are oriented respectively towards whole populations, those who are at increased risk and those already show signs of a disease or health problem). Critically, the Korn and Shaffer framework allows that gambling can bring benefits, as well as costs, and that (some or even most) individuals can enjoy healthy gambling. It follows, from this view, that a public health approach needs to provide individuals with the means to maximise the likelihood of healthy gambling and, where possible, to minimise any resultant harms.

There are good reasons to believe that individual characteristics matter in relation to gambling harms. As a clinical population, individuals with gambling problems share a number of psychological, neurobiological and possibly genetic characteristics associated with co-occurring psychiatric disorders [125-127, 161], perhaps reflecting a common pathophysiology [91, 92, 128]. Similarly, the development of gambling problems and, especially, individuals' experiences of these problems, do seem to reflect shared mechanisms or 'pathways' [162-164]. The most influential framework for these pathways is the Blaszczynski and Nower Pathways Model that posits that: (i) some vulnerable individuals show heightened sensitivity to the reward features of gambling products; (ii) others tend to gamble in order to cope with negative emotional states or circumstances and; (iii) others develop problematic gambling patterns that reflect a constellation of impulsive, risk-seeking traits linked to broader addictions and sometimes anti-sociality [162]. To differing extents, vulnerable individuals come to experience harms through these underlying mechanisms.

Importantly, the above perspectives do not claim that the access to gambling products, their social context or commercial promotion do not matter; indeed, the social and cultural moderators of gambling are explicitly acknowledged as critical. However, for the most part, current theories do not fully articulate how social, economic and cultural processes interact with the individual-specific risk factors to generate gambling harms. Rather, these perspectives specify that gambling harms arise principally because of the way that vulnerable individuals think about, and respond emotionally to, gambling products and services, their sensitivity to products' (rewarding) properties, and motivations for using them heavily.

By contrast, we propose that, reflecting social epidemiological perspectives [165], gambling harms as health outcomes cannot be fully understood apart from the social processes in which they occur. There is increasing recognition that the separation of social and individualised health risks is artificial and that it is the interplay of individual, social and environmental processes that generates morbidity [166, 167]. In the context of gambling, we argue that it is specifically social processes (including but not limited to the provision and accessibility of gambling products) that, interfacing with individual biological, cognitive and affective factors, probabilistically determine socially-patterned harms. People's decisions to gamble, in what ways and in which circumstances, are profoundly conditioned by their social and cultural contexts [168, 169] and the literature contains a number of powerful descriptions of how ethnicity, culture, economic circumstance, prevailing beliefs and attitudes determine the meaning and experience of gambling harms in affected individuals [20, 149, 168].

This debate is more than one of rhetoric; it has implications for the range of actions that are implemented to protect people from harms. Korn and Shaffer (1999; 2002) advocate the use of primary prevention measures; secondary harm-minimisation measures (e.g. self-exclusion, pre-commitments to limit time and money expenditure, warning messages and behavioural feedback where possible) and tertiary measures as formal treatment interventions for gambling problems in affected individuals [151, 152]. However, in practical terms, the focus of policy development has fallen unequivocally upon the individual as the locus of action, inevitably pointing to a range of harm-minimisation measures that target individuals and, where necessary, 'fix' false beliefs about products and behaviours. Shifting focus towards broader societal determinants requires examining the way in which gambling is provided, promoted and supplied across society and the formulation of universally focused policies to address gambling harms as another health inequality. These are different types of actions.

To date, responsible gambling, as individualised options, has been dominant, with the 'Reno Model' promoted as a framework for mitigating harm [153, 170]. The Reno model mandates harm-minimisation policies to mitigate risk in vulnerable individuals in the population and specifies policies to promote responsible gambling. In essence, it emphasises (i) the need for accurate information about gambling products and accessible tools to support responsible gambling behaviours; (ii) the progressive refinement of these tools by partnerships between stakeholders – operators, regulators, health professionals and governments - on the basis of rigorously assessed evidence; and (iii) individuals' free choice to use or not use these measures to moderate gambling activity. In this way, the promotion of responsible gambling is the shared responsibility of government, industry, regulators, welfare groups, communities and individuals. Until recently, the promotion of responsible gambling and implementation of harm-minimisation for individuals was the primary discourse of British (and international) regulators. However, there is increasing emphasis upon broader perspectives [151-155] and the Gambling Commission's most recent strategy announced a changed direction, with a focus upon *safer* rather than responsible gambling, and announced that gambling is a public health concern with determinants extending beyond the individual [35, 36].

...with a focus upon *safer* rather than responsible gambling...

This change in focus is likely related to increasing critiques of the notion of responsible gambling. First, these are that the risks of gambling harms are more broadly distributed across populations than is reflected in responsible gambling models [9, 17-20] and that they fail to articulate adequately the pivotal socio-cultural determinants of gambling and their importance in the generation of gambling harms [165]. Second, the resulting regulatory frameworks, including those established in Great Britain by the Gambling Act 2005 [5], that frame gambling as a legitimate leisure activity enjoyed by a majority of individuals with significant harms attaching only to a minority of vulnerable individuals, has spurred

the unchecked expansion of the industry and the aggressive marketisation of inherently dangerous products [2]. In its strongest form, so the argument runs, responsible gambling frameworks constitute a collusion between governments, regulators and industry that prioritises the claimed consumer and economic benefits – leisure, employment, tax returns – over broadly unacknowledged (and unmet) social and health costs [171-175].

In this report, we take no position on these broader socio-political claims. Rather, we note that there are signs that the policy basis – at least, of the British regulator – is changing towards considering broader social determinants of gambling harms [35, 36]. The requirement for operators and local authorities (LAs) to profile local area risks when making licensing decisions signals the need for a greater understanding of the environment in which gambling is offered. However, in practice, the range of policy actions that can be taken forward is constrained by the terms of the Gambling Act 2005 itself [5]. LAs have to aim to permit gambling so long as the application is ‘reasonably consistent’ with the licensing objectives. This is an ambiguous statement which, in practice, has meant that many LAs have felt unable to refuse licensing applications, or have had decisions overturned on appeal. However, in the light of the Gambling Commission’s most recent strategy to promote *safer gambling*, the May 2018 announcement of reduced maximum stakes of £2 for B2-category machines, alongside a review of age-restrictions for some National Lottery products and proposals to consider spending limits pending affordability checks for online gambling [66], may indicate a shift towards policies with universal elements to protect vulnerable groups.

From another perspective, there is considerable debate about the relationship between the availability of gambling and its impact upon behaviour. At the limit, ‘total consumption’ models posit a linear relationship between the prevalence of a health-related behaviour within a population, such as alcohol use or gambling, and the prevalence of the resultant health problems. There is some quite limited British data consistent with its prediction that increased gambling is associated with increased gambling problems [176, 177], but the evidence is strongest in jurisdictions with state monopolies of provision [178-180]. A greater focus upon social and environmental determinants would include examination of the distribution and supply of gambling opportunities across different sectors of the community and address the distribution of gambling harms alongside other health inequalities, opening up a range of proportionate universal measures, rather than purely selective measures on offer as harm-minimisation. Arguably, the Gambling Act 2005 [5], with its ‘aim to permit’, will continue to restrict this debate and supports gambling across society with an emphasis upon ‘harm-minimisation measures’ for a minority [32]. In the next chapter, we review the efficacy of these measures. We argue that harm-minimisation for gambling amounts to consumer protection, and that the limited and inconsistent engagement of individuals with these measures across diverse products mean they can have only marginal effects upon aggregated harms in the most vulnerable groups and, therefore, cannot address social determinants.

5 Harm-minimisation measures as a policy option

Harm-minimisation measures have been implemented and tested across a range of health-related behaviours, including alcohol and substance misuse [181]. The dominant model of gambling harms – as articulated, for example, in the Reno Model as regulatory policy – has construed harm-minimisation in terms of responsible gambling [182]. If a substantial proportion of the risk arises at the level of the individual, it makes sense to offer accurate information about gambling products (and minimise the availability of misleading advertisements) and provide tools to assist individuals – especially vulnerable individuals – to manage their gambling effectively. However, by definition, harm-minimisation in this form is unable to address the broader social and economic determinants of gambling harms.

There are a large number and variety of harm-minimisation and responsible gambling measures described in the academic and grey (non-academic) literature. Reviewing them all is beyond the scope of this report. Several recent and excellent reviews are available [182-186]. Some harm-minimisation initiatives are explicitly intended as consumer protection measures, mandated by policy regulators for all individuals, providing information about gambling products and their risks [185]. Other measures are offered to all individuals but are intended to assist individuals who are likely to be at heightened risk of gambling harms [187]. These include measures to promote ‘*protective behavioural strategies*’ such as limit-setting and self-exclusion [185]. Finally, responsible gambling measures can also be viewed as ways to assist individuals in managing potential negative consequences of gambling [182].

In all cases, the objective is to balance the reduction of gambling harms in vulnerable individuals against the (minimal) disruption of others’ gambling. Thus, harm-minimisation assumes that (i) ‘*individuals will continue engaging in potentially harmful gambling behaviours*; and (ii) *similar to alcohol consumption (and dissimilar to smoking), it is generally accepted that there are safe levels of gambling participation*’ [151] quoted in [159].

Here, we argue that the majority, if not all, harm-minimisation instruments are best understood only as forms of consumer protection. That is to say, the best of these measures have value by (i) providing *individuals* with accurate information about gambling products that carry substantive risks of harms; and/or by (ii) offering *individuals* the means to manage their use of gambling products within desired limits as intended at time of purchase and/or use. However, the diversified British market with its multiplicity of operators and services means that (i) individuals’ contact with harm-minimisation measures will be highly episodic even though their efficacy will be dose-dependent and hinge upon the continuity of use; (ii) these measures are unlikely to be effective in reducing the aggregated harms at a population-level; and (iii) they cannot address the broader social and economic determinants of gambling harms. In addition, the diversity of the British and other markets means that systematic efficacy testing of harm-minimisation measures involves serious methodological difficulties. Following Ladouceur et al. (2017), we summarise what is known about the major

harm-minimisation measures, concentrating upon those that have been tested within commercial gambling environments and in relatively high-quality studies [182].

5.1 Harm-minimisation as public information/education programmes

Education about gambling problems and the risks of gambling harms are the most publically salient form of responsible gambling intervention [186]. The initiatives are present in ‘social marketing’ campaigns, encouraging gamblers to ‘gamble responsibly’, ‘to stop when the fun stops’, to spot signs/symptoms of hazardous gambling (‘Bad Betty TV adverts’) (<http://senetgroup.org.uk/>), or to give information about where to go for help or more information on problem gambling (e.g. GambleAware). Campaigns can also provide information about the mathematics of gambling and common fallacies about gambling. Content can be made available on products (e.g. odds printed on the back of lottery tickets, responsible gambling messages on gambling machines), on posters and leaflets in licenses betting offices (LBOs), casinos and bingo venues; or more broadly through radio, television, and newspapers advertisements and internet websites (including regulator websites).

Although public awareness campaigns are a cost-efficient means of disseminating responsible gambling messages to large numbers of people, there has been little research into their efficacy in reducing gambling harms. Overall, studies from Australia and Canada suggest that such campaigns do not substantially increase awareness of gambling harms or interventions within communities [188, 189]. However, multi-faceted information campaigns involving co-ordinated television, radio and newspapers can increase contacts with support groups and treatment services from individuals with concerns about their gambling [190]. This suggests that information campaigns can assist those vulnerable individuals who have particular reasons to engage with the material. In a youth context, media campaigns can be used to promote responsible behaviours and provide information about gambling harms, address false beliefs about gambling in order to support individuals in moderating their gambling; they can also include parental guidelines for gambling within a family context [191, 192]. In general, there are no long-term assessments involving behavioural outcome measures [182]. However, in many cases, the outcome measures of awareness campaigns are not well-defined. Although providing information can improve knowledge and only rarely changes behaviour, such campaigns can still be useful as part of a co-ordinated public health approach. In this way, they are likely to have little value implemented only as stand-alone initiatives.

...information campaigns can assist those vulnerable individuals who have particular reasons to engage with the material.

School-based educative campaigns have also been tried with young people across Australia, United States and Canada as broadly preventative measures. Presentations to pupils between aged 10 and 18 years tended to produce improvements in knowledge about gambling and reduce misconceptions about the nature of probability and random games compared with before the presentations, or in comparison with control groups. However, there is little evidence that benefits included altered or reduced gambling behaviour. Similar interventions in adult gamblers also tended to produce only weak effects, such that video-based explanations of how slot-machines work and the value of limit-setting improved gamblers’ appreciation of gambling fallacies but with no consistent reductions in expenditure at a 30-day follow up [193]. It is also possible that educative programmes that emphasise gambling as a risk-based activity, paradoxically, might increase gambling behaviour in some young people [159].

In the main, these findings are consistent with what we know about the efficacy of information and awareness initiatives in the context of other health behaviours such as

alcohol and substance use [194-197], and suggest that such campaigns will tend to have only limited effects upon harms. However, as argued by Williams et al. (2012), there are examples of positive behavioural change in some areas [186]; such as changes in birth control pills and IUDs in the mid-1970s [198], cancer screening [199], and HIV testing [200]. In these cases though, the health risks are immediate and severe for individuals so that the benefits of changing behaviour are easy to perceive and achieve [186]. By contrast, as with alcohol misuse, many vulnerable individuals are unaware of gambling harms as they are affected by them, limiting the potential impact of information/awareness campaigns. Furthermore, knowledge and attitudinal impacts of information campaigns can depend critically upon source credibility and, worse, be highly transient, dissipating over time.

5.2 Harm-minimisation as machine features

Many harm-minimisation features have been implemented in the context of machine gambling where, it is argued, individuals can sustain harms by becoming distracted and spending more money or time gambling than intended. Therefore, a number of integrated features have been offered to provide individuals with information and options that can help them make better decisions about whether to continue or terminate gambling sessions.

On-screen pop-up messages and warning. On-screen clocks and cash counters (that show money rather than credits) may encourage individuals to monitor the length of gambling sessions and then interrupt their play [201]. Early studies showed only marginal effects of these measures upon actual time spent gambling [201, 202]. However, later work in an online setting showed that on-screen warning messages can reduce the amount of time and money spent following the display of graphical representations of recent gambling at the start of sessions [116, 117, 203]; see section Limit-setting as pre-commitment. Impacts are also maximised when positioned in the centre of the game display, or when messages pause play and require active removal by players [204].

Structural features of machine gambling games. It is commonly argued that electronic gambling machines, such as B2-category machine or Fixed Odds Betting Terminals (FOBTs), promote gambling harms because their structural characteristics offer opportunities to lose large amounts of money relatively quickly [49-52, 60-64, 187]. Accordingly, there has been considerable interest in the role of stakes, prizes, pay-line features (e.g. near-misses and losses-disguised as wins), prize volatility, and speed of play (among other features) that might be sources of risk but which might also be manipulated to protect customers [49, 52, 64, 205-207]. A good deal of this research has been laboratory-based and provides important information about the psychological processes that mediate how individuals respond to these features. However, this work does not yet quantify the extent to which structural features increase harms in commercial gambling environments. Field studies have manipulated some features to assess changes in individuals' behaviour. However, these have tended to involve multiple changes at the same time, or failed to restrict access to alternative opportunities to gamble [202, 207, 208], making it hard to interpret any behavioural changes.

Limit-setting limits as pre-commitment. Pre-commitment strategies are ways to enable individuals to set limits on their expenditure (as deposits, bets, wins or losses) and their session time, prior to the commencement of play [209]. These systems assume that decisions about gambling should be made in 'a state of non-emotional arousal', and that, once made, the decisions are adhered to for the remainder of the session. The Association of British Bookmakers (ABB) 2015 Code of Practice requires operators to offer (voluntary)

opportunities to set time and money limits on FOBTs within LBOs [210]. Field studies, however, show that only a minority of FOBT players use these facilities, and adherence to limits is variable [211, 212]. In online settings, there is evidence that limit-setting can sometimes reduce the amounts of money gambled, and in individuals who gamble with high-intensity [117, 213, 214] though here again it is possible that only a minority of individuals use these facilities voluntarily [213 for review, 215], consistent with evidence that the benefits of pre-commitments depend upon the psychological characteristics of users [216]. Furthermore, breaching limits is a common experience, especially in individuals with gambling problems [217]. Laboratory-based work suggests that failed adherence to limits can be mediated by attentional distraction during play but improved by pop-up reminders [218] or strengthened by jackpot expiries [219].

The most significant challenges to pre-commitment systems involve the structure of the wider gambling environment itself. In essence, gambling pre-commitments, like those offered in other health contexts [220], need to involve choices that remove the possibility of future temptation. Pre-commitments can only work to the extent that such choices are irrevocable, as ‘full’ gambling pre-commitment systems rather than the mostly partial and voluntary systems currently offered [209]. For example, opportunities to card-share (where individuals are able to interact easily with each other), or move to different machines or other operator websites once limits have been breached mean that most pre-commitments are ‘leaky’ or revisable, and unlikely to reduce harm over the longer-term in vulnerable individuals.

5.3 Self-exclusion

Self-exclusion programmes offer individuals an extreme form of pre-commitment: the opportunity to preclude further opportunities to visit gambling venues or use online gambling services. Self-excluding individuals sign up to allow staff to deny access to a venue, remove them from premises if detected, and potentially to lay charges for trespass or impose some other form of penalty. Ban lengths typically range from months, to years, to lifetime commitments. In Great Britain, self-exclusion is one of the few harm-minimisation measures mandated by the Gambling Commission as part of operator license conditions [221].

In general, individuals who self-exclude will be those who are experiencing, or have experienced already, significant gambling harms. In some studies, between 73% and 95% of self-excluders were problem gamblers [222]. Motivations for self-exclusion include mounting financial losses, difficulties involving partner and family relationships, occupational/legal and health-related issues. However, other motivations can be more prosaic; e.g. wishing to take short breaks from gambling or to save money for household/family expenses. Self-exclusion can bring a number of significant, albeit, sometimes temporary benefits. These can include reductions in gambling expenditures, diminished urges to gamble and improvements in the perceived control over gambling [223, 224]. Importantly, other benefits can include improvements in mood and well-being, rather than just problem gambling symptoms and behaviours [225]. However, over the longer-term (i.e. beyond 12 months), the picture is much less certain, with reports of high numbers of breaches over periods of up to 10 years [226].

...a number of significant, albeit, sometimes temporary benefits...including reduced gambling expenditures... improvements in mood and well-being

In the round, the available data suggests that self-exclusion can be helpful to vulnerable individuals who are experiencing gambling harms. Of all the available harm-minimisation measures, self-exclusion probably has the most supportive evidence-base [182], although

there are also examples where changes in gambling behaviour following exclusion are modest or absent [227]. Important obstacles to their wider use include a lack of awareness that schemes are available, embarrassment and the stigma of enrolment, concerns about confidentiality and privacy, and inconvenience of having to register at each venue.

Finally, like other forms of pre-commitment, self-exclusion depends upon the effective barriers to other opportunities to gamble, and there is evidence that opportunities to move to other operators can undermine adherence [222]. Encouraging multi-operator self-exclusion schemes for land-based operations and national online self-exclusion schemes in which the identity of self-excluders is shared between operators may be beneficial [228]. In Great Britain, the Senet Group of operators (<http://senetgroup.org.uk/>) have launched a multi-operator self-exclusion scheme (MOSES) over licensed betting offices (LBOs) (<https://self-exclusion.co.uk/>). The Self-Enrolment National Self-Exclusion (SENSE) – is available for all land-based casinos (<http://www.nationalcasinoforum.co.uk/voluntary-self-exclusion-sense/>). Finally, the Remote Gambling Association (<https://www.rga.eu.com/>) now offers GamStop; a developing facility that covers UK gambling websites (<https://www.gamstop.co.uk/>). At the time of writing, there were no systematic assessments of the performance of these schemes in terms of helping individuals to reduce their gambling. An early evaluation of the MOSES processes found that 83% of 196 customer respondents reported that the scheme had helped them to reduce their gambling and that 71% had not attempted to gamble in their nominated LBOs since registration [229]. However, the report highlighted that procedures could be improved by helping staff to explain the scheme to LBO customers, by increasing staff members' awareness of their responsibilities under the scheme, and by speeding up registration. These findings are consistent with broader observations that assisting individuals who are experiencing gambling harms through land-based self-exclusion schemes depends critically upon high quality staff training (see '5.5 Situational measures and customer monitoring').

5.4 Player-tracking and behavioural feedback

Behavioural feedback over the longer-term may also be helpful in some circumstances, such as in online contexts or with loyalty schemes where player-tracking allows the collection and analysis of individuals' gambling histories [114-117, 230-235]. In the context of loyalty schemes, there is some evidence that the presentation of a colour-coded rating of risk and information about gambling expenditure (including the amounts deposited and wagered) can help vulnerable individuals to moderate their gambling, both immediately and over periods of months [231]. In an online context, other examples include the use of cluster-analysis over online player-tracked data to identify account holders at greater risk of harms [232, 233], and hazardous betting patterns prior to account closures [234].

...player-tracked betting patterns can be used to provide personalised feedback about gambling behaviour; and, sometimes, a recommendation to engage responsible gambling tools.

In addition, player-tracked betting patterns can be used to provide personalised feedback about gambling behaviour [115-117]; and, sometimes, a recommendation to engage responsible gambling tools [235]. There is some evidence that use of personalised feedback to moderate betting patterns is greatest in online account-holders with aggressive betting patterns [117]. In land-based forms too, casino loyalty cardholders may benefit from feedback about total monies staked, won and lost over periods of months [236, 237]. Benefits can include reductions in casino visits, monies wagered and lost; sometimes in the absence of self-reported awareness of these changes [237].

Developments of behavioural tracking to identify behavioural signatures of vulnerability

to gambling harms is at an early stage. Evidence has been garnered from studies with relatively short-term follow up of months rather than years, and provide little information about the mechanisms of change. Also, the efficacy of behavioural feedback is likely to differ between gambling forms [230] and settings (e.g. online vs land-based), highlighting the methodological challenges of demonstrating external or criterion validity. So far as we are aware, there are no published large-scale study or trials that cross-validate these methods.

5.5 Situational measures and customer monitoring

Finally, there are several candidate harm-minimisation measures that are implemented in commercial gambling environments themselves, sometimes supported by operator staff. However, their reported efficacy is mixed [228]. Restricting individuals' access to extra funds to gamble can be achieved through the removal of ATMs from gambling venues and clubs [238], with some evidence of reductions in time spent at clubs, gambling expenditure, and in impulsive gambling overspend [239]. These effects appear more marked in individuals at the highest risk of harms. Restricting opening times has only marginal effects upon gambling expenditure that are dependent upon the time of day when venues are closed [240]. Although, of little relevance in the current British context, smoking bans in other jurisdictions have been linked to lowered gambling expenditure, requiring individuals to move to designated smoking areas can impose helpful breaks in possibly hazardous patterns of play [241].

Staff training has increased over the last few years in a number of jurisdictions, with the intention of facilitating engagement with responsible gambling tools by individuals who show signs of difficulties with their gambling. The 2015 ABB's Responsible Gambling Code stipulates that staff *'must be trained to recognise a wider range of problem gambling indicators in order to identify those customers at risk of developing a gambling problem and interact with them'* and that staff will be actively encouraged to *'walk the shop floor...to initiate customer interaction in response to specific customer behaviour'* [210]. Staff training should be refreshed annually and included in staff inductions, and operators without social responsibility training must complete the ABB online training course.

One recent review of responsible gambling practices, instigated by the Industry Group for Responsible Gambling (igrg.org.uk/wp/home/) and GambleAware (about.gambleaware.org/) reported a number of shortcomings in staff training around the explanation of product information. These included inadequate highlighting of responsible gambling features of games and inadequate care to avoid endorsing false beliefs or reinforcing misunderstandings about products, as well as poor integration of best practice into staff day-to-day duties [242]. Further, the international evidence is not encouraging. First, responsible gambling training may impart new knowledge about problem gambling to employees but does not appear to correct their own inaccurate beliefs about gambling [243]. Second, staff ratings of customers' likely gambling problems can diverge significantly from actual problem gambling symptoms (as scored by the PGSI), with high numbers of false-positives and false-negatives [244]. Finally, staff can report feeling uncomfortable when approached by customers for assistance with gambling problems, or when approaching customers whom they believe may have gambling harms [245]. These concerns include the discussion of personal issues, confidentiality and, when approached by customers, confusion and apprehension. Taken in the round, it seems likely that the capacity of staff to engage individuals to indicate responsible gambling measures is limited and would require continuous training.

Summary

Harm-minimisation and responsible gambling measures take diverse forms across the multi-faceted and a highly diversified supply of gambling products and especially so in the British market. Primary (universal) public information campaigns are likely to have impacts only among individuals who already have concerns about their gambling. Educative programmes, especially in young people may improve knowledge about gambling risks but not necessarily diminish gambling behaviour. Of the secondary (selective) measures, self-exclusion, as well as money and time limit-setting, hold the most promise but, here too, their efficacy is likely to depend upon regulatory changes to produce enforceable, full pre-commitments.

Research underpinning the development of harm-minimisation appears to be piece-meal in comparison to other contexts involving clinical interventions or public health. Weaknesses include small sample sizes, a lack of randomised or appropriate control comparisons and outcome measures that involve only self-report or behavioural measures that are interpreted as proxy indicators for longer-term harms (such as expenditure or intensity of involvement). Most critically, in a diversified market with multiple operators, field studies are not able to isolate particular changes in gambling behaviour and relate them back to particular measures.

For these reasons, harm-minimisation instruments – including those offered as responsible gambling tools – may be best understood as forms of (continuing) consumer protection. That is to say, the best of these measures have value by (i) providing *individuals* with accurate information about products that carry risk of harms and by (ii) offering *individuals* the means to manage use of gambling products within desired limits (as intended at time of purchase). However, the diversified British market in which individuals use products of multiple operators – for example, multiple online accounts [8] – means that use of particular measures is likely to be intermittent [246]. Other data indicate that use can decline over time [247]. This suggests that harm-minimisation measures are likely to have only marginal effects upon the aggregated harms experienced among the broader groups of individuals at greatest risk.

6 The unequal distribution of gambling harms across social groups

Policy and regulatory frameworks to date have been dominated by a conception of gambling harms in which risk arises predominantly at the level of the individual. However, there is significant evidence that gambling harms are socially-patterned; that is, that their incidence varies significantly across social groups identified by broad demographic and cultural factors (e.g. young people and ethnicity) or by shared economic and health experiences (e.g. unemployment and mental health problems) [56, 58, 141, 248]. Thus, gambling harms reflect other health inequalities across Great Britain and other jurisdictions [43, 158].

A public health approach that broadens its policy targets to include social, economic and cultural process (as well as harm-minimisation measures to protect individuals as consumers) can offer opportunities to address gambling harms more effectively. In this chapter, we summarise what is known about the social groups at heightened risk of gambling harms. We focus upon the particular demographic, ethnic and economic risk factors that we use to illustrate the likely distribution of risk across Welsh communities in the geo-spatial risk-index map offered in Chapter 8. Here, we update an earlier exposition [19].

6.1 Young people

The Gambling Act 2005's third licensing objective states that children should be protected '*from being harmed or exploited by gambling*' [5]. So, children are explicitly recognised as a vulnerable group. In Great Britain, the legal age for most gambling products is 18 years, but, for lotteries, scratchcards and football pools, the legal age is 16 years. There are also some gambling machines (Category D) that have no legal age limit. Thus, notwithstanding recent discussion of harms arising out of facsimile gambling games on social media [3, 4, 24-26], there has been some tolerance of young people gambling for small stakes in Great Britain, at least since the Gaming Act 1968 [249]. In May 2018, the Department of Digital, Culture, Media & Sport (DCMS) announced that it would review the legal age for some National Lottery products [67].

A child can experience harms directly through their own gambling activity or indirectly through parental or caregiver gambling or their gambling problems.

Young people can be vulnerable to gambling harms in two ways. A child can experience harms directly through their own gambling activity or indirectly through parental or caregiver gambling or their gambling problems. With regards to direct harms, children and adolescents will be vulnerable in terms of the impacts upon health and well-being from over-

involvement in gambling. For some individuals, this over-involvement can affect future life opportunities. The adolescent and younger adult years see continuing cognitive, emotional and social development frequently involving risk-taking behaviours that sometimes include gambling [250, 251]. Reflecting these risks (both social and individual), harms arise when gambling disrupts relationships with family and peers and causes problems at school. In some cases, harms can involve patterns of delinquent behaviour [252]. In addition, it is

possible that early engagement with developing technologies associated with gaming [253] or social free-to-play online gambling games facilitates the transition to commercial gambling [30, 31]. However, at the current time, the available evidence that this happens is mixed [30, 31, 254].

Indirect harms, that reflect the gambling of parents and caregivers, can include low quality care, inadequate financial support for care and broader activities, reduced time/attention from parents/caregivers, loss of trust in parents/caregivers, and the effects of heightened stress, anxiety and spousal conflicts [12-15]. Consistent with this, children of individuals with gambling problems show other concerning indicators including tobacco use, alcohol misuse, poor sleep, and adjustment problems [148]. Adolescent gambling problems are associated with parental gambling problems [255], reflecting the inter-generational transmission of attitudes and beliefs about gambling, as well as modelling behaviours [256].



Evidence

There is a wealth of data on gambling behaviours among young people [252]. Gambling is a popular activity among school pupils aged 11-16 years, despite legal age restrictions on most commercial forms of gambling. In 2018, less than 10% of children aged 11-12 years had gambled in the last week; but this increased to 22% among 16 year olds [107]. Overall, 14% of 11-16 year olds had spent their own money on gambling in the past week. Youth gambling problems are often assessed using an instrument called the DSM-IV-J-MR; adapted from its adult version [257]. In 2018, 1.7% of 11-16 year olds in Britain were problem gamblers and 2.2% were 'at-risk' gamblers [107].

Not all young people who engage in gambling develop problematic patterns of play. In Great Britain, risk factors include being male, of Asian ethnicity, parents with permissive attitudes to gambling or who themselves gamble, being a single child, in the care of a guardian, cigarette smoking and higher levels of income [258]. Common themes though included commencement of gambling at a young age and sometimes rapid transitions to hazardous patterns of gambling with friends who also gamble or as a solitary activity [259, 260]. Young people who were problem gamblers reported lower self-esteem, elevated rates of anxiety and depression, more marked alcohol and substance misuse, and were more vulnerable to suicide ideation and suicide attempts compared with young people who were not problem gamblers.

Young people may also experience a different range of impacts and harms as a result of gambling compared to adults [260]. These include heightened conflict with parents and friends, greater disrupted school work, strong feelings of guilt, skipping school/work, unpaid debts and stealing money to gamble. This suggests that the experience of gambling harms among young people relate to social problems and disruptions to daily life (in terms of school, work and social commitments) rather than issues around money pressures [261].

6.2 Students

Among young population groups, students may be at elevated risk of gambling harms. Beginning college or university involves important social and economic transitions, involving a combination of leaving home, separation from parents or caregivers, the stress of being in new environments, having fixed incomes but further access to money through student loans, and/or financial worries; all potential factors that can promote vulnerability to gambling harms [262]. Students may also be at heightened risk because they can now legally access gambling. Foreign students may also be vulnerable through the additional risk factors associated with migrant status, especially if students come from countries where, for example, alcohol and gambling are not as accessible as they are in Great Britain [263].



Evidence

For 2017, the Gambling Commission reported that 1.2m or two thirds of students at British institutions had gambled in the last month, with 54% of those reporting their motivation as to make money; with one in four gambling more than they could afford [264]. There has been little research into students' experience of gambling in a British context. However, a single study of gambling in Scottish college students identified 3.9% of college students as probable pathological (and very severely affected) gamblers and a further 4.0% as problem gamblers [265]. These figures are typically higher than those reported among similar age groups interviewed through household surveys [56, 58, 133]. However, as ever, differences between the estimated prevalence rates across social groups should be treated with caution due to different ways of measuring problem gambling and uncertainty about the extent to which these results can be extrapolated to the broader national student population.

Looking further afield, there is a wealth of international evidence exploring gambling among students in higher education. Much of this work has focused upon rates of problem gambling [266, 267, 268] and correlations with opportunities to gamble, alcohol and substance misuse [269]. Most research has involved the gambling behaviour of North American samples so comparisons should be made with care due to the different structure of higher education in Great Britain. Instruments used to measure problem gambling can also vary. While studies do show elevated rates of problem gambling among college students compared to adult rates generally, it is less clear that rates are elevated in comparison to demographically-matched groups not in higher education. At least one study did not find elevated rates of gambling problems among college students [270], suggesting that gambling harms specifically associated with being a student are likely to be relatively moderate in severity.

6.3 Ethnicity

Vulnerability to gambling harms varies significantly with ethnicity, and can be elevated among some minority ethnic groups [56, 271, 272]. Typically, this vulnerability is attributed to specific beliefs and cultural practices that promote gambling in these groups. However, gambling and its harms among ethnic groups may also reflect socio-economic characteristics of urban areas in which these groups are often situated as well as patterns of low pay, shift-based employment [273]. Therefore, minority ethnic status may be a marker for a number of cultural and economic factors that contribute to gambling harms in these communities [272].

Evidence

In Great Britain, the 2007 and 2010 British Gambling Prevalence Survey (BGPS) and more recent health surveys show a consistent relationship between ethnicity, gambling and gambling problems [55, 56, 58, 133]. In all of these studies, the prevalence of problem gambling was higher among those from Non-White ethnic backgrounds and the odds of problem or at-risk gambling were higher among those from Asian/Asian-British backgrounds and, to a slightly lesser extent, Black/Black-British backgrounds. In addition, South Asian adults and children tend to indicate a ‘harm paradox’ whereby both adults and children of Asian backgrounds are less likely to gamble than their White-British counterparts, yet those that do are more likely to experience problems. Further work has shown that these relationships remain robust even once other predictive factors such as household income, socio-economic status and indicators of multiple deprivation are taken into account statistically [272]. Both the BGPS series and the subsequent England Health Survey series suggest similar patterns among individuals of Black/Black-British ethnicity [55, 56, 58, 133].

6.4 Immigrants

Migrants from other countries may be at heightened risk of gambling harm by virtue of poor social and support networks, limited financial resources and, possibly, social stigma [274-276]. In addition, some immigrants come from cultures where gambling availability is not as widespread as it is in Great Britain, and this greater accessibility may heighten the risk of harms.

Evidence

There has been very little examination of immigrants’ gambling behaviours and none in a British context. In Norway, individuals born in non-Western countries showed higher rates of at-risk gambling than ‘ethnic’ Norwegians [274], while similar patterns have been found in comparisons between individuals born outside Denmark and native Danish [275]. Another study, this time in Spain, compared the experiences of immigrants and native individuals who had sought treatment for gambling problems [276]. While there were more similarities between groups than differences, Asian immigrants reported more severe gambling problems [276]. These studies suggest that immigrant groups may be at heightened risk of gambling harms, but does not tell us much about the mediating processes.

Cultural contexts can have powerful effects upon gambling behaviours [169]; and it is likely that, for some immigrants, the processes of acculturation and its resultant stressors increase vulnerability to harms [277-279]. Gambling may also offer opportunities for immigrants to visit venues to mix with other people of the same ethnicity [280]. Immigrants can also be

motivated to gamble – sometimes hazardously so – by financial insecurity and the hope of winning money [280]. Finally, it is possible that vulnerability to gambling harms among immigrant groups varies across generations, with 1st generation immigrants being less likely to gamble or experience harms than natives, whilst 2nd or 3rd generation migrants are more likely than 1st generation migrants. This indicates that it is not merely displacement to new countries and cultures that increases the risk of gambling harms [281].

6.5 Economic disadvantage

There is substantial evidence that gambling harms are increased among individuals with constrained economic circumstances; in particular, those with low incomes who are unemployed or with unstable employment. This association does not merely reflect harms that arise by spending more money on gambling than is affordable or going without essentials. Rather, the association between economic disadvantage and gambling harms reflects broader societal and contextual factors around financial difficulties; for example, unemployment and under-employment as stressors that make gambling harms more likely.

Evidence

Income. British-based evidence about the relationship between household income, gambling participation and gambling problems is mixed. The BGPS series consistently show that individuals from low income households were less likely to gamble overall, allowing for differences in National Lottery purchases [56, 58, 248]. However, individuals from low income households participated in bingo and scratchcards more frequently than those from high income households, suggesting that participation in different gambling forms is patterned, in part, by income [56]. In terms of gambling problems, while the 2007 BGPS showed no substantial variation in prevalence between the lowest and highest income households (0.9% vs 0.4%, respectively) [58], the 2010 BGPS showed rates of problem and at-risk gambling that were highest among the lowest income households [56]. This finding was replicated in the 2016 Scottish Health Survey; 1.1% of those from the lowest income households were problem gamblers compared with 0.5% from the highest [282].

However, the relationship between income and gambling is likely complex. In the 2008/09 Living Costs and Food Survey [283], households with the lowest income were less likely to gamble than those with higher incomes. However, individuals from low income households who did gamble spent a higher proportion of their total income on gambling, showed higher levels of gambling participation than their higher income counterparts. Households with the heaviest expenditure on gambling were distributed roughly equally across the income distribution though they were less likely to come from the very lowest income households. Thus, *'heavy gambling activity is not the exclusive preserve of the rich, but involves a significant number of households on middle and low incomes'*. Follow up of bookmaker loyalty cardholders found more gambling problems in those from low income than from higher income households, again demonstrating that gambling harms are socially-patterned [68].

Money problems and debt. Financial difficulties and debt are not static and can involve shifting availability of formal and informal credit, financial management, personal control and income. The 2010 BGPS showed that both at-risk gambling and problem gambling rates were significantly higher among those who reported money problems in the past month. In fact,

the problem gambling prevalence rate of 6.1% among those who reported severe money problems was the highest of all socio-economic characteristics considered [56]. Similarly, the 2007 English Adult Psychiatric Morbidity Survey (APMS) [284] highlighted a strong relationship between debt and problem gambling. Overall, 8% of English adults experienced some form of debt but, among problem gamblers, this number was 38% [285].

Use of credit is also linked to gambling participation and problems. In the 2007 APMS, 3% of adults in England had obtained money from a pawnbroker, taken out a loan with a money lender, bought goods on a hire purchase scheme or borrowed from family or friends. Among problem gamblers, rates for these behaviours were over double with 7% having borrowed money [19, 284]. Taking age, sex and ethnicity into account, taking a loan from a money lender or pawning goods was significantly associated with gambling problems; those who borrowed money from these sources were twice as likely to be at-risk or problem gamblers. This relationship between credit (secured from any source) and gambling expenditure is also clarified by the 2001-2007 Expenditure and Food Surveys [286]. Credit repayments were associated with a 5% point increase in probability of being a gambler, and that the level of credit repayments was positively associated with higher rather than lower gambling expenditure. (There was no evidence that the associations between loan repayments and gambling were moderated by household income.)

Unemployment. Gambling and gambling problems can show divergent associations with periods of unemployment. Reith and Dobbie (2013) reported that the experience of unemployment is associated with fluctuating gambling participation and/or gambling problems that can increase in severity over time; or, equivalently, that stable gambling or gambling problems are associated with periods of prolonged employment [20]. Other evidence from cross-sectional surveys highlights links between employment status and problem gambling, with those who are unemployed typically being at elevated risk of more severe gambling problems. In the 2010 BGPS, 14.6% of unemployed individuals were categorised as at-risk gamblers compared with 7.5% of employed individuals; 3.3% scored as problem gamblers compared with 0.9% of employed individuals [56].

Finally, the summary statistics likely hide a broader pattern by which individuals who are unemployed tend to be far more likely to participate in some gambling forms such as sports betting, playing slot machines, playing B2-category Fixed Odds Betting Terminals (FOBTs) in licensed betting offices (LBOs) and casino table games, and gambling more frequently than individuals in employment [56]. Therefore, certain activity preferences and their frequency may combine to enhance risk of harms among people who are unemployed. In a study of bookmaker loyalty cardholders, unemployed men were four times more likely to be problem gamblers than employed men, highlighting these individuals as a key risk group [73].

6.6 Areas of multiple deprivation

There is a broad acceptance in Wales and elsewhere that where people live matters to their health [43, 158, 287]. In 2010, the Marmot Review stated that *'inequalities in health arise because of inequalities in society – in the conditions in which people are born, grow, live, work, and age'* and that tackling these inequalities is a matter of social justice [158]. Aforementioned (Chapter 3), the Gambling Commission and Responsible Gambling Strategy Board (RGSB) advocate a public health approach to gambling and its associated harms [35, 36]. In line with the recommendations of the Marmot Review, this suggests a focus upon inequalities in behaviour, the conditions of people's lives (including where they live) and the impacts of gambling and gambling harms upon individuals' well-being more broadly.

Evidence

Individuals living in deprived areas are at increased vulnerability to health problems generally and gambling harms specifically. In policy terms, deprivation is multi-faceted and is not just a matter of poverty and income. In England, deprivation is measured using the Index of Multiple Deprivation (IMD). The Department of Communities and Local Government is clear that this is a measure of deprivation, not affluence; and that it indicates: 'a broad range of issues and refers to unmet needs caused by a lack of resources of all kinds, not just financial' [288]. IMD brings together several domains of deprivation: income; employment; health; disability; education, skills and training; barriers to housing and services; and poor living environment and crime. Similar indices are available for Wales and Scotland. However, because of their differing geographies and some differences in calculation, IMD measures cannot be combined across the whole of Great Britain.

British-based evidence has tended to focus upon two themes: first, the relationship between deprivation, gambling and problem gambling; and second, the co-distribution of deprivation and gambling opportunities. In fact, the 1999, 2007, and 2010 BGPS series, the English and Scottish health surveys, and the 2007 APMS provided broadly consistent evidence [77, 133].

Deprivation and gambling harms. In the 2007 APMS, individuals living in the most deprived areas were either less or just as likely to gamble as those living in the least deprived areas [19, 284]. However, problem gambling rates were 1.3% among those in most deprived areas and 0.4% for those in least deprived areas, demonstrating that whilst gambling participation by deprivation level may be similar, those living in deprived areas who gambled were more likely to experience problems [19]. Moreover, among those who gambled, problem gambling rates were 2.0% and 0.6% for those living in the most and least deprived areas, respectively. This pattern has been replicated in subsequent studies. In the 2010 BGPS, problem gambling prevalence was again highest among those living in most deprived areas; at-risk gambling rates were also elevated compared to the least deprived areas (9% vs 5%, respectively) [56].

Similarly, the Scottish Health Survey 2016 showed a strong relationship between problem gambling and deprivation – this time, measured by the Carstairs Index⁵. Rates of problem gambling among those living in the most deprived areas were 2.1% compared with 0.8% for those living in the least deprived areas [282]. In the 2012 England Health Survey, at-risk and problem gambling rates did not vary by deprivation but there was a significant association with living in the most deprived areas as defined by Spearhead Primary Care Trusts (PCT)

5 The Carstairs Index is comprised of four indicators: low social class, lack of car ownership, overcrowding and male unemployment (Carstairs V & Morris R. Deprivation and health in Scotland. Aberdeen: Aberdeen University Press, 1991).

status⁶ [133]. Those living in Spearhead PCTs were 1.9 times more likely to be a problem gambler than those who did not. Finally, a survey of people who played machines in the three major bookmakers and held a loyalty card demonstrated comparable results [68]. Whilst the number of gambling activities undertaken by loyalty cardholders did not vary by deprivation, those living in more deprived areas had higher rates of problem gambling than those living in less deprived areas. Overall, these data suggest that, though loyalty cardholders come from: *'more economically constrained backgrounds than machine players as a whole, there is a distinct social gradient evident within this group. Loyalty card customers who have low incomes, live in deprived areas, and are economically inactive gamble on machines more frequently and are more likely to experience gambling problems'* [68].

Deprivation and opportunities to gamble. In Great Britain and Australia, there has been consideration of the distribution of gambling venues and their area characteristics including deprivation. This work has focused upon the distribution of machines [77] and the distribution of bookmakers (LBOs) [289]. Areas with a high density of machines tend to have higher deprivation (IMD) scores (i.e. be more deprived) than other areas [77]; and areas with high numbers of LBOs tend to have higher deprivation (IMD) scores than areas with no LBOs or urban areas generally [289]. So, there is an unequal distribution of machines and LBOs, being disproportionately placed in areas of greater deprivation.

Furthermore, Astbury and Thurstain-Goodwin (2015) highlighted how the distribution of LBOs typically serve local markets, with the most regular customers residing locally to their preferred LBO [289]. Specifically 'an estimated 8% of loyalty card players sampled live within 400m of an LBO where they have played a machine... nationally, 23% live within 1km, and 46% live within 3km, suggesting quite local choices being made and a typical pattern of accessibility to goods and services'. This proximity of customers to LBOs translates into increased machine use, such that individuals who played machines on 80 or more different days between September 2013 and June 2014 travelled a median distance of less than 1km from their home to the LBO. This indicates that more regular machine players in LBOs are more likely to live locally, and more likely to live in neighbourhoods with higher deprivation levels than either the national average or the average for urban areas [289]. Finally, bookmaker loyalty cardholders who lived within 400m of a cluster of LBOs had higher rates of problem gambling than those who did not [289].

The explanation for the concentration of LBOs within deprived areas is complex and likely to relate to cheaper rents, greater footfall on high street locations, and a local population more traditionally interested in the gambling products offered in LBOs [77, 289]. Similar patterns have been identified in Australia, New Zealand and Canada, with one particular study reporting that aggregated gambling (monetary) losses were highest in the most disadvantaged areas of Melbourne, with the highest density of machines [76].

⁶ Spearhead PCTs were 88 PCTs identified by the Department of Health in 2004, as the most health deprived in England. Health deprivation was measured across five areas: male life expectancy at birth; female life expectancy at birth; cancer mortality rate in under 75s; cardiovascular disease mortality rate in under 75s; and Index of Multiple Deprivation 2004 (Local Authority Summary) average score.

6.7 Mental health

There are strong associations between some mental health problems and gambling harms. However, the causality of the association in particular cases is highly complex. On the one hand, gambling harms – such as financial and emotional difficulties – may act as (diathetic) stressors to precipitate psychological problems in vulnerable individuals [163]. On the other hand, some mental health problems – especially, alcohol and substance misuse, and some mood-related illnesses – share genetic and individual risk factors so that gambling problems and their accompanying psychological problems reflect final common pathways [127, 143, 161, 162, 290, 291]. Still other life experiences or life transitions – such as, adjusting to civic life following military service or even combat experience – might increase the risk of gambling harms, as individuals seek to cope with emotional distress [292].

Evidence

Samples of problem gamblers show very high rates of other mental health problems [125, 126], with one systematic review reporting rates of 58% for alcohol and substance use disorders and 38% for mood and anxiety disorders [125]. At the same time, samples of individuals with mental health problems exhibit elevated rates of problem gambling. In the 2007 APMS, higher rates of problem gambling were found among individuals with psychological problems: (i) mixed anxiety and depressive disorder; (ii) general anxiety disorder; (iii) phobias; (iv) obsessive compulsive disorder; (v) panic disorder; (vi) eating disorders; (vii) probable psychosis; (viii) Attention deficit hyperactivity disorder (ADHD); (ix) post-traumatic stress disorder; (x) hazardous levels of alcohol use; and (xi) drug dependency [19]. Problem gambling rates varied from 6.0% among individuals with probable psychotic illnesses to 1.5% among those with evidence of anxiety/depressive disorders. These estimates were at least twice the rate of problem gambling among the general population [56, 58]. These associations remained statistically reliable once age, sex, ethnicity, income and indices of multiple deprivation were taken into account. They are also notable in that past year gambling was similar among those with and without the psychological disorders listed above (with the exception of phobias and psychotic illnesses), suggesting that individuals with mental health problems who do gamble are more likely to encounter gambling problems; another example of the ‘harm paradox’ [19]. Other data from the National Epidemiologic Survey on Alcohol and Related Conditions showed that among individuals being treated for mood disorders and anxiety, rates of life time problem gambling ran from 3.1% for those with depression to 5.4% for those with social phobia [291]. 8.9% of individuals reported a history of at least some gambling problems.

As expected, associations between nicotine use and hazardous alcohol consumption patterns and gambling problems are particularly strong. Looking at past year gamblers only, those with alcohol dependency had higher rates of problem gambling than those with no alcohol-related problems [19, 125, 126]. This suggests that people who have alcohol dependency problems and who gamble are more likely to experience gambling problems than people who gamble but do not consume alcohol or consume alcohol to harmful levels. Similarly, the 2007 BGPS demonstrated that the prevalence of problem gambling was elevated among those who consumed the most alcohol on their heaviest drinking day in the past seven days [58], while the extent of recent alcohol consumption was strongly linked to gambling alongside a number of health-related behaviours in an earlier survey of British adults [293].

Finally, there is also recent evidence that adverse childhood experiences (ACEs) are linked, not only to mental health problems (including alcohol and substance misuse) [294], but also to gambling problems [295-298]. This link may be at least partially independent of the increased risk of alcohol and substance misuse, family environment, psychological distress, and antisocial features [296] and, possibly, connected to the severity of ACEs and mediated by difficulties with emotional regulation [297]. The latter observation suggests that ACEs are linked to gambling behaviours by motivations to moderate emotional distress [162].

6.8 People with gambling problems or seeking treatment for problems

Current problem gamblers could also be considered especially vulnerable to harm because of the way that gambling problems can fluctuate over time. Individuals who seek treatment often 'relapse', moving in and out of problematic patterns of gambling [135-137, 299-303]. This suggests movement along a spectrum of improvement so that recovery from problem gambling is not synonymous with abstinence from gambling [301]. Resumed or increased gambling, is likely to be common among individuals in treatment for gambling problems, running as high as 92% in one study [136]. Relapse among problem gamblers will reflect *'a complex, non-linear process involving factors that together can increase a gambler's vulnerability to relapse'*. Often the resumption of gambling reflects powerful urges to gamble, triggered by either internal cues (e.g. depression or mood instability) or external cues (e.g. as responses to gambling adverts and promotions) [136, 300, 303]. Finally, a 10-year longitudinal study of gambling behaviour among men found that the strongest predictor of past year gambling problems was historical gambling problems, highlighting that individuals with past or current gambling problems remain vulnerable to further harm [302].

6.9 Other vulnerable groups

There are several other groups of people that may be potentially vulnerable to gambling harms but for which there is relatively limited data. These include women; older people; prisoners or individuals on probation; and military veterans. Possibly, the variety of technological platforms have increased the accessibility of gambling opportunities for both women and older people. However, at the current time, it is unclear whether this accessibility can be linked to increased harms. In the case of older people, reliance upon fixed incomes may mean less resilience to financial difficulties [304]. Sentenced prisoners and individuals on remand might be vulnerable to gambling harms that arise through exposure to gambling cultures. Gambling harms may also persist beyond custodial sentences; for example, impacting upon individuals' health and well-being following release and/or while on probation [305].

One key mechanism in the vulnerability of these groups is their likely social isolation; for example, single mothers looking for a distraction from the pressures of family life or engaging in online gambling as a way to connect with others; older people who are lonely or have experienced bereavement; and those on probation who may experience difficulties reintegrating into society, with gambling offering a way to connect to others [162]. Here, we illustrate what is known about harms in military veterans, and homeless people.

Military veterans. Veterans of the Armed Forces may be vulnerable to gambling harms. Although at the current time the underlying factors are not fully understood, it seems

reasonable to assume that ex-service personnel may be at heightened risk as they transition back into civilian life, reflecting the absence of support from service colleagues or the financial challenges that this transition can bring. The 2007 APMS data showed that British veterans were more than eight times as likely to exhibit problem gambling than non-veterans [292]. Male veterans were also more likely than male non-veterans to have ever experienced a traumatic event. Overall, the association between service status and gambling problems was not explained by the presence of other mental health difficulties, substance misuse, or financial difficulties. International evidence also attests to elevated rates of problem gambling among ex-service personnel. For example, one study reported that 4.2% of US Armed Forces veterans were experiencing gambling problems which is over twice as high as the rate reported in civilian populations of the US [306]. Veterans who suffer from post-traumatic stress disorder and other mental health problems are also very likely to be at-risk of gambling harms [126, 307]. Finally, many Armed Forces veterans experience financial struggles. The Royal British Legion estimated that 10% of veteran households did not have enough money or savings to meet daily living costs and fall into debt [308], consistent with the other evidence above that money worries are markers for vulnerability to gambling harms [286, 309].

Homeless people. Homelessness may be a marker for vulnerability to gambling harms, reflecting both economic disadvantage and social isolation. In Great Britain, there is a legal definition of homelessness which is enshrined in the Housing Act 1996 [310]. Under these provisions, a person is legally defined as homeless if: (i) they have no accommodation which they are entitled to occupy; (ii) the accommodation they are entitled to, is of such poor quality they cannot reasonably occupy it; (iii) they have been illegally evicted or; (iv) they are in accommodation which they have no legal right to occupy. Therefore, homelessness does not simply refer to being without shelter or sleeping rough but instead a broader range of circumstances under which someone can be homeless and, for example, be squatting. It follows that people can move in and out of homelessness. For the year 2017 to 2018, 9,072 Welsh households were assessed as threatened with homelessness within 56 days; and 11,277 households were assessed as homeless and owed a duty to help secure accommodation [311].

A small number of studies indicate higher rates of problem gambling among samples of homeless individuals. In each case, rates observed (in both Great Britain and in North America) were substantially higher than their corresponding general population estimates [312-315]. Sharman et al. (2015) reported that 12% of a sample of homeless individuals interviewed in Westminster shelters were problem gamblers [314], compared with prevalence rates of 0.4% among adults living in private households; 3.3% were scored as at moderate risk of problem gambling [19]. Figures for Wales were unavailable at the time of publication.

It is not yet clear whether gambling problems can be a precursor to homelessness itself. First, gambling problems can contribute to homelessness through a number of complex pathways that include strain upon financial resources (family or otherwise), leading to rent/mortgage arrears and sometimes precipitating relationship breakdown that leads to homelessness. Movement along a path from gambling problems towards homelessness also depends upon exacerbating economic and individual factors such as disadvantage, poverty, social isolation, mental health problems and alcohol/substance use [316]. Second, continued gambling among homeless individuals may produce additional gambling harms. Housing-related stress can increase vulnerability to harms by creating instability, insecurity and the corrosion of health and well-being as people use gambling to 'ease the conditions' of being homeless [317]. In this way, gambling can be a way to escape the stresses associated with homelessness. At a practical level, gambling venues can also offer homeless people (albeit) temporary shelter, warmth and safety, and a place to connect with other members of the community [316-318].

7 Gambling harms are socially-patterned across Wales

So far, we have looked at the national and international literature to assess what is known about the social groups most vulnerable to gambling harms. In 2015, the Gambling Commission published the first survey of Welsh gambling behaviour from the Wales Omnibus Survey [22]. In this chapter, we provide a limited small-scale secondary analyses of that data in order to demonstrate the same social-patterning distribution of gambling and gambling problems in Wales, as observed in England and Scotland.

According to the original report [22], 1.1% of adults in Wales were identified as problem gamblers according to either the DSM-IV or PGSI criteria. Men had higher rates of problem gambling than women (1.9% vs 0.2%, respectively), especially at younger ages: 4.5% of men aged 25 to 34 years compared with 0.3% of women. In addition, estimates of problem gambling were 2.4% of individuals who gambled on forms other than the National Lottery and 9.2% of those who gambled online. Estimates of adults identified as low-to-moderate risk gamblers were 4% overall but were 6% among those individuals who had gambled within the last 12 months. Low-to-moderate risk of problem gambling was highest among young men, aged 16 to 24 years; 10% compared with 4% for women. Estimates of problem gambling were highest (22%) in those who gambled across multiple forms (seven activities or more). Finally, there was some indication that the numbers of individuals at-risk or identified as problem gamblers were highest among those who used spread-betting products (60%), bet with bookmakers on non-sports events (52%), or used Fixed Odds Betting Terminals (45%).

7.1 Secondary analyses of Wales Omnibus Survey 2015

Ethnicity

Beyond some analyses involving age and gender, the Wales Omnibus Survey did not look at social factors in relation to gambling participation and problems. Analysis of the relationships between ethnicity and gambling participation is limited by the small base sizes for the individual ethnic groups (e.g. just 57 for Asian/Asian-British and 26 for Black/Black-British). As such, we combined all of the latter groups into a single Non-White/Non-White British group to compare behaviours with the White/White British group. Even then, bases sizes were too small to robustly compare rates of problem gambling. However, individuals from Non-White/Non-White British ethnic group (39%) were far less likely to have gambled in the past year than individuals drawn from White/White British groups (63%), a feature also observed among minority ethnic groups in England and Scotland.

Unemployment

We found varying rates of gambling on any form other than the National Lottery by employment status. When National Lottery only players were included, rates of past year gambling was similar in those who were employed and unemployed. However, when

individuals who only played the National Lottery were excluded, rates were highest among those who were unemployed. Over half of adults (52%) who were unemployed had gambled on something other than the National Lottery in the past year compared with 38% of employed individuals and 48% of those with 'other' employment status (e.g. in full-time education, looking after the family or on long-term sick-leave). We found that rates of problem gambling were highest among individuals who were unemployed compared with those of employed and 'other' employment status (2.0% vs 1.0% and 0.6%, respectively).

The Welsh Omnibus Survey does not include information about household income ('equivalised' or not), precluding analysis of relationships between income, gambling participation and gambling problems. However, the Wales Omnibus Survey did collect information about social grade based upon occupational categories [22]. Individuals with manual occupations, skilled or unskilled manual occupations (social grades C2, D and E) were more likely to gamble on any form (64%) than individuals in supervisory, managerial, administrative or professional occupations (57%; social grades A, B and C1). Further, rates of problem gambling were also significantly higher among those working in skilled or unskilled manual occupations (1.4%; social grades C2, D and E) compared with those individuals working in supervisory, managerial, administrative or professional occupations (0.6%; social grades A, B and C1).

Deprivation

In socio-economic terms, individuals living in more deprived areas of Wales were more likely to have gambled in the past year than those in less deprived areas (see Figure 7.1). However, differences by level of deprivation were significantly more marked for activities other than the National Lottery. Nearly half (48%) of adults living in the most deprived areas had gambled on activities other than the National Lottery in the past year compared with just over a third (35%) of those living in the least deprived areas. However, notably, problem gambling rates were over seven times higher among those living in the most deprived areas of Wales than those who lived in the least deprived areas (see Figure 7.2).

Figure 7.1: Past year gambling by Welsh Index of Multiple Deprivation quartiles

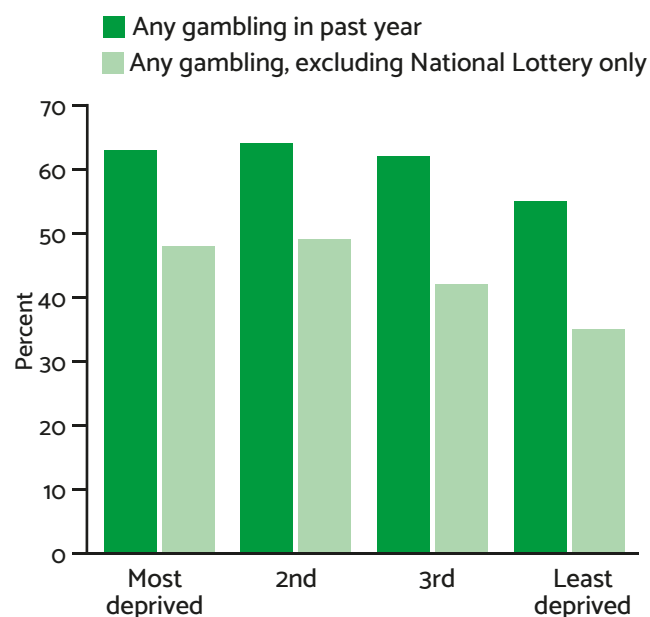
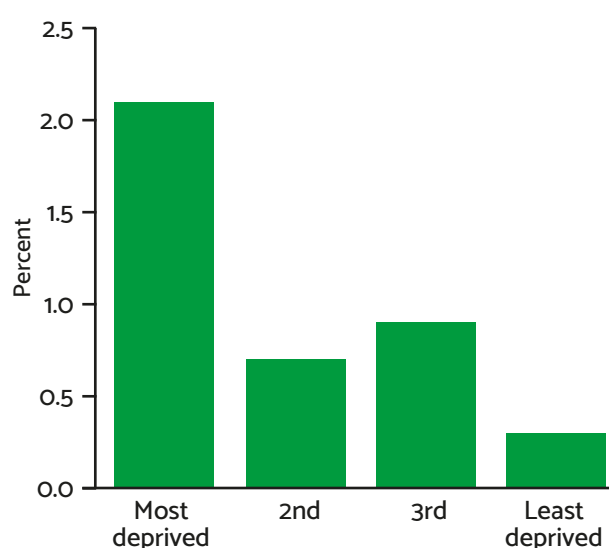


Figure 7.2: Past year rates of problem gambling by Welsh Index of Multiple Deprivation quartiles



While overall gambling participation did not differ substantially by residence in urban compared with rural areas of Wales (62% vs 61%, respectively). Rates of gambling on forms other than the National Lottery were also similar between urban (45%) and rural areas (44%). Despite this similar propensity to gamble, problem gambling rates were significantly higher among those living in urban areas (1.4%) than rural areas (0.4%).

Summary

To summarise, these secondary analyses of the Welsh Omnibus Survey 2015 demonstrate (i) that fewer Non-White\Non-White British individuals reported past year gambling than White/White British individuals; (ii) that more unemployed individuals gambled in the past year (especially with forms other than the National Lottery), and had more gambling problems than employed individuals; (iii) that more individuals in manual occupations gambled, and had more gambling problems, than individuals in supervisory, managerial, administrative or professional occupations; (iv) that more individuals living in the most deprived areas of Wales gambled than those in less deprived areas (especially on gambling forms other than the National Lottery), and that rates of problem gambling were significantly increased in this group; and, finally, (v) that more individuals living in urban areas of Wales reported gambling problems compared with those individuals living in rural areas, despite both groups having a comparable rates of gambling participation.

These findings confirm that gambling harms are highly likely to be socially-patterned and distributed across Wales in ways that are consistent with existing knowledge and that reflect current health inequalities [43, 158]. Therefore, we can be confident that the patterns and evidence we are drawing on from the BGPS series, and from the England and Scotland Health Surveys, for this review and for our geo-spatial risk-index are applicable to Wales. In the next chapter, we provide a geo-spatial risk-index map to illustrate the distribution of social and economic risk factors for gambling harms across Wales as a whole.

8 A geo-spatial risk-index map of gambling

The wide variation in social, economic and cultural features across Wales, and the acknowledged disparities in health outcomes [43], strongly suggests that risk factors for gambling harms will also vary substantially across Welsh communities. Chapter 7 provided some limited evidence that gambling participation and gambling problems in Wales reflect social and economic risk factors. In this chapter, we use a variety of indicators to build a composite illustration of how the social, health and economic risk factors for gambling harms are likely distributed across the communities of Wales. We also provide four case studies (Cardiff, Pontypridd, Rhyl and Brecon) to illustrate how risk reflects different factors in different places that warrant complementary public health policy interventions.

The map shows the likely risk of gambling harms at given locations. It does not show where problem gambling is occurring. Geo-spatial mapping of this kind illustrates only an estimated probabilistic risk of gambling problems among the population based upon the strength of associations reported in the literature as described in Chapter 6. The map indicates where in Wales there are greater numbers of people who are potentially vulnerable to experiencing gambling harms [77].

8.1 Constructing the risk-index map

The following methodology has been used previously and has been subject to thorough peer review [19, 77]. Full details of the map construction is provided in the accompanying technical report available from www.bangor.ac.uk/gambling-and-health-in-wales. The study area was the entire geographical area of Wales, an area of 20,779km², with a resident population of just over 3m (by the Census, 2011). To capture the characteristics of neighbouring English areas that may impact on the indicators within Wales, the analysis included a 1km boundary beyond the Wales-England border.

We concentrated upon social indicators for which there is good evidence of associations with gambling harms and for which we could secure good quality small area data. Specifically, we looked at the following indicators: (i) young people; (ii) minority ethnic groups; (iii) unemployed people; (iv) people in poverty or with financial difficulties; (v) people with poor mental health; (vi) people seeking treatment for alcohol and substance misuse; and (vii) people seeking treatment for gambling problems. **The map also captures the risk of harms attached to local residents (called ‘people at-home’ hereafter) and the risk attached to individuals drawn into the area by local services (called ‘people away-from-home’).** The latter indicator can help us to understand how risk of gambling harms are not simply attached to individuals but can attach to spaces, potentially creating risk environments that reflect the availability of services and their use by groups of individuals [77, 166].

For the listed indicators, we outline the type of data used including their strengths and weaknesses⁷. Full details are given in the accompanying technical report.

Risk factor: Young people

Datasets used: *Number of residents aged 10-24 years – census 2011 table Q103*

The age range of 10-24 year olds was selected based upon the evidence that identifies ‘emerging adults’ alongside younger children in ‘transitional life stages’, as being vulnerable. We recognise that the ages when developmental stages begin or are completed can be different across individuals. However, for the purposes of quantitative modelling, a distinctive age range was used. A limitation of this dataset is currency, being based on the latest census data. Counts in areas with prisons were removed.

Education institutions with students of 13-24 years; Welsh Government and Statistics Wales

These data listed all known educational institutions for 13-24 year olds and were derived from the Welsh Government schools’ census/Edubase2, and Statistics Wales’ lists of further education colleges and higher education institutions. These locations were included as they represent areas where younger people will be present in greater numbers at certain points of the day. Many educational institutions can have catchment areas much broader than their immediate locale and their the daytime population. In the case of higher educational institutes, this will reflect greater numbers of young people in night-time populations.

Risk factor: Minority ethnic groups

Datasets used: *Number of residents from Asian/Asian British, Black/African/Caribbean/Black British ethnic groups, Arab or other ethnic groups – census 2011 table KS201*

Census data were used to look at the ethnic profile of local residents. All relevant ethnic groups vulnerable to gambling harms were weighted equally within our model (consistent with current research evidence). A limitation of this dataset is currency, being based on the latest census data. Counts in areas with prisons were removed.

Risk factor: Unemployed people

Datasets used: *Location of job centres; Department of Work and Pensions*

Job centres will be accessed by members of the population who are likely to be unemployed and considered likely to have a combination of very low income and a large amount of personal unoccupied time. These data were gathered from a Freedom of Information request to the Department of Work and Pensions. To our knowledge, the data provided a complete list of job centre locations.

Number of economically active unemployed residents; census 2011 table QS601

These data represent unemployment among resident populations and were derived from the 2011 UK Census data. These data may be limited by being 8 years old; the numbers of unemployed people having fluctuated during this interval. However, locations of higher unemployment in cities tend to persist through time. Census data gives good spatial aggregation and accuracy of data at each output area level, representing around 300 people on average. As such, this data captures unemployment among local residents. Counts in areas with prisons were removed.

7 Note that the risk-index presented here omits the Welsh Index of Multiple Deprivation (WIMD). The WIMD maps eight separate domains (income, employment, education, community safety, health, housing, access to services and physical environment) [<https://gov.wales/statistics-and-research/welsh-index-multiple-deprivation/?lang=en>]. The WIMD collects up several important indicators used here (e.g. employment levels). Therefore, its inclusion would risk adding redundant data. In addition, the WIMD omits other domains of particular relevance to gambling harms (e.g. poor mental health). More importantly, using the WIMD would not have enabled us to capture the highly dynamic aspects of risk (of gambling harms) by which some services (e.g. Gamblers Anonymous meetings) bring vulnerable people from outside of an area.

Risk factor: People in poverty or with financial difficulties/debt

Datasets used: *Location of cheque cashing shops*

These data were sourced from the Local Data Company (<http://www.localdatacompany.com>) business listings. These data represent locations where those with financial difficulties and debt problems are more likely to be present, visiting places where credit is accessed through less secured means. Although cheque cashing shops may be accessed by many members of the population, these locations may serve to draw vulnerable populations with financial difficulties/debt into an area by providing access to unsecured and easy-access finance.

Location of food banks

This dataset quantitatively modelled financial difficulties and debt problems through places where people are so severely financially constrained they cannot afford to buy food; capturing locations drawing in people with the biggest financial strains. This data was based upon the bulk of food banks managed by the Trussell Trust (<https://www.trusselltrust.org/>), supplemented by independent locations researched in a 2015 study by Dr David Beck and Dr Hefin Gwilym at the School of History, Philosophy and Social Sciences, Bangor University [319]. Internet searches were also carried out to check the currency of these data. Again, completeness and currency are key data quality issues. Food banks are opening at a fast rate and there is no central database record of their locations as they are usually not council-led services or officially part of welfare state provision.

Risk factor: People with poor mental health

Datasets used: *Number of patients recorded on the GP register with schizophrenia, bipolar affective disorder and other psychoses, and other patients on lithium therapy or with depression (18 years or over) – NHS Quality Outcomes Framework (QOF)*

These data reflect residents who have sought primary care treatment under the NHS via a general practitioner (GP) as recorded in the QOF database. However, this excluded residents who have not sought help. The types of mental health measured reflects those defined in the QOF database and do not represent a detailed assessment of area-based mental health problems. These data were limited by the varying size and population of GP catchment areas. However, the QOF data does represent a broad approximation of residents in GP catchments areas who have sought primary care for mental health problems.

Risk factor: People with alcohol or substance misuse

Datasets used: *Alcoholics Anonymous and Narcotics Anonymous meetings, drug and alcohol treatment and recovery clinics, adult care home/placement scheme for persons with drug and alcohol misuse problems.*

Alcohol and substance misuse clinics are likely to act as a 'pull' for potentially vulnerable people to these locations. This dataset is an amalgamation of Alcoholics Anonymous and Narcotics Anonymous meetings, locations of services for people with substance misuse problems received from the NHS Wales Informatics Service, together with data from the Care and Social Services Inspectorate Wales (CSSIW) for care home/placement schemes for people with drug and alcohol misuse problems. The analysis was dependent upon the sources being well informed, managed and current; further sense-checking using local knowledge is recommended. CSSIW data are a robust and complete national dataset.

Risk factor: People seeking treatment for gambling problems

Dataset used: *Gamblers Anonymous meetings, and GamCare counselling locations*

These locations were derived from lists provided by GamCare and the Gamblers Anonymous websites. These locations show the places where people with gambling problems will be visiting and hence 'pull' vulnerable individuals to this location.

8.2 Results

Interpreting the results

The map for each case study area, and for the whole of Wales, show the potential risk of gambling harms at a given location. **They do not show where problem gambling is occurring.** Our methods combined data about the types of people most likely present in certain places and used this to create a gambling harms risk score. These risk scores are then visualised on a map. They represent the estimated probabilistic risk of gambling problems among the local population, indicating where in Wales there are more likely to be greater numbers of people who are vulnerable to gambling harms. Each cell (measuring 50m x 50m) of the maps has a value indicating this relative risk. These values are a measure of ‘high risk’ and ‘low risk’ relative to other places within Wales. **It is important to avoid the ‘ecological fallacy’ that every individual within an area that has a high score will be at-risk. Although certain places may, on average, be at higher risk, not everyone in those spaces will be at-risk.**

The overall composite index has a total score of between 0-100. This is comprised of two components: the index data based upon the ‘people at-home’ (or resident population) and the index data based on the ‘people away-from-home’ population (or drawn to an area by relevant services). On the maps shown, the higher the cell value, the higher the risk. Each cell indicates points or specific locations in the study area. The results do not show building-level accuracy but they do show sub-neighbourhood and, in some cases, sub-street level trends. It is recommended to consider a value or score within any one cell within the context of its surrounding cells, so as not to assume an inappropriate level of precision. Generally speaking, it is most useful to look at patterns across a neighbourhood.

It is also useful to use the switches on the left-hand side of the map to view the spatial patterns of the individual risk factors. This gives information about the features that are driving levels of risk in specific areas – for example, high levels of unemployment or high numbers of substance abuse treatment facilities. We illustrate this using four case studies drawn from across Wales to illustrate how risk of gambling harms in those communities will reflect different and, in some cases, divergent factors. Further exploration of other areas can be made by looking at the interactive maps and by entering in postcodes.

To view the map, visit:

www.bangor.ac.uk/gambling-and-health-in-wales

In geographical terms, the map shows localised risk within specific areas but little- or no-risk across the vast majority of Wales, reflecting its rural geography (i.e. areas which are not populated; see Figure 3 of the Technical Report). However, areas with higher risk can be seen around the major conurbations of Cardiff, Swansea and Newport but also in smaller towns, like Wrexham, and around coastal resorts, particularly along the North coast (Figures 4 and 5 of the technical report show the risk scores for Wales according to the ‘at-home’ and ‘away-from-home’ indices). Because of the national scale of the maps, patterns are difficult to discern and, for this reason, we focus on exploring risk in four case studies.

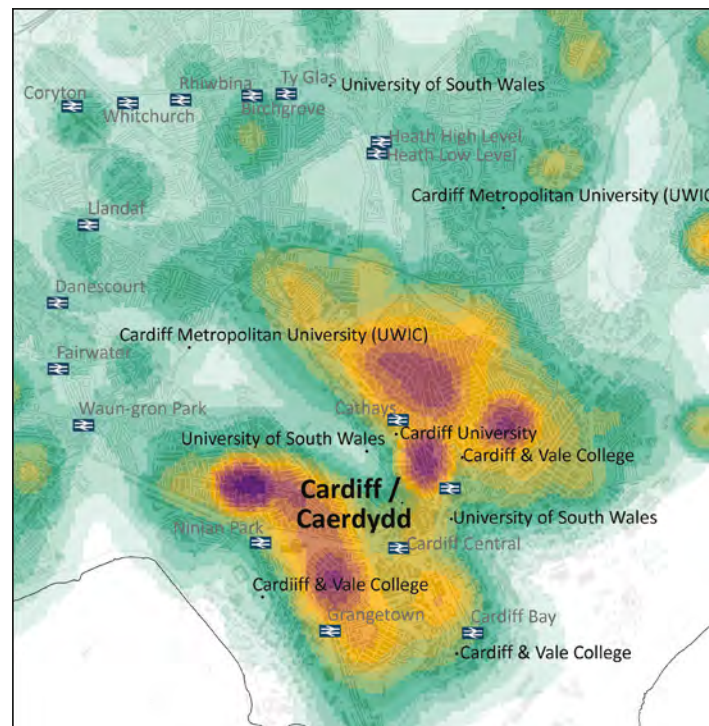
8.3 Case studies

Case study 1: Cardiff

There are two main clusters of elevated risk of gambling harms in Cardiff (see Figure 8.1). The first is the area around the universities. The second is the area to the west of the city, around Canton and Cowbridge Road. There are slightly different factors driving risk in these areas. Looking at Figure 8.2, we can see that the area around the universities has higher numbers of young people, with many output areas having in excess of 100 young people aged between 10-24 years.

By contrast, in Canton/Cowbridge Road, the number of young people per output area is lower. Canton/Cowbridge Road has slightly greater numbers of substance misuse facilities and cheque cashing shops than around the university (see Figures 8.3 and 8.4). These are the primary distinguishing factors between the two parts of Cardiff a youthful population (in the universities area) but substance misuse and indicators of financial difficulties (in the Canton/Cowbridge Road area). However, these areas share other risk factors for gambling harms. Both areas have relatively high numbers of people from minority ethnic groups and both have provisions for gambling treatment services in their locale (see Figure 8.5). As this case study shows, despite the overall risk being similar in the two areas, there is variation between them in terms of the profile of residents and the types of services offered in each area. This means there may be different types of people who may be at-risk in these areas.

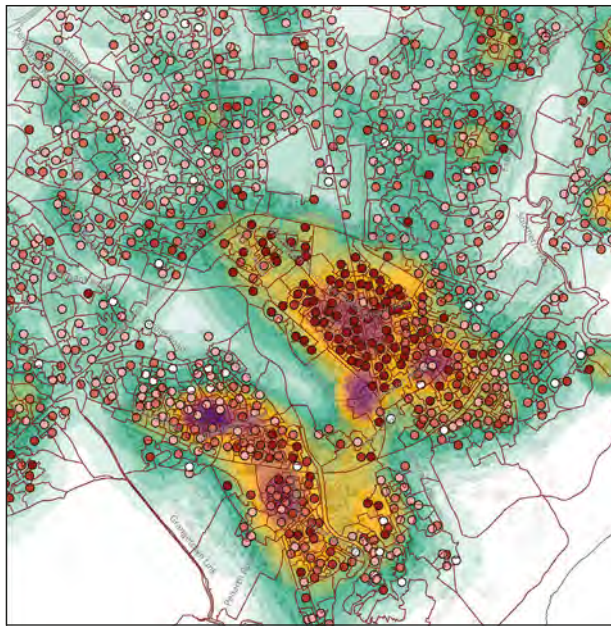
Figure 8.1: Overall risk-index for gambling harms represented per output area of Cardiff



Key Composite risk index					
0 - 0.5	4.5 - 7.2	14.1 - 17.9	27.3 - 32.4	42.9 - 48.7	Local Authority boundaries
0.6 - 2.1	7.3 - 10.4	18 - 22.3	32.5 - 37.5	48.8 - 55.6	
2.2 - 4.4	10.5 - 14	22.4 - 27.2	37.6 - 42.8	55.7 - 66	

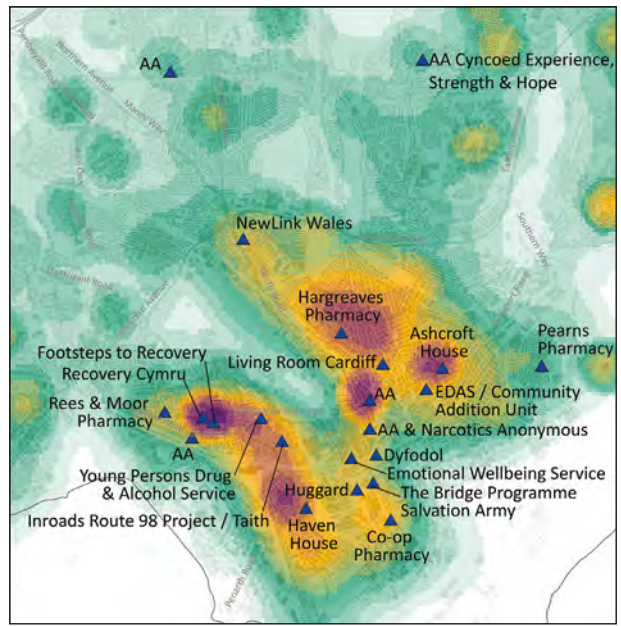
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Figure 8.2: Number of young people aged 10-24 years per output area in Cardiff



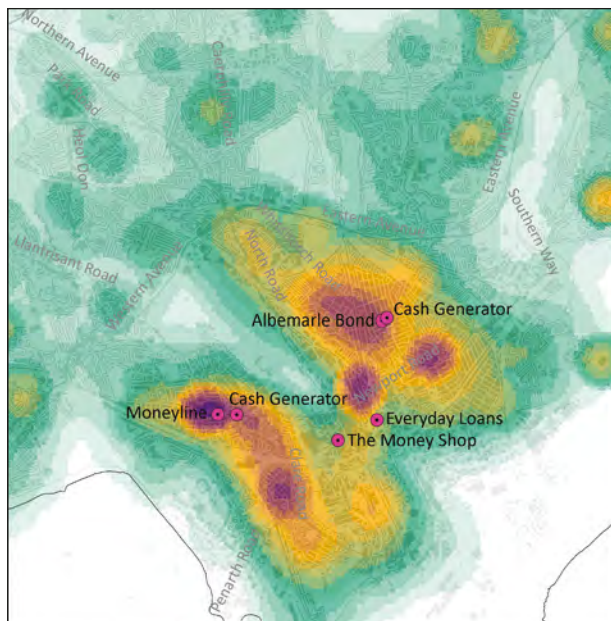
Number of residents aged 10-24 by Census 2011 output areas
 ○ 1 - 25 ● 26 - 50 ● 51 - 75 ● 76 - 100 ● 101 - 1917

Figure 8.3: Substance misuse treatment facilities per output area in Cardiff



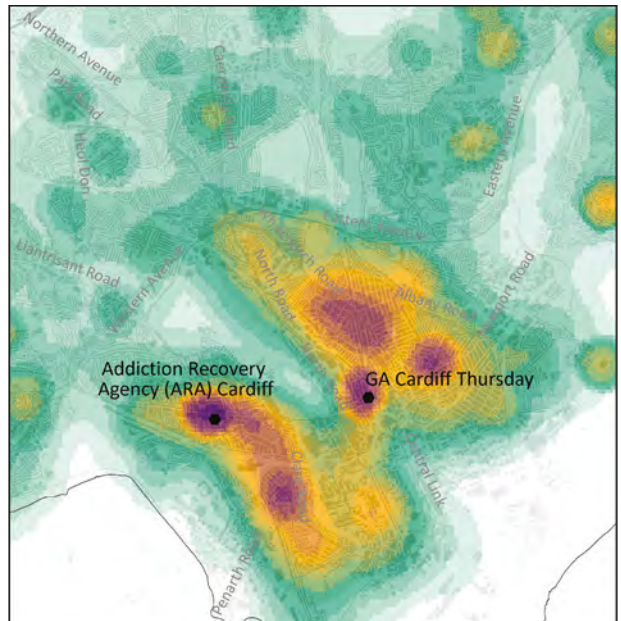
▲ Substance misuse locations

Figure 8.4: Location of cheque cashing shops/ pawn brokers per output area in Cardiff



● Cheque cashing and pawnbroking shops

Figure 8.5: Location of treatment facilities for gambling problems per output area in Cardiff



● Gamblers Anonymous meetings and Gamcare counselling locations

Key Composite risk index					
0 - 0.5	4.5 - 7.2	14.1 - 17.9	27.3 - 32.4	42.9 - 48.7	Local Authority boundaries
0.6 - 2.1	7.3 - 10.4	18 - 22.3	32.5 - 37.5	48.8 - 55.6	
2.2 - 4.4	10.5 - 14	22.4 - 27.2	37.6 - 42.8	55.7 - 66	

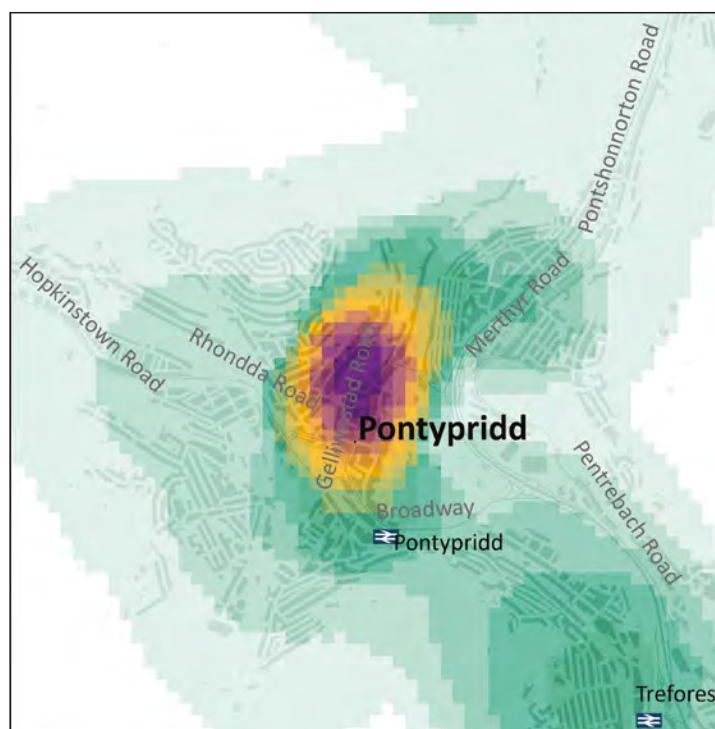
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Case study 2: Pontypridd

The overall risk for Pontypridd is shown in Figure 8.6. Pontypridd has an area of highest risk extending north along the Gelliswastad Road, with services to attract vulnerable people into the area. This includes treatment facilities for gambling problems (see Figure 8.7) and substance misuse (see Figure 8.8) as well as a food bank on the periphery (see Figure 8.9).

Looking at the profile of residents, there are few people from minority ethnic groups and the number of people who are unemployed or aged 13-24 years is relatively low. However, there are high numbers of patients with mental health problems on the GP register (see Figure 8.10). Thus, Pontypridd is a good example showing how risk of gambling harms can be largely driven by services offered in an area attracting potentially vulnerable people (with mental health problems that include gambling and substance misuse problems) into that space.

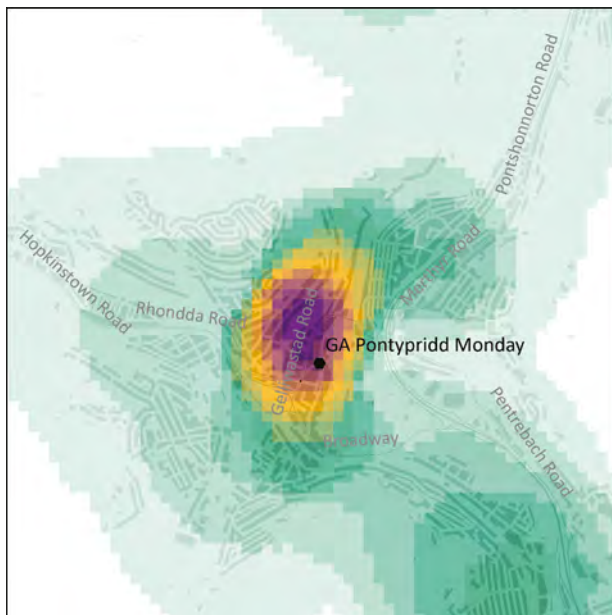
Figure 8.6: Overall risk-index for gambling harms represented per output area of Pontypridd



Key Composite risk index					
0 - 0.5	4.5 - 7.2	14.1 - 17.9	27.3 - 32.4	42.9 - 48.7	Local Authority boundaries
0.6 - 2.1	7.3 - 10.4	18 - 22.3	32.5 - 37.5	48.8 - 55.6	
2.2 - 4.4	10.5 - 14	22.4 - 27.2	37.6 - 42.8	55.7 - 66	

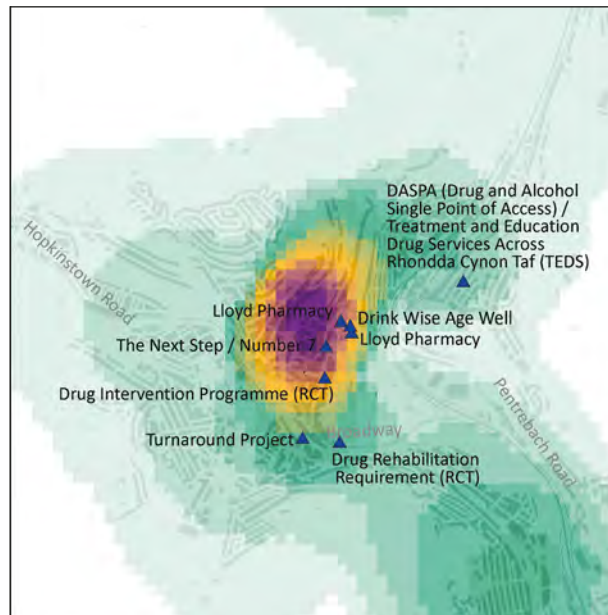
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Figure 8.7: Treatment facilities for gambling problems in Pontypridd



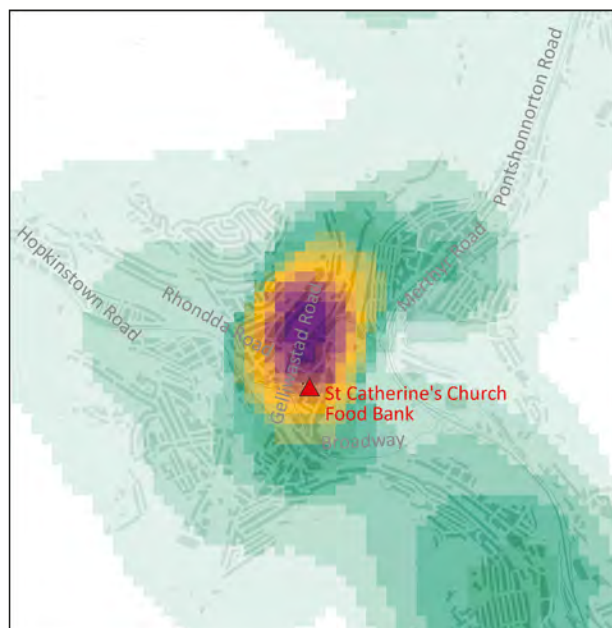
● Gamblers Anonymous meetings and Gamcare counselling locations

Figure 8.8: Location of substance misuse treatment centres in Pontypridd



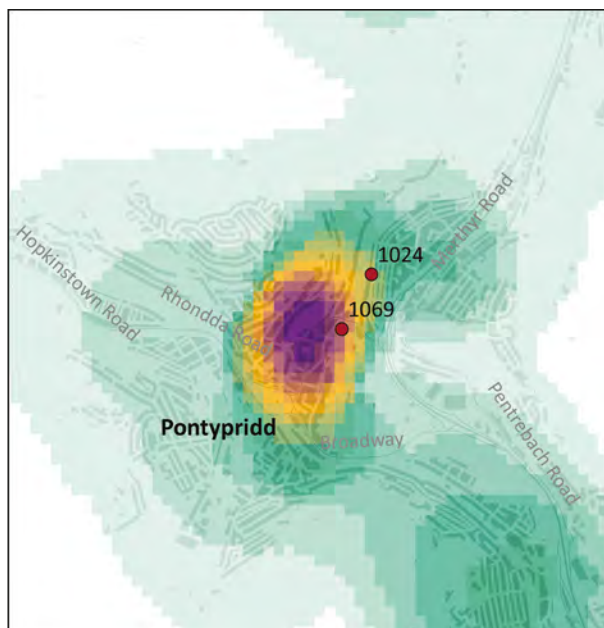
▲ Substance misuse locations

Figure 8.9: Location of food banks in Pontypridd



▲ Food banks

Figure 8.10: Number of patients with mental health problems in Pontypridd



Number of patients recorded on the GP register with schizophrenia, bipolar affective disorder and other psychoses, and other patients on lithium therapy or with depression (18 or over)
April 2015 – March 2016

• no patient info available • 1 – 300 • 601 – 900
• 301 – 600 • 901 – 2543

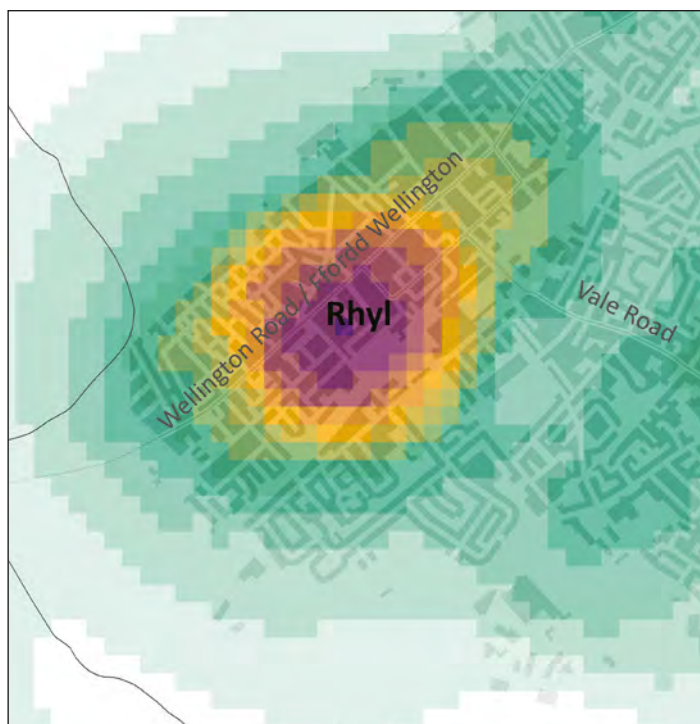
Key Composite risk index						
0 - 0.5	4.5 - 7.2	14.1 - 17.9	27.3 - 32.4	42.9 - 48.7	Local Authority boundaries	
0.6 - 2.1	7.3 - 10.4	18 - 22.3	32.5 - 37.5	48.8 - 55.6		
2.2 - 4.4	10.5 - 14	22.4 - 27.2	37.6 - 42.8	55.7 - 66		

Case study 3: Rhyl

Rhyl indicates an area of heightened risk towards the south west of the train station (see Figure 8.11). Risk of gambling harms is driven by a combination of factors, reflecting both the profile of the resident population and services bringing people into the area. First, there are higher numbers of unemployed people, with most output areas having over 20 cases (see Figure 8.12). There are also high numbers of patients with mental health problems registered with local GP practices (see Figure 8.13), reflecting risk in the resident community.

In terms of services, there are both substance misuse facilities and food banks in the area of highest risk, attracting potentially vulnerable people with alcohol and drug use problems, as well as money problems into these spaces (see Figures 8.14 and 8.15). By contrast, there is no provision for the treatment of gambling problems in Rhyl so risk is driven by other factors. In Rhyl, risk of gambling harms is being driven by unemployment, mental health problems including alcohol and substance misuse problems and, to a lesser extent, financial difficulties.

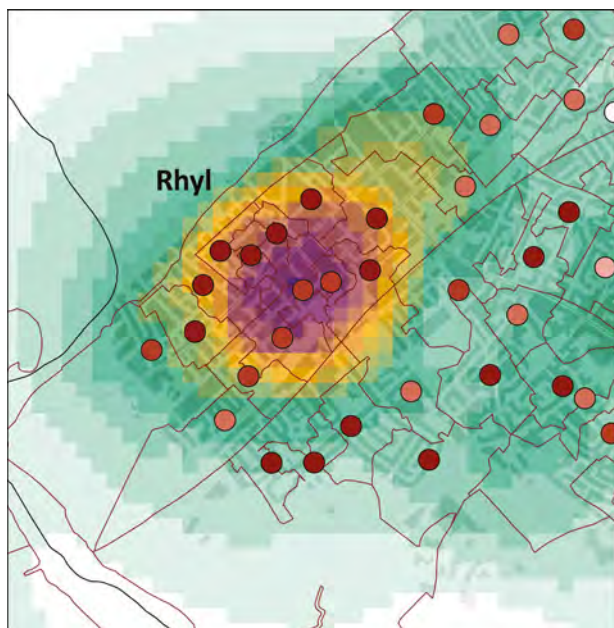
Figure 8.11: Overall risk-index for gambling harms represented per output area of Rhyl



Key Composite risk index					
0 - 0.5	4.5 - 7.2	14.1 - 17.9	27.3 - 32.4	42.9 - 48.7	Local Authority boundaries
0.6 - 2.1	7.3 - 10.4	18 - 22.3	32.5 - 37.5	48.8 - 55.6	
2.2 - 4.4	10.5 - 14	22.4 - 27.2	37.6 - 42.8	55.7 - 66	

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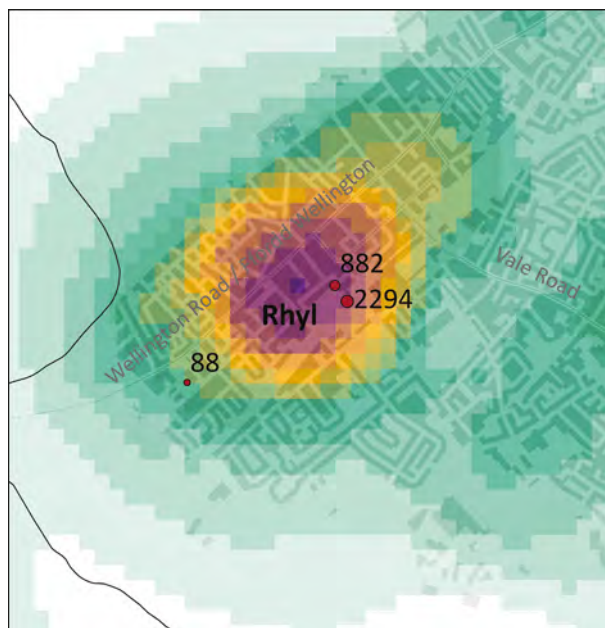
Figure 8.12: Number of residents unemployed per output area in Rhyl



Number of economically active unemployed residents by Census 2011 output areas

- 0 – 5 ● 11 – 15 ● 21 – 53
- 6 – 10 ● 16 – 20

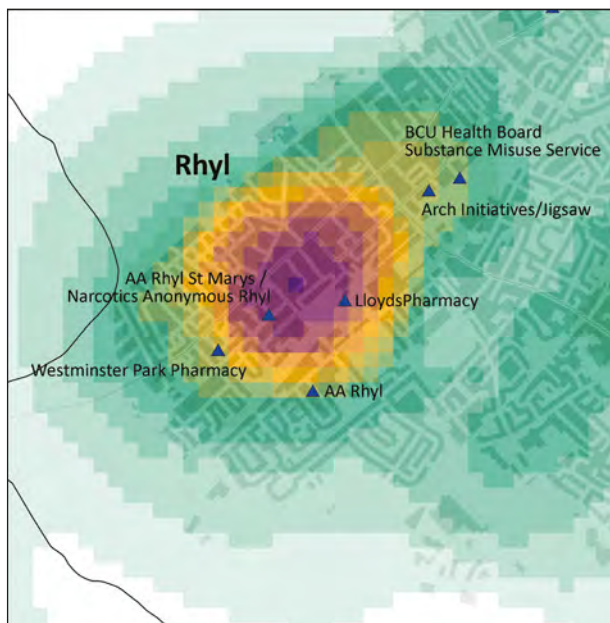
Figure 8.13: Number of patients with mental health problems in Rhyl



Number of patients recorded on the GP register with schizophrenia, bipolar affective disorder and other psychoses, and other patients on lithium therapy or with depression (18 or over) April 2015 – March 2016

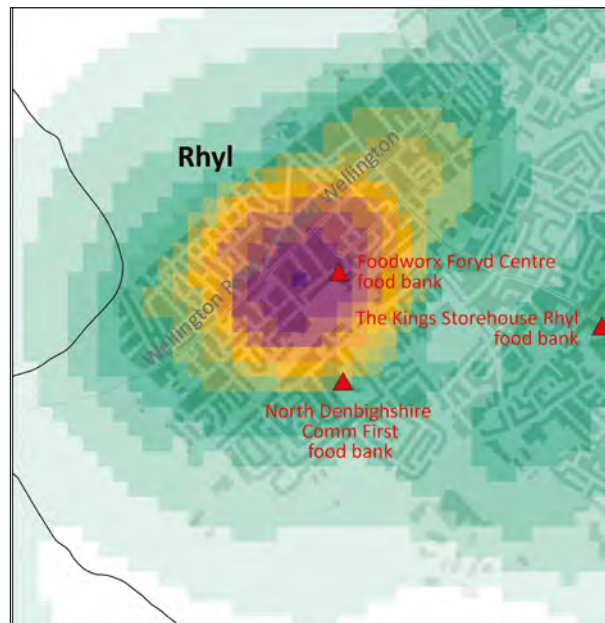
- ▲ no patient info available ● 1 – 300 ● 601 – 900
- 301 – 600 ● 901 – 2543

Figure 8.14: Location of substance misuse treatment facilities in Rhyl



▲ Substance misuse locations

Figure 8.15: Location of food banks per output area in Rhyl



▲ Food banks

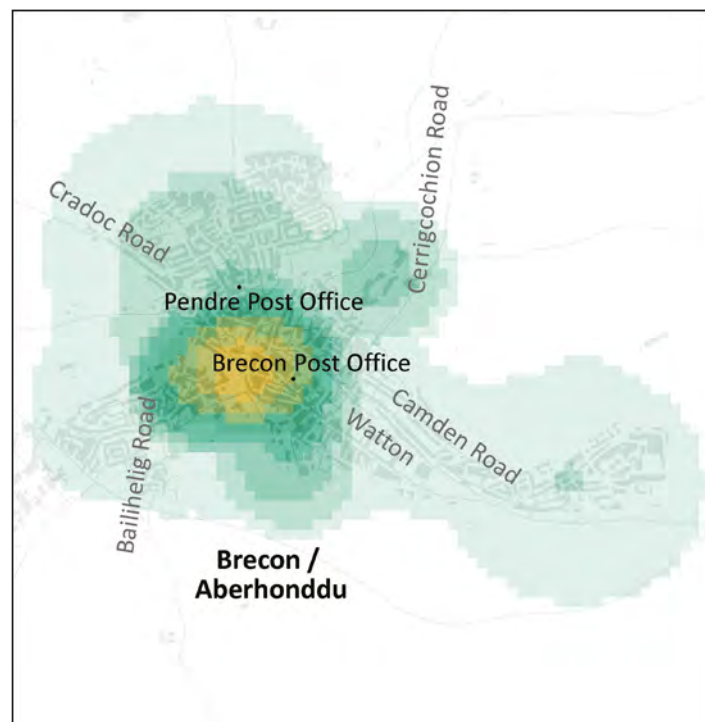
Key Composite risk index					
0 - 0.5	4.5 - 7.2	14.1 - 17.9	27.3 - 32.4	42.9 - 48.7	Local Authority boundaries
0.6 - 2.1	7.3 - 10.4	18 - 22.3	32.5 - 37.5	48.8 - 55.6	
2.2 - 4.4	10.5 - 14	22.4 - 27.2	37.6 - 42.8	55.7 - 66	

Case study 4: Brecon

So far, the case studies presented involve a number of drivers, with a mix of risk factors of gambling harms relating to both types of people who live in the area and services offered. However, in rural locations like Brecon, risk derives mainly from the profile of the people who live in the area, as there are fewer local services to attract people in (see Figure 8.16). The differences in the sources of risk can be seen by comparing results for the people at-home and people away-from-home indices (see Figure 8.17 and 8.18, respectively).

Brecon has moderate risk scores compared with urban areas. Comparison of the people at-home and people away-from-home indices shows that the overall risk score is driven more by the profile of local residents than people drawn into the area by services. So, there are no treatment facilities for problem gambling or cheque cashing shops in the area of greatest risk. The people at-home risk-index covers a broad geographical area. Risk for the resident population is driven by a relatively high number of unemployed people, those from minority ethnic groups and a high number of people on the GP register with mental health problems.

Figure 8.16: Overall risk-index for gambling harms represented per output area of Brecon



Key Composite risk index					
0 - 0.5	4.5 - 7.2	14.1 - 17.9	27.3 - 32.4	42.9 - 48.7	Local Authority boundaries
0.6 - 2.1	7.3 - 10.4	18 - 22.3	32.5 - 37.5	48.8 - 55.6	
2.2 - 4.4	10.5 - 14	22.4 - 27.2	37.6 - 42.8	55.7 - 66	

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Figure 8.17: People at-home risk-index for Brecon per output area

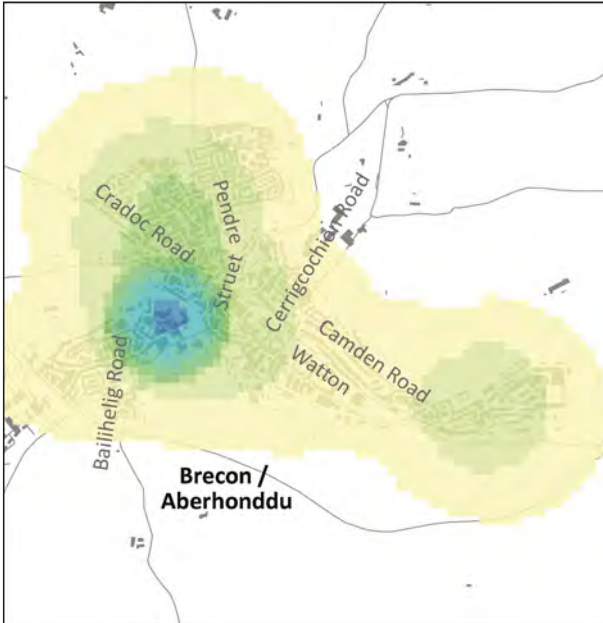
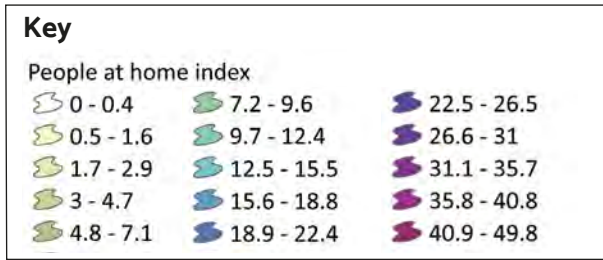
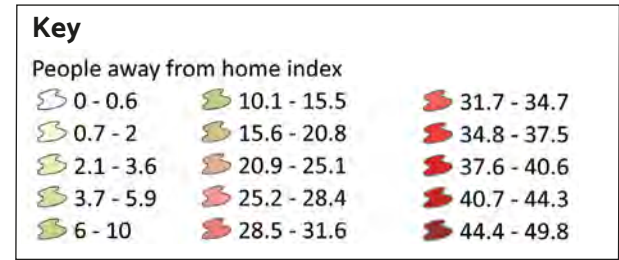


Figure 8.18: People away-from-home risk-index for Brecon output per area



Summary

These four case studies demonstrate that risk of gambling harms is likely to differ across urban and rural communities of Wales, reflecting convergent and divergent social and economic characteristics. Risk here indicates areas in which there are relatively higher numbers of people with characteristics linked to gambling problems.

First, as the case study of Cardiff shows, risk in different urban areas can reflect both common social characteristics (e.g. high numbers of people from minority ethnic groups and provisions for gambling treatment services) but also divergent characteristics (e.g. a youthful population around the universities but substance misuse treatment facilities and individuals with financial difficulties in the Canton/Cowbridge Road area). Therefore, despite the two areas showing comparable overall risk of gambling harms, they are likely to vary in terms of the profile of their residents and the types of local services offered. This means that the types of people who may be at-risk of gambling harms in the two parts of Cardiff are likely different.



In the smaller conurbation of Pontypridd, areas with the greatest risk of gambling harms reflects services, such as treatment centres for substance misuse and gambling problems as well as a food bank, that attract vulnerable people into these spaces. In contrast to Cardiff, risk in Pontypridd is not driven by the presence of people from minority ethnic groups, unemployed people or people aged 13 to 24 years. Risk is indicated by comparatively high numbers of individuals with mental health problems. Therefore, Pontypridd shows how

risk of gambling harms can be largely driven by services offered in an area attracting in vulnerable people with mental health problems that may include gambling and substance misuse problems.



In Rhyl, an area with people at-risk of gambling harms is characterised by both the characteristics of its resident population and its services. Thus, the resident population includes high numbers of unemployed people and people with mental health problems. In addition, however, there are both a number of substance misuse facilities and food banks in the area, attracting in people with alcohol and drug use problems, as well as people with money problems. In summary, risk of harms in Rhyl is driven by unemployment, mental health

problems including alcohol and substance misuse and, to some extent, financial difficulties.

Overall, Brecon has moderate risk scores relative to other urban areas driven largely by the profile of local residents. There are no provisions for alcohol or substance misuse, treatment of problem gambling, or cheque cashing shops that might draw people into the area. Rather, risk of gambling harms reflects the relatively higher number of unemployed people, those from minority ethnic groups and high numbers of people with mental health problems.



Collectively, the risk-index map presented here illustrates the distribution of social and economic facilitators of gambling harms across Wales, combining them into an indicator of overall risk. We anticipate that the risk-index map will be used to help understand how social and economic risk factors combine to capture the numbers of people at-risk of gambling harms across communities. We also acknowledge that some of the indicators in the above map, such as the presence of youth or minority ethics status, will be linked to gambling harms on their own account but may synergise with others factors such as unemployment, debt and money concerns to amplify their effects. In public health terms, the diversity illustrated here argues for a combination of universal measures to address gambling harms but also measures designed to address social and economic facilitators in particular communities. Chapter 9 completes this report with a discussion of this policy space and then the options for Wales.

9 Framing the policy space and options for Wales

The unequal distribution of gambling harms across communities, as a health inequality, highlights the need for a public health approach to gambling [35, 36, 151-155]. The Chief Medical Officer for Wales has added his voice to calls for a public health approach, noting that gambling harms are not *'an issue that cannot be tackled by interventions solely aimed at individuals'* [25]. In this report, we argue that three inter-related obstacles hinder the development of an effective and durable public health response in Great Britain. The first two of these are (i) the predominant conception of gambling harms in terms of an essentially individualised (and addictive) psychopathology; and (ii) a disproportionate focus upon harm-minimisation for individuals and a failure to address adequately the social, economic and cultural processes that mediate the incidence and experience of harms in both individuals and vulnerable social groups. At the current time, gambling regulation remains a reserved power and, obviously, this limits the policy options open to the Welsh Government.

In the first part of this final chapter, we argue (iii) that the existing regulatory framework as captured in the Gambling Act 2005 [5] does not yet reflect a consensus between policymakers and the public on the balance to be struck between, on the one hand, the levels and kinds of harms (as they impact vulnerable groups) that communities are prepared to accept and, on the other hand, the need to protect individuals' liberty to gamble. Then, in the Welsh context, we discuss the policy implications of the likely unequal distribution of harms across communities and indicate synergies with relevant legislation; and, especially, the Welsh Government's public health frameworks for mental health [44] and alcohol and substance misuse [41] and Well-being of Future Generations (Wales) Act 2015 [45].

9.1 Gambling harms require different policy responses in different places

As discussed in Chapters 7 and 8, gambling harms are unlikely to be uniformly distributed across social groups. Whilst anyone can experience difficulties with their gambling, there are groups of people who are more likely to experience harms than others. There is also evidence of a harm paradox, whereby some individuals (such as those from minority ethnic groups or individuals with mental health problems) are less likely to gamble but are more likely to experience harms. While rates of problem gambling in Great Britain hover around the 1% mark [55, 56, 58], rates in some communities are much higher because of the particular demographic profile and socio-economic circumstances of those places [19, 55, 56, 58]. Drawing on the maps in Chapter 8 illustrates how the risk of gambling harms varies by place and social group across Wales. For example, risk of harms may vary between areas of Cardiff in ways that reflect the concentration of young people in one place but minority ethnic groups in another place; while, within smaller urban areas (e.g. Pontypridd), risk might be driven (to a greater extent) by patterns of unemployment, poverty or mental health problems.

Because there are finite resources for the prevention and treatment of gambling harms, this insight is especially useful as it forms a picture of likely need among Welsh communities.

...this insight...forms a picture of likely need among Welsh communities.

Those communities at heightened risk could be selected for particular interventions. So, for example, in terms of primary (universal) interventions, calibrated public awareness campaigns (as well as educational programmes) could be delivered among young people and students within these areas against outcomes defined around increased awareness of gambling harms and the availability of NHS and local (third sector) support services. By contrast, to address the risks carried by high rates of poverty and mental health problems in smaller urban areas, targeted GP training could be undertaken to enhance screening for gambling harms in individuals seeking treatment for mental health problems. Comparable training might also be beneficial in individuals dealing with other social groups that are at-risk in particular places including people of minority ethnicity, people who are experiencing problems with housing, poverty, debt, or domestic abuse; as well as military veterans, and people with mental health problems such as alcohol and substance misuse [25].

9.2 Effective interventions will involve both targeted and universal action

Experience from other public health areas tells us that, while interventions targeted at vulnerable individuals or groups have a place in the policy repertoire, it is often the more universally applicable responses that have the most impact in terms of changing behaviour. There are a number of examples to illustrate this. For example, the evaluation of pictorial health warnings on cigarette packaging found evidence of improved knowledge of the health consequences of smoking but little evidence of behaviour change [320]. By contrast, the smoke-free legislation of 2007 significantly changed smoking behaviours, diminishing exposure to second-hand smoke both in the workplace and at home. Its impacts included a 2.4% drop in hospital admissions for myocardial infarction in England, and an increase in cessation attempts and a reduction of smoking in smokers [321]. Similarly, a 10% increase in the minimum prices of alcohol achieved a 9% decrease in acute alcohol-attributable hospital admissions and a 9% drop in chronic alcohol-attributable admissions two years later [39]. In fact, careful review of the available evidence suggests that the recent decline in youth drinking is best explained by the falling affordability of alcohol (as the value of incomes diminish against price) and changed parental behaviours [40]. These examples illustrate that primary (universal) measures can alter some health-related behaviours that co-occur with gambling and that a harms-reduction strategy for gambling should build on this experience.

...it is often the more universally applicable responses that have the most impact in terms of changing behaviour.

Here, we offer two examples of universal policies for consideration.

Policy options around advertising and marketing. The Gambling Act 2005 [5] states that children and young people ‘*should be protected from being harmed or exploited by gambling*’. Though ‘exploitation’ is not defined in the Act, it can be reasonably inferred to mean protecting children from situations where industry could use children and young people to gain business advantage. There has been insufficient discussion of what this means in practical terms; for example, to what extent do we limit or curtail the freedom of industry to promote gambling services in advertisements for adults in order to protect children from harms? The absence of a settled answer to this question has facilitated ineffective policy.

Our contention is that the current voluntary codes of practice on gambling advertisements, as provided by the UK Code of Broadcast Advertising (the BCAP Code) [96] and the UK Non-Broadcast Advertising, Sales Promotion and Direct Marketing Code (CAP Code) [97] (see Chapter 2), do not go far enough to protect children and young people from being exposed to, and potentially exploited by, gambling marketing.

As noted in Chapter 2, for 2018, 66% of children aged 11-16 year olds were most likely to have seen gambling advertisements on TV (43% had seen them at least once a week), and 59% reporting seeing them on social media (27% had seen them at least once a week) [107]. 12% of children follow gambling companies via social media; a medium used for intense marketing activity by industry operators and 7% report that they had been prompted to gamble by a gambling advert or sponsorship. Currently, age-verification on social media works through self-report, making it is easy to circumvent these restrictions. Policy options might include arrangements by which ‘in-app’ marketing (and free-to-play games) are accessible through these media only once full third party, age-verification processes have been completed. However, the data analytical systems that distribute gambling promotions across social media pose significant – perhaps, insuperable obstacles – to implementing such measures effectively. Thus, the development of effective policy will require consideration of universal (and mandated) restrictions to the distribution of gambling advertisements and promotions on technological platforms that are very likely accessed by children. Policies of this kind would align with the Responsible Gambling Strategy Board’s (RGSB) recent position paper, ‘Children, young people and gambling: a call to action’ that, among other things, emphasises how children can experience gambling harms differently from adults but have the right to effective protection and continuing sources of support and help [322].

...age-verification on social media works through self-report...

Policy options around access to funds. Card-based facilities are now being offered that allow the direct transfer of online funds to customers in licenses betting offices (LBOs), placing bets or playing Fixed Odds Betting Terminals (FOBTs). Restricting access to funds has been recommended repeatedly as a key harm-minimisation measure including the removal of gambling on credit at point-of-sale and the removal of ATMs as key actions in this area [228, 238, 239]. Reflecting the 2018 Gambling Commission review of the online sector [323], the Department of Digital, Culture, Media & Sports (DCMS) has asked the Commission to consider the introduction of spending limits, pending affordability checks when individuals open accounts with online gambling services [67]. However, as stated, affordability checks

...a review of the broader role of credit in online gambling and more restrictive policy options are required.

are temporary restrictions on *expenditure* and do not necessarily address the broader challenge of harms that gather as individuals continue to gamble against established lines of credit. As such, a review of the broader role of credit in online gambling and more restrictive policy options are required. Norway which has introduced mandatory individual (monthly) loss limits of 20,000K (at the time around

\$2,500) [324]. The Chief Medical Officer for Wales has noted that Wales should consider implementing best practices from other countries [25].

9.3 Developing a meaningful public health framework for gambling

At the moment, the range of action that can be taken to address gambling harms across Great Britain, and not just in Wales, is constrained by the Gambling Act 2005 [5]. However, with any law there is a degree of subjectivity and interpretation. Critically, the issue of proportionality has not been addressed properly by policymakers, regulators or by the public; that is, there has been no resolution of the following central questions:

What level of gambling harms are policymakers and communities prepared to tolerate to protect individuals' liberty to gamble; and to what extent do we limit freedom to gamble in order to protect effectively children, young people and vulnerable individuals from harm?

Because these questions have not been answered, the policy options offered by the Gambling Act remains both underspecified and, in some respects, ineffective. (The 2001 Budd Report, that paved the way for the subsequent reforms of gambling legislation in Great Britain, recommended a systematic review regarding children and gambling five years following the introduction of the new regime [325]. The review has never happened and so the tensions remain unresolved.) Meanwhile, the most recent report on the implementation the National Responsible Gambling Strategy shows improvements in only a few of the major indicators such as the measurement of harms and engagement with public bodies but no progress in other vital areas, such as the consolidation of a culture of evaluation (despite the previous policy emphasis upon responsible gambling measures) [326]. This marginal progress is likely attributable to programmatic challenges but also difficulties in calibrating policy against underspecified policy targets; all within the neo-liberal framing of the 2005 Act [5, 32, 33]. Possibly, the direction of travel is changing with the Gambling Commission's switch of emphasis to 'safer' gambling and tougher regulatory responses [36], the restrictions of maximum stakes for B2-category machines, the review of age-limits for some National Lottery products, and affordability checks for online gambling [67].

Finally, to illustrate further the policy challenges around gambling harms, the Gambling Act 2005 [5] is notable in terms of what it does *not* say. To take the case of young people again, the Act does *not* say that children should not gamble; just that they should be protected. This is unique in public health terms but reflects a British cultural history in which children have for decades played fruit machines and low stakes devices in hotels, arcades and seaside resorts [327]. These observations highlight the need for a broader debate about the role of gambling in our lives, and a resolution of appropriate risks that is neither imposed by legislation on an increasingly ambivalent public [34] or one grounded in moral censure. Rather, risks need to be measured against what we know about gambling behaviour, the way technology is developing and, then thinking through a proportionate regulatory approach.

9.4 Taking things forward in Wales

Notwithstanding the absence of policy resolution, a public health perspective upon gambling harms is still possible in Wales and can be articulated within existing legislation and public health frameworks for mental health and substance use. Building upon the definition of alcohol and substance-related harms offered in these frameworks [44] and reflecting cross-consultation with work completed by the Responsible Gambling Strategy Board (RGSB) at the same time as this report [42], we argue that gambling harms are diverse, reflecting an interplay of individual, family and community processes. We recommend adopting the definition of gambling harms as:

'the adverse impacts from gambling on the health and wellbeing of individuals, families, communities and society' [42].

In all of the above, gambling harms can be occasioned by single, short-lived or extended patterns of gambling activity but the harmful effects of gambling will tend to endure as longer-term adverse consequences for health and well-being. We propose that this definition of harms can be used in Wales to complement other public health objectives around well-being and health, affording measurable outcomes against which to test policy.

Aligning policy objectives with the Well-being of Future Generations (Wales) Act 2015

First, and in common with the Welsh Government frameworks for mental health and substance use [41, 44], policy needs to highlight a life-course perspective that reflects how individuals who gamble can drift towards and away from harms. A set of public health interventions to address gambling harms in Wales would be consistent with the Well-being of Future Generations (Wales) Act 2015 [45]: by facilitating population-level policies (to promote a healthier Wales); by addressing (as far as possible) the social and economic patterning of gambling harms (to promote a more equal Wales); by promoting evidence-based interventions for affected individuals and to support their children and families (to build a prosperous Wales); and, finally, by addressing gambling harms with community-level interventions (to promote a Wales of cohesive communities). In these objectives and, in line with the recommendations of the 2018 Chief Medical Officer for Wales' report [25], the Welsh Government could engage with the Gambling Commission and operators to assist the provision of consumer protection and harm-minimisation measures in Welsh and English.

Integrating gambling interventions with other Welsh Government Public Health policies

Consideration of whether policies to address gambling harms are integrated or delivered separately to other health initiatives is beyond the scope of this report. Nonetheless, mental health problems and gambling frequently co-occur and is usually associated with poorer clinical outcomes [125, 126, 143]. This makes addressing gambling harms an important element in the next iteration of the Welsh Government's 'Together for Mental Health' strategy [44]. For example, gambling harms can, in the most severe cases, involve self-harm and suicidality. Thus, policies to mitigate these harms aligns with building resilience in affected individuals (Priority 1 of 'Together for Mental Health' Delivery Plan [328]). Similarly, gambling harms can involve profound social isolation [20] and thereby significantly undermine well-being [42]. Therefore, appropriate policies to tackle these harms align with improving the quality of life of individuals with mental health problems (Priority 2).

To the extent that public health policies can tackle the social patterning of gambling harms, they will contribute to meeting the needs of the diverse population in Wales (Priority 3) and help to sustain reductions in stigma and discrimination [44]. Policies to tackle gambling harms in children and adults would address another of the framework's objectives: ensuring that all children have the best possible start to life by giving parents/caregivers the support they need (Priority 5) and ensuring that all children and young people are resilient and better able to tackle poor mental health when it occurs (Priority 6), allowing children and young people experiencing mental health problems to get better sooner (Priority 7). Public Health Wales could consider incorporating gambling harms into their framework for adverse childhood experiences (ACEs) and assess these harms in their next ACEs surveys [294, 329]. Finally, under the 'Prosperity for All: the national strategy' [330, 331], gambling harms could be adopted as an outcome under the 'Healthy and Active' aim, alongside those of alcohol and smoking. Broader policies on equity (e.g. A Healthier Wales) [332] may consider gambling as a current driver of inequalities in health and one that appears to be escalating.

Public awareness and education

There are also a number of actions to address gambling harms that the Welsh Government could borrow from their alcohol and substance abuse framework the 'Working Together to Reduce Harm' [150]. First, in terms of allowing people to make informed choices to prevent harms (Outcome 1), the Healthy and Sustainable Colleges and Universities Framework [333]

could offer opportunities to provide calibrated messages about gambling harms to young people and strengthen links with Further Education colleges, the Welsh universities and National Union of Students (NUS) for awareness campaigns targeted at students. Second, the new Welsh curriculum will include ‘health and well-being’ as an independent objective [334]. Therefore, for younger groups, the Welsh Government and Public Health Wales could consider a public guide to gambling harms for parents and school pupils (key action 2), alongside the inclusion of content on gambling harms, resilience and well-being in the All Wales Schools Liaison Core Programme [335].

In addition, links should be developed with Police and Crime Commissioners (PCCs) to include material on gambling harms in the educational material offered by police services, National Offender Management Service (NOMS) and Youth Justice Board (YJB) (c.f. key action 4). In addition, gambling addiction is cited as one of the reasons for homelessness in the Auditor General for Wales’ 2018 report [336], highlighting the need for training for personnel (including those in the third sector) who work to support individuals with housing problems, or relatedly who have experienced domestic abuse. The Welsh Government should also engage with Armed Forces and veteran charities to support ex-service men and women vulnerable to harms when, for example, they engage with services (key actions 22 and 23). In all of these cases, there should be a clear focus upon the impact of gambling harms upon families and the development and provision of brief interventions and, where appropriate, family-based interventions [337].

Treatment and GP training

Finally, individuals experiencing gambling harms can present in healthcare settings with sometimes complex medical needs and broader challenges that can include relationship, financial or housing problems [143]. Identifying these individuals in primary care settings can be challenging, not least because of time and workload pressures, practitioners’ conceptions about gambling harms as a health issue and differences in the number of affected individuals across regions and practices [338, 339, 340]. Nonetheless, early detection of gambling harms is helpful. We recommend that work with the Royal College of General Practitioners (RCGP) and the Deanery is undertaken to upskill primary care professionals (including GPs) in identifying individuals vulnerable to gambling harms (key action 7 and Priority 8 of ‘Together for Mental Health’), identify appropriate referral pathways to NHS and third sector services.

The Welsh Government and Public Health Wales should also ensure that awareness of gambling harms is increased in all housing support systems and assistance offered, where possible, to sustain tenancies (Outcome 5). Area Planning Boards intensify liaison with third sector organisations including CAIS and the Living Room and should engage with third sector organisations working with the homeless and domestic abuse cases. Reflecting the Chief Medical Officer for Wales’ call [25] for a comprehensive repertoire of treatment services, the Welsh Government could consult with existing facilities (e.g. National Gambling Clinic in London [341]) to consider the merits of a specialised national service for gambling problems in Wales for individuals who experience severe difficulties with their gambling. Care pathways could be implemented across Wales for the treatment of, and support for, individual experiencing gambling harms.

Finally, consideration should be given to increasing support to third sector organisations for the provision of psychological therapies (e.g. brief motivational interventions and cognitive behavioural therapy (CBT)), debt counselling and family support.

In short, gambling now needs to be recognised as a significant public health issue and an inter-locking set of appropriate actions taken to prevent harms. Addressing gambling harms effectively will help us to meet other related socially unequal health challenges. Failure to address gambling harms jeopardises the success of other health policy initiatives, as an unintended consequence. More broadly, the rapidly developing technological base and the fluid marketing and provision of gambling products requires a fuller and better informed debate about the role of gambling in our lives. This debate should address the key issue of proportionality, not as a vague principle to be upheld, but as a firm set of guidelines against which all future actions – policy, regulatory and corporate – can be judged.

9.5 Policy options

- Adopting a pragmatic definition of gambling harms as '*the adverse impacts from gambling on the health and well-being of individuals, families, communities and society*' [42]. Gambling harms can be occasioned by either short-lived or extended patterns of gambling but the harmful effects will tend to endure as longer-term adverse consequences that can afford appropriate and measurable policy targets.
- In line with the Well-being of Future Generations (Wales) Act 2015 [45], incorporating gambling harms into the next iterations of the 'Working Together to Reduce Harms' [41], 'Together for Mental Health' strategy [44], and 'Prosperity for All: National strategy' [331], and 'A Healthier Wales' [332].
- Utilise the Healthy and Sustainable Colleges and Universities Framework [333] to provide calibrated messages to increase awareness of gambling harm to young people and strengthen links with Further Education colleges, the Welsh universities and NUS for awareness campaigns targeted at students.
- Welsh Government and Public Health Wales could consider a public guide to harms for parents and pupils, alongside inclusion of content about gambling harms, resilience and well-being in the All Wales Schools Liaison Core Programme [335].
- Engage with PCCs to include content on gambling harms in the educational material offered by police services, NOMS and YJB, and to support the education about gambling harms for public and third sector bodies working with vulnerable groups include the homeless, individuals who have experiences domestic abuse cases, ex-service men and women. (Relatedly, the Welsh Government (2016) Code of Guidance for Local Authorities on the Allocation of Accommodation and Homelessness could be amended to reference gambling harms alongside alcohol and substance misuse.)
- Welsh Government could work with the RCGP and Deanery to upskill primary healthcare professionals in the identification of gambling harms, especially in communities with high levels of mental health problems and facilitate training in brief counselling interventions.
- Welsh Government could consult with the NHS National Gambling Clinic [341] in London to consider the potential merits of a specialised national service for gambling problems in Wales. Relatedly, care pathways should be implemented across Wales for the treatment of, and support for, individual experiencing gambling harms.
- Consideration could be given to increased financial support to third sector organisations (e.g. CAIS, the Living Room) for the provision and rigorous evaluation of psychological therapies (e.g. CBT), debt counselling and family support.

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