



# Gamgard Evaluation Final report





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### *Document Details:*

Date: 8 November 2021  
Reference: 5-28185.00  
Status: Final

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# Contents

Disclaimers and Limitations .....	1
Executive Summary .....	2
<b>1 Literature Review .....</b>	<b>6</b>
1.1 Background.....	6
1.2 The meanings of harm minimisation and responsible gambling (RG) .....	8
1.3 Who were/are the designers?.....	10
1.4 The stated intended purpose/use of Gamgard.....	10
1.5 The actual use of Gamgard.....	12
1.6 How does Gamgard work, including its design elements? .....	14
1.7 Are the design elements appropriate/fit for purpose? .....	18
1.8 The question of sensory cues.....	20
1.9 Manner of presentation to end-users.....	20
1.10 Alternatives to Gamgard .....	21
1.11 Gamgard ratings compared to opinions of high-risk gamblers.....	25
1.12 Gamgard's fit in the overall harm prevention-minimisation space.....	26
1.13 Conclusions.....	27
1.14 Recommendations.....	28
<b>2 Expert Interviews.....</b>	<b>29</b>
2.1 Purpose and background.....	29
2.2 Method.....	29
2.3 Findings.....	30
2.4 Conclusion.....	40
<b>3 In-depth Gamgard Case Study Evaluation.....</b>	<b>42</b>
3.1 Purpose and background.....	42
3.2 Method.....	42
3.3 Focus group results – Use of Gamgard .....	43
3.4 Individual scoring sessions.....	45
3.5 Benchmarking scores.....	50
3.6 Conclusion.....	50
<b>4 Summary of recommendations .....</b>	<b>51</b>
4.1 Recommendations for Ministry of Health policy consideration .....	51

4.2 Recommendations around the application of Gamgard in the New Zealand context: .....51

References.....53

Appendices.....59

Appendix A: Approach Letter .....59

Appendix B: Questions for Gamgard interviews ..... 60

Appendix C: Evaluation scoring sheet..... 62

### List of Figures

: Figure 1: Product-related risk: Categories and characteristics Source: Parke, J. (2018) .....6

Figure 2: Example of a Gamgard risk wheel. Supplied by DR Richard Wood of Gamgard .....15

Figure 3: Gamgard assessment benchmarks (Supplied by Dr Richard Wood of Gamgard. ....16

Figure 4. An example of a Gamgard 3.0 game rating.....16

Figure 5: An example of a Gamgard Risk Wheel.....16

Figure 6: An example of how a risk rating may change with the addition of RG features .....17

Figure 7 Game design approval process.....44

Figure 8 Frequency of participation in EGMs by time spent playing EGMs in an average day. .... 49

### List of Tables

Table 1-1: Gamgard scoring scheme and changes between versions.....18

Table 1-2 Why use Gamgard? Statements from the Gamgard web site (www.Gamgard.com) ..... 21

Table 1-3 Asterig's risk factors and their scores from Mörsen (2014), slide 12.....22

Table 1-4 Comparison of factors used in Gamgard, Asterig and RaVa .....24

Table 3-1 Scoring consistency (Krippendorff's alpha) and mean confidence rating for individual risk factors ..... 46

## Disclaimers and Limitations

This report has been prepared by WSP exclusively for Ministry of Health in relation to providing an industry-independent evaluation of Gamgard, carried out in a New Zealand setting, and in accordance with the Contract for Services, GMC Form 1 Services (schedule 2) dated 25 October 2019. The findings in this Report are based on and are subject to the assumptions specified in the Report and Contract of Services dated 25 October 2019. WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.

## Executive Summary

### *Background/Origins of Gamgard*

Gambling Assessment Measure — Guidance about Responsible Design (Gamgard) is an online rating tool designed to assist the gambling industry to assess the impact on vulnerable populations of gambling games. It evaluates game features, designs and characteristics and provides a risk rating. Gamgard originated from work carried out at Nottingham Trent University in the United Kingdom. It was devised by a team comprised of Dr Richard Wood now of GamRes, the company behind Gamgard, Professor Mark Griffiths who is still based at Nottingham-Trent University and Dr Jonathan Parke, now a consultant.

### *Purpose of the work*

This evaluation is to provide an industry independent evaluation of Gamgard, carried out in a New Zealand context. The evaluation is intended to help inform Ministry of Health thinking about the utility of the Gamgard product for supporting regulatory decisions about gambling harm minimisation advice to the New Zealand Government within the context of the current government policy settings.

The evaluation comprises of three elements:

1. Literature review
2. Expert interviews
3. In-depth Gamgard case study evaluation

### *Literature Review*

The literature review is structured around the following research questions which are of particular interest to the Ministry of Health.

1. What is the intended purpose/use of Gamgard? (How is it being presented to end-users - widely defined - gambling industry, gambling harm minimisation providers, regulators?)
2. What are the design elements of Gamgard that are intended to help it achieve the purpose/use? Who were the designers, what is the origin of the product, what linkages exist to the gambling industry/gambling harm minimisation providers, how does it work? Are the design elements appropriate/fit for purpose?
3. To what extent do problem gambling service provider reports indicate that games identified as "high-risk" by Gamgard are also those games that their clients report as having the most negative impact?
4. How is the Gamgard product being used, compared to intent? To what extent is it being used appropriately by different users? Is the intent/purpose well understood by key stakeholders/end-users?
5. What are the pros and cons of the product? What are the alternatives - if any?

The literature review identifies issues that should be considered by a Gamgard user or regulator before adopting it as a risk prevention and minimisation tool for vulnerable populations:

1. Gamgard is a preliminary screen, not a precision tool. It considers a relatively small (albeit important) selection of the possible factors which might impact on the risk profile of a game.
2. Are preliminary screens necessary? They are not universally used, with some providers testing games in house and others using the services of external laboratories.
3. Inter-rater reliability-particularly between Gamgard provided ratings and ratings carried out by providers. A game's rating should be the same irrespective of whether it is provided by Gamgard or by a customer of Gamgard using Gamgard.
4. Whether the prime risk factors used, which were developed in a UK context require any tailoring to the New Zealand context and to particular game types.

5. To what extent are Gamgard's four responsible gaming features (popup reminders, spend limits, time limits and feedback tools) adequately covering the field in New Zealand over the range of games Gamgard is used to assess in New Zealand, and what other such features need also to be considered? A large number of features are mentioned in the literature and serious consideration is required to weight their importance in a New Zealand context.
6. To what extent is Gamgard suitable for assessing higher risk games like Electronic gambling Machines (EGMs)? Gamgard appears to be mainly used on lower risk games.
7. At what level on the Gamgard traffic light scale of five colours, each with a cut-off point should a game be considered unacceptable without amendment? The scoring details used to derive the scale are not known, because they are not publicly available.
8. Where it would sit in a wraparound package of measures to minimise gambling harm, in the context of the Government's Strategy to Prevent and Minimise Gambling Harm 2019/20 to 2021/22 and the Gambling Act 2003's definition of responsible gambling? Such a package could include measures such as additional responsible gaming features, gambling supply controls and easy availability of treatments like counselling.
9. Whether wider contextual elements like marketing and social features are appropriate to be included in a preliminary screening tool (as in RaVa) or whether they should be considered separately. These features may have an impact on game uptake.
10. Gamgard does not appear to have any serious competitors at present in the preliminary screen space in the English-speaking world. However, Asterig appears to dominate the preliminary screening tools market for German speaking countries.

### *Expert Interviews*

Expert interviews were conducted to gather information that reflects the experiences and perspectives of experts from diverse fields. They provide a depth of understanding about the Gamgard tool that will help to address the research questions, fill in knowledge gaps identified in the published literature, and either support (or refute) the findings of articles and reports presented in the literature review.

Semi-structured interviews were conducted with four gambling research experts. They were asked questions regarding: the role of game design within a harm minimisation and responsible gambling context; game design features and associations with risk of harm; as well as their impression of Gamgard's background, function, use, and alternatives.

Interviewees all agreed that game design is critically important within a harm minimisation and responsible gambling context and that game design must be considered within a wider context. They were not aligned when questioned about the strength of evidence behind the association of particular game features with risk, and the consistency of that association across game dynamics and contexts. There were mixed opinions about the value of, and best way to, identify and reduce the risk of harm associated with a specific game. Most of the participants emphasised the importance of taking a comprehensive and strategic approach to reducing the risk of gambling harm, of which game design was just one aspect.

Most of the participants thought that Gamgard's approach either was, or may be, able to usefully identify and reduce the risk of harm associated with game design. However, none of the participants thought that Gamgard was a full harm minimisation and responsible gambling solution. It is apparent from the literature review that Gamgard itself does not make such claims. Concerns raised by the interviewees about Gamgard include its goodness-of-fit to the New Zealand context, the validity of its ratings, its assessment of the consistency of risk associated with particular game features, its treatment of potentially risky features, the compensation of higher risk with lower risk features, its view of harm being from an individual (not public health) perspective, the potential for bias in its use, and a lack of transparency and comprehensiveness.

### *In-depth Gamgard Evaluation*

The final phase of the work built on the knowledge gained from the literature review and expert interviews. Lotto NZ were used as a case study to understand the practical application of Gamgard in New Zealand, determine if the intent of the tool is well understood by users, and identify pros and cons of the product.

A focus group session was held to evaluate how Lotto NZ, used Gamgard as part of a responsible gaming strategy. The Focus group was held at Lotto NZ and attended by the General Manager Strategy & Communications, Head of Product and Channel Innovation, Senior Social Responsibility Manager, Product Manager, and Marketing Manager for Product and Channel Innovation. Following the focus group individual face-to-face sessions between two product managers and two independent researchers were conducted to understand the use of the Gamgard evaluation tool across six Lotto NZ products. All assessors independently scored a product using an evaluation scoring sheet. This process was designed to evaluate the tool and differs to the standard Lotto NZ method where Products Managers assess in their areas of expertise, consult with the wider team when required and have an annual peer review of scores. Scoring consistency and a rating of confidence in the score was analysed across assessors for all six games and the 14 risk factors. The researcher asked questions where objective information was required for context. The researcher also asked about the rationale for the product managers' scores after they had both scored each item in the 14 item Gamgard questionnaire.

The focus group and individual scoring demonstrates that Gamgard can be successfully applied in New Zealand with the support of a wrap-around process, not in isolation. There is evidence that the Gamgard tool has supported the use of a range of controls being implemented by Lotto NZ in relation to game design and acceptance. It is used as a tool to give an indication of risk of harm but does not act as a stand-alone green light to proceed.

To be used successfully, a tool requires good interrater reliability. There is an opportunity to improve this through a standardised application process or independent assessor. There appear to be differences in approach which could lead to variability in how games are scored. The outcomes of these are mostly quite subtle and are dependent on whether the question is followed explicitly, with or without expanded information and organisational interpretation. This also has an impact on any use of the new benchmarking feature (where score details of similar game types scored via Gamgard are provided), where the approach of different product users may vary.

The colour-coded risk categories do appear to be used to inform the thresholds of game acceptance, and the procedure for adjusting controls (i.e. encourage avoidance of "high" and "very high" risk categories). While the individual game elements have been selected as they have alignment with gambling harm, the score thresholds to enter another category do not have proven alignment with gambling harm to our knowledge. This combined with the difficulty in scoring a "very high" risk means that some evidence of category alignment against actual harm would be beneficial, as would a broader process to guide thresholds of acceptability in a New Zealand context.

### *Recommendations for Ministry of Health policy consideration*

1. Responsible gambling provision in New Zealand should use the meaning of responsible gambling in Part 1 s 4 of the Gambling Act 2003, rather than the different concepts common in the international gambling industry.
2. Game improvement tools:
  - a. Are not silver bullets in the minimisation of gambling harm and need to be used in conjunction with other provider based and community-based harm minimisation initiatives and tools along with appropriate regulation.

- b. Have potential to encourage game developers to be more proactive in providing more responsible games and give operators and regulators the opportunity to reject or insist on improvement to suboptimal games.
3. Gamgard appears to be an adequate preliminary screen **to be used for its stated purpose of** reviewing the functional characteristics of games, as part of a wider responsible gaming programme. However, it must be remembered that it is just that, and that the entire gambling environment should be considered before a game is approved for use. Regular monitoring should be carried out during its use, with the idea of proactively making changes where player behaviour suggests harm is occurring.
4. Being a Gamgard user should not be taken, by itself, as an indicator that a gambling provider is responsible. The entire Gambling environment should be taken into consideration

*Recommendations around the application of Gamgard in the New Zealand context:*

1. Aspects offered in other tools could be more directly imbedded into a standardised wrap-around process involving Gamgard. For example, a more in-depth assessment in the evaluation process, including active assessment of the stimulation level of each product (i.e. noise and light) as this relates to gambling harm.
2. Recognise the large weighting factor placed on Risk factor 1, event frequency, and that very few games will fall into the very high-risk factor once this score is applied.
3. Evaluate suitability of risk factor 5, jackpot size bands, and update to reflect NZ currency prize ranges.
4. Control potential for variability in scoring for some risk factors in Gamgard through the development of guidelines for application in New Zealand. These could be developed jointly by the Ministry of Health and Lotto NZ to promote consistency in ratings and thus improve detection of harm.
5. Use of Gamgard to independently score games under review by agencies like Ministry of Health/DIA could be beneficial.
6. Guidance around the acceptance thresholds for games in New Zealand and the appropriateness of controls could be developed and regularly reviewed.
7. Data collection and access around gambling harm indicators based on game types would benefit from being collected at a more detailed level. This would help clarify understanding of where control and regulation around game types are best targeted and inform acceptance thresholds for games.

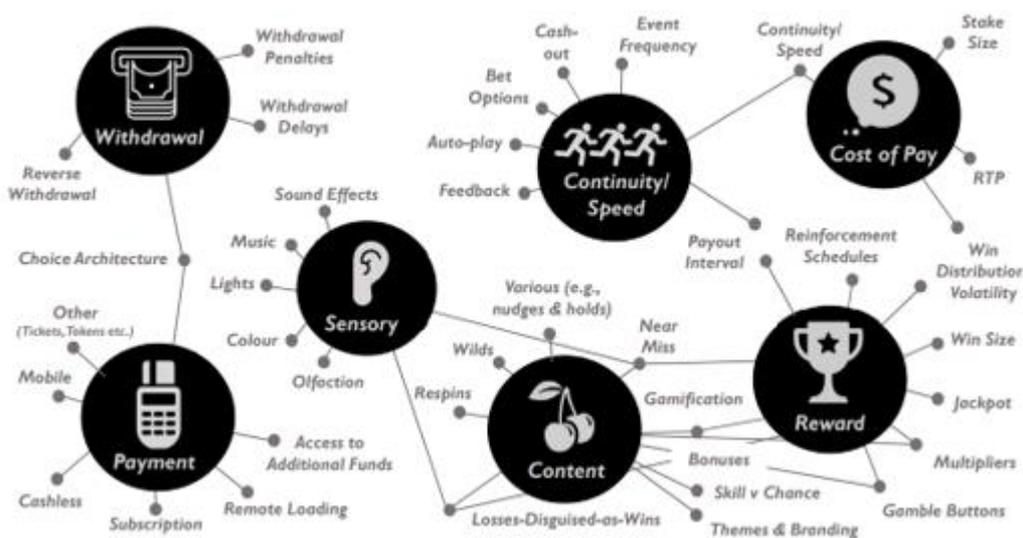
# 1 Literature Review

## 1.1 Background

Gambling Assessment Measure — Guidance about Responsible Design (Gamgard) is an online rating tool designed to assist the gambling industry to assess the impact on vulnerable populations of gambling games. It evaluates game features, designs and characteristics and provides a risk rating. Gamgard originated from work carried out at Nottingham Trent University in the United Kingdom. This literature review is part of a Ministry of Health project to provide an industry-independent evaluation of Gamgard, carried out in a New Zealand context. The literature reviewed included peer reviewed journal articles, magazine articles, conference papers and information available on the internet from gambling regulators and industry participants. These were accessed through search engines, the WSP Opus information Centre, suggestions from colleagues and directly from the authors. There were no formal exclusion or inclusion criteria. The review is structured around the following research questions which were of particular interest to the Ministry of Health.

1. What is the intended purpose/use of Gamgard? (How is it being presented to end-users - widely defined - gambling industry, gambling harm minimisation providers, regulators?)
2. What are the design elements of Gamgard that are intended to help it achieve the purpose/use? Who were the designers, what is the origin of the product, what linkages exist to the gambling industry/gambling harm minimisation providers, how does it work? Are the design elements appropriate/fit for purpose?
3. To what extent do problem gambling service provider reports indicate that games identified as “high-risk” by Gamgard are also those games that their clients report as having the most negative impact?
4. How is the Gamgard product being used, compared to intent? To what extent is it being used appropriately by different users? Is the intent/purpose well understood by key stakeholders/end-users?
5. What are the pros and cons of the product? What are the alternatives - if any?

Addiction risk is a systemic problem associated with gambling. The many risks associated with gambling games are summarised in the figure below.



: Figure 1: Product-related risk: Categories and characteristics Source: Parke, J. (2018)

Where this risk results in serious repercussions for gamblers and those close to them, the associated gambling behaviours are often called ‘problem gambling’. There is no one universal definition of problem gambling. The risks become greatest in the 1.9% of gamblers designated in the 2018 New Zealand Health and Lifestyles Survey<sup>1</sup> as “moderate risk and problem”<sup>2</sup> using the Problem Gambling Severity Index (PGSI) (Ferris & Wynne, 2001). It should be noted that the PGSI is structured as a continuum of risk, often used in population surveys for prevalence rates, but not specifically designed for measuring gambling related harm. Results at the appropriate level of disaggregation, are not yet available from the 2018 survey, but problem gamblers numbered around 0.1% of gamblers in 2016 while those of moderate risk were 1.5% (Thimasarn -Anwar et al, 2017). The Gambling Act (2003)<sup>3</sup> defines a problem gambler as *a person whose gambling causes harm or may cause harm*. Harm in this context is defined (part 1, section 4) as:

*harm or distress of any kind arising from, or caused or exacerbated by, a person's gambling*

*and “includes personal, social, or economic harm suffered:*

*(i) by the person;*

*or (ii) by the person's spouse, civil union partner, de facto partner, family, whanau, or wider community;*

*or (iii) in the workplace;*

*or (iv) by society at large*

The definition used in the act would include the next category of “moderate risk” people as classified by the PGSI index.

The numbers from the Health and Lifestyles Survey look relatively small, but problem gambling affects a wide circle of family, friends, workmates, etc., of the gambler. Browne et al (2017), reporting on gambling harm to the Ministry of Health estimated the aggregate harm of gambling problems to be almost twice that of drug use disorders, bipolar affective disorder, eating disorders and schizophrenia. It was also suggested that this burden of harm is primarily due to financial impacts, damage to relationships, emotional / psychological distress, and disruptions to work / study.

Gambling providers are required to operate gambling environments in accordance with the act. The act also mandates that an integrated problem gambling strategy focused on public health be produced. The implication is that providers should operate in a manner consistent with this public health-based strategy (Ministry of Health, 2019). Therefore, the utility in New Zealand of products like Gamgard will depend on how they fit into an overall package of measures designed to comply with the provisions of the act and their level of consistency with the strategy.

Williams and Wood (2016) estimate that 15-50% of gambling revenue emanates from problem gamblers depending on jurisdiction and the time of data collection. They suggest that the revenue derived from problem gamblers may be much higher if newer, improved measures are applied. Williams and Wood (2016) use the Canadian Problem Gambling Index (CPGI) and, in an Ontario study (Williams & Wood, 2007), they defined a problem gambler as someone fitting the severe problem gambler and moderate problem gambler categories of that index, which approximate to the top two categories in the PGSI.

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<sup>1</sup> <https://www.hpa.org.nz/tags/health-and-lifestyles-survey> Accessed 18/6/2020

<sup>3</sup> <http://www.legislation.govt.nz/act/public/2003/0051/latest/DLM207497.html> Accessed 18/6/2020

The latest information from New Zealand on revenue from people with a gambling problem goes back to Abbott and Volberg (2000) whose estimate was 19% of gambling revenues emanating from problem and probable pathological gamblers. According to Abbott and Volberg (2000), a problem gambler is a person with *patterns of gambling behaviour that compromise, disrupt or damage health, personal, family or vocational pursuits* (p 11). Pathological gamblers are people with a gambling related *chronic or chronically relapsing mental disorder* (p 12). A probable pathological gambler is someone who has not been clinically diagnosed as a pathological gambler but whose answers to survey questions indicate that are likely to be a pathological gambler. This group (sometimes misidentified as problem gamblers) comprised 1.3% of all gamblers at the time. The estimate used an adaption of the earlier South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987). This instrument is a risk measurement similar to the PGSI and is compared to the PGSI by Ferris and Wynne (2001).

## 1.2 The meanings of harm minimisation and responsible gambling (RG)

Gamgard's published intention according to its website is to promote both *harm minimisation* and *responsible gambling (RG)*. The definitions of the above terms are not universal, and they are used differently by gambling industry participants and others. Gamgard works within the gambling industry and thus its use of these terms reflect usage within the industry.

Consequently, the term *harm minimisation* as used by Gamgard conforms more to a gambling industry definition of harm minimisation rather than a public health definition of harm minimisation. In the gambling industry harm minimisation generally means minimising harm without reducing overall demand. To quote Gainsbury & Blaszczynski, (2012).

*harm-minimisation strategies aim to minimise the risks associated with gambling and facilitate responsible gambling, without overtly disturbing those who gamble in a non-problematic manner (p. 5).*

In a real world setting this means trying to minimise the harm to those players who are vulnerable, in a context of continuing promotion of gambling as a legitimate pastime (in which it is engaged in moderation) by the broad population. An example of this approach is Camelot's stated strategy<sup>4</sup> to:

*encourage lots of people to play National Lottery games but to individually spend relatively small amounts*

An industry related view of what is required for a responsible gambling environment is discussed in detail by Parke et al. (2016) in a report to the UK's Responsible Gambling Trust.

Camelot's strategy means that while per gambler harm may reduce, collective harm may increase. Such an increase would occur if the overall increase in harm from marketing related increases in exposure to risk were to outweigh the impact of harm minimisation measures.

This is different from the perspective of the health sector (Ministry of Health, 2019) which wishes to minimise collective harm as well as individual harm. At present some controls on collective harm from exposure to gambling risk are contained in the Gambling Act 2003 and in the sinking lid policies of some Territorial Local Authorities on the number of Electronic Gambling Machines (EGMs), commonly called *pokie machines*, allowed on their territory.

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<sup>4</sup> <http://www.camelotgroup.co.uk/what-we-do/promoting-responsible-play>  
Accessed 18/2/2020

Another objective of Gamgard is to promote *responsible gambling* commonly abbreviated to RG. Its website<sup>5</sup> states that it promotes responsible gambling accompanied by the following points:

- Responsible game design is the foundation of a good responsible gaming strategy
- Helps train staff to understand key responsible gaming principles
- Maintains player trust and company integrity

To understand the above it is instructive here to look at how the concept of responsible gambling is viewed by the main Gamgard developers, Wood and Griffiths, through their published work. This can be found in Wood et al. (2014) who quote the following definition from Blaszczynski et al. (2004):

*Responsible gambling refers to policies and practices designed to prevent and reduce potential harms associated with gambling; these policies and practices often incorporate a diverse range of interventions designed to promote consumer protection, community/consumer awareness and education, and access to efficacious treatment (p. 308).*

Wood et al. conclude from this definition that the individual is *primarily responsible for their own gambling behaviour and RG should primarily help players to help themselves with those already with a gambling problem being directed to providers of the treatment they require.*

This interpretation is arguable, as it is not immediately obvious that Wood et al.'s (2014) conclusion follows from the Blaszczynski et al. (2004) definition. Gamgard fits into this frame of reference as a tool to remove some detrimental features from a game within an RG ethos of individual player responsibility. This ethos is contentious and the subject of intense debate among gambling researchers. For instance, Thomas et al. (2016) listed it as a key contributing factor to the stigmatisation of gamblers:

*The framing of 'problem gambling' as an issue of 'personal responsibility' by dominant institutions such as governments and the gambling industry (p. 5).*

This view of responsible gambling is also somewhat at odds with the relevant New Zealand legislation (Gambling Act 2003) which states ( Part 1 s 4 ) that Responsible Gambling means lawful participation in gambling that is:

(a) Lawful, fair and honest;

(b) Conducted –

- i. In a safe and secure environment;
- ii. Without pressure or devices designed to encourage gambling at levels that may cause harm; and
- iii. By informed participants who understand the nature of the activity and do not participate in ways that may cause harm

The NZ Department of Internal Affairs (DIA) views this in the New Zealand context as meaning:

*Responsible gambling is largely about gamblers' rights, and the obligations of gambling operators. Under the Act, responsible gambling is not primarily about individual gamblers taking responsibility for their own actions (2006, p. 4).*

Such a package of measures, in the case of venues comes under the general heading of host responsibility. Host responsibility guidance for gambling venues is provided in a 2005 University

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<sup>5</sup> <https://www.gamgard.com/> Accessed 15/6/2020

of Auckland report for the Ministry of Health (Tse et al., 2005). The report lists the following key content areas of host responsibility for physical venues:

- safe product:
- responsible marketing:
- safe access:
- informed patrons:
- responsible venue design:
- responsible delivery
- assists responsible community problem-solving:
- assists responsible community planning:

A preliminary screening tool like Gamgard may represent a component of what is required to fulfil key content area one, safe product. Broadly similar key content areas would logically apply to online gambling venues.

### 1.3 Who were/are the designers?

The tool was originally designed by a team based at Nottingham-Trent University, UK. The team comprised:

Dr Richard Wood now of GamRes, the company behind Gamgard, Professor Mark Griffiths who is still based at Nottingham-Trent University, and Dr Jonathan Parke, now a consultant. (Griffiths, Wood and Parke, 2008).

Dr Wood<sup>6</sup> is a Psychologist and has a PhD in Gambling Studies. He was formerly a Senior Lecturer in Psychology, International Gaming Research Unit, Nottingham Trent University. He is now a proprietor of GamRes, the company which owns the Gamgard product.

Dr Griffiths<sup>7</sup> is a Professor of Behavioural Addiction in the Psychology Department and Director of the International Gaming Research Unit (IGRU) at Nottingham-Trent University

Dr Jonathan Parke was a Senior Lecturer at Nottingham Trent's Psychology Department at the time of Gamgard's original design. Dr Parke, who appears to be no longer actively involved in Gamgard, is Director of Sophro, a consultancy specialising in research and policy relating to gambling<sup>8</sup>

Professor Griffiths was the doctoral supervisor of both Dr Wood and Dr Parke. Although the original designers were at the time employed by Nottingham Trent Psychology Department, Gamgard appears to have been developed by them in their private capacity.

### 1.4 The stated intended purpose/use of Gamgard

Gamgard's proprietors wish Gamgard to be part of society's efforts to curb the risks associated with gambling games. Gamgard is not concerned directly with problem gamblers. It focusses on reducing the odds of vulnerable people becoming problem gamblers in the first place. Therefore, its constituency is vulnerable gamblers who do not yet have a problem. This would equate to low risk or no-risk under the PGSI classification.

According to the Gamgard web site:<sup>9</sup>

*Gamgard objectively applies psychology to game design, balancing the fun and excitement of a game with a responsible level of risk (para?).*

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<sup>6</sup> [www.gamres.org](http://www.gamres.org) Accessed 5/10/2021

<sup>7</sup> <https://www.ntu.ac.uk/staff-profiles/social-sciences/mark-griffiths> Accessed 5/10/2021

<sup>8</sup> <https://www.sophro.uk.com/> Accessed 5/10/2021

<sup>9</sup> [www.gamgard.com](http://www.gamgard.com) Accessed 8/7/2020

A more detailed, operational statement of Gamgard's purpose is provided directly by Dr Richard Wood in a PowerPoint presentation supplied to the author (Wood, personal communication 2019, slide 4) It identifies the purpose as:

- To identify how risky a new game may be for a 'vulnerable' player
- To advise on how to lower the risk of some games
- To pinpoint elements of a game that are most risky
- To help use research findings for evidence-based practise
- To provide a standardised objective procedure to assess all games the same way

Gamgard has World Lottery Association (WLA) certification to level IV RG (Responsible Gambling) standards. The WLA is an International Gambling Industry Group. The WLA (([www.world-lotteries.org](http://www.world-lotteries.org)) describes itself as a member-based organization to advance the interests of state-authorized lotteries. Its membership comprises state lottery and gaming organisations from six continents. According to information provided by Dr Richard Wood (Wood, 2019), Gamgard is currently in use by state-regulated lottery/gaming companies or regulators of gambling in 35 jurisdictions world-wide including in: Austria, Australia, Italy, Norway, Sweden, Switzerland, five US states, all of Canada, Brazil, Uruguay, Poland, Hungary, UK, Ireland, New Zealand, Greece, China and Hong Kong.

It's work however extends outside state-authorized lotteries to other types of gambling. According to Dr Richard Wood Gamgard has recently undertaken several Gamgard reviews (involving hundreds of games) for online gaming companies wishing to enter the Netherlands online gaming market. The Dutch Gambling regulator requires that applicants for online gaming licences relating to the Netherlands must have a 3<sup>rd</sup> party independently review their games and has named Gamgard as an acceptable service in that regard. Most of the games reviewed have been online casino and online slot machine style games, as well as some online sports betting. In addition, most of the Canadian provincial gaming operators that use Gamgard also offer online gaming, EGMs and physical casinos.

The Government of New Zealand has a Strategy to Prevent and Minimise Gambling Harm.<sup>10</sup> Objective 8 of the strategy states:

*Gambling environments are designed to prevent and minimise gambling harm (p. 20).*

This can be interpreted as meaning that the original design intention of a gambling environment should be to prevent harm, but in an imperfect world, where harm occurs despite that intention, the environment should be modified by the introduction of further elements to minimise that harm.

Tools like Gamgard fit within this overarching objective as the nature and risk of the game being used by a gambler is part and parcel of the gambling environment. An appropriate combination of effective tools is necessary to achieve Objective 8 of the New Zealand Strategy. It is a joint responsibility of regulators, providers and the Ministry of Health, within the terms of the Gambling Act (2003) to ensure their contributions are effective in protecting the players.

The philosophical basis of a product impacts on how it is developed and used. A process evaluation of Gamgard was carried out by Cousins (2018) for Dr Richard Wood, of GamRes, the proprietor of Gamgard and Professor Mark Griffiths, Nottingham-Trent University, who is also associated with Gamgard. Cousins, an Emeritus Professor of the University of Ottawa, wrote the

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<sup>10</sup> <https://www.health.govt.nz/system/files/documents/publications/strategy-prevent-minimise-gambling-harm-2019-20-to-2021-22-dec18.pdf>

report under the auspices of that University's Centre for Research on Educational and Community Services (CRECS). Cousins' report (2018) is a major source of information regarding Gamgard. He provided the following comments regarding its purpose and philosophical basis.

*Gamgard seeks to reduce risks for vulnerable players and minimise harms to problem gamblers and may therefore be principally classified as an instrument for harm reduction, with only modest interest in prevention (p. 3).*

*It helps minimise the risk that vulnerable players will develop problems and/or limits the money they can lose by flagging risk factors associated with new and existing games and suggesting strategies to reduce risk. (p. 3)*

These comments indicate that Gamgard is a harm minimisation tool rather than a harm prevention tool. If this is so, the tool is relevant only to the minimisation part of the New Zealand Strategy to Prevent and Minimise Gambling Harm and additional tools would need to be used if harm prevention is to occur.

Dr Richard Wood, the proprietor of Gamgard however takes a different view.

*Gamgard helps minimise the risk that vulnerable players will develop problems, which is a clear prevention goal. However, whether it is used for harm prevention or minimisation depends on how it is applied by the user. I contend that a tool that highlights risky elements of a game can be used to prevent harm if said elements are removed or reduced such that the game is less likely to negatively impact vulnerable players. (Personal communication, Richard Wood, 2021)*

There is also a perception on the part of Cousins that it seeks to *minimise harms to problem gamblers*. It is important to note that minimising harm to problem gamblers is not, according to the proprietor of Gamgard, a focus of responsible gambling. Wood et al. (2014a) state that:

*Those individuals that already have a gambling problem are not the main focus of RG (beyond being directed to a suitable treatment provider and/or other referral services) (pg. 95)*

Another statement from Cousins (2018) is that Gamgard:

*...also, minimises the chance that a company's reputation will be tarnished by launching a game that is found to be dangerous to a significant number of players (pg. 3)*

Gamgard, therefore, has a provider protection function as well as a player protection function. This unstated function of providing protection against reputational risk to the operator could be of concern if the primary motivation of a gambling provider to use Gamgard was this part of its function.

## 1.5 The actual use of Gamgard

Gamgard is used by both gambling providers and regulators (Cousins, 2018). Consequently, it has an impact on game developers through their interaction with the providers and regulators. In some cases, the providers and regulators may be housed within the same agency. It is also used directly by developers in some cases. According to Cousins (2018):

*Gamgard assessments play an RG assurance role being seen as an early detection mechanism (i.e., one source of information that is used in conjunction with other SR [Social Responsibility] strategies. (pg. ii)*

Therefore, Gamgard is intended to be a preliminary screen contributing to decision making rather than a standalone decision-making tool. Clients of Gamgard may run their own reports or have them provided by Gamgard. Reports provided by Gamgard may be accompanied by supplementary information, and the clients who run their own reports may integrate them with other information related to their situations. Regardless of how the reports are produced, they look the same.

The operators and regulators use Gamgard as a filter to remove or amend unacceptably risky games, so it is in the developers' interests to provide games with the features which will make them achieve acceptable Gamgard scores. What is deemed unacceptably risky depends on the standards of the operators and regulators and by its nature, Gamgard scores are subject to some subjectivity. In New Zealand, this would relate to the achievement of compliance with the Gambling Act 2003. The developers of Gamgard encourage their clients to use the tool in conjunction with other non-product-based ways of contributing to harm minimisation. Camelot describes its acceptance process regarding game design thus:

*When it comes to game design, we believe prevention is better than cure.*

*Step 1: We use GAM-GaRD to test how risky certain characteristics of a game could be for players, such as the return to player, jackpot size and sensory features. (Note: Sensory features do not appear to be addressed by Gamgard)*

*Step 2: We investigate any risk factors identified in Step 1 to understand how they can be minimised or mitigated*

*Step 3: We commission expert research to give us insight into the potential impact of new games on players*

*Step 4: We analyse the results of these tools to see if a game poses a risk that's above average<sup>11</sup>. If it does, we'll take another look at the product or review other factors, such as our marketing strategy. But if we're still not convinced, we won't launch the game.*

Gamgard's main clientele are the operators of Government lotteries and associated games which are generally considered lower risk than many other games (e.g., EGMs). However, as mentioned earlier it does have substantial business outside that sector dealing with higher risk games. Linkages to the gambling industry/gambling harm minimisation providers.

According to Cousins (2018) and Griffiths et al (2008) the initial design and development of Gamgard was commissioned in 2007 by Camelot,<sup>12</sup> a private sector company which operates the UK's National Lottery for the UK Government. As noted earlier, Camelot's strategy is to encourage wide participation but low individual expenditure. This may provide insight into what Gamgard's main client is trying to achieve through using Gamgard in conjunction with other approaches.

In common with other similar organisations, Camelot is not predominantly focussed on working to prevent overall harm from increasing. However, the UK Gambling Regulator, the Gambling Commission, has a National Strategy to Reduce Gambling Harms (UK Gambling Commission, 2019). As a consequence of this strategy, under the Gambling Commission's Licence Conditions and Codes of Practice all operators are required to have a number of measures in place that would reduce the potential for harm (e.g., fair and transparent terms and practices, etc.).

GamRes works in the field of gambling harm minimisation, as an industry provider, as does Nottingham Trent University as a research institution, so the linkages here are obvious as are the

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<sup>11</sup> It is not clear what is meant by "average" in this context as the average level of risk would depend on historical acceptance criteria.

<sup>12</sup> <http://www.camelotgroup.co.uk/> Accessed 5/10/2021

shared personnel. Obvious also are linkages to Camelot, which commissioned Gamgard's initial development and continues to use it. Gamgard is obviously linked to its gambling provider clients, its gambling regulator clients, and its certifier, the WLA.

Cousins (2018) interviewed 12 organisations in Europe Australasia and Canada in his evaluation of Gamgard. These included two regulators with the remainder being developers and/or operators. The regulators were invited to participate because at least some operators within their jurisdiction were using Gamgard. The operators represented a mixture of private sector companies reporting to state regulators and others were government owned corporations or entities. Gamgard's developer clients would appear to be state owned lottery/ gaming organisations who develop their own games. Gamgard's view of harm minimisation means it stops short of interaction with gambling treatment providers apart from referring people with problem gambling to them.

*Those individuals that already have a gambling problem are not the main focus of RG (beyond being directed to a suitable treatment provider and/or other referral services) (Wood et al., 2014a, p. 3).*

Thus, Gamgard has no direct linkages to treatment providers.

## 1.6 How does Gamgard work, including its design elements?

Gamgard is concerned with the structural characteristics of the game being evaluated and scores a game on the responsibility of its structural characteristics in the light of expert opinion. This section will discuss how it works, and also consider the changes as the tool has developed from Version 1.0 in 2008 to the most recent release, Version 3.1 in 2020..

Gamgard is a proprietary product, and in common with other proprietary products, disclosure stops short of a rival being able to copy the product. Consequently, there is some opaqueness in the detail of its approach. The questions and the weight given to their answers in arriving at a score are stated to be based on the best available evidence-based information, gleaned by structured interaction with experts. The source of confidence in the tool is based on a Delphi study carried out with 20 responsible gambling research and clinical experts. More information about the Delphi panellists will be provided in the next section.

Gamgard works by applying ten game feature related risk factors to the game being assessed. These 10 factors were assessed as being the most important of many factors considered during the initial Delphi development process. Although the list was developed through a systematic process, it has been subject to criticism and providers and regulators interviewed by Cousins (2018) did in some cases suggest that it could be reviewed. The severity of each risk factor, as it appears in the context of the game under scrutiny, is assessed by the answers to questions about that aspect of the game posed to the assessor. The risk factors are:

1. Event frequency
2. Multigame
3. Fixed/variable stake
4. Prizeback
5. Jackpot
6. Near Win
7. Continuity
8. Accessibility
9. Payment options
10. Illusions of control

The answers to the questions are weighted and a score is produced in the range of 0 to 100 with the range evenly divided into 5 rating categories:

- 0-20- very low risk
- 21 -40 low risk
- 41-60 medium risk
- 61 – 80 high risk
- 81-100 very high risk

An example is shown in Figure 2

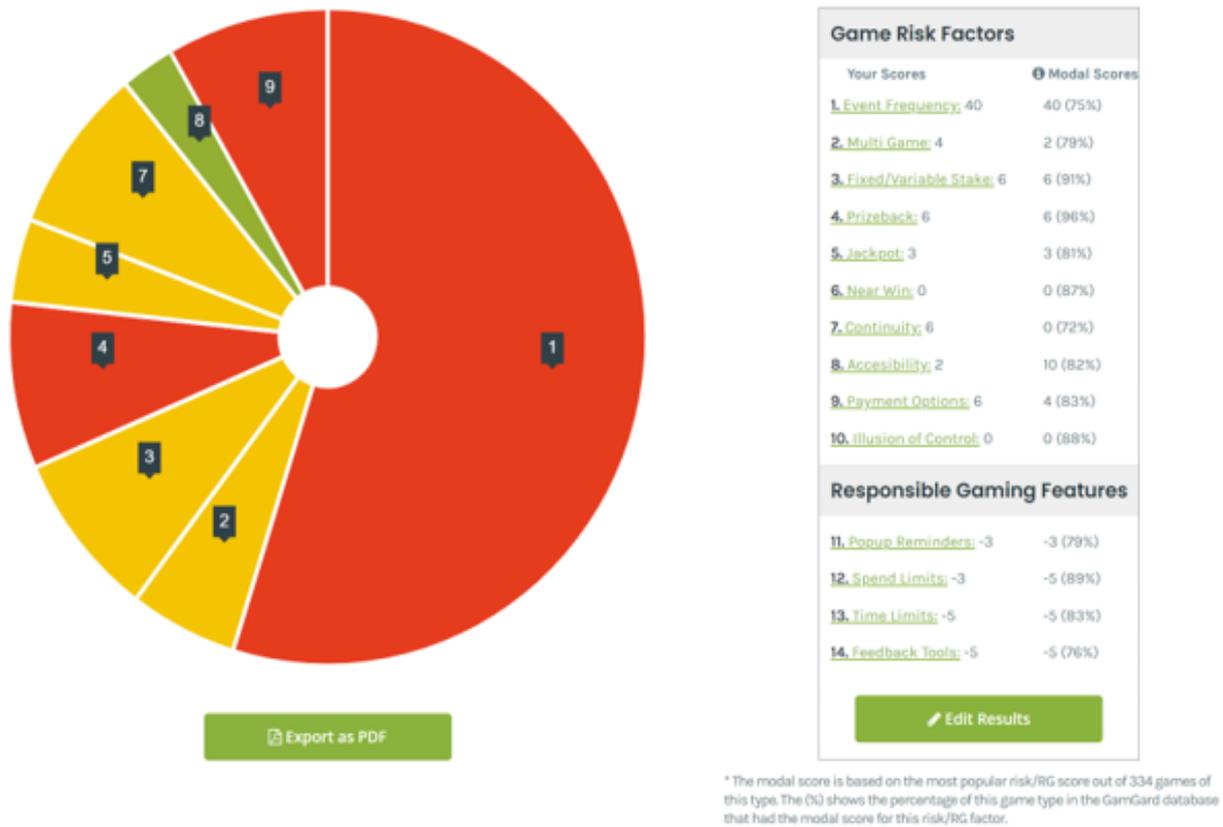


Figure 2: Example of a Gamgard risk wheel. Supplied by DR Richard Wood of Gamgard

Gamgard describes the risk wheel thus:

The risk wheel shows how much each individual risk factor contributes to the overall risk of a game. The larger the section, the larger the influence. Green represents the lowest possible score for a risk feature. Red represents the highest. Amber represents somewhere in between the highest and lowest possible scores. Where a risk feature is absent from the risk wheel, it is scoring zero and not contributing to the overall risk of the game.

The assessments involve comparison of the scores of the game with a benchmark database of scores. The benchmarks used are shown in Figure 3 :

Benchmarks	Description	
Minimum score	The lowest score in the benchmark database	<ul style="list-style-type: none"> <li>If your score falls between the <b>minimum score</b> and lower <b>quartile</b>, it's in the bottom 25% of all games in this benchmark</li> <li>If your score falls between the <b>lower quartile</b> and the <b>median</b>, it's in the bottom 25-50% of all games in this benchmark</li> <li>If your score falls between the <b>median</b> and the <b>upper quartile</b>, it's in the top 50-75% of all games in the benchmark.</li> <li>If your score falls between the <b>upper quartile</b> and the <b>maximum score</b>, it's in the top 25% of all games in the benchmark</li> </ul>
Lower quartile	75% of games of this type in the benchmark database have scores that are higher than this score	
Median score	50% of games of this type in the benchmark database have scores that are higher than this score	
Upper quartile	25% of games of this type in the benchmark database have scores that are higher than this score	
Maximum score	The highest score in the benchmark database	
Average score	The total scores added together and divided by the number of games tested	The average is influenced by high scores and low scores and may not reflect the most frequently occurring score
Modal score	The most frequently occurring score for this game type	The mode is not influenced by high or low scores. There can be more than one mode if two scores occurs at the same frequency

Figure 3: Gamgard assessment benchmarks (Supplied by Dr Richard Wood of Gamgard).

There is no bottom-line score for any of the risk factors above which the game must be rejected or amended. Gamgard provides each game tested with a total score, like a traffic-light rating. When a game is rated in the red or light red category, RG features can be introduced to reduce the risk rating, or the game can be rejected by stakeholders. An example of a Gamgard 3.0 rating of a games is shown in Figure 2.



Figure 4. An example of a Gamgard 3.0 game rating

The tool then produces a risk wheel showing the assessed contribution of each risk factor to the game's overall risk. Risk factors not shown on the wheel are those assessed to have zero contribution. An example risk wheel supplied by Dr Richard Wood is shown in Figure 5.

Figure 5: An example of a Gamgard Risk Wheel

Source: ?

Gamgard 3.0 improves a game's score if the operator is using any of four specified interventions, not related to the structure of the game, which have been shown to reduce risk. These may be traded off against risky game elements to reduce the score (Cousins, 2018). These interventions, called responsible gambling features by Gamgard are:

- Popup reminders
- Spend limits
- Time limits
- Feedback tools

The number of responsible gambling features included is arbitrary and chosen on their effectiveness as judged by GamRes and its advisors. The limits considered here are voluntary as GamRes does not consider the research evidence base for mandatory limits adequate (Cousins, 2018).

An example of how a risk rating may change with the addition of RG features shown in Figure 6.

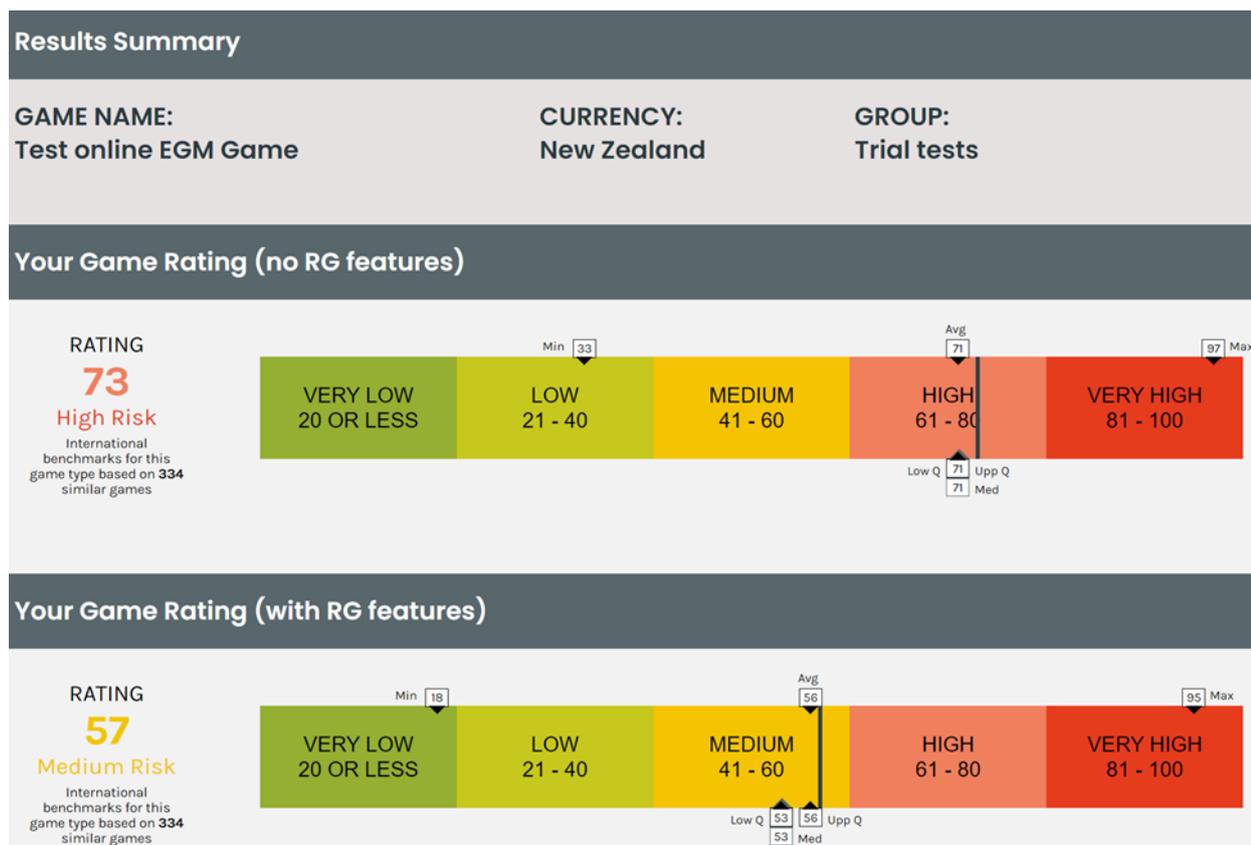


Figure 6: An example of how a risk rating may change with the addition of RG features

Source: Supplied by Dr Richard Wood of Gamgard

Different operators may use different thresholds on Gamgard's traffic light-based assessment advice to accept, reject or amend games. The extent to which yellow or light red games are allowed to be used by operators is not clear from Cousins (2018) but there are some clues. One operator quoted by Cousins discussed how some lower risk rated games using version two became higher risk when using version 3, commenting:

*Some of the 'yellow' products went into 'light red' which meant that our policy had to be checked and we had to see what we would do with those products that were coming into the minefield of the 'red' area. (pg. 25)*

This indicates that this operator was using a yellow rated product. The actual scoring scheme, which includes inbuilt weights is depicted in Table 1-1 from Cousins (2018, pg. 14)). The table also contains brief details of changes between different versions of Gamgard. There appear to have been quite substantial changes in scoring between versions 2 and 3. However, it is unclear by what weighting mechanism the scores are combined to provide a final overall score for the

game. This is presumably for reasons of intellectual property. While recognising the limitation, the lack of transparency presents a barrier to a full assessment of Gamgard's application in a different jurisdictional setting.

Gamgard seeks to be strictly evidence based, so no score decrease is given for measures which have good face validity but have not yet, in the opinion of GamRes, accumulated any research-based evidence of being effective (Cousins, 2018). Gamgard regularly reviews the 10 factors and their weighting in the overall score to take into consideration the latest research evidence.

Table 1-1: Gamgard scoring scheme and changes between versions

Item	V1.0	V1.1	V 2.0-2.1	V 3.0	Adjustments to equate v 2.1 and earlier with v 3.0
1. Event Frequency	Range: 1-20	Range: 1-20	Range 1-20	<b>Range 1-40</b>	Double scores for v 2.1 and earlier
2. Multi-game/stake opportunities	1,2,3	1,2,3	1,2,3	<b>2,4,6</b>	Double scores for v 2.1 and earlier
3. Variable/fixed stake size	1,3	1,3	1,3	<b>2,6,8</b>	Recode v2.1 and earlier: 1=4, 3=8 Note: low option split into 2 options
4. Prizeback percentage	1,3,5	<b>1,2,3</b>	1,2,3	<b>2,4,6</b>	Recode v1.0:1=2, 3=4, 5=6; Double scores for v 1.1 through v 2.1
5. Jackpot size	0.5,1,1.5,2,2.5,3,1.5	0.5,1,1.5,2,2.5,3,1.5	0.5,1,1.5,2,2.5,3,1.5	<b>1,2,3,4,5,6,3</b>	Double scores for v2.1 and earlier
6. Near win opportunities	1,3	<b>0,2</b>	0,2	<b>0,4</b>	Recode v1.0: 1=0, 3=2; Double scores for v 1.1 through v2.1
7. Continuity of play	1,2,3	1,2,3	<b>1,2,3,4,5</b>	<b>0,6,10</b>	Recode v 1.0 and v 1.1: 1=0, 2=6, 3=10. Recode v 2.1 and earlier; 1=0, 2&3=6, 4&5=10
8. Accessibility points	1,3,5	1,3,5	1,3,5	<b>2,4,6</b>	Double scores for v 2.1 and earlier
9. Payment options	1,2,3	1,2,3	<b>0,0.5,1,2,3</b>	<b>0,1,2,4,6</b>	Add options in v 2.0 & v 2.1: 0, 0.5; Double scores for v 2.1 and earlier
10. Illusion of Control	1,3	<b>0,2</b>	0,2	<b>0,4</b>	Recode v2.0: 1=0, 3=4; Double scores for v2.1

Note: Cell entries for middle columns correspond to values associated with item options. Bolded entries correspond to changes made from previous version.

Source: Cousins, 2018,p.14.

## 1.7 Are the design elements appropriate/fit for purpose?

According to Griffiths et al (2008) and the Gamgard web site the original development of Gamgard was carried out in consultation with an expert advisory panel using the Delphi method as outlined by Hader and Hader (2000). Delphi is an accepted methodology to solicit expert consensus on complex problems (Okoli & Pawlowski, 2004; Thangaratinam & Redman, 2005).

The expert panel for the original Delphi consisted of 20 people. Fifteen experts were part of the International Gambling Research Unit (IGRU) team at Nottingham Trent University, and five were international experts from the US (Dr. Henry Lesieur), Canada (Dr. Robert Ladouceur, Dr. Jeffrey Derevensky), Australia (Dr. Alex Blaszczynski), and Germany (Dr. Gerhard Meyer). All international members of the panel were academic psychologists with an interest in problem gambling, as were the IGRU members. The stated aim was to examine available evidence world-wide and develop a tool incorporating the latest findings on *the impact of the specific elements of a game for influencing vulnerable players* (pg. 15).

It would be helpful to have more information about the IGRU members of the panel. Useful information would include who they were, to what extent they had published or participated in the gambling studies community, and in what specific area(s) did they have expertise? If they were clinicians, how long had they been working in this area? A clue may lie in the recruitment criterion mentioned in Wood et al. (2014) that described a Delphi process for a later Gamgard version. It is not stated whether this was the same exercise used to update Gamgard from version 2.0 to version 3.0.

The stated criterion for the experts in the panel were having published at least 10 peer reviewed papers relating to the field of RG.

Subsequent updates of Gamgard have been carried out by GamRes based on literature reviews carried out by Dr Wood and Dr Griffiths and in consultation, via the Delphi method with panels of international gambling researchers and clinicians. The Gamgard web site indicates that the upgrade to the latest version Gamgard 3.0 used a Delphi panel of 20 researchers and 20 problem gambling clinicians and included feedback from 20 recovered problem gamblers.

Insight into the type of Delphi approach used may be gained from a detailed description by Dr Wood (Wood et al, 2014a) of a later project involving him and Professor Griffiths, which also used a Delphi approach to information gathering.

According to its web site Gamgard was initially tested against 40 existing games. Following that testing, the developers were satisfied that Gamgard accurately reflected the known impact of the tested games on problem gambling behaviour. The web site does not provide a definition of problem gambling behaviour. Rather, it emphasises that Gamgard is aimed at vulnerable players rather than players with an existing gambling problem. However, it does state that<sup>13</sup>:

*A person with a gambling problem cannot usually make rational decisions about their gambling behaviour and they may dissociate (zone out) whilst playing.*

Gamgard has continued to state that it has a policy of continuous improvement incorporating the latest research findings presumably gathered from the literature and through interactions with its advisory panel. Unlike Asterig (discussed in section 10) it does not appear to have interviewed gamblers as part of original development the process. However, according to Gamgard, the updating to Gamgard 3.0 involved input from 20 leading researchers, 20 problem gambling clinicians and feedback from 20 recovered severe problem gamblers. This resulted in adding consideration of the impact of four responsible gambling features, external to the structure of the game being considered. These features have been empirically shown to lower the risk of associated gambling games. Also, according to GamRes:<sup>14</sup>

*The final version of Gamgard 3.0 was then tested against a range of games to ensure that it correctly assigned risk according to the known risk associated with those game types (e.g., slot machines, weekly lottery draws, etc.) as reported by treatment provider reports.*

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<sup>13</sup> <https://www.gamgard.com/faq/>

<sup>14</sup> <https://gamres.org/gamgard-version-3-0-launched-2/> Viewed 8/7/2020 4.20pm.

The design element or risk factors used in Gamgard were the result of a Delphi approach to gathering information from an expert panel. There would have been a much larger list to start with which would have been whittled down to the core ten during the Delphi process. The risk factors used are certainly considered important in the problem gambling literature (Parke et al, 2016) and have considerable commonality with those used in the similar German product, Asterig, which used a broadly similar Delphi approach with a different panel, and input from gamblers. Therefore, the factors appear to be fit for purpose, although there will always be argument as to their level of optimality in terms of their number and their appropriateness as time goes by. As game characteristics change and knowledge increases, GamRes has considered whether this list needs to be changed and/or expanded. Consequently, the developers have changed how the factors in the list are defined and scored in some cases. A timeline for these changes is given in Gamgard (n. d.).

There are four responsible gambling features. In Wood et al. (2014a) the proprietor of Gamgard lists many more recommended features. The paper promises an online resource which would deal in more depth with selecting RG features. This resource was published as a paper (Wood et al., 2014) in the *International Journal of Mental Health and Addiction*.

In addition, a review paper of harm-minimisation tools available for electronic gambling (Harris and Griffiths, 2017) includes consideration of the four responsible gambling features included in Gamgard scores plus some other different harm minimisation tools.

Gamgard is an online tool and clients may commission Gamgard to apply it to candidate games in consultation with them or they may have their own staff apply it themselves. Inter-rater differences may apply. Operator concerns regarding differences between their ratings and the rating of GamRes and regulators are mentioned in Cousins (2018). Cousins (2018) also compared user generated and GamRes generated risk scores for online slot games. Using the Mann-Whitney nonparametric test of group differences, he had nine user ratings and 11 Gamgard ratings at his disposal. Not unsurprisingly, given the small number of ratings and the fact that the ratings were not of the same game but of the same game type, no significant difference was detected. Given these results, Cousins recommended a rigorous research study be conducted on this question.

## 1.8 The question of sensory cues

A conspicuous omission from Gamgard is consideration of controls on sensory cues (e.g., blinking lights, exciting jingles, the simulated clatter of coins, and olfactory effects) (Cherkasova et al., 2018; Chóliz, 2018). These are important features of gambling environments which can increase the chances of gamblers making riskier choices. Cherkasova et al. (2018) found that more risks were taken, with little regard to the odds, when casino-like audio-visual features were presented to subjects in a laboratory gambling game. Subjects showed more pupil dilation, suggesting more arousal or engagement where wins were accompanied by sensory cues. Without the cues, decisions of subjects were more restrained. Chóliz (2018), writing from a public health perspective, recommends minimising sensory cues associated with wins and maximising those associated with losses. Gamgard's opinion, as indicated by Dr Richard Wood, is that there is at present insufficient research evidence to include them.

## 1.9 Manner of presentation to end-users

End users of Gamgard include, but are not limited to, the gambling industry, including providers and game developers, gambling harm minimisation providers and regulators. Gamgard's detailed presentation of its tool can be found on its web site. As a commercial operator GamRes, the developer and marketer of Gamgard, naturally recommends use of its own consultancy services and its other product, Positive Play, in addition to Gamgard. The recommendation is for

operators to use Gamgard to remove inappropriate elements from games and measure the overall gambling health of their clientele using Positive Play. Positive Play is a tool which measures responsible gambling-related beliefs and behaviours amongst players. It is a psychometric tool using a scale, the Positive Play Scale (PPS) (Wood, Wohl, Tabri & Philander, 2017). This is a standardised scale to measure responsible gambling-related beliefs and behaviours amongst players. Gamgard connects on the website to Positive Play by stating that it is part of the Positive Play initiative.

The description of Gamgard on the Gamgard web site<sup>15</sup> is led by the following “Why use Gamgard?” statements (Table 1-2), adapted from the *Why use Gamgard?* section of the web site. The table is included to explain what the proprietors of Gamgard see as features that would make it appealing to potential users.

Table 1-2 *Why use Gamgard? Statements from the Gamgard web site (www.Gamgard.com)*

<b>World-Leading Standards</b>	<b>Build Smarter &amp; Safer</b>	<b>Promotes Responsible Gambling</b>
Recognised by the WLA as meeting	Balance fun with risk and identify issues before a game is	Responsible game design is the foundation of a good responsible
Evidence-based by applying up-to-date	Ensure that all games go through the same objective	Helps train staff to understand key responsible gaming principles
Developed by leading researchers in the field	Avoid punitive repercussions resulting from overly risky game development	Maintain player trust and company integrity

Gamgard identifies itself as a measure aimed at vulnerable players to help prevent them from developing into problem gamblers. It does so by amending risk features to maintain a responsible balance between excitement and overall risk. A statement from Gamgard’s web site<sup>16</sup> that:

*By examining the specific risk features of a game, it is possible to pinpoint exactly where the problematic elements of a game lie*

This statement is true but somewhat optimistic if applied to the Gamgard assessment only. This is because Gamgard is a preliminary screening tool considering a relatively small (albeit important) selection of the possible factors which might influence the risk profile of a game.

## 1.10 Alternatives to Gamgard

### 1.10.1 Other preliminary screening tools

Four tools with similar objectives to Gamgard were identified. They are described below.

#### Asterig

The development of Asterig was commissioned by Aktion Mensch (a German social services organisation funded through a lottery) and ARD TV Lottery (one of two German TV lottery operators). Its development is discussed in Peren (2010) and Blanco et al. (2013). The development was, in essence, similar to that of Gamgard involving application of a Delphi approach (discussed in Peren, 2010 and Blaszczynski et al., 2015) to a panel of experts augmented with interviews of ordinary gamblers, problem gamblers and morbid gamblers (i.e., people who continue to

<sup>15</sup> Gamgard.com Viewed 8/7/2020 4.25 pm

<sup>16</sup> <https://www.gamgard.com/about/> Viewed 8/7/2020

gamble when the pastime has ceased to afford them any pleasure). Along with a literature review, this process reduced an original list of 61 risk factors progressively down to ten.

The main difference between Asterig’s and Gamgard’s processes was that Gamgard omitted people who gamble during the development of earlier versions, whereas they were always included for Asterig. Gamgard subsequently addressed this omission when developing V.3. Asterig<sup>3</sup> rates gambling products based on the 10 factors. Those factors and their weightings and the range of possible scores are shown below in Table 1-3 from Mörsen (2014). The weighting approach is completely transparent. This differs from Gamgard where weighting information is proprietary and not publicly available. Detailed definitions of the Asterig risk factors are found in Clement et al (2012), with a detailed table of Asterig’s Scoring/weighting system.

Table 1-3 Asterig’s risk factors and their scores from Mörsen (2014), slide 12

Risk potential criteria	Weight (fix)	Score (0-10)	Range of value	
Event frequency	8	0 - 10	0 - 80	
Interval of payback	6	0 - 10	0 - 60	
Jackpot	5	0 - 10	0 - 50	
Continuity of playing	8	0 - 10	0 - 80	
Chance of Winning	6	0 - 10	0 - 60	
Availability	7	0 - 10	0 - 70	
Multiple playing-/ stake opportunities	6	0 - 10	0 - 60	
Variable stake amount	6	0 - 10	0 - 60	
Sensory product design	4	0 - 10	0 - 40	
Near wins	6	0 - 10	0 - 60	
<b>Totals</b>	<b>62</b>	<b>0 - 100</b>	<b>0 - 620</b>	<b>Risk score 0 - 10</b>

The scoring systems of different tools will provide different weights for their factors. In Asterig, the raw values of the aggregated factor scores can range from 0 to 620 and are transformed into a score between 0 and 10 by dividing by 62. Later, the original Asterig was amended to better evaluate online games, in particular, to evaluate the online game Texas Hold’em Poker No Limit (Perez & Reiner, 2012). This change involved the addition of an illusion of control factor, similar to that in Gamgard, and splitting the event frequency factor into two sub-factors. These were event frequency- game speed and event frequency-reaction time.

Peren and Reiner (2012) also recommended operator behaviour, which they state *might significantly influence the addiction potential of games of chance and games of skill* (p. 4) as a material factor worthy of further investigation. No information on industry use of Asterig in English speaking countries has been found although it can reasonably be expected to be in use by the German lotteries associated with its commissioning, particularly given that Gamgard has no German clients. It was used, however, as the basis for a survey of perceptions of industry and researchers on the relative risk of various gambling products by the University of Sydney (Blaszczynski et al, 2015).

### RaVa

RaVa (Ethical Evaluator Tool). is used in Finland by Veikkaus<sup>17</sup> the Finnish State Gaming Company. It is the only Finnish gambling game operator and develops many, if not all, of its own games. It assesses its products from an ethical perspective, during all stages of game

<sup>17</sup> <https://www.veikkaus.fi/fi/yritys?lang=en>

development. RaVa contains nine components aimed at measuring possible addiction-provoking features in a game or a game idea, how the game is marketed and social aspects. The components contain several detailed questions to examine the game's features from multiple angles. The results may lead to possible restrictions either on the game, its setting, or its marketing. The components are:

- Risk of financial loss
- Profit/Stake structure
- The role of skills, information, chance, and rules
- The attractiveness of the game and the gaming environment
- Additional attractions
- Social features
- Availability
- Marketing

Basic guidelines for interpretation of its outputs (Airas, 2011) include:

- The higher the values are, the more hazardous the product potentially can be.
- High values should be analysed with particular care.
- Even though a product would seem particularly attractive in one aspect, the qualities of another aspect may compensate for that.
- Some qualities are ambiguous, e.g., social aspects of gaming can prevent, or encourage addictive behaviour.

RaVa has a wider scope than Gamgard as it touches on issues well outside the game itself like marketing, the gaming environment and social aspects. A personal communication from Veikkaus indicates that it needs updating but there are no immediate plans to do so.

### Serenigame<sup>18,19</sup>

Serenigame, is a tool used by Francaise des Jeux (FDJ) the operator of France's National Lottery games. It is described as a risk prevention matrix aimed at measuring the level of potential risk of games upstream or at the time of their design. There is no further information regarding this tool currently available .

### Hungarian tool

A Hungarian tool, which does not appear to have a name was described at the 2nd International Conference on Behavioral Addictions by Paksi et al (2015). The tool was developed in five consecutive and separate phases. The first three phases were similar to those used in the development of Gamgard and Asterig but with a special focus on Hungarian gambling products. Phase four reassessed the measurement using quantitative data from population-wide surveys. The risk potential of a game as estimated by the assessment tool was compared with the rate of problematic or pathological gambling associated with the same type of game. The survey data was combined with the characteristics of the preferred game and correlated with the total PGSI score. In Phase five, the tool was applied. The instrument includes ten items and the total score ranges between 34 and 144. Games are classified as low risk, moderate risk, high risk and very high risk. The importance of the population reassessment is highlighted by the fact that the reassessment had a substantive impact on the weights from the qualitative phase based on the total PGSI points. This approach looks technically sound. However, the population assessment can presumably only be done if that type of game is already in use in the relevant jurisdiction.

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<sup>18</sup> <http://www.arjel.fr/IMG/pdf/synthese20161122en.pdf> Viewed 12/6/2020

<sup>19</sup> <https://www.groupefdj.com/en/group/our-csr-activities-responsible-gaming.html> Viewed 12/6/2020

### 1.10.2 Comparison of the factors/elements used in Gamgard, Asterig and RaVa

The three tools, Gamgard, Asterig and RaVa, for which details are available, have lists of risk factors (or gaming elements in RaVa's case). These are augmented in Gamgard by an allowance for external responsible gaming feature. Table 1-4 is a comparison of the three tools. Where the factors/elements exhibit some commonality, they are listed in the same row of the table.

Table 1-4 Comparison of factors used in Gamgard, Asterig and RaVa

Risk factors/Gaming elements scored by Gamgard, Asterig and RaVa		
Gamgard	Asterig	RaVa
Event frequency	Event frequency	
Payment options	Interval of payback	
Jackpot	Jackpot	
Continuity	Continuity of playing	
Fixed/variable stake	Variable stake amount	Profit/Stake structure
Near Win	Near win	
Multigame	Multiple playing/stake opportunities	
Accessibility	Availability	Availability
Prizeback	Chance of winning	Risk of financial loss
Illusions of control	Illusions of control <sup>20</sup>	
	Sensory product design	The attractiveness of the game and the gaming environment
		Additional attractions
		The role of skills, information, chance, and rules
		Social features
		Marketing
<b>Responsible gaming features Gamgard only)</b>		
		Popup reminders
		Spend limits
		Time limits
		Feedback tools

Eight of the factors used between Gamgard and Asterig show some commonality. Peren (2010) mentions this commonality with Gamgard as an indication of validity of Asterig. These factors are highlighted in green in the table with the main difference between the Gamgard factors and the Asterig factors being the absence of a sensory product design factor in Gamgard. Only three of the RaVa elements show some degree of commonality with factors in the other two tools. These are highlighted in blue.

### 1.10.3 Evaluation of games without using a preliminary screen or in conjunction with one

Not all gambling providers/regulators use a preliminary screen in their game evaluation process. As mentioned earlier, the proprietors of Gamgard (Wood et al, 2014) have produced a resource dealing in more depth with selecting RG features. According GamRes may use this information

<sup>20</sup> Added to Asterig in 2012.

to assist its clients with more detailed assessments than are available from Gamgard. According to Dr Richard Wood:

*Gamres often undertakes expert reviews of potential new games (as do other RG experts) in conjunction with a Gamgard assessment. These reviews allow for a wider scope of consideration to be included (e.g., potential appeal to children). Furthermore, expert reviews may be useful when a very novel game is being proposed and there is little or no empirical evidence by which to quantify the risk. In such cases, theoretical comparisons may be made to related games or activities (e.g., video game research). In fact, many gaming companies world-wide make use of expert reviews in addition to Gamgard.*

There are various levels of detail at which such an evaluation might be conducted. Ontario, Canada has its own game testing laboratories which carry out testing of games, including gambling risk testing. Ontario's gaming regulator, the Ontario Alcohol and Gaming Commission (AGCO) has an ISO 17025:2005 accredited laboratory<sup>21</sup> which covers a wide range of games.

Other providers/regulators may use independent private laboratories (several are available) to carry out their testing. An example of such laboratory providers is Gaming Laboratories International (GLI)<sup>22</sup> which appears to mainly work in North America. One of the many services offered on its web site is to:

*Review your operation's existing RG programs, personnel, resources and performance metrics to assess how they align with the legal, cultural and socio-economic conditions in the jurisdiction (ref).*

There is no information on how GLI evaluates games.

A worldwide list of gaming laboratories is available at <https://www.vegasslotsonline.com/gaming-fairness-and-testing-companies/>.

The list includes operations in many countries including the United Kingdom, US, Australia, Canada, Macau, Philippines, Italy and the Netherlands. There is not a lot of information given on their foci, but they seem to cover a wide range of game types and levels of risk.

## 1.11 Gamgard ratings compared to opinions of high-risk gamblers

This section addresses the extent to which problem gambling service provider reports indicate that games identified as high-risk by Gamgard are also those games that their clients report as having the most negative impact. Two studies provide relevant information.

Cousins (2018) reported that rank ordered Gamgard game risk ratings from six game types included in the Gamgard data file supplied to him by Gamgard were compared with rank-ordered game risks reported by treatment service providers. The six game types were video lottery, online slots, bingo online, online scratch, casino online, and lotto draw games. Therefore, the results are specific to those specific games, in the context in which they were provided by the gambling providers.

Notwithstanding an elevated level of variation within the small sample of providers, Cousins' conclusion, using non-parametric Spearman rank order correlations, was that it appeared, overall, that games with higher risk Gamgard scores were those most often reported as

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<sup>21</sup> <https://www.agco.ca/lottery-and-gaming/electronic-gaming-equipment-and-systems>

<sup>22</sup>

<https://gaminglabs.com/services/testing/>

problematic by treatment service providers. However, when his Table 6 of results is viewed, it seems that only five of the nine service provider reports pertained to reports from people with problem gambling. The remainder were related to gambling activity or, in one case, the conclusions of studies.

The two providers with significant correlations were from Canada, one using numbers of studies that found the game type associated with problem gambling (which does not relate to the opinions of problem gamblers), and the other based on the activity of problem gamblers. The five providers who were reporting ratings based on reports of people with problem gambling had highly variable and non-significant correlations with the Gamgard scores.

In the other study, Lyk-Jensen (2010) assessed 4932 Danish players and found that those who played games classified high-risk by Gamgard were most likely to be identified as at-risk players by The National Opinion Research Center DSM Screen for Gambling Problems (NODS) (Gerstein et al., 1999). (NODS is another alternative to the PGSI).

It must be remembered that the development of Gamgard 3.0 included input from people who had recovered from problem gambling. However, we do not know how their opinions compared to other members of the Delphi group.

## 1.12 Gamgard's fit in the overall harm prevention-minimisation space

The game characteristics measured by tools like Gamgard are only part of the total gaming environment to which a gambler is exposed. To achieve a responsible gambling operation, in accord with the provisions of the Gambling Act 2003, an operator will need to provide an appropriate overall environment to minimise gambling harm. This includes offering games with characteristics which are in accord with a responsible approach to gambling as interpreted by the Act (See section 1 of this review). Relevant here is Tse et al. (2005) on the subject of host responsibility.

Gainsbury & Blaszczynski (2012) mention that tools to minimise harm can be accompanied by tools to reduce demand like warning messages, various game modifications (some of these are incorporated into Gamgard assessments as responsible gambling features), venue modification, precommitment strategies and marketing restrictions. Supply restrictions may also be imposed by regulators.

Therefore, products like Gamgard can provide only a part of the solution to the challenge of providing a responsible gambling environment. The operator will need to take other complementary measures to achieve such an environment. These come under the categories of operator-based' and 'community-based' measures (Blaszczynski et al, 2014).

According to Blaszczynski et al (2014), operator-based measures involve:

*Harm minimisation strategies that are enacted through a gambling operator's website, land-based venue or by direct marketing (pg 17).*

*Community based approaches encompass:*

*All efforts beyond modifications to the game or approaches executed at venue or site-level (pg 19).*

Korn and Shaffer (1999), as quoted in adapted form in Parke (2016), illustrate the influences which can come together to produce problem, or "disordered", gambling. These interactions involve characteristics of the gamblers, the environment of the gambling and the characteristics of the game. Specifically mentioned are:

- The gambler: Individual differences, resilience, self-control, motives and demographic variable
- The environment: Venue characteristics. delivery channel. accessibility. culture. regulatory framework. advertising, social support. leisure options. community support and treatment)
- The game: Staking and payment options. game speed. frequency of betting opportunities. size and structure of prizes. visual and audio effects. licencing and themes, return-to-player

It is worth noting the relative risks of various forms of gambling. An article by Delfabbro and King (2019) places the more discontinuous forms, like bingo and lotto at the lower risk end of the spectrum and the more continuous forms, like EGMs, at the higher risk end.

The authors indicate that tools like Gamgard may be of use to classify the risk associated with various forms of gambling and show that EGMs are a higher risk activity because of multiple features. They predict that modern multiline machines will be more problematic than early generation machines, but they imply a higher level of difficulty in predicting the risk of modern multiline machines. This view is supported by Gainsbury and Blaszczynski (2012) who describe EGMs as the primary form associated with problem gambling and its rapid development. This indicates that there may be limits to the effective game coverage of tools like Gamgard as they are configured at present. This view is supported by the increased number of harm minimisation tools or Responsible Gaming Features discussed in Wood et al. (2014) and Harris and Griffiths (2018).

### 1.13 Conclusions

Issues related to Gamgard that should be considered by a Gamgard user or regulator before adopting it as a risk prevention and minimisation tool for vulnerable populations are, as follows:

1. Gamgard is a preliminary screen, not a precision tool. It considers a relatively small (albeit important) selection of the possible factors which might impact on the risk profile of a game.
2. Are preliminary screens necessary? They are not universally used, with some providers testing games in house and others using the services of external laboratories.
3. Inter-rater reliability-particularly between Gamgard provided ratings and ratings carried out by providers. A game's rating should be the same irrespective of whether it is provided by Gamgard or by a customer of Gamgard using Gamgard.
4. Do the prime risk factors used, which were developed in a UK context require, any tailoring to the New Zealand context and to particular game types?
5. To what extent are Gamgard's four responsible gaming features (popup reminders, spend limits, time limits and feedback tools) adequately covering the field in New Zealand over the range of games Gamgard is used to assess in New Zealand? What other such features also need to be considered? There are a large number of features mentioned in the literature and serious consideration, including a possible need for further research, is required to weight their importance in a New Zealand context.
6. It is the providers role, working within the applicable laws, to assess information and make its own decision about the acceptability of a game, in the circumstances in which the game is to be used. In this context. at what level on the Gamgard traffic light scale of five colours, each with a cut-off point should a game be considered unacceptable without amendment? The scoring details used to derive the scale are not known, because they are not publicly available.
7. Where would Gamgard be situated in a wraparound package of measures to minimise gambling harm, in the context of the Government's Strategy to Prevent and Minimise Gambling Harm 2019/20 to 2021/22 and the Gambling Act 2003's definition of responsible gambling? A wraparound package could include such measures as additional responsible gaming features, gambling supply controls and easy availability of treatments like counselling.

8. Are wider contextual elements like marketing and social features appropriate to be included in a preliminary screening tool (as in RaVa) or should they be considered separately? These features may have an impact on game uptake.
9. Gamgard does not appear to have any serious competitors at present in the preliminary screen space in the English-speaking world. However, Asterig seems to dominate the preliminary screening tools market for German speaking countries. Dr Richard Wood has supplied information that Gamgard does have some German clients.

## 1.14 Recommendations

Based on information presented in the literature review we recommend that the following higher-level policy related points should be considered by the Ministry of Health.

1. Aspects offered in other tools could be more directly imbedded into a standardised wrap-around process involving Gamgard. For example, a more in-depth assessment in the evaluation process could include active assessment of the sensory stimulation level of each product (i.e., noise and light) as this relates to gambling harm.
2. Recognise the large weighting factor placed on Risk Factor 1, event frequency, and that very few games will fall into the very high-risk factor once this score is applied.
3. Evaluate suitability of Risk Factor 5, jackpot size bands, and update to reflect NZ currency prize ranges.
4. Control the potential for variability in scoring for some risk factors in Gamgard through the development of guidelines for application in New Zealand. These could be developed jointly by the Ministry of Health and Lotto NZ to promote consistency in ratings and thus improve detection of harm.
5. The use of Gamgard to independently score games under review by agencies like Ministry of Health/DIA could be beneficial, as it would provide another point of comparison for Lotto ratings and those of other possible future Gamgard users and also provide Ministry of Health and DIA with access to a screening tool.
6. Guidance around the acceptance thresholds for games in New Zealand and the appropriateness of controls could be developed and regularly reviewed.
7. Data based on game types would benefit from being collected at a more detailed level. This would help clarify understanding of where control and regulation around game types are best targeted and inform acceptance thresholds for games.

## 2 Expert Interviews

### 2.1 Purpose and background

Expert interviews were the second of the three evaluation components requested by the Ministry. They contribute to the overarching project goal, which is to inform NZ government agency. This includes consideration of the utility of the Gamgard product with regards to regulatory decision making and gambling harm minimisation within current policy settings, as well as to NZ gambling providers. The evaluation concerns Gamgard's overall design philosophy, utility and fit as a risk rating tool for detecting how likely it is that a game could lead to gambling problems among people who are vulnerable.

### 2.2 Method

Expert interviews can gather information that reflects the experiences and perspectives of experts from diverse fields. They can also help to develop a depth of understanding about the Gamgard tool that will help to: address the research questions, fill in knowledge gaps identified in the published literature, and either support (or refute) the findings of articles and reports presented in the literature review.

Specifically, questions were posed regarding the role of game design within a harm minimisation and responsible gambling context; game design features and associations with risk of harm; and their impressions of Gamgard's background, function, and use. A full list of the interview questions and prompts is available in the Appendices. The interview questions were reviewed by the Ministry of Health and by the research reference group.

#### 2.2.1 Participants

Potential academic candidates for the expert interviews were identified by the research team, the stakeholder reference group, the Ministry of Health, and by the expert peer reviewer. The initial list was shortened through mutual agreement between the research team and the Ministry of Health to candidates who would represent a range of backgrounds, and both New Zealand and international perspectives.

Short-listed candidates were contacted by email with information about the project and an invitation to participate in a telephone interview (see Appendix A). A reminder email was sent one week later if the candidate had not responded. If, at this stage, the candidate did not respond, a phone call was attempted. If there was no response to the phone call, then the research team assumed the candidate was not available for the interview and a new candidate was selected from the short-list.

In total, nine candidates were contacted, three declined to participate, and two did not respond to contact attempts. In total, four experts were interviewed during January and February 2020. All of the participants had academic backgrounds specialising in gambling research.

Participants are identified in this report by using an alpha-numeric label to maintain confidentiality. The label assigned represents the background of the participant. Participants A1 and A2 were (A) academics currently employed by Universities in New Zealand and Australia respectively. Participant G1 was directly associated with the (G) Gamgard business. Participant R1 was based in Canada and employed as a researcher by an independent, non-profit (R) responsible gambling organisation.

#### 2.2.2 Interviews

The interviews lasted between 30-45 minutes and were recorded for later analysis with the interviewees' consent. One interview was unable to be recorded due to technical difficulties. For this interview, the interviewer took comprehensive notes that were checked and approved by the

participant for content and accuracy. The interviews were semi-structured to allow the interviewer to probe certain topics of interest, while also allowing the conversation to move to new areas of enquiry and explore ideas that emerged during the interview.

### 2.2.3 Analysis

The interviews were analysed using thematic analysis (Clarke & Braun, 2014). The phone interview was recorded, and key ideas were noted by the interviewer during the conversation. Immediately following the interview, the interviewer made notes summarising the key points and ideas raised, as well as their own reflections. After the interviews were completed, the interviewer listened to each of the interview recordings again and completed a full transcription. At this point the content of all four interviews was coded manually for emergent themes. The coded content was then analysed for areas of both agreement in, and divergence of, opinion between the interviewees. These findings are presented below, grouped into themes that emerged from the coded text. Throughout the findings the use of participant quotations is employed extensively to present the experts' viewpoints and elaborate on detail. This adds a layer of transparency to the findings, where rather than primarily presenting the researchers interpretation of the experts' viewpoints, the expert voices are presented prominently and clearly in their own words, with interpretive text and thematic structure supporting the quotations.

## 2.3 Findings

### 2.3.1 Introduction and high-level summary

This section presents the findings of the expert interviews, organised into topic areas with five overarching themes. These are:

- 1 Game design within a responsible gambling and harm minimisation context
- 2 Game features associated with harm
- 3 Reducing the risk of harm associated with gambling games
- 4 Game design within a comprehensive and strategic approach
- 5 Perceptions of the strengths and limitations of Gamgard

The findings indicate consistent agreement among participants that game design is critically important within a harm minimisation and responsible gambling context, and that game design must be considered within a wider context. Most of the interviewees made the point that risk associated with a game will vary based on these wider contextual factors. All participants agreed that, to varying extents, some game features were typically riskier than others. There was disagreement about the strength of evidence behind the association of particular game features with risk, and the consistency of that association across game dynamics and contexts.

While the participants generally agreed that it would be useful to be able to identify and reduce the risk of harm associated with a specific game, they had mixed opinions on the best way to achieve this. Opinions ranged from the approach taken by Gamgard, i.e., directly targeting and limiting the outcome of harm in terms of money and time spent, through to the use of evidence-based standards. Most participants emphasised the importance of taking a comprehensive and strategic approach to reducing the risk of gambling harm, of which game design was just one aspect. Two participants pointed out that this approach is consistent with the New Zealand policy framework, which requires that gambling is regulated from a public health perspective.

The participants also discussed their perceptions of Gamgard's strengths and limitations. Most thought that the approach taken by either Gamgard did, or may, offer some value. However, none of the participants thought that Gamgard was a full solution and discussed that if it was to be used, it should form just one part of a comprehensive and strategic approach. This one participant did not see any value in using Gamgard. They felt that Gamgard appealed to operators and regulators as it provided a tidy package, as well as an (unfounded) sense that the resulting gambling products were not very risky.

Concerns raised about Gamgard included:

- goodness-of-fit in the New Zealand context,
- validity of ratings,
- assessment of consistency of risk associated with particular game features,
- treatment of potentially risky features,
- compensation of risk between features,
- view of harm being from an individual (not public health) perspective,
- potential for bias,
- lack of transparency, and
- lack of comprehensiveness.

The findings are discussed in more detail in the following sections.

### 2.3.2 *Game design within a responsible gambling and harm minimisation context*

All participants agreed that game design was of critical importance within a harm minimisation and responsible gambling context. They noted that the features of a game can directly influence risky gambling behaviour, particularly for vulnerable players. However, they also all agreed that the game itself was only one important factor of overall harm risk and must be considered as part of a wider context. Examples of the wider context provided by the participants included:

- The environment within which the game is played;
- The person gambling, including their circumstances, the social and cultural context; and,
- The proximity or accessibility to vulnerable populations.

Three participants (A1, G1 and R1) pointed out that these factors interact to influence the overall risk of harm and emphasised that the risk associated with various game features is likely to vary depending on these factors.

#### *Game features associated with harm*

All participants agreed that some game features were typically riskier than others, but to varying extents. There was disagreement about the strength of evidence behind the association of particular game features with risk, and the consistency of that association across game dynamics and contexts.

For example, one participant felt the evidence basis for which features were consistently most risky was quite strong:

*There is a lot of psychological research done on the structural characteristics, particularly the ones that are of higher risk of harm (G1).*

In contrast, another participant felt that the evidence base was insufficient to be able to use generalisations about which game features are most likely to be associated with harm. For example, they discussed how sound could be a particularly risky feature of a game but that very little was known about which elements of sound were most risky:

*It is a bit mysterious as to what the elements of those features are that cause people to want to gamble to excess, to better understand that and remove those elements from play would be very helpful... [but] ...we don't know a lot about it (A2).*

This participant did not discuss pre-market assessment of games, but instead focussed on metrics that can be used to assess a game for harm once it is in use (and equally could be used to regulate overall gambling harm, rather than a game by game analysis of the potential for harm). They pointed out that the overall indicator of harm associated with a particular game can

be summarised by the average, distribution of, and maximum loss incurred by the game in terms of time and money, for the playing population:

*The structural features of the [games], they all interact to produce the outcome that is actually of importance. What game feature puts people most at risk? It's simple. Calculate the expected loss per period of time, and that's what makes things dangerous. Being able to lose large amounts of money. Look at average, mean and the spread of loss. What is the range? Look at the distribution of loss. This will show you what features of a game are most dangerous (A2).*

Another participant (A1) explained that generalisations could not always reliably be made about which game features were most risky, as risk varies across games and game types, and in different contextual circumstances:

*Risky game features may not necessarily be consistent across games and game types, nor across various contextual circumstances and players. Various elements may be risky to a greater or lesser extent depending on the game (A1).*

A further Participant tended to agree with this, and felt that while there were several types of game features that were consistently risky, others were not, and that overall risk was a result of complex interactions of various game and contextual features:

*...there are so many different determinants interacting with one another. It could be the game, it could be the place, it could be the person, that creates a modified risk or harm outcome and there are many different layers to game design that can potentially cause harm and increase risk (R1).*

Most participants discussed some of the game features they thought were more likely to be associated with higher risk of harm. The participants specifically mentioned the following game features as being associated with risk. It is important to note that this list is neither ordered nor comprehensive:

- the stickiness of the game (amount of time and money spent) (A2)
- continuity/continuous play (A1 & R1)
- aesthetics such as lights, sounds, images (all participants)
- online availability (A1)
- the perceived control over the game by the player (A1)
- free spins (A1)
- a large jackpot (can lead to loss of control) (A1)
- frequent small wins (A1)
- multiple lines on an electronic gaming machine (A1)

They also specifically mentioned the following contextual features:

- the social activity of the game (A1)
- the environment of the game – whether it is played in a place with other people, or the player is isolated (A1)

One participant highlighted how the risk of a game may change given different delivery methods, which allow for new game features:

*For example, a scratch card played on paper is very different to when it is played online. They have many of the same features, but the same Lotto scratch card online becomes an interactive internet game, you now have sounds and graphics, and they are quite exciting. Also, you can choose to play it in different ways. It has all these other characteristics now, such as increased*

*perceived control, and you can play it privately alone, say in the bathroom. So online scratch cards are much riskier than a regular scratch card (A1).*

Another participant presented a similar argument, discussing how aesthetic features of a game can create the impression of winning when in reality the player is losing, and that they can also be used to deliver losses disguised as wins:

*That's one notable feature of game design I would call on, the way the game is designed aesthetically, lights and colours, and the way they respond to inputs, they can give the false impression of winning, such as celebratory lights and sounds, when actually you are losing, and that provides an erroneous mental cue to an individual and distorts their cognition of their performance.*

*A related feature is the idea that these cues, lights, sounds, bonus features, mini-games, they may seem positive, but essentially, they deliver losses disguised as wins, you get a portion of your loss back, but have still lost, so that also provides a cognitive distortion (R1).*

The same participant also thought that continuous play was an important risk factor:

*... things that are particularly important, are rate of play, the break in play, the closer the break is and the faster the speed from wager to outcome, creates continuous play, and these are the most risky forms, they expedite the money that one can spend, and the lack of break has an association with disassociated states (R1).*

One participant explained the underlying motivation behind game development processes that can lead to riskier game designs, which is often to increase time and money spent playing:

*Often people imagine there is a very scientific approach to game design, but really it is evolutionary, and the goal is more time [playing] and more money earned. They try lots of things to make the games as 'sticky' as possible and the sticky ones survive. The developers then try new things and see what happens and over time things become more highly tuned, but the process is not scientific but a gradual evolution in terms of what is effective (A2).*

Another participant agreed with this, stating that "a lot of the industry knows intuitively what pushes the buttons through trial and error. But it is hard to do that in reverse" (G1).

This section shows that while participants agreed that some game features tend to be riskier than others, they disagreed about the strength of evidence behind the association of particular game features with risk, and the consistency of that association across game dynamics and contexts. The next section presents the participants' views on reducing the risk of harm associated with gambling games.

### **2.3.3 Reducing the risk of harm associated with gambling games**

While the participants generally agreed that it would be useful to be able to identify and reduce the risk of harm associated with a specific game, they had mixed opinions on the best way to do this.

One participant G1 felt the best way to reduce risk was to take the approach used by Gamgard. They elaborate on this approach and why they believed it to be most suitable:

*The best way to look at game harm, particularly in relation to new games that we have no information on, is to look at the structural building blocks and situational characteristics... By comparing structural characteristics of games, you can see why one game is riskier than another game, and you can see what you can adjust to make the game less risky... We need a set of standardised, objective criteria, so we are always comparing games using the*

*same elements, to reduce subjectivity. A standardised way of assessing the components of a game in an objective manner, to evaluate risk and compare between games... If we can understand where these risks lie and reduce those, that is an important part of the puzzle of what causes problem gambling and how we might better mitigate those risks (G1).*

By contrast, another participant felt that the best way to identify and limit the risk of harm associated with a game was by directly targeting and limiting the primary outcome of harm, which is cost in terms of money and time spent. They noted that by assessing the average and maximum cost per time period (for example, dollars per hour or hours per week), and having mandatory limits around these, harm can be substantially reduced. They pointed out that game features may be some of the pathways that can lead to harm, but they are not directly harmful. They stated that:

*Identifying the risk of harm associated with the design of a game? It's a little bit easy actually... You don't have to get into all of the detail of the sound, etc, these things are important, but are the features of the game that make them fun. You cannot remove them without making them boring to someone who wants to recreate and enjoy them. So, if you want to minimise the cost while maximising the enjoyment, you need to look at typical and maximum cost per time spent, e.g., per hour. So, if you can reduce the money in particular, but time is another structural characteristic you can limit, so people are not playing constantly... Those two things are most important. Focusing on other game features is a distraction from these two main features (A2).*

This participant further shared that to achieve mandatory limits on time and money spent gambling, the structure of the industry would need to change to one where "a lot of people can play at low intensity and that very few people play at high intensity". They detailed what this approach might look like in practice:

*There are really out-there, innovative approaches where you could make games that are essentially, when you start spending up to a limit of what's acceptable (e.g., using a card to play) then the games start gradually moving towards 100% return. They move in the direction to where odds are 1:1. They move into a sort of free-play zone where they are no longer being sucked dry. You still have the time harm. So, at that point, on average over the population, there would be a reduction in harm. That structure has the proper incentives. There would be a reduction in revenue, absolutely. And perhaps in this universe, people would be more wanting to play those games because they are safer, over time the impression of the industry would change, as so few people are being negatively affected (A2).*

One participant explained that the best approach to identify risk associated with particular games is by using evidence-based standards:

*In terms of what the regulator can reasonably control, in terms of those features, I think yeah there can be a consistent application of responsible gambling interventions or regulatory requirements or restrictions that can mitigate the risk that is presented by gambling to a certain degree (R1).*

They also provided two examples to highlight their point. The first is accreditation programmes for large scale operations run by industry-independent, non-profit organisations. They discussed the second example in more detail, which is the Ontario (Canada) gaming lab:

*It starts with evidence-based standards for games. In Ontario the regulator runs a gaming lab where they directly evaluate games for a period of time. So, the operator or developer submits a request for license, and the regulator does a fairly in-depth analysis of the game. So, in addition to the responsible*

*gambling features they may require for those games, they also look at how clear is the game in terms of its rule set, and basically describing to or presenting to the player the risks, odds of winning, and also the types of risks mentioned earlier... Standards and requirements are necessary... The Ontario gaming lab is fairly unique worldwide. It's a full-on approach(R1).*

This section has shown that the experts had divergent views on the best way to reduce the risk of harm associated with gambling games. The next section presents participants' views on game design with a comprehensive and strategic approach to responsible gambling and harm minimisation.

#### 2.3.4 Game design within a comprehensive and strategic approach

Participants A1, G1, and R1 emphasised the importance of taking a comprehensive and strategic approach to reducing the risk of gambling harm, of which game design was one aspect. Participants A1 and R1 pointed out that this approach is consistent with the New Zealand policy framework which requires that gambling be regulated from a public health perspective. Participant A1 emphasised the importance of considering the wider context as well as the accessibility of vulnerable populations to gambling. Participant G1 emphasised the importance of considering cultural aspects and advertising.

Participant R1 also provided a detailed discussion of a potential comprehensive approach with a strategic public health focus and including an emphasis information gathering systems. This discussion is presented here in detail as it provides insights which may be of value to the NZ Ministry of Health.

*There is regulation, founded on good standards, and that feeds into the games themselves, policies around the types of training that operators are required to provide, the measurement and collection of evidence. This is something I am working on now myself, is to develop a public health framework for gambling harm minimisation and following the core functions of a public health system, some of the things I've noticed as being absent are information gathering systems. They are essential for harm prevention, and they are important when we are talking about problem gambling... Those structural features around evidence informed standards, as well as systems and measurement to guide that, and systems for analysis and deliberation over that information to make informed decisions, that are relevant and nuanced to your jurisdiction and don't necessarily conform to a one size fits all model.*

*If you take a strategic perspective, you can develop and leverage evidence in order to make the most informed and impactful policy and programming decisions. Implementation can become complicated, but I really do think that there is enough information and practical precedent to develop, or review and reflect on responsible gambling standards, to advance the development of guidelines and also select key indicators that you can institutionalise. These are, in most cases, operations that rely on the collection of information and I think it's not too much to ask that this information is administered in a way that would be useful for the purposes of public health (R1).*

Overall, most participants emphasised the importance of policy taking a comprehensive and strategic approach to reducing the risk of gambling harm, which is consistent with the New Zealand gambling policy context. They pointed out that game design is just one aspect of such an approach. The next section presents the participants' perceptions of the strengths and limitations of Gamgard, organised by emergent themes.

### 2.3.5 Perceptions of strengths and limitations of Gamgard

This section presents the participants' perceptions of the strengths and limitations of Gamgard, organised by themes. All of the participants had been provided with the description of the purpose of Gamgard as well as its approach (including the game features evaluated).

#### 2.3.5.1 Overall role and value

Three participants (A1, G1 and R1) thought that the approach taken by Gamgard did, or may be able to, offer some value. However, none of the participants thought that Gamgard was a full solution. They felt that if it was to be used, it should form just one part of a comprehensive and strategic approach.

One participant pointed out that “*Gamgard may be able to give an initial indication of the risk of harm for a new game*”, and Participant G1 said that Gamgard should be “*just one part of the overall risk evaluation process*”. Participant R1 agreed that Gamgard may be helpful, but shared some concerns:

*Tools like Gamgard can be helpful, but I am hesitant to say they are comprehensive enough and may not have validity to provide a full measure of confidence as to whether a game is safe within reason or not. It should be either supplemented or supplement something else within a strategic approach... I would be cautious as to how far we interpret the results or scores that are outputted (A1).*

A second participant did not see value in using Gamgard. They felt that Gamgard appealed to operators and regulators as it provided a tidy package and a sense that the resulting gambling products were not very risky.

*Gamgard is a salve on the conscience of governments, by being able to say, “Look I have a machine with a gold star so now everything is fine. So now I can ignore the carnage”. Buying into that narrative is very counter-productive. Spending money on a product like that is counterproductive.*

*The risk you run is that people will naturally gravitate toward the argument of using Gamgard is ‘neat and tidy’ and attractive in that sense, but Gamgard will be used as a way to justify games that are, I mean maybe you can imagine a more horrible game, but it doesn’t matter because what really matters is what is it taking, on average and the maximum, and how sticky it is, how much time is it taking, because those things are what results in harm, it’s in the definition of harm. But Gamgard white-washes that fundamental message, they allow you to say everything is fine, when everything isn’t fine (A2).*

In summary, there were mixed opinions among the participants regarding the value of using Gamgard, ranging from reasonably confident that it adds value, to cautiously assessing that it might add some value, to being critical of the Gamgard approach. Some participants raised or addressed specific concerns about Gamgard, which are covered next

#### 2.3.5.2 Gamgard’s fit with the New Zealand risk context

There were mixed opinions regarding the extent to which Gamgard may be accurate within the New Zealand setting. One participant raised a concern over how well Gamgard would assess risk of harm for vulnerable populations within a New Zealand context:

*My concern with generic tools is, in a multicultural place like NZ, we know research shows particular populations are very high risk, such as Māori, Pacific and Asian people, lower socioeconomic groups, and youth (A1).*

They pointed out that Gamgard was “developed in a cultural context that is very different to New Zealand” and described Gamgard as being *Euro-centric*. A second participant raised a similar point:

*One size fits all does not work or take into account issues of social and cultural difference. The place of implementation has a lot to do with the potential impact (of a game). I know in NZ, for instance, that certain games located in certain areas have had disproportionate impact on those areas, and that's a public health issue (R1).*

By contrast, another participant disagreed that Gamgard may not be suited to the New Zealand context. They explained that features in Gamgard are based on “*universal psychological principles, such as reinforcement, escape, arousal, addiction etc. They are fairly universal and fairly well measured*” (G1).

There are diverging opinions of Gamgard's ability to assess risk in the New Zealand context, with two participants concerned that it may not be suitable, while one participant felt that it likely was. The next section presents participants' views on the validity of Gamgard ratings.

### 2.3.5.3 Validity of Gamgard ratings

Some participants were concerned about the validity of Gamgard ratings. For example, one participant explained that to the best of their knowledge Gamgard had not been proven to be valid:

*So far as I know, the tool itself hasn't been tested. I recently read the 2018 Ottawa evaluation of Gamgard, and I think it brings up a lot of interesting points, but it does not quantitatively provide a clear picture of the programmes' validity, especially content validity, it provides a sense of the validity as it is perceived by some operators and regulators, but in terms of the system itself being a valid tool for consistently, and reliably making an assessment of the risk of a game, which has policy implications, is precarious. I'm not saying it isn't valid, but I haven't come across anything that has proven that out (R1).*

In contrast, another participant (G1) disagreed and felt that the Ottawa study had found there was a good fit between Gamgard ratings and actual game risk, as measured by treatment provider reports. They also mentioned a study from Denmark which compared treatment provider reports with Gamgard ratings and found them to be consistent.

The next section addresses concerns regarding the consistency in risk of particular game features.

### 2.3.5.4 Consistency in risk of game features

Some participants raised the issue that the game features included in Gamgard could not be consistently measured or may not have a consistent level of risk. For example, one participant mentioned that ‘speed of play’ is generally seen as risky, but it is not necessary so:

*You can have a slow game you lose a lot of money on and a fast game you lose very little money on, because these features all interact (A2).*

Another participant elaborated:

*In terms of the features, the thing is, some of these are important areas of consideration, but because of their abstract nature, they can be applied or have multiple different meanings, and each of those meanings can have different relative weights of risk (R2).*

A third participant agreed, but felt that this variation was accounted for by the range of features assessed in Gamgard:

*There is some variation and that is accounted for in other aspects. For example, people say that online games are riskier than other delivery methods, but this is assessed under the availability of the game, so this risk is accounted for there. But, because it is an online game you may give the players the option to set limits or get playing feedback, or pop ups to limit that risk... This is why it is important to look at the structural characteristics of a game. For example, a fast action lottery game could be very high risk, e.g. it's fast and you can play it for long periods of time. You could produce a pokie that was benevolent and a lottery that was very risky. Different game types tend to have different game characteristics but this does not inherently need to be the case (G1).*

In sum, participants disagreed regarding the consistency of risk, and consistency of the measurement of risk, across the game features measured in Gamgard and for different gambling games. The next section addresses game features that are potentially risky, but where the risk is not well known.

### 2.3.5.5 Potentially risky features

One participant pointed out that gambling technology is changing rapidly and that “*Gamgard may not be relevant to new features played in new ways*” (A1). A second participant agreed with this, stating:

*One limitation of Gamgard is you can only include things if there is a good quality body of empirical research evidence base out there... Light and sound are not included in Gamgard. They are important but there is not enough evidence to conclusively include that in a quantitative way... Gamgard accounts for this by continual monitoring of what's going on out there, raising issues and trying to encourage new research where there are gaps (G1).*

Participants that discussed this theme agreed that a limitation of Gamgard is that it can only take into account features that have a sufficient evidence base regarding risk. Accordingly, it is possible that there are risky features that Gamgard does not account for. The next section presents participants concerns about the ability of lower risk features to compensate for higher risk features when producing Gamgard ratings.

### 2.3.5.6 Compensating risk between features

Two participants (A1, R1) raised concerns about whether the presence of lower risk features could compensate for the presence of higher risk features. One participant felt they could not unless they directly mitigated the risk, “*for example an effective limit on time and money spent*” (A1). The second noted that the responsible gambling features in Gamgard may not be effective in a real-world setting:

*In terms of the responsible gambling features [in Gamgard], that are supposed to discount the potential risk of a particular game, my understanding is time limits are not effective compared to monetary limits, but there is a lack of consensus in the field regarding pre-commitment. But this has to do with research design to test these features. Often it is tested in a lab which does not reflect the natural environment, or the actual population who will play (usually student convenience samples). I have concerns about the validity of that (R1).*

They also made the case that the effectiveness of compensatory features depends on how they are implemented:

*The other issue that I think is significant, is that the responsible gambling features effect will be significantly modified by whether the limits are voluntary or mandatory. And that is in relation to whether it is the setting of the limit or the limit itself which is voluntary or mandatory. The exercise of setting the limit is significant, but the option of setting a limit is not. The intervention may be effective but the implementation of it may not be (R1).*

It is apparent that some participants were concerned about the ability of lower risk features to compensate for higher risk features in producing overall Gamgard ratings. The next section raises a concern from a participant that Gamgard evaluates risk from an individual perspective and not from a public health perspective.

#### 2.3.5.7 Narrow perspective

A participant raised a concern that Gamgard does not evaluate risk from a public health perspective, because it does not include contextual factors, and because Gamgard “views gambling harm from an individual perspective and not from a perspective of wider social harm” (A1).

While only one participant raised this point, this perspective was included for consideration given that the New Zealand policy context requires that gambling is regulated from a public health perspective. The next section presents concerns regarding the potential for bias in Gamgard ratings.

#### 2.3.5.8 Potential for bias

Participants (A1, R1) also raised concerns about the potential for bias in Gamgard ratings. They were both concerned that gambling operators can apply the tool to their own products. One participant pointed out that operators “may have competing priorities and a lack of familiarity with the area, which may lead to variance in the scores that are being put out” (R1). Participant A1 was also concerned that there was nothing to stop high risk games being used if an operator chose to do so.

A third participant agreed that most users do apply Gamgard themselves, stating:

*Often, they get in touch and check they are using it right, interpreting things right. Encouraged to get a few staff to run Gamgard and check for consistency. Sometimes batches of games are sent through to Gamgard for review. But it is hard to know how some users are using it, but you only know about the ones who are getting in touch. The users of Gamgard do tend to seek support to ensure that they are applying it correctly (G1).*

This participant also pointed out that some regulators have been able to access Gamgard free of charge, which has allowed them to “provide a good check and balance to make sure operators are using Gamgard appropriately” (G1). They also noted that almost all customers of Gamgard are from the lottery sector and are regulated operators, so they tend to be quite conscientious in their intentions.

To summarise, some participants were concerned about the potential for bias in Gamgard ratings, given that the gambling operators can apply Gamgard to their own products. The next section raises a further concern-that it is difficult to evaluate Gamgard as its inner-workings are not publicly available.

### 2.3.5.9 Evaluating a black box

Two participants were concerned by the lack of information on how exactly Gamgard works and pointed out that this made it very difficult to evaluate. In order to assess its potential value, one participant said they would need to see “*detail on exactly how it works*”. They argued that:

*You can make generalisations about game features that are most likely to be associated with harm, so long as all relevant aspects are considered. It can be done, but whether Gamgard does it I cannot say (A1).*

The second participant agreed, stating:

*I haven't come across and explanation as to the weighting of these risk factors and their scoring, and at the end of the day, yes, the framework it is based on or informed by research evidence, but however that doesn't necessary reflect on the validity of the tool itself (R1).*

Participant G1 explained that one of the main reasons that Gamgard is confidential is to prevent unscrupulous users from using it for the wrong purpose.

The final section regarding the perceptions of strengths and limitations is presented next, discussing the comprehensiveness of Gamgard.

### 2.3.5.10 Comprehensiveness of Gamgard

Some participants were concerned that Gamgard was not as comprehensive as it could potentially be. In particular, one participant thought that a key feature missing from Gamgard was the provision of player support and intervention, as well as game information:

*What I think is missing from Gamgard, from a game design perspective, is the lack of interfacing player support, such as features that could help people self-exclude or ask questions about whatever it may be, and access to information about the game. The emphasis on explaining to people about gambling myths, such as for games of chance and what near misses and near wins mean, this crosses over to illusion of control. The provision of that type of information in a compelling way is more effective than pop up reminders, for example. This is a weak policy tool by itself, but combined with other interventions or restrictions, it can have a positive effect. The other thing is making sure that people have that easy path to player support and intervention, whether it is cessation or limitation (R1).*

Overall, participants believed that Gamgard was not as comprehensive as it could be, particularly relating to the provision of player support and intervention, as well as game information. Only one participant specifically discussed items that could be included in Gamgard to make it more comprehensive. The next section concludes the expert interview component of this report.

## 2.3.6 Summary of findings

## 2.4 Conclusion

The purpose of the interviews with gambling research experts was to assess expert perceptions of the role of game design within a harm minimisation and responsible gambling context, as well as the association between game features and risk of harm. Enquiries were also made regarding the interviewees' knowledge and impressions of Gamgard, their views of its strengths and weaknesses, and alternatives. The interviews provided an opportunity to incorporate into the evaluation experiences and perspectives of people with knowledge, perceptions, and experiences relevant to Gamgard. Importantly, experts from three different occupational backgrounds were included, thereby representing a range of viewpoints. It is important to note that a limitation of

the expert interviews was a relatively small sample size, so there may be some perspectives that were not fully captured.

There was consensus among the interviewees that game design is critically important within a harm minimisation and responsible gambling context, and that game design must be considered within a wider context. There was disagreement about the strength of evidence behind the association of particular game features with risk, and the consistency of that association across game dynamics and contexts. There were mixed opinions about the value of, and best way to, identify and reduce the risk of harm associated with a specific game. Most participants emphasised the importance of taking a comprehensive and strategic approach to reducing the risk of gambling harm, of which game design was just one aspect.

Most participants thought that the approach taken by Gamgard either was or may be able to usefully identify and reduce the risk of harm associated with game design. However, none of the participants thought that Gamgard was a full harm minimisation and responsible gambling solution. One participant did not see any value in using Gamgard and thought that the best approach was to directly limit gambling harm, in terms of time and money spent gambling. Concerns raised by the interviewees about Gamgard include its goodness-of-fit to the New Zealand context, the validity of its ratings, its assessment of the consistency of risk associated with particular game features, its treatment of potentially risky features, the compensation of higher risk with lower risk features, its view of harm from an individual (not public health) perspective, the potential for bias in its use, and a lack of transparency and comprehensiveness.

## 3 In-depth Gamgard Case Study Evaluation

### 3.1 Purpose and background

This phase built on the knowledge generated from Phases 1 and 2 (the literature review and expert interviews) by gaining an understanding of the practical application of Gamgard in a case study, Lotto NZ. Lotto NZ is the trading name of the New Zealand Lotteries Commission, a crown entity which operates national lotteries in New Zealand.

The aims of the case study were to:

- 1) Understand the extent to which Gamgard is being used appropriately by users,
- 2) Determine if the intent and purpose of the tool is well understood by key stakeholders or users, and,
- 3) Identify pros and cons of the product.

### 3.2 Method

#### 3.2.1 Focus group

A focus group session was held to evaluate how a product owner, Lotto NZ, used Gamgard, including understanding where Gamgard fits within their responsible gaming strategy. The focus group was held at Lotto NZ. It was attended by the General Manager Strategy & Communications, Head of Product and Channel Innovation, Senior Social Responsibility Manager, Product Manager, and Marketing Manager for Product and Channel Innovation

#### 3.2.2 Individual Gamgard Scoring Sessions

The focus group was followed by individual face-to-face sessions between two product managers and two independent researchers to understand use of the Gamgard evaluation tool across six Lotto NZ products. This provided four scores for each product and allowed a view of inter-rater reliability in the product scoring process.

For the individual sessions, a product manager sat with a researcher and they each independently scored a product using the evaluation scoring sheet (see Appendix C: Evaluation scoring sheet). The two pairs sat in separate rooms. The researchers asked questions where objective information was required for context. The researchers also asked about the rationale for the product managers' scores after they had both scored each item in the 14-item Gamgard questionnaire. For each question both researcher and product manager gave Gamgard Scores, a rating of confidence in the score (ranging from 1 = "Not confident at all" to 5 = "Very confident"). In addition, a score was provided for their confidence that the overall Gamgard score accurately reflected relative gambling harm based on their experience (ranging from 1 = "Not confident at all" to 5 = "Very confident").

#### 3.2.3 Product selection

Products selected for assessment using Gamgard were:

- 1) Lotto NZ lottery draw (online)
- 2) Lotto NZ lottery draw (physical store)
- 3) Instant scratch ticket (online; \$3 crossword-based game)
- 4) Instant scratch ticket (physical store; \$3 crossword-based game)
- 5) Instant scratch ticket (physical store; \$1 Kiwi Treasures)

## 6) Keno

The rationale for product selection was based on variation in three factors. These were (1) Gamgard score, (2) mix of physical and online, and (3) mix of game type (lottery and instant scratch ticket).

### 3.3 Focus group results – Use of Gamgard

#### 3.3.1 *How are Gamgard and similar tools used by Lotto NZ?*

Lotto NZ have used Gamgard since 2013. It is used as a screening tool as part of their responsible gaming strategy. They intend to review scores annually and, for the past 18 months, have also used the accompanying Positive Play Scale tool (described in section 1.9 of this document) to measure responsible gambling-related beliefs and behaviours amongst players. In addition, Lotto NZ runs a Play Smart “know your limit and play within it” programme which provides players with “a set of tips and tools designed to help you play smarter”. Lotto NZ has had compulsory online spend limits since 2007/2008. The spend limits have changed over time but are currently a maximum of \$150/week with no more than \$50/week on Instant Kiwi games and \$500/month across all games. The Lotto NZ online platform is not open 24/7 as a harm minimisation measure. The website opens at 6.30am daily and closes between 10.10pm and 12.00am depending on draw days and game type.

Lotto NZ broadly breaks their responsible gaming process into three components: prevention, detection, and intervention. Gamgard ratings are included as part of the prevention process. Detection is supported by their data analytics process, including data from MyLotto<sup>23</sup> around time spent on site, spend, and spend limits (self-selected up to pre-set maximum by Lotto NZ). Intervention is focussed on providing access to help and support.

#### 3.3.2 *How do Lotto NZ score their products using Gamgard?*

Lotto NZ is self-scoring (as opposed to outsourcing this to the Gamgard provider). A product manager will score a game during early game design, then may re-score the game again during development. The product passes through the approval process depicted in Figure 7 with the approval level determined by the type of game.

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<sup>23</sup> <https://mylotto.co.nz/>

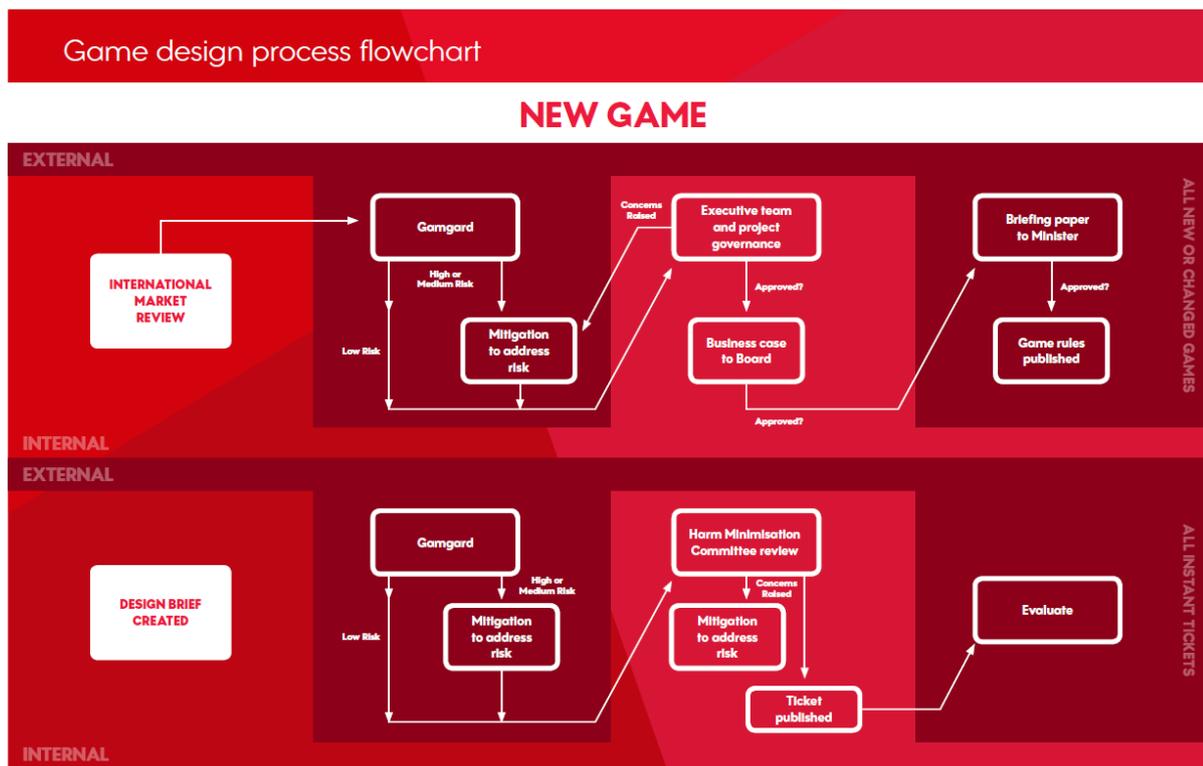


Figure 7 Game design approval process  
 Lotto NZ, World Lotteries Association Responsible Gaming Submission 2019

### 3.3.3 How does the independent harm minimisation committee work?

There is a harm minimisation committee that meets twice weekly to review the design and promotion of all new games and how they are marketed. The committee is comprised of Lotto NZ staff that are independent from the product development team. They have varied backgrounds and levels of experience with the products under evaluation. The membership is drawn from senior people from legal, marketing and responsible gaming teams. They outsource e.g., to Gamgard, Advertising Standards, when required. External stakeholders are engaged when Lotto NZ makes changes to its games or launches new products.

### 3.3.4 What is the highest rated product and how are acceptable thresholds set?

Gamgard score thresholds are used to inform the process, with a score of 61 being the limit set as unacceptable to Lotto NZ. No product has scored over 61 before going to the Executive team. The highest Gamgard score was for CashBuster, which uses pull tabs that allow game completion in 15-20 seconds. This game achieves a score of 53 (60 without Gamgard responsible gaming measures in place).

At a high level, Gamgard is being used as a pre-screening tool to triage games into risk categories:

- 1) Higher risk (61-100) – Do not proceed (red traffic light)
- 2) Moderate (41-60) – Triggers a more thorough review process (yellow traffic light)
- 3) Low risk (0-40) – Triggers review and approval process (green traffic light)

While no advice is given by Gamgard to a provider to set a threshold of acceptance for this process, the traffic light colour system around harm is the most logical interpretation. Consequently, Lotto NZ has never tried to provide a game with a score over 60.

### 3.3.5 Principle-based guidelines

As part of the responsible gambling wrap-around for Gamgard, a principles-based approach is used as an additional control beyond the Gamgard scoring. This approach follows the Lotto NZ Harm Minimisation Guidelines for Lotto NZ Products (V 2.4 19-03-2021), in particular Section 3.2 Design Principles for physical and digital instant games (Lotto NZ, 2021). The relevance of this is that it allows detection of some gaming elements not covered in Gamgard, but included in other tools, such as:

Noise: “No depiction of automatic gaming machines (i.e., pokies)” (Lotto NZ, 2021, p. 18) is included as a key principle. Consequently, the use of audio around a “coin dropping noise” in one online game was altered. Note: Other noises and lights can be used.

- 1) Artwork and visual appeal: “No design symbols or language that primarily appeal to children and those under 18” (Lotto NZ, 2021, p. 17) as part of the Social Responsibility principle. This meant that a game that passed the Gamgard score threshold (scoring a 52), was rejected based on this principle because it depicted ice cream icons, which were deemed to appeal to children.
- 2) Marketing and misrepresenting win rates: “All text accurately reflects the odds or likelihood of winning.” (Lotto NZ, 2021, p. 18) One game had advertising that represented the likelihood of winning beyond the actual win rate. This game was rejected based on this principle.

Recommendation: Some aspects offered in other risk assessment tools could be more directly imbedded into a wrap-around process with Gamgard. For example, if there is a more in-depth assessment in the evaluation process, include active assessment of the stimulation level of each product (i.e., noise and light) as this relates to gambling harm.

## 3.4 Individual scoring sessions

Each factor in the Gamgard tool was rated for the six games by four assessors in a test environment, totalling 24 ratings for each risk factor. This process was designed to evaluate the tool and differs to the standard Lotto NZ method where Products Managers assess in their areas of expertise, consult with the wider team when required and have an annual peer review of scores. Interrater reliability was analysed using Krippendorff's alpha, a measure of the agreement among raters which is applicable to any number of coders (Krippendorff, 2011). If all raters, or nearly all raters, give a similar score within each game the Krippendorff's alpha result is higher. Krippendorff suggests: “[I]t is customary to require  $\alpha \geq .800$ . Where tentative conclusions are still acceptable,  $\alpha \geq .667$  is the lowest conceivable limit (Krippendorff, 2004, p. 241).” Scoring consistency is reported for each risk factor in Table 3-1 Scoring consistency (Krippendorff's alpha) and mean confidence rating for individual risk factors Also, reported is the mean confidence rating. This was calculated for each risk factor using ratings from the four assessors on a scale of 1 (not confident at all) to 5 (very confident) across all games.

Table 3-1 Scoring consistency (Krippendorff's alpha) and mean confidence rating for individual risk factors

Gamgard item	Scoring consistency ( $\alpha$ )	Confidence in Score
Risk Factor 1 Event frequency	1	4.7/5
Risk Factor 2 Multi-game / stake opportunities	0.711	4.7/5
Risk Factor 3 Variable / fixed stake size	0.507	4.2/5
Risk Factor 4 Prizeback percentage	1	4.6/5
Risk factor 5 Jackpot size	1	4.6/5
Risk factor 6 Near win opportunities	1	4.7/5
Risk factor 7 Continuity of play	1	4.6/5
Risk factor 8 Accessibility points	1	5/5
Risk factor 9 Payment options	1	4.6/5
Risk factor 10 Illusion of control	-0.269	3.2/5
Responsible gaming features 11 Pop up reminders	1	5/5
Responsible gaming features 12 Spend Limit	1	4.9/5
Responsible gaming features 13 Player-defined time limits	1	5/5
Responsible gaming features 14 Behavioural feedback tools	0.38	3.9/5

### 3.4.1 Risk factor 1 – Event frequency

Event frequency is measured using the time taken to purchase a game, get the result, and purchase the game again. For example, Lotto draws take place weekly, therefore event frequency falls into the 'two to seven days' category.

The scale scores focus on the frequency of a game based on X seconds of a game, such that the maximum score is provided if event frequency is 5 seconds or less. The minimum score will be applied if game frequency is more than 7 days. Overall, 40% of the maximum Gamgard harm score sits with this item, which strongly affects where the mid-point (i.e. mean and median scores) can sit for most game types. This is important as it has an impact on what providers are working towards as cut-off thresholds for determining an inappropriate game. Even some EGMs, which typically have very high association with gambling harm, are not delivering a time of five seconds or less and achieving the highest score.

Scoring was consistent ( $\alpha = 1$ ) and confidence high (4.7/5) among Product Managers and Experts due to the nature of the games and objective measures taken by Lotto NZ. However, calculation of time is complicated, particularly in face-to-face transactions. Determining an average time to purchase may be difficult, e.g., queuing time is dependent on number of customers and staff; time/day of the week. Given that the intent of this factor is to capture harm, it may be more accurate to look at only the fastest time for in store purchase and play.

Event frequency interpretation for scratch tickets is defined in the tool for physical tickets "often take 31 seconds to 2 minutes and 59 seconds to purchase" (Gamgard risk assessment tool). This can be programmed into online scratch tickets to influence the score. For example, delaying the

online scratch ticket to 11 seconds for a full reveal (reveal all button) provides a significant drop in score. There is a risk that scorers will follow this example rather than measuring time, where for some games such as Instant Kiwi Crossword, the measured time taken to purchase and play was longer than the example.

Based on the contribution from this risk factor alone, no Lotto NZ game could achieve a risk score in the very high category.

### 3.4.2 Risk factor 2 – Multi-game / stake opportunities

Multi-game/stake opportunities explores the opportunity to play multiple games/stakes at the same time. It categorises games into one purchase allowed per transaction, a fixed number of multi-purchases allowed per transaction, or unlimited purchases allowed per transaction.

While scoring consistency analysis showed agreement ( $\alpha = 0.711$ ), there was some variability in scoring on this item. For example, for instant win tickets in person may be interpreted as being per purchase (i.e., someone can purchase unlimited tickets per transaction in person) and per game (i.e. only one bet per game is allowed).

Lotto NZ interpreted in-store Instant Kiwi as unlimited purchases are allowed per transaction, which is supported by internal guidelines and applies the intent of the question to capture harm. All scorers were confident that the score they awarded was correct (4.7/5).

### 3.4.3 Risk factor 3 – Variable / fixed stake size

This risk factor refers to the extent to which a player can determine the stake size, whether there is one fixed stake size, several offered or unlimited stake size.

Scoring of this factor identified a tendency towards disagreement ( $\alpha = 0.507$ ) between scorers. Using Lotto as an example, while one line costs 70c, the minimum ticket (at least four lines of Lotto) costs \$2.80. This, therefore, could be interpreted as several fixed stake sizes offered (ticket price options) or one fixed stake size (per line). This was reflected in the confidence scores of some assessors being lower for Lotto and Keno games; however, overall confidence in scoring this factor was high (4.2/5) and may be further improved by an agreed upon and consistently applied method of scoring throughout New Zealand.

Application of Gamgard is intended for an individual game. This means it does not take into account that a customer can determine stake size through ticket purchase choice, e.g. a \$1 to a \$3 Instant Kiwi ticket.

### 3.4.4 Risk factor 4 – Prizeback percentage

This is an objective measure, clearly defined as the average percentage of stake that is paid back in winnings. In terms of identifying contribution of the scores to harm, it is reliant on the player being aware of the payback which may not be the case for all games e.g. Keno prizeback percentage varies depending on the amount bet and number of balls selected. Ratings were consistent across participants and researchers ( $\alpha=1$ ).

### 3.4.5 Risk factor 5 – Jackpot size

This is an objective measure, clearly defined as the largest amount of money the player believes they can possibly win. Ratings were consistent ( $\alpha=1$ ) across participants and researchers with high confidence in scoring (4.6/5).

There is also an element of linking the amount of game play to jackpot size, e.g., a \$3 crossword with a maximum prize of \$40,000.

*“It offers more game play so don't have to offer as much money” (Focus group).*

The jackpot size has been converted directly from USD to NZD which results in bandwidths that may not align with game design e.g. NZD 2,291-22,896. It may be more appropriate to set categories according to useful game limits e.g. \$5,000, \$10,000, \$20,000 etc. No Lotto NZ games fall into the highest scoring category.

#### 3.4.6 Risk factor 6 – Near win opportunities

Near win opportunities refer to intentionally manufactured instances when the player believes they nearly won (i.e. not occurring purely by chance). This is an objective measure. Inclusion of near-win opportunities is clearly defined in the Lotto NZ game designs. It requires the scorer to be familiar with the game design to score accurately. Raters were in agreement ( $\alpha = 1$ ) and they were confident in their scores (4.6/5). It was recognised that this may not necessarily be a strong indicator of harm which is reflected in the contribution to overall risk score within the tool:

*“We know information the player doesn't know. This information you'd have to purchase a lot of tickets to figure out. For a vulnerable player they get the nearly win moment” (Focus group)*

#### 3.4.7 Risk factor 7 – Continuity of play

This is an objective measure regarding how long the game can be played without a mandatory break. Continuity of play is easily assessed based on the explanation within this factor of “a time limit of 30 seconds between purchase and result being a break in play, and it is unlikely that players would purchase so many scratch tickets that it would take an hour to scratch them”, This reduces the number of game types that are given harm scores to a limited number, e.g., EGMs. Scoring was consistent with raters in agreement ( $\alpha = 1$ ) and confidence in scoring was high (4.6/5).

#### 3.4.8 Risk factor 8 – Accessibility points

Accessibility points identify how easily a player can access a game, for example, having to travel to a destination resort to gamble versus accessing online. This measure is easy to interpret with consistent ratings across participants and experts ( $\alpha = 1$ , confidence in score 5/5).

#### 3.4.9 Risk factor 9 – Payment options

This is an objective measure about the type of payment used to gamble e.g. cash, debit, credit. Ratings for this factor were in agreement ( $\alpha = 1$ ) and assessors were confident in their scoring (4.6/5). As with other measures it requires the person completing the assessment to be informed of the payment methods that are available.

#### 3.4.10 Risk factor 10 – Illusion of control

Illusion of control refers to any elements of a game of chance that may suggest there is skill involved, or where the player is given a hint that they believe will help them win.

There is a possible gap between active game intent around illusion of control and a player's cognitive bias around illusion of control based on the inputs they can control. Arguably, both can have an impact on gambling harm. In assessing games against this risk factor some assessors interpreted it as player perception of control, while others recognised that there was no actual control over the outcome. This resulted in unacceptable agreement ( $\alpha = -0.269$ ), and reduced confidence compared to other factors (3.2/5) that the score given was correct.

The examples provided in the instructions make it clear that an aspect of the game must provide an explicit hint or provide some level of skill (e.g. nudge button, stopping device) such that the timing might influence the outcome. However, for some games it is less clear where the line is drawn (e.g., mimic of a crossword, where the outcome is not altered even though the nature of a crossword implies there is some level of skill involved).

In relation to player control, for games like Lottery Draws, having the ability to pick numbers (e.g., players may perceive they have lucky numbers) as opposed to having them randomly generated arguably provides people with some illusion that this control over numbers picked (not numbers

drawn) gives them some control over the outcome. See also Dixon (2000), who controlled whether the player was able to select the roulette chip location or whether an experimenter set the location of chips (neither of which impacted the actual chance of winning). Players wagered more chips when they were in control of chip placement.

The scale could include both aspects, with the player perception element rated as a middle score, rather than as a 0 score.

### 3.4.11 Responsible gaming feature 11 – Pop up reminders

Pop up reminders is the first of four responsible gaming features that can be applied in a game to reduce the overall risk score in Gamgard. Pop up reminders are any kind of pop up that reminds a player how long they have been playing a particular game. They are not used by Lotto NZ. This feature is likely to be of most benefit in EGMs.

In applying the scoring bands to New Zealand gamblers, it may be more suitable to reduce the time limit control to a shorter timeframe. Outside of casinos more than 85% of frequent EGM players play for 2 hours or less (Abbott, Bellringer, Garrett and Mundy-McPherson, 2014). It could be more appropriate to align with Ministry of Health or international time classifications e.g. pop up at 30 minutes, 1 hour, 2 hours as shown in Figure 6.

Venue and time	Frequency of participation % (95% CI)					
	At least once a week		Less than once a week but at least once a month		Less than once a month but at least once a year	
<b>NZ Casino</b>						
Up to 15 minutes	5.8	(0.5 - 27.1)	-	-	21.7	(15.8 - 28.5)
15 - 30 minutes	-	-	30.4	(11.8 - 56.1)	22.4	(16.5 - 29.4)
31 - 60 minutes	-	-	21.0	(9.5 - 37.8)	24.7	(19.2 - 31.0)
1 - 2 hours	15.9	(2.7 - 46.8)	25.1	(12.3 - 42.7)	17.4	(13.2 - 22.4)
2 - 3 hours	23.3	(2.9 - 67.1)	9.8	(3.3 - 21.9)	5.7	(3.3 - 9.2)
3+ hours	54.9	(14.2 - 90.6)	13.6	(5 - 28.5)	6.7	(4.3 - 9.9)
<b>Pub</b>						
Up to 15 minutes	8.1	(2.4 - 19.8)	20.2	(12.6 - 29.9)	41.0	(35.0 - 47.2)
15 - 30 minutes	23.9	(14.2 - 36.2)	34.3	(25.1 - 44.4)	30.8	(25.0 - 37.2)
31 - 60 minutes	35.7	(24 - 48.8)	21.2	(14.8 - 29.0)	19.1	(14.9 - 23.9)
1 - 2 hours	18.8	(10.8 - 29.5)	18.1	(12 - 25.8)	6.2	(4.0 - 9.1)
2 - 3 hours	10.5	(4.8 - 19.4)	4.0	(1.2 - 9.7)	1.4	(0.5 - 3.3)
3+ hours	2.9	(0.9 - 7.1)	2.2	(0.7 - 5.4)	0.4	(0.1 - 1.1)
<b>Club</b>						
Up to 15 minutes	3.4	(0.7 - 10.8)	12.4	(4.3 - 27.1)	30.6	(23.0 - 39.2)
15 - 30 minutes	34.0	(17 - 55.1)	36.7	(23.4 - 51.8)	34.1	(26.9 - 41.9)
31 - 60 minutes	30.2	(13.9 - 51.6)	31.3	(19.7 - 45.1)	24.6	(18.5 - 31.7)
1 - 2 hours	19.8	(7.7 - 38.8)	19.0	(10.2 - 31)	4.7	(2.1 - 9.2)
2 - 3 hours	8.3	(1.6 - 24.7)	0.5	(0.1 - 2.5)	3.5	(1.6 - 6.6)
3+ hours	4.3	(0.9 - 13.4)	-	-	0.2	(0.0 - 1.2)

Note: Past year gamblers who generally gamble less than once a year are omitted from this table due to small sample sizes.

Figure 8 Frequency of participation in EGMs by time spent playing EGMs in an average day.

Source: Abbott et al, 2014, New Zealand 2012 National gambling study: overview and gambling participation, p.54.

### 3.4.12 Responsible gaming feature 12- Spend Limit

Player defined spend, loss or deposit limits are when the players have the option to define how much they want to spend, deposit, or lose within a specified time period. Limits can be voluntary or mandatory. As with other objective measures this feature was scored consistently across all

assessors ( $\alpha = 1$ , confidence in scoring 4.9/5). Player defined spend limits enables appropriate use of behavioural feedback tools (see 3.4.14). Lotto NZ's enforced limits are not captured within this as they are set by Lotto NZ, not the player, with the option of lowering the limits over the course of a week or month by the player within their account settings. It could be useful to consider having mandatory player defined limits as an option and keeping these below the maximum defined by Lotto NZ.

#### 3.4.13 *Responsible gaming feature 13 – Player-defined time limits*

This feature puts the responsibility on the player to set time limits, making them consciously pay attention to their gambling time. The limits can be voluntary or mandatory. Lotto NZ do not offer any options for players to set time limits. Scoring was consistent ( $\alpha = 1$ ) and there was high confidence in the scores given (5/5).

#### 3.4.14 *Responsible gaming feature 14 – Behavioural feedback tools*

The descriptions for this feature are complex and multifaceted. There is no option in the tool for providing feedback only when the players are at risk for problem gambling, this is combined with all players receiving automatic feedback. This is a nuance in the wording in the Gamgard tool. In terms of responsible gambling, unless the player defines their spend limits (3.4.12), it is not possible to identify if their behaviour is at risk for harmful online gambling.

There was poor scoring consistency for this feature ( $\alpha = 0.38$ ). Lotto NZ players receive feedback for continually hitting their spend limits – an automated monthly email, and a bespoke email after four months in a row of reaching their spend limit, and they can view their playing habits; however, they are not notified of these if they are within the pre-defined limits. All in-store players (regardless of games) are given an option to opt in to receive feedback via the Lotto retail responsible gaming programme. These were scored more favourably by one product manager demonstrating a need for clarification around this question (confidence in scoring 3.9/5).

### 3.5 Benchmarking scores

Gamgard has introduced the ability to view benchmark scores for similar games if the user consents to their scores going into the benchmark pool. It is recommended that these benchmarks are used with caution, as there is no information on who has provided input to the benchmarks and what additional guidance or assessment biases are placed on the method of scoring.

### 3.6 Conclusion

A focus group and individual scoring sessions were carried out to investigate Gamgard use in New Zealand, using Lotto NZ as a case study. The focus group and individual scoring demonstrate that Gamgard can be successfully applied in New Zealand with the support of a wrap-around process, but not in isolation. There is evidence that the Gamgard tool has supported the use of a range of controls being implemented by Lotto NZ in relation to game design and acceptance. It is used as a tool to provide an indication of risk of harm, but it does not act as a stand-alone green light to proceed. Gamgard offers an objective measure of the risk factors associated with gambling harm and can be used with little training by raters with appropriate game knowledge.

To be used successfully, a risk assessment tool requires good interrater reliability, and there is an opportunity to improve this through a standardised application process or an independent trained assessor. There appear to be differences in approach which could lead to variability in how games are scored. The outcomes due to variability are mostly subtle and are dependent on whether the question is followed explicitly, and with or without expanded information and organisational interpretation. This also has an impact on any use of the new benchmarking

feature (where score details of similar game types scored via Gamgard are provided), and where the approach of different product users may vary.

It is important to recognise that most Lotto NZ games will be excluded from the “very high” risk category based on game time alone when applying Gamgard to the NZ context. This is due to the high weighting placed on event frequency, e.g., all Lotto NZ games have a maximum possible risk rating of “high” based on time taken to play. This should be considered when comparing results across games. When responsible gaming features are introduced, it is very difficult for a game other than an EGM to achieve a high-risk score.

The colour-coded risk categories do appear to be used to inform the thresholds of game acceptance, and the procedure for adjusting controls (i.e., encourage avoidance of “high” and “very high” risk categories). While the individual game elements have been selected as they have alignment with gambling harm, the score thresholds to enter another category do not have proven alignment with gambling harm to our knowledge. This combined with the difficulty in scoring a “very high” risk, means that some evidence of category alignment against actual harm would be beneficial, as would a broader process to guide thresholds of acceptability in a New Zealand context.

Recommendations based on the three components of the report are presented in the next section.

## 4 Summary of recommendations

### 4.1 Recommendations for Ministry of Health policy consideration

1. Responsible gambling provision in New Zealand should use the meaning of responsible gambling in Part 1 s 4 of the Gambling Act 2003, rather than the different concepts common in the international gambling industry.
2. Game improvement tools:
  - a. These are not ‘silver bullets’ in the minimisation of gambling harm. They need to be used in conjunction with other provider based and community-based harm minimisation initiatives and tools, along with appropriate regulation.
  - b. The tools have potential to encourage game developers to be more proactive in providing more responsible games and give operators and regulators the opportunity to reject or insist on improvement to suboptimal games.
3. Gamgard appears to be an adequate preliminary screen to be used for its stated purpose of reviewing the functional characteristics of games, as part of a wider responsible gaming programme. However, it must be remembered that it is just that, and that the entire gambling environment should be considered before a game is approved for use. Regular monitoring should be carried out during its use, with the idea of proactively making changes where player behaviour suggests harm is occurring.
4. Being a Gamgard user should not be taken, by itself, as an indicator that a gambling provider is responsible. The entire gambling environment should be considered.

### 4.2 Recommendations around the application of Gamgard in the New Zealand context:

1. Aspects offered in other tools could be more directly imbedded into a standardised wrap-around process involving Gamgard. For example, there could be a more in-depth assessment in the evaluation process, including active assessment of the sensory stimulation level (e.g., noise and light) of each product as this relates to gambling harm.

2. Recognise the large weighting factor placed on Risk factor 1, event frequency, and that very few games will fall into the very high-risk factor once this score is applied.
3. Evaluate suitability of risk factor 5, jackpot size bands, and update to reflect NZ currency prize ranges.
4. Control potential for variability in scoring for some risk factors in Gamgard through the development of guidelines for application in New Zealand. These could be developed jointly by the Ministry of Health and Lotto NZ to promote consistency in ratings and thus improve detection of harm.
5. Use of Gamgard to independently score games under review by agencies like Ministry of Health/DIA could be beneficial.
6. Guidance around the acceptance thresholds for games in New Zealand and the appropriateness of controls could be developed and regularly reviewed.
7. Data collection and access around gambling harm indicators based on game types would benefit from being collected at a more detailed level. This would help clarify understanding of where control and regulation around game types are best targeted and inform acceptance thresholds for games.

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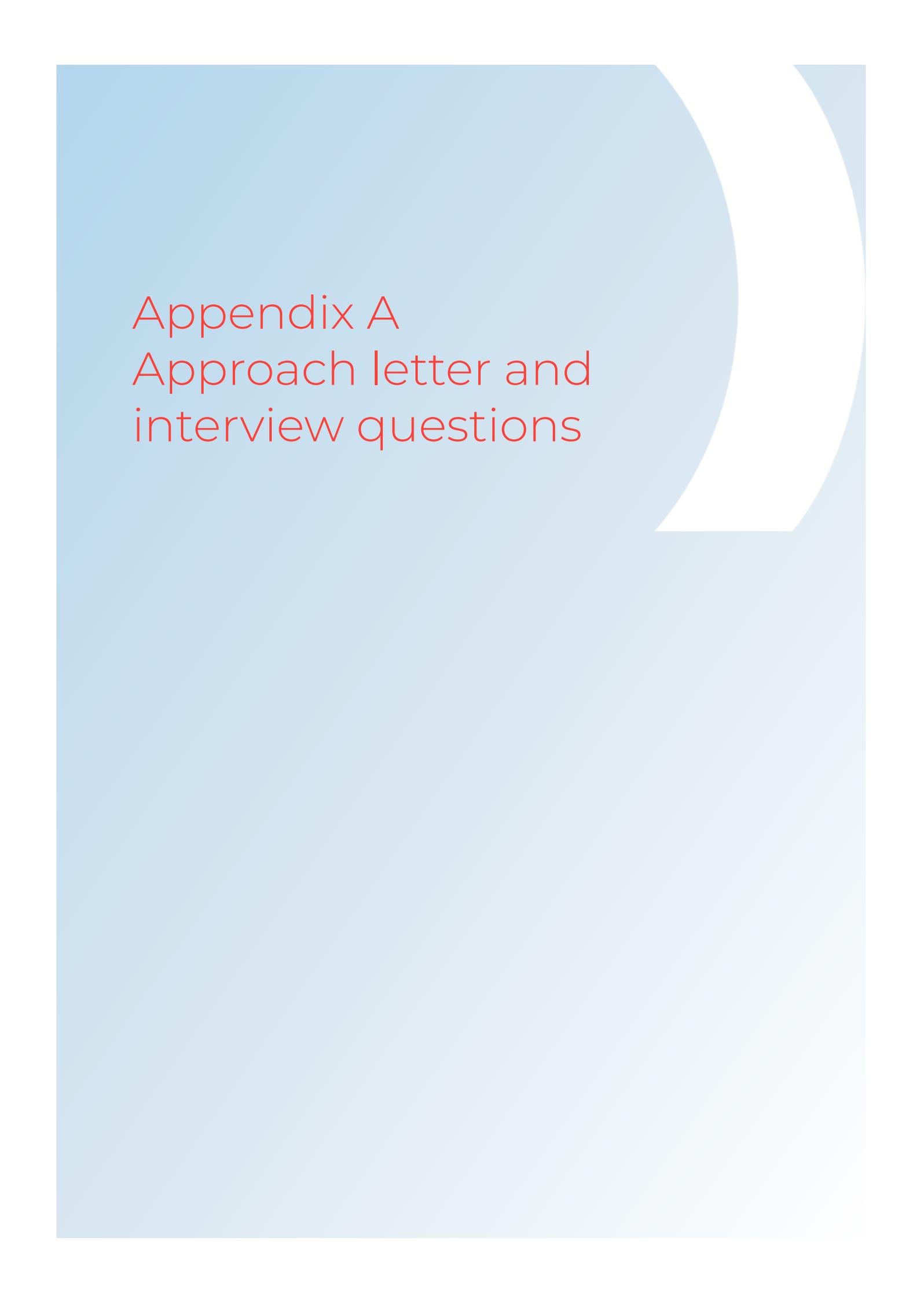
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# Appendix A

## Approach letter and interview questions

# Appendices

## Appendix A: Approach Letter

Dear [name],

I am inviting you to participate in a research project our WSP Research and Innovation Centre are conducting for the New Zealand (NZ) Ministry of Health. The purpose of this study is to provide an industry-independent evaluation of 'Gamgard' (Gambling Assessment Measure – Guidance about Responsible Design) in an NZ setting. As you may be aware, Gamgard is an online rating tool designed to assist the gambling industry to assess how risky a game is likely to be for a vulnerable player by examining specific risk features.

This evaluation is intended to inform NZ government agency thinking about the utility of the Gamgard product with regards to regulatory decision making and gambling harm minimisation within current policy settings, as well as to NZ gambling providers. The evaluation will concern Gamgard's overall design philosophy, utility and fit as a risk rating tool for detecting the how likely it is that a game will lead vulnerable players into problem gambling.

We would like to invite you to participate because you have been identified as an expert in this field. If you agree, we would like to conduct a phone or Skype interview at a time convenient for you. The interview should take about 30 minutes and will cover your perspectives and insights on:

- the role of game design within a harm minimisation and responsible gambling context,
- game design features and associations with risk of harm;

As well as (to the best extent of your understanding) Gamgard's:

- background,
- function,
- use,
- alternatives.

Your agreement to take part in this study would be greatly appreciated. If you would like to take part, please respond to this email and we will be in touch soon to arrange the interview. If you have any questions, please contact me directly.

Yours sincerely,

Jean Beetham Email: [Jean.beetham@wsp.com](mailto:Jean.beetham@wsp.com) M +64 273142380

## Appendix B: Questions for Gamgard interviews

Verbal consent to participate in the research will be sought at the start of the interview. Interviews will be recorded, and the interviewees will be informed of this fact. Interviewees will be asked to declare any potential conflicts of interest before the interview begins.

General questions:

1. In your opinion, what is the relative importance of game design within a harm minimisation and responsible gambling context?
2. What do you think is the best way to identify the risk of harm associated with the design of a game?
3. To what degree do you think generalisations can be made about game features that are most likely to be associated with harm? *If they can be, which features do you think they are? If not, why not?*

Background of Gamgard:

4. Are you familiar with the Gamgard product?

*[Prompts: If not familiar, the following will be read:*

*“Gamgard is an online rating tool intended to assess how risky a game is likely to be for a vulnerable player by examining specific risk features. It aims to pinpoint the elements of a game that are most risky and advise on how to lower the risk of some games.” [SKIP to explanation under Q9].*

5. What is your understanding of the purpose of Gamgard?
6. **BRANCHING QUERIES: Only for those who are very familiar:** What is your understanding of how Gamgard is maintained and supported?

*[Prompts: How well are users trained? How good is the consistency of scoring? How is it updated? Is this a robust update process in your opinion?]*

Function of Gamgard:

7. What is your understanding of the components and function of Gamgard?

*[Prompts: If not familiar, the following will be read:*

*“Gamgard rates the overall risk of a game based on an assessment of the severity of risk of ten game features (below). The score for each feature is weighted and an overall score produced (very low-low-medium-high-very high).”*

1. *Event frequency*
2. *Multigame*
3. *Fixed/variable stake*
4. *Prizeback*
5. *Jackpot*
6. *Near Win*
7. *Continuity*
8. *Accessibility*
9. *Payment options*
10. *Illusions of control*

*These 10 factors were assessed as being the most important out of a myriad of factors during an initial Delphi development process. The tool then produces a “risk wheel” showing the assessed contribution of each risk factor to the game’s overall risk. In Gamgard 3.0 the risk rating gained by this method can be reduced by incorporation any of the following “responsible gambling features” into the game:*

1. *Popup reminders*
2. *Spend limits*
3. *Time limits*

#### 4. Feedback tools”

8. To the best of your knowledge, to what extent do you think the Gamgard risk ratings reflect the actual risk of games? [Prompt: Thinking about how the risk rating is scored, where would you set the acceptable threshold? Can low risk features compensate for the presence of high-risk features? How do its ratings compare with other sources?]
9. What do you see as the strengths of Gamgard? What do you see as its weaknesses?
10. [Prompts: What would be the ONE most important thing that would improve Gamgard? In your opinion, what is the reputation of Gamgard?]
11. Could you please comment on the extent to which you believe Gamgard is fit-for-purpose?

#### Use of Gamgard:

12. In your opinion, what is (or would be) appropriate use of Gamgard?  
*[Prompts: Are there any specific games it works better? Any it is less suited for?]*
13. Can you provide any examples of where Gamgard has been used appropriately or inappropriately?  
*[Prompt: What is your impression of how Lotto NZ is applying Gamgard?]*

#### Alternatives:

8. Are you aware of any alternative products to Gamgard?  
*[Prompts If yes: What are they? Briefly, how do they function and perform? What are your views on them?]*

#### Final thoughts:

9. Do you have any other insights or thoughts you would like to share related to our conversation today?

## Appendix C: Evaluation scoring sheet

### Score Sheet

Product		Scorer ID	
Familiarity with product [rate from 1-5, with: 1 = not familiar at all to 5 = extremely familiar]			

Attribute	Score	Confidence in accuracy of my scoring	Confidence of sensitivity of scale in capturing any harm	Rationale / comments
		[1 = Not confident at all – 5= very confident]		
1. Event frequency [1 = 7days+ to 11 = 5secs or less]				
2. Multi-game / stake options [1 = only 1 to 3 = Unlimited]				
3. Variable / fixed stake size [1 = fixed to 3 = player determined]				
4. Prizeback percentage [1 = 50% or below to 3 = 71% +]				
5. Jackpot size [1 = \$150 or less to 7 = variable size]				
6. Near win options [1 = none to 2 = near win options]				
7. Continuity of play [1 = break at or before 1 hour to 3 = 5 hours + without break]				
8. Accessibility points [1 = travel to gamble to 3 = Remote access]				

Attribute	Score	Confidence in accuracy of my scoring	Confidence of sensitivity of scale in capturing any harm	Rationale / comments
		[1 = Not confident at all – 5= very confident]		
9. Payment [1 = Cash only to 5 = credit]				
10. Illusion of control [1 = none to 2 = some]				
11. Pop-up reminders [1 = warning at/before 1 hour to 3 = No warning times]				
12. Player defined spend/loss limits [1 = mandatory limit to 3 = no option]				
13. Player-defined time limits. [1 = Mandatory to 3 = No option]				
14. Feedback tools [1= All players + risk to 5 = no feedback]				

Attribute	Score	Confidence in accuracy of my scoring	Confidence of SCORE in capturing any harm	Rationale / comments
		[1 = Not confident at all – 5= very confident]		
Initial score (no RG features)				
Overall score (with RG features)				



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