Australian Government
Australian Institute of Family Studies
Australian Gambling Research Centre

Review of electronic gaming machine pre-commitment features
Limit setting

Anna Thomas, Darren Christensen, Julie Deblaquiere, Andrew Armstrong, Sharnee Moore, Rachel Carson and Angela Rintoul

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Abbreviations

AGRC	Australian Gambling Research Centre
AIFS	Australian Institute of Family Studies
EGM	Electronic gaming machine
FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs
REA	Rapid evidence assessment

Executive summary

Background

Gambling is a popular activity in Australia, but can result in problems for a significant minority. The effects of gambling problems can extend well beyond the individual, and even low-risk gamblers can experience episodes that put them at risk of harmful consequences. Local, state and federal governments and the gambling industry all have an important role to play in protecting the public from gambling-related harms. Achieving an appropriate balance between implementing effective harm minimisation measures and the continued enjoyment of gambling is a significant consideration for all governments (Productivity Commission, 2010).

Electronic limit setting offers consumers a broad new set of choices for placing constraints on time or money spent when gambling on electronic gaming machines (EGMs) in gambling venues. Limit setting can be implemented in a number of different pre-commitment designs, varying by:

- how gamblers enter the pre-commitment system:
  - *full*—it is compulsory to use a gambler registration system;
  - *partial*—there is a choice to gamble either within or outside a registration system; and
- within a full or partial system, how they interact with limit-setting features:
  - *mandatory*—all gamblers are required to set limits;
  - *voluntary*—gamblers may choose whether they set limits or not.

The Australian Institute of Family Studies (AIFS) was commissioned by the former Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA)[a] to research options for the introduction of limit setting within a broader pre-commitment system. This report examines research evidence and opinions from regulators, academics, government officials and EGM venue operators relating to the optimum design of limit-setting features within a pre-commitment system. The report provides analyses and options relating to applying limit-setting features to EGMs as a consumer protection or harm minimisation measure.

Methodology

This report synthesises information collected in 2013 using two information-gathering approaches:

- a rapid evidence assessment (REA) was conducted to provide an overview of research that addresses the design of limit-setting pre-commitment features; and
- consultations were held with key stakeholders in selected government, industry and research sectors in Australia and internationally regarding existing and proposed pre-commitment systems and any limit-setting features within them.

a Now the Department of Social Services.

Limit-setting effectiveness

Worldwide, a variety of different pre-commitment systems have been trialled and implemented that have incorporated limit-setting features. The majority have used partial and voluntary systems, where gamblers opt in to a program where they can make choices about expenditure and time constraints on their gambling. Australian implementations have run and evaluated trials in specific gambling venues, typically adding voluntary opt-in limit-setting options to electronic card systems (Delfabbro, 2012b; Office of Regulatory Policy, 2009; Schottler Consulting, 2010a, 2010b). Although implementations have been somewhat different from each other, and internationally have operated under sometimes widely different governmental frameworks, some conclusions are possible:

- Almost all of the implementations and trials (international and Australian) showed evidence of overall effectiveness for those who used pre-commitment features (reduced expenditure and participation, lower rates of problem gambling, and increased awareness of spending).
- There is mixed evidence, however, as to whether moderate-risk and problem gamblers who participate in pre-commitment systems reduce their expenditure, as some studies have reported decreases in average expenditure for moderate-risk and problem gamblers while other studies have reported no change.
- In the majority of trials/implementations, multiple pre-commitment features were introduced concurrently. It was therefore difficult to determine in those studies how effective limit setting was as a specific feature.
- There is evidence that higher risk gamblers are aware of the potential value of limit setting as a way of managing their gambling and that its presence encourages them to think about limit setting.
- Initial sign-up rates under voluntary, partial systems are likely to be fairly low, partly because many people consider limit setting to be irrelevant to them (as they perceive themselves to be non-problem gamblers). Problem gamblers who are not yet ready to deal with their gambling issues are also unlikely to set limits in a voluntary system.
- Setting limits under a voluntary system was found to have limited effectiveness where the individual was able to exit the system and/or continue gambling past set limits.

In a full, mandatory system, all gamblers are required to use the system and consider limit setting. An analysis of the research evidence showed that much higher proportions of gamblers trialled limit setting in full, compared to partial, systems:

- Evidence to date suggests a full, mandatory system is likely to be a more effective means of reducing harm in theory, particularly if it includes non-exceedable limits, is offered with wide reach (i.e., state- or nation-wide and covering multiple forms of gambling), and/or includes mandated maximum monetary limits. However, if the system is seen as too restrictive or paternalistic the community may reject it (e.g., through gambling outside the system by swapping to different forms of gambling, accessing additional cards or sign-in options, or setting very high limits).
- Some problem gamblers in particular will try to circumvent the intention of a full, mandatory system if it is seen as too restrictive and/or they are not yet ready to deal with their issues.
- The hybrid system being developed in Sweden should be examined for effectiveness over the coming months and years as it uses the same protective full, mandatory system offered in Norway, including wide jurisdictional coverage, but without mandated maximum limits, thereby retaining gambler autonomy. This design may be seen to be congruent with the Productivity Commission's (2010) recommendation to balance non-interference with recreational gamblers against good protective harm minimisation measures for problem gamblers.

Limit-setting design features

Evidence from published reports and our consultations suggest that a range of limit-setting options would be useful to gamblers.

Monetary limits

- Daily monetary limits are clearly preferred over other monetary limits. Daily limits assist gamblers to control impulsive over-spending. They are protective for all gamblers, but particularly for higher risk gamblers, who tend to spend more per session.
- Longer term monetary limits (e.g., weekly or monthly) assist with budgeting. They are particularly protective of higher risk and frequent gamblers.

Time limits

- Time-based limits are a sophisticated control tool allowing gamblers to pre-commit to the amount of time spent gambling per day, week and so on, as well as to set specific gambling-free days, end session times, and receive timely reminders.
- Time limits are helpful for gamblers who lose track of time or experience dissociation while gambling. This is likely to include large percentages of moderate-risk and problem EGM gamblers.
- Time-based limits are less preferred and less frequently used than monetary-based limit-setting features, and so will require effective communication/education and/or strategic marketing to ensure gamblers understand the usefulness of these tools.
- Time-based limits may need to be introduced secondarily to monetary limits to reduce confusion for users in the early stages.

Encouraging the use of safe limits

It is important that people are encouraged to use limit-setting features when gambling. Particular options in limit setting that can encourage use include:

- defaults that require the gambler to opt out from, rather than opt in to pre-commitment systems;
- defaults that provide for at least the most important limits (e.g., daily money limits);
- sending regular invitations to gamblers to opt in to the limit-setting system and reconsider their limits, especially for those who have opted out or who have set very high limits;
- providing the ability to set and reset limits at regular intervals both at the venue (to respond to immediate needs) and outside the venue (which is likely to lead to more considered limit setting).

Downward resets should take effect immediately and upward resets should have time delays of at least 24 hours (to reduce impulsive decisions in the heat of a gambling session), though more research is required to determine if longer time periods are needed before limits can be altered (particularly to longer term limits).

It is important that gamblers are encouraged to set safe limits. However, there is still insufficient evidence to guide recommendations for default safe limits that are universally relevant:

- Data from recent prevalence studies suggest that most non-problem gamblers spend less than $40 per session (in 2013 dollars), so this amount would likely be a reasonable limit for most gamblers. Gamblers other than problem gamblers are likely to spend less than $125 per session, so this amount may constitute a high-end safety barrier.
- The provision of comparative information on wider community spending on gambling, which would demonstrate what constitutes safer and risker spending, may also encourage the setting of safer limits.
- Limits based on population-wide averages take no account of personal financial situations or budgets. Facilitating the use of budgeting tools would be best practice for encouraging safe personal limits.

Communication to gamblers about limit setting may be delivered in a variety of ways:

- Messaging about safe limits (using comparative data) should occur at multiple points, both within and outside the gambling environment.

- Information about the benefits of limit setting, and the new technology to facilitate this, should occur in various places and use different media to raise the awareness of the protective benefits of limit setting and safe limits, and to encourage engagement.
- Social media campaigns and information at venues and on machines should use appropriate psychologically based approaches to influence behaviour.
- Familiarity can improve attitudes. The gradual introduction of limit setting and/or use of familiar technology such as existing gambling-related technology can assist.
- Features should be client-centred and moderated. Uptake will be stronger if features are personalised and simple to understand.

Overarching supports

- Information about the benefits of limit setting and ways in which to achieve this through pre-commitment need to be carefully marketed to gamblers.
- Industry engagement can assist in terms of design, facilitation of trials/implementations, and contribution to staff training, but input should be managed carefully as part of the overarching process.
- Overall, best practice for limit setting includes offering basic, essential options in an easy-to-use system that includes regular opportunities to reset limits.

Additional future research recommendations

- Examine the relative efficacy of weekly versus monthly limits.
- Examine whether time-based limits increase the effectiveness of limit setting over and above what is provided by monetary limits alone.
- Examine and test low versus high default monetary limits.
- Test the relative effectiveness of partial versus full pre-commitment, including an assessment of their cost-effectiveness.
- If a full system is being considered, test relative efficacy of mandatory versus voluntary limit setting.
- Consider appropriate time periods for setting and resetting limits on demand.
- Examine the likelihood of unintended consequences from setting a limit or exceeding a limit and ways to minimise these.
- Explore the usefulness of incentives.
- Compare how pre-commitment is perceived within a loyalty card system compared to when it is presented outside a venue-based system.
- Examine the timing of invitations/reminders to participate in limit setting.

As with any research, large and representative samples and consistent trial methodology are important considerations for future research. Further future trials or implementations should also try, where possible, to introduce features separately and include detailed comparisons across gambler risk groups to more clearly articulate differences in effects between different groups of gamblers.

Conclusions and recommendations

The evidence across jurisdictions indicates the particular type of system used has an important effect on limit setting. Full, mandatory systems with non-exceedable limits offered with a wide jurisdictional reach in theory provide the best level of protection from harm, but they may be rejected by the community and so fail if the system is seen as too restrictive or paternalistic. Where a region does not have existing infrastructure to support wide jurisdictional linking of machine data, the costs involved in setting this up must also be considered. It is also clear that the way in which the system is designed and marketed to consumers is important, as gambler engagement is essential. A basic system including essential limit-setting options in an easy-to-use and clear system that includes regular opportunities to reset limits is optimal.

Additional limits can be offered through advanced screening and/or irregular invitations. A gradual rollout to increase familiarity and iron out any issues is likely to increase participation in a pre-commitment system.

A clear finding from consultations was that early pre-commitment systems and limit setting features were based on minimal evidence, with the design being driven by technological capability rather than theory or any clear understanding of gambler behaviour. There were important lessons learned from these early implementations, and consultation data show that later designs were strongly influenced by the evidence and experiences of earlier trials and implementations.

This review provides a consolidated summary and critique of limit setting, including best practice design options. It provides a valuable resource that could be used by both state and federal governments to inform their design and implementation choices within pre-commitment systems.

1 Limit-setting technology in an effective pre-commitment system

1.1 Review context

Local, state and federal governments and the gambling industry all have an important role to play in protecting the public from gambling-related harms. Achieving an appropriate balance between implementing effective harm minimisation measures and the continued enjoyment of gambling is a significant consideration for all governments (Productivity Commission, 2010).

The Australian Institute of Family Studies (AIFS) was commissioned by the former Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA)[1] to research options for the introduction of limit setting within a broader pre-commitment system. Limit setting offers consumers a broad new set of choices for placing informed constraints on the time or money spent gambling on electronic gaming machines (EGMs) in gambling venues. Regulators in Australia and around the world have called for more extensive application of limit-setting technologies in EGM venues to improve consumer protection and harm reduction measures. The Productivity Commission (2010) likewise recommended the wider implementation and greater cohesion of limit-setting technologies. It was their view that limit setting was the most practical and cost effective pre-commitment option.

This report examines existing evidence from research literature, as well as evidence obtained from regulators, academics, government officials and EGM venue operators relating to the optimum design of limit-setting features within a pre-commitment system. These data were collected in 2013. The report provides analyses and options relating to applying limit-setting features to EGMs as a consumer protection or harm minimisation measure. The findings are designed to inform policy development, including any potential pre-commitment trials.

1.2 EGM gambling in Australia

More than 70% of the adult population in Australia participate in some form of gambling each year. The most popular forms of gambling are currently lotteries (60%), scratch tickets (30%), EGMs (30%), wagers on horse or dog races (20%), and Keno (15%). The remaining activities have participation rates of less than 10% each, including sports betting, casino games, Internet gambling and bingo (Delfabbro, 2012a).

In 2008–09, expenditure on EGMs accounted for $12 billion, or 63% of the $19 billion spent on all gambling in Australia. Wagering accounted for 15%, while the remainder, including lotteries and Keno, accounted for 12%. Taxes on gambling provided $5 billion, or 10% of the total tax revenue collected by the states and territories. EGMs provided the single largest source of gambling revenue for all states and territories (except Western Australia), contributing between 37% in the Northern Territory and 73% in South Australia (Productivity Commission, 2010).

The likelihood of a leisure gambling pursuit resulting in harm is low for those who play lotto, scratch tickets, bingo or raffles, but inflates considerably with frequency of gambling on table games, wagering and, especially, EGMs (Productivity Commission, 2010). Around 600,000 or 4% of Australian adults gamble on EGMs at least weekly. While survey results vary, around 15%

1 Now the Department of Social Services (DSS).

(90,000) of these regular gamblers are considered "problem gamblers", and a further 15% are at moderate risk of becoming problem gamblers. These rates are much higher than the prevalence of problem gamblers (1%) and moderate-risk gamblers (2%) among the total population of Australian adults who gamble. Further, problem and moderate-risk gamblers account for 41% and 19% of EGM spending respectively, and therefore 60% or $7.2 billion of total machine gaming expenditure (Productivity Commission, 2010).

Problem gambling is defined in terms of both behaviour and consequences. It is characterised by people having difficulties in limiting the amount of time and/or money spent on gambling, whereby these difficulties result in adverse consequences for the gambler, their family and friends, or the community (Neal, Delfabbro, & O'Neil, 2005). Adverse consequences typically involve financial problems (including mortgage foreclosure, inability to pay bills/rent or inability to purchase essentials such as food) and relationship breakdown. These harms extend to the family and friends of people who experience problem gambling. Work performance is often affected, resulting in absenteeism and potential job loss. Clinical distress is frequently reported, with suicide attempted in the worst cases. Problems extend to legal or even criminal issues when debts remain unpaid, or when theft or domestic violence result from financial or emotional strain (American Psychiatric Association, 2000; Productivity Commission, 2010).

While the focus of research and intervention has tended to take a medical approach (by focusing on those identified as problem gamblers), it is recognised that the broader population of non-problem EGM gamblers also experience episodes that put them at risk of harmful consequences. Around 70% of EGM gamblers report that they sometimes exceed their spending limits, and 12% do so often or always. Moreover, while overspend events tend to be rare among the lowest risk EGM gamblers who play only occasionally, there are so many lower risk EGM gamblers that the aggregate number of overspends is large, as are the opportunities for harm (Productivity Commission, 2010). Therefore, despite the pleasure that many Australians derive from EGM gambling, there is clear evidence that it places a considerable burden of risk on individuals and communities. Such levels of risk strongly support a public health approach that targets prevention and harm minimisation policies at EGM gambling and suggests that policy measures with even modest efficacy in reducing harm will be worthwhile. Good measures will have positive outcomes for the community, in the form of reduced harms, as well as for the gambling industry, in the form of providing a safer and sustainable entertainment product attractive to recreational gamblers.

1.3 Role of government

Governments have a role to play in working with the gambling industry to minimise the prevalence and harms of problem gambling, and protect the wider community. At the same time, a key policy challenge for government is to maintain the enjoyment of gambling when trying to reduce the harms associated with gambling. Achieving a balance between effective consumer protection and harm minimisation and continued enjoyment of gambling is a significant consideration for government (Productivity Commission, 2010).

From the Productivity Commission's (2010) point of view, research and government policy should be directed towards understanding and influencing the epidemiology of problem gambling, particularly prevalence and incidence. The Productivity Commission argued for a public health approach that focuses on the harm caused by problem gambling episodes to all gamblers and to the community. This approach emphasises protective factors for those presently not at risk, and emphasises harm minimisation factors for those who are at risk. It stands in contrast to the traditional medical approach in which the focus has been on clinical or diagnosed cases of problem gambling. A clinical focus does not address the fact that many individuals in low- and moderate-risk groups are at risk of harm by spending more than they can afford, and also experience adverse consequences. Studies have also shown that only a minority of individuals experiencing gambling problems seek professional help through services such as counselling (Hodgins, Wynne, & Makarchuk, 1999; Slutske, 2006).

Further, governments can have only a limited influence on the personal factors leading to gambling harm. They are more likely to be effective in their aims to minimise harm and protect the wider community, by regulating environmental factors like gaming machine technology or

venue behaviour, through, for example, providing options to set limits, providing transaction histories, setting slower spin rates, restricting bet sizes, and removing features such as "losses disguised as wins" (Delfabbro, 2012a; Dixon, Harrigan, Sandhu, Collins, & Fugelsang 2010; Livingstone & Woolley, 2008). Strategic targeting of such elements can assist individuals to self-manage their gambling, act as an effective harm reduction or protective measure, and have minimal influence on consumer enjoyment. This report considers the benefits and design options of one such environmental factor—electronic limit-setting technology.

1.4 Rationale for limit setting

Self-managing gambling

People like to manage their own lives and this includes gambling. One of the most commonly used methods of self-managing or self-regulating gambling spending is setting monetary and/or time limits (Moore, Thomas, Kyrios, & Bates, 2012; Thomas, Bates et al., 2011). Gamblers can use a variety of strategies, such as setting a limit on how much money they are prepared to lose over a day/session, only bringing into a venue the amount of money they are prepared to lose, and leaving credit and debit cards at home. Time limits can involve deliberately limiting the number or length of visits to a venue, and alternating gambling with other recreational activities.

While most people attempt to self-manage their gambling, some people (particularly higher risk gamblers) are less successful at this than others. For example, research looking at gamblers' own methods of limit setting has suggested that problem gamblers are less likely than other gamblers to set themselves limits (Nower & Blaszczynski, 2010), are much less satisfied with their ability to control the amount they are spending (Focal Research, 2010), will vary the amount they use as a limit in different gambling sessions, and/or have trouble stopping gambling when they reach a self-imposed limit (Lalande & Ladouceur, 2011; Thomas, Bates et al., 2011). Therefore, some gamblers may find it difficult to manage their gambling because they do not consider they need to set themselves any limits prior to gambling or because they have trouble sticking to any limits that they do set. There are several explanations for people gambling beyond any pre-set limits.

Impediments to self-management

EGM venues are often full of sensory cues designed to induce gambling (such as lighting, sounds and animation), and the arousal induced by such an environment can interfere with cognition and compromise decision making (Wilkes, Gonsalevz, & Blaszczynski, 2010). Decisions to limit gambling to particular amounts that are made at a distance from the gambling environment (in "cold cognition" conditions) may be over-ridden once the gambler is surrounded by the cues of the gambling environment and the excitement of the game (in "hot cognition" conditions). An under-appreciation of the effect of this external stimuli on decision-making can lead some gamblers to overestimate their capacity to control their desire to gamble, leading to harmful patterns of spending (Gupta & Derevensky, 2005).

Erroneous beliefs about gambling can also interfere with decision making. For example, a gambler may think that a win will occur simply because it has not occurred for some time. This is known as the "gambler's fallacy" (Delfabbro & Winefield, 1999), and when it happens, each loss is interpreted as increasing the probability of a win in the near future. This can lead to extended gambling sessions; chasing the win. Another related erroneous belief is chasing losses, where the gambler believes the only way to regain losses is to keep gambling. This again can lead to extended gambling sessions (Parke & Griffiths, 2005; Toneatto, Blitz-Miller, Calderwood, Dragonetti, & Tsanos, 1997; Walker 1992). Research has shown that higher risk or problem gamblers hold these beliefs to a greater extent than non-problem gamblers (Joukhador, Blaszczynski, & Maccallum, 2004).

Another reason gamblers may gamble excessively relates to motivation. Gambling as a means of escaping from life stresses is a known a motivator for EGM gambling, particularly for problems EGM gamblers (Thomas, Allen, Phillips, & Karantzas, 2011; Thomas, Sullivan, & Allen, 2009). This can lead to irresistible urges to visit venues more often than can really be afforded or

than planned. The lights and music, together with the continuous nature of EGM play, provide a desired cognitive distraction from other thoughts. This can then lead to extended gambling sessions, as a side effect of this unconscious style of play, because the gambler is so engrossed in their gambling they lose track of time and/or money spent (Ricketts & Macaskill, 2003).

Other factors that are known to negatively influence good decision-making about gambling within the gambling environment include alcohol consumption, or pressure from peers to increase bets or continue gambling (Dowling, Clarke, Memery, & Corney, 2005; Welte, Wieczorek, Barnes, & Tidwell, 2006). Both of these have been known to lead people to gamble more than they had intended.

How pre-commitment technology can assist with self-managing

Limit-setting technology incorporated into EGM design can assist people to set and stick to limits. For example, the simple availability of the technology and messaging around its benefits should operate to encourage people to think about and set appropriate time and money limits around their gambling. The technology itself can work to remind people when they have reached limits and/or stop them from impulsively gambling beyond these. This technology may be particularly useful for moderate-risk and problem gamblers who, as discussed above, are more likely to have problems setting and sticking to pre-set limits due to a range of different factors. The introduction of this tool as part of a suite of pre-commitment measures may assist all EGM gamblers, and vulnerable groups in particular, to maintain or regain control of their gambling. A full discussion of the way in which the technology could operate and how people can be encouraged to set limits can be found in Chapters 3 and 4.

Electronic limit setting can be implemented within a number of different pre-commitment models. The most significant variable is whether the system is *full* or *partial*. A full system is the compulsory use of gambler registration, while a partial system gives the gambler the choice to either gamble within a registration system or gamble outside one. Within this, the system can be *mandatory* or *voluntary*. Mandatory systems require all gamblers to set limits, while voluntary systems allow gamblers to choose whether they will set limits or not. These design options for limit setting are summarised in Table 1.1.

Table 1.1: Pre-commitment design options

	Patrons must register (full)	Patrons do not have to register (partial)
Limit setting required (mandatory)	Full, mandatory	Partial, mandatory
Limit setting not required (voluntary)	Full, voluntary	Partial, voluntary

Therefore, a system where all gamblers are required to register to gamble (e.g., using a card or logging on with an ID) and are required to set a limit is a full and mandatory system. A system where gamblers do not need to register to gamble and are not required to set a limit is a partial and voluntary system.

Within this system there is some flexibility. There can be: (a) different consequences for when limits are reached—for example, being able to continue to play but without accruing loyalty points versus not being able to play beyond pre-set limits; and (b) differences in the ability of a gambler to determine absolute limits—for example, maximum limits can be mandatory and set by the government, or be set by the gambler.

For the purposes of this report we refer to a full system as requiring all gamblers to use some form of registration every time they gamble, while a mandatory system is the compulsory use of responsible gambling features, including limit setting (although it may be possible to set limits so high as to equate to having no effective limits on gambling).

The main system design decision is two-fold: between a full and partial system and between mandatory and voluntary approaches. It can then be further defined by its implementation characteristics, namely:

- *other* or *individual*—whether limits are set by the regulator, venue, third party etc., and/or the individual gambler;
- *exceedable* or *non-exceedable*—whether gamblers are able to exceed their limit and continue gambling or cannot exceed their limit once their limit has been met;
- *opt-in* or *opt-out*—whether a gambler is presented with a limit-setting system they can opt in to or a system they can opt out of; and
- *hybrid*—combinations of different designs, such as where some limits can be exceeded while others cannot, or where anonymous (non-registered) play can occur on "low-loss" EGMs, but compulsory gambler registration is required for play on "high-loss" EGMs).

Productivity Commission's recommendations

In its latest review of gambling, the Productivity Commission (2010) set out its recommendations for a national pre-commitment system for Australia. It recommended full pre-commitment systems to operate across a jurisdiction, such that all EGM gamblers would be required to use pre-commitment technology. The commission also recommended that, to increase the chances of successful implementation, that prior to the roll-out of full pre-commitment, partial pre-commitment should be implemented on compatible machines to allow people to become familiar with the technology. Further, it recommended that it be voluntary for people to set or reset personal spending and/or time limits prior to commencing a session, without being able to revoke these limits within the set period; that is, a full, voluntary system with non-exceedable limits. The commission did not recommend mandated maximum limits.

Any system design should be subject to rigorous examination and trials, and the Productivity Commission (2010) recommended that these pre-commitment features should be trialled and subject to possible modifications if necessary. They noted, for example, that a potential issue of a system without mandated maximum monetary limits is that it may be ineffective as a harm-reduction measure for problem gamblers, who could set very high personal limits, thereby circumventing the intention of the measure. Additional features such as the incorporation of easy-to-use default limits and/or safe-limit messaging could mitigate issues such as this.

1.5 Project objectives and research questions

AIFS was commissioned by the former FaHCSIA to research options for the optimum design of limit-setting features within a pre-commitment system.

Objective and information sources

The objective of this review was to gather information from a number of sources relating to pre-commitment limit-setting features to inform policy development. The analysis (based on data gathered in 2013) was based on:

- a literature review of relevant social policy and public health research, including grey literature;
- information gathered at state government and key stakeholder level regarding existing pre-commitment options in Australia related to limit setting; and
- stakeholder consultations with relevant government officials, venue operators and researchers in the ACT, Queensland, South Australia and Victoria, and, internationally, in New Zealand, Norway, Canada and Sweden.

The stakeholder consultations discussed the design of limit-setting features as part of a broader pre-commitment system, the rationale and theory to support development, and, where the information was available, how well these features were working and whether amendments or enhancements were being considered.

Priority research questions

This report addresses six priority research questions relating to the design of limit-setting pre-commitment features:

- What is the program logic for why limit setting would be effective? What effects would you expect to see and for whom?
- What is the best way to design a limit-setting feature (including default limits) as part of an effective and efficient pre-commitment system? Consideration should be given to the value and length of time of the limit and the way the limit is set (venue, Internet, etc.).
- How can all gamblers be encouraged to set limits?
- How can gamblers be encouraged to set safe limits? What rationale would be used to inform the safe limit and how could this be communicated to gamblers?
- How often should gamblers be encouraged to set limits, and should expired limits revert back to a default limit?
- What is the current state of play across jurisdictions and overseas?

1.6 Summary of methodology

Literature review

A rapid evidence assessment (REA) was performed to provide an overview of existing research that addresses the design of limit-setting pre-commitment features. An REA rather than a systematic review was conducted in response to the timeframe specified in the project brief. REAs aim to be rigorous and explicit in method and remain systematic, but make concessions to the breadth of the process by limiting particular aspects of the systematic review process (Government Social Research Service, 2009). The search process used by the research team is outlined in Figure 1.1.

Stage 1	
Identify sources/legislation to be searched Identify and pilot search terms	Identified electronic databases that had facilities to search academic, legislative and/or grey literature. Identified specialist websites to search. Defined combinations of search terms specific to each priority research question.
Stage 2	
Conduct initial search and create initial database of references	Entered search terms systematically into the databases. Created Endnote database of all "hits".
Stage 3	
Remove duplicates, apply inclusion/exclusion criteria by reading title and abstract	Removed duplicate hits. Applied the inclusion/exclusion criteria by reading title and abstract.
Stage 4	
Group hits by research question, and revise and apply inclusion/exclusion criteria	Refined and applied inclusion/exclusion criteria specific to each research question, based on developing understanding of scope of literature and to ensure manageable number of hits.
Stage 5	
Read and extract data and/or relevant legislative provisions	Extracted information and applicable legislative items relevant to research questions from each source using a data extraction template.
Stage 6	
Manual search and follow-up of references	Supplemented the systematic search by manually searching contents and bibliographies of key sources.
Stage 7	
Quality assessment	Different strengths and weaknesses of each study were described and tabled. Studies and literature of greatest strength and relevance were identified.

Figure 1.1: Overview of rapid evidence assessment method

Stakeholder consultations

Consultations were conducted with relevant Australian state government officials and researchers ($n = 8$, Queensland, South Australia & Victoria), selected government officials internationally ($n = 5$, Canada, Norway & Sweden), and with selected venue operators ($n = 8$, ACT, Victoria, New Zealand and Norway) regarding options for existing/proposed pre-commitment features. A legislative overview of the various options currently available for limit setting in the relevant Australian jurisdictions, Canada, Norway and Sweden can be found in Chapter 2 and for New Zealand in Appendix B.

The consultations were conducted to determine how pre-commitment features had been designed and, where the information was available, how well those features were working and whether amendments or enhancements were being considered.

In total, information received from 13 consultations involving 21 professionals (who, in consultation with the former FaHCSIA, were identified as having expertise in the area) was incorporated into this report.

Further details on the methodology used can be found in Appendix A.

1.7 Structure of the report

Chapter 2 examines evidence of the effectiveness of limit setting within different pre-commitment systems. Chapter 3 critiques the design features of limit setting, and Chapter 4 considers ways to encourage limit setting and safe limits. Finally, Chapter 5 summarises key findings from the literature and consultations, and outlines a range of research recommendations, including proposing some limit-setting conditions that could be tested in a future randomised control trial.

2 Effectiveness of different system designs

This chapter examines different pre-commitment trials and full implementations that have occurred in different parts of the world.

Key messages

- Full and partial pre-commitment systems have been implemented in different parts of the world using both mandatory and voluntary limit setting.
- Evidence supports reductions in gambling expenditure for people who used the pre-commitment system features.
- There is some evidence to suggest that problem gamblers participating in a pre-commitment system may reduce their gambling expenditure.
- Voluntary systems tend to have very low participation rates in limit setting, at least initially.
- There is evidence that higher risk gamblers are aware of the potential value of limit setting as a management tool and that its presence encourages them to think about limit setting.
- A system is more likely to be effective if everyone is engaged and required to set a limit.
- It is important that gamblers see the systems as positive and beneficial to them.
- Benefits from pre-commitment systems are likely to be the result of a combination of harm minimisation features (e.g., limit-setting features, transaction history statements).

Around the world, the majority of pre-commitment trials have used partial, voluntary systems where gamblers opt in to a program in which they can make choices about expenditure and time constraints on their gambling. Australian implementations have run trials in specific gambling venues, typically adding voluntary, opt-in limit-setting options to existing electronic loyalty cards (Delfabbro, 2012b; Office of Regulatory Policy, 2009; Schottler Consulting, 2010b).

Internationally, jurisdictions within Canada (notably Nova Scotia) have run trials and introduced both partial and full systems where gamblers using cards can access various responsible gaming features, but with limit setting always on a voluntary basis (Focal Research, 2007, 2010; Omnifacts Bristol Research, 2005, 2007). Other jurisdictions have used voluntary limit-setting programs that focus on specific limit-setting options. For example, Singapore allows gamblers to set restrictions on the frequency with which they can visit a casino.

The Norwegian government is currently unique: the gambling industry is wholly government-owned and it is the only jurisdiction to have introduced a full, mandatory limit-setting system. In their system all gamblers must use pre-paid smart cards. Originally introduced on a voluntary basis, card use was subsequently made mandatory. In 2009, the mandatory system introduced both "global" (i.e., jurisdiction-wide) mandatory maximum limits and the option of voluntary personal limits that could be set at a lower level than the global limits (Hoffman, 2012).

Sweden has very recently trialled a social responsibility control tool in EGMs (Strand, 2013; stakeholder consultations). This tool provides personal gaming budgets, self-diagnostic tests of gaming habits, and the chance to self-exclude from gaming. Unlike Norway, no mandated maximum limits will apply.

Online implementations have also included limit-setting options. Notably, the bwin online betting company uses a full system with voluntary opt-in harm minimisation features to subscribers (Nelson et al., 2008), while the Swedish gaming company Svenska Spel runs a full system where online gamblers can opt in to voluntary responsible gambling features, including limit-setting options (Griffiths, Wood, & Parke, 2009). Similarly, New Zealand has introduced a full system using voluntary online opt-in limit-setting programs for expenditure on lotteries.

Given the bias towards partial, voluntary pre-commitment systems, only limited comparisons between different system types can be made. However, this report does examine relevant theories to suggest best practice options where possible. Regardless of this limitation, full or partial system options are the critical design features when thinking about limit-setting features, so it is important to consider these differences where possible as they have a significant effect on limit-setting participation rates and the success of the system as a whole.

2.1 Full systems

A full system requires all gamblers to register to gamble. The only complete implementation of a full, mandatory limit-setting system at the time of writing is Norway, although trials have been conducted in Canada.

Norway

Current legislation

Due to public pressure, the old EGMs were removed from Norway in 2007 and new EGMs with harm minimisation features, including limit setting, were introduced from 2009.[2] The machines are cashless and require gamblers to be at least 18 years of age, register an account, and use a gambler ID (although Norway introduced mandatory gambler "smart cards" in 1992). The government imposes global limits on gamblers, such that there is a maximum daily net loss of Kr600 per day (c. A$105; as at June 2013) and a maximum monthly net loss of Kr2,500 (c. A$445) for the Multix (lower intensity) EGMs in convenience stores and newsagents. Limits for the higher intensity Belago machines in casino and bingo halls are set at a maximum daily net loss of Kr800 (c. A$140) and a maximum monthly net loss of Kr4,000 (c. A$715). In addition, voluntary personal limits can be set that are lower than the global (government set) limits. Personal time limits can also be set.

Additional harm minimisation features include mandatory breaks in play each hour, as well as personal breaks in play and permanent self-exclusion. Further, the maximum bet allowed is limited to Kr50 (c. A$9), the minimum game duration is 3 seconds (i.e., the quickest a gambler can play is one game per 3 seconds), and the maximum win permitted is Kr1,500 (c. A$270) per round. All EGMs in Norway are connected to one central server that records all transactions and manages the limit-setting process (Engebo, 2012; stakeholder consultations). Only one card is issued per gambler and all winnings are paid into a bank account linked to the card (which is also used to access an individual's taxation records). Gamblers add credit to their cards via multiple channels, including retailers, EGMs, mobile applications, and the Internet.

Evaluation

The mandatory nature of the system, including maximum spends, means that there is necessarily 100% participation in the scheme and a maximum daily and monthly spend across the board. There is both direct and indirect evidence of the effectiveness of these changes. Most importantly, direct evidence of the effectiveness of the measure in minimising harm to problem gamblers comes from the fact that the drop in calls by gamblers to the Norwegian helpline following the removal of the old EGMs in 2007 (2,100 calls from gamblers in 2005, falling to 657 calls in 2008) has not rebounded, despite the re-introduction of EGMs in a full and mandatory limit-setting system in 2009 (e.g., there were 746 calls in 2011).

2 Lower intensity Multix machines were introduced initially, with higher intensity Belago machines being introduced in 2011.

In addition, there is indirect evidence that the introduction of these measures has been successful in reducing harm across all gamblers. Comparing expenditure on old and new EGMs, gambling revenue fell from Kr27 billion in 2005 to Kr4.8 billion in 2011, while participation dropped from 490,000 to 105,000 gamblers (Hoffman, 2012). These changes represent approximately an 80% reduction across all aforementioned indices.

While these data do not allow examination of different risk groups of gamblers, extrapolating from other research (e.g., Thomas et al., 2013), it is likely that expenditure dropped more substantially among problem gamblers following these measures, as they tend to spend more, on average, than other gambler groups. Further, the number of EGMs dropped from a high of more than 20,000 prior to their removal in 2007, to 2,750 after their re-introduction, greatly reducing the accessibility of EGM gambling. We know that there is a positive relationship between geographic accessibility to gambling opportunities and gambling problems (Cox, Yu, Afifi, & Ladouceur, 2005; Storer, Abbott, & Stubbs, 2009; Thomas, 2010), therefore this reduction in access is likely to have had a positive effect on reducing gambling problems. Data from consultations also supported pre-commitment systems as having had positive effects in reducing harm from gambling, including a reduction in Norway in both the number of calls to gambling helplines and in the number of problem gamblers overall.

Therefore, there is direct and indirect evidence that the re-introduction of EGMs within a full, mandatory pre-commitment system has contributed to reductions in problem gambling and expenditure on EGMs. However, these data do not allow us to determine to what extent limit setting versus other harm minimisation features were responsible for reductions in problem gambling or play. Additional data provide some limited evidence to suggest that limit-setting features contributed to the fall in gambling participation and expenditure in Norway. For example, in the fourth quarter of 2012, 15% of Multix gamblers reached the global monthly limit and had their play suspended, and 2% of sessions were stopped due to people gambling continuously for an hour (Hoffman, 2012). Moreover, in the second quarter of 2012, 24% of gamblers reached the monthly maximum on the Multix machines, while 1% reached a limit on the Belago machines (Engebo, 2012). Expenditure also appears to follow a "saw-tooth" pattern, where spending is highest at the start of the month and week and then decreases as that month or week progresses. This indicates that some people are gambling more vigorously at the beginning of each time period and then slow down as they draw closer to or meet their limit. This then suggests that some gamblers may have reduced their gambling expenditure due to the mandated limits set by the government.

Interestingly, only very small percentages of gamblers set personal limits that are stricter than those mandated by the government—time limits (up to 2%) and money limits (3%) (Engebo, 2012). One explanation for this is that for the vast majority of gamblers the limits set by the government are sufficient to control their gambling. Another explanation may be that government-imposed limits are seen as very strict and so few gamblers would want to lower them any further.

Although the above data have not been disaggregated by gambler risk status, the data relating to much lower numbers of gamblers calling helplines suggest the system has been effective as a harm minimisation strategy for problem gamblers. Norway has tracked the numbers of gamblers and rates of problem gambling over the past few years and has found problem gambling prevalence has fluctuated only slightly from 2005 to 2010 (around 2% of the population), while the proportion of moderate-risk gamblers has fallen from 4% (2005) to 2% (2010). Information from Norwegian consultations confirm that data from EGMs are periodically collected and analysed to inform the development of new gambling policies in the pre-commitment area. However, no formal evaluation has yet been conducted on the effectiveness of the new harm minimisation machines or on the limit-setting features. More importantly, no independent and overarching evaluation has been conducted on the effectiveness of the system in dealing with different levels of gambling, and whether limit setting or other harm minimisation features either delay or stop gamblers from developing more severe problems, or pull problematic gamblers into lower categories of severity. It is therefore difficult to be certain which features are most effective at reducing harm or how extensively these changes are affecting problem gamblers compared to other gamblers (other than the data relating to the reductions in the number of gamblers calling helplines).

The pre-commitment system operating in Norway has shown both direct and indirect evidence of the effectiveness of limiting EGM expenditure. Gambling expenditure and participation were all reduced in the new system of pre-commitment compared to the old EGM system. Importantly, there was also indirect evidence that limit setting was having an effect on expenditure, with substantial proportions of gamblers reaching monthly limits and being stopped from playing after hitting the one-hour mark.

It is possible that some EGM gamblers may be migrating to other forms of gambling, something that would reduce the effectiveness of this measure. However, there is currently no evidence that this is occurring, with evidence suggesting a reduction across other forms of gambling rather than an increase (Lund, 2009). Other recent research has similarly shown that harm minimisation measures that effectively targeted high-risk EGM gambling did not result in any major migration to other forms of gambling (Thomas et al., 2013).

Nova Scotia, Canada

Current legislation

The Nova Scotia Provincial Lotteries and Casino Corporation (NSPLCC) is responsible for managing gambling in Nova Scotia in accordance with the provincial *Gaming Control Act SNS, 1994–95, C4.* The NSPLCC introduced the My-Play System, which is a full and voluntary pre-commitment system that allows gamblers to access to their EGM play history and to set time and/or spend limits. A gambler is required to register for My-Play in order to play EGMs in the province, but can choose not to set any limits and may continue to play after they have exceeded any limits by inserting a non-gambler identifying "light enrolment" My-Play card into the EGM to and continue gambling (see below).

My-Play allows two levels of gambler registration: light enrolment, which doesn't require identification, and full enrolment, which does require gamblers to show government-issued identification to register (but this information is not retained on the account). The other key difference is that full enrolment is account-based and enables a gambler's transaction/account history to be transferred to another card, whereas light enrolment is card-based only and gamblers require the card to access any play history.

Gamblers can register for My-Play using an automated terminal at the gambling venue or by approaching specified venue staff. Gamblers who register with My-Play are issued with an anonymous account identification number, a membership card and a PIN. The card allows gamblers to access a range of features by inserting it into the EGM, including setting time and/or spending limits and monitoring their play against those limits. Once a limit is set, it may be decreased, but it cannot be increased or removed for the period to which it relates (that is, for the day, week, month or year).

Implementation and evaluation of trial systems

Nova Scotia funded three independent trials to evaluate the efficacy of different responsible gaming devices on EGMs. The first trial used a partial system, while the second and third trials were full systems. A fourth study combined data from previous trials and data from live field tests. Finally, a recent study funded by Nova Scotia examined attitudes to My-Play to coincide with a province-wide rollout. In all cases, use of the responsible gambling options, including limit setting, were voluntary.

Study one

In the first trial, 70 modified EGMs were distributed across 10 venues in Nova Scotia, beginning in April 2005. Omnifacts Bristol Research (2005) reported on the use of the modified EGMs and other factors by a panel of 121 regular gamblers (i.e., who gambled at least once per month). Although participants were strongly encouraged to use the responsible gaming device, use was voluntary, and could be circumvented by the removal of the gambler card from the device. At the four-week follow-up, just under half of the 92 participants still in the study (45%, $n = 41$) reported using the device every time they gambled, with use less likely the higher the risk of

gambling-related problems (67% of non-problem gamblers, 75% of low-risk, 47% of moderate-risk, 26% of problem gamblers, as measured by the Problem Gambling Severity Index [PGSI];[3] Ferris & Wynne, 2001).

Further, 68 of the 92 respondents to the final survey indicated they had used the card at some point during the study. Of these 68 participants, 44% ($n = 30$) reported using the device every time they gambled. Broken down by gambling-related risk as measured by the PGSI, 40% of non-problem gamblers, 80% of low-risk gamblers, 51% of moderate-risk gamblers, and 27% of problem gamblers reported using the device during each gambling session. Note that the below average proportion reported in the non-problem gambler sample may be somewhat misleading as the sample sizes for both non-problem and low-risk gamblers were small (non-problem gamblers: $n = 12$ at four weeks and $n = 10$ at some point in the trial; low-risk gamblers: $n = 8$ at four weeks and $n = 5$ at some point in the trial), so these results are less reliable. The general trend nevertheless suggests that consistent use of the voluntary device was less common in higher risk gamblers (that is, moderate-risk and problem gamblers). Interestingly, 86% of all gamblers used the limit-setting option at some point in the trial, and all gambling severity groups reported high use of money limits (81% non-problem, 75% low-risk, 82% moderate-risk, and 96% problem gamblers).

Importantly, of those who chose to set limits, the vast majority (87%) reported that they played more responsibly using the device, saying it helped them set and maintain limits on their spending. Therefore, there was some indirect evidence of effectiveness in that around half of the regular gamblers who took part used responsible gambling features, including limit setting. Further, it appears problem gamblers were at least interested in exploring these features, which suggests that, if implemented in the appropriate manner, it has the potential to be an effective harm minimisation tool. Additionally, panellists reported being supportive of pre-commitment as they would use a card if it was mandatory (93%) and recommend the system to others (88%) if it was introduced. These results suggest that introducing a full pre-commitment system is likely to be accepted by gamblers and that this trial was not so onerous as to dissuade people from recommending it to others. This indicates that participants did not experience significant issues with the technology, system design, or the idea of using card-based responsible gambling features.

However, although most findings were positive in terms of effectiveness, the study also found that while 68% of the limit setters reached a limit, 44% reported they removed their card and kept gambling. This finding suggests that in partial systems many gamblers may choose to ignore their pre-set limits when they are in the heat of the gambling environment. A similar situation would occur in a mandatory system that allows gamblers to continue gambling beyond pre-set limits (mandatory exceedable system). Any system where people are in some way able to continue gambling beyond pre-set limits, therefore, may not be effective for those who struggle to self-manage limits, as they can easily continue gambling impulsively. The very high positive responses reported in the acceptance and recommendation of the trial's partial system may therefore not transfer to a full, mandatory system, where people cannot gamble without having a card and setting a non-exceedable limit. Testing gambler perceptions and experiences across different systems is an important part of any trial.

Study two

In the second trial, the responsible gaming device was assessed between October 2005 and April 2006 in the casino laboratory of the INNovation Village, a hospitality research centre at the University of Nevada, Las Vegas. The gaming laboratory was designed to mimic the experience found in casino environments, including a rotating collection of 24 EGMs (i.e., some were unavailable for a period of time) and a variety of gambling tables. All gamblers at the INNovation Village were required to use the responsible gaming card to gamble with their own money, although the use of the responsible gaming features was voluntary. Bernhard,

3 The PGSI is a nine-item sub-scale within the Canadian Problem Gambling Index, and is currently the predominant measure of gambling-related risk. Scores range from 0 to 27, with threshold scores indicating risk groups as follows: 0 = non-problem gambler; 1–2 = low risk gambler; 3–7 = moderate risk gambler; and 8–27 = problem gambler.

Lucas, and Jang (2006) examined qualitative responses from five focus groups of gamblers[4] to the responsible gaming features at the beginning of the trial, when they had the opportunity to use the machines in "demo" mode.[5] Seventy per cent of focus group members rated the card as useful. People also reported that they liked that the responsible gaming features were optional, but some members disliked the compulsory use of the card. In terms of limit setting, however, results show that few focus group participants intended to use the money limit-setting feature (and even fewer would use the time limit feature). Further, non-problem gamblers felt that those who were already responsible gamblers did not need this feature. One non-problem gambler reported that this feature was not relevant to them as they felt they could "leave it [the EGM] when I think it's [their gambling has been] enough" (Bernhard et al., 2006, p. 24).

Although card use data were analysed, the researchers were alerted to a significant amount of card swapping and so decided to only report aggregate data. Bernhard et al. (2006) reported that over the course of the trial period, slightly more than half (51%) of the cards had been used to opt in to one or more of the responsible gambling features at least once. By far the most popular feature was the "My Account" summary statement of wins and losses over the past day, week, month and/or year (34% used one of these at least once), and the "Live Action" detailed monitoring of activity on the machine the gambler is playing during the current gambling session (34% used this at least once). Among the "My Money Limit" features, 3% used a daily monetary limit feature at least once, while much less than 1% each used the weekly and monthly monetary limit features (0.2% and 0.1% respectively). This suggests that for both the quantitative and the qualitative analyses presented here, popular features were related to monitoring spending.

Qualitative analyses from the non-problem and low-risk gambler focus groups show that these groups would primarily use the accounting tools to keep track of their (limited) gambling expenditures, and they liked having the ability to do so conveniently. The moderate-risk gambler focus group also reported liking the accounting features, and they felt this component may provide a tool to encourage responsible gambling behaviour. Nevertheless, they did not see it as being relevant to them as they did not see themselves as being at risk of problem gambling, despite the PGSI indicating they were probably at significant risk. Qualitative analyses from the problem gambler focus group showed problem gamblers tended to like the "limit" features more than non-problem gamblers. Virtually all problem gamblers felt that this device would not help them when they were "at bottom" (i.e., at their lowest point), but many felt that this might have helped them earlier on in their gambling careers, and that more educational features should be added to the device as they were largely oblivious to the potential problems when they first started gambling.

Therefore, in this study where people could try out pre-commitment features, gamblers were generally positive about pre-commitment, but few were interested in using limit-setting features, primarily because they did not see it as being relevant to them (as they perceived themselves to be responsible gamblers). Interestingly, the problem gamblers thought that the limit setting features would have been of assistance to them if they had had access to this at an earlier stage. However, the fact that the moderate-risk gamblers tended to think the features were not relevant to them suggests that it may take sustained media communication to educate people about the protective benefits of limit setting.

Study three

In the first study related to the third trial, Omnifacts Bristol Research (2007) selected a panel of gamblers (n = 161) for an ongoing dialogue about the system and its features. Panelists agreed to certain conditions, such as providing information on their play behaviour and completing a PGSI assessment. Those who did not play EGMs on a monthly basis were excluded from the study, as were those who regularly played EGMs outside the test area of Windsor-Mount Uniacke,

4 Four of the groups were categorised and grouped according to their scores on the PGSI. A fifth group was added to include former problem gamblers, which the research team defined as an individual who had participated in either a Gamblers Anonymous program or a formal treatment program, and had two years of "recovery" (i.e., time spent without gambling).

5 Quantitative analyses were also conducted, but as the authors discovered significant amounts of card swapping, possibly because of suspicion of the system, only the qualitative results are reported in this section.

Nova Scotia. Overall, the authors reported that there were positive indicators of success from this study and several indicators suggested the card system did encourage responsible gambling among regular EGM gamblers.

The study found gamblers underestimated the time and money they were spending on EGMs when self-reported data were compared to actual gambling data, suggesting that both time and money tools may be helpful. For example, Omnifacts Bristol Research (2007) reported the cash-in amount was underestimated by a factor of 7, the number of sessions by a factor of 3, the minutes played for those playing up to 4 hours by a factor of 2.5, and minutes played for those playing 4–12 hours by a factor of 1.2. Only minutes played for those playing more than 12 hours were overestimated, by a factor of 0.9.

Omnifacts Bristol Research (2007) also reported some card swapping between gamblers; therefore they analysed spend only for those who reported borrowing a card on no more than one occasion, lent their card rarely, only played once or twice when the card network was unavailable, and did not regularly play outside the test area ($n = 55$). During the live test period, between 4 October 2005 and 25 March 2006, this group reported a decreased spend of 31% by non-problem gamblers, 24% by low-risk gamblers, 33% by moderate-risk gamblers, and 13% by problem gamblers. Further, when gambling status scores as measured by the PGSI pre- and post-implementation were examined, 34% had dropped into a lower PGSI category, 52% had not changed scores significantly, and only a small group (14%) moved into a higher PGSI category. Moreover, the reductions in symptoms were more pronounced in the low- and moderate-risk categories of the PGSI (a decrease of 12% each), with the problem gambler category falling by 9%. The non-problem category was the only group that recorded an increase (by 7%) in their PGSI scores. This is less problematic than increases in risk for other groups as the base level of risk for this group is 0. Therefore, during the course of this analysis, there was a general reduction in the severity of problem gambling symptoms, and falls in spending. Although this was a self-selected group who may have been more motivated to change their behaviour, it suggests that the responsible gambling features were successfully reducing expenditure and the experience of gambling-related harm.

Study four

In a second study relating to the third trial in Nova Scotia, EGM data from the live field tests of the responsible gaming device were analysed. Focal Research (2007) reported on the gambler data collected between October 2005 and March 2006. During the trial period, the use of a gambler card was compulsory to play on any EGMs located in the test area (Windsor-Mount Uniacke, Nova Scotia: 9 sites, 51 terminals, $n = 1{,}854$ gamblers). This was a full system in that it was essential to register and use cards, but it was voluntary to sign up for the responsible gambling features (which included money and/or time limit setting).

In this study of nearly 2,000 gamblers who were required to use a card to play, based on EGM data, Focal Research (2007) found approximately 34% of all gamblers and 71% of regular gamblers (i.e., those who gambled once a month or more, $n = 624$) used the responsible gambling features on their cards (i.e., spending limit, time limit, two-day exclusion, or playing history). Further, approximately 66% ($n = 414$) of regular gamblers continued to use one or more responsible gambling feature in subsequent gambling sessions. Around 11% ($n = 97$) of all regular gamblers ($n = 871$) or 5% of all gamblers ($n = 1{,}854$) set a "daily money limit" at least once during the trial, with 1% ($n = 5$) setting a monthly and/or yearly limit, and 1% ($n = 5$) setting an EGM expenditure limit.

Among gamblers who played 18 or more sessions, those who regularly used responsible gambling features reported significantly more intense gambling across several indices (e.g., total money played per session, total money spent per session, number of games played per session etc.) than regular gamblers who did not adopt those features. The direction of the relationship is unknown. It may be that adoption of responsible gambling features results in more intense play, possibly encouraging gamblers to believe they are protected from the harms from gambling. Alternatively it may be that higher intensity gamblers chose to gamble using these features. Further research should examine whether this is an unintended consequence of providing a pre-commitment system or whether the features are particularly attractive to high-intensity gamblers.

Focal Research (2007) compared regular gamblers who did and did not use responsible gambling features on a number of indices at the end of the trial. They found that, in comparison to those who did not use the features ($n = 247$), responsible feature adopters ($n = 414$) had longer play sessions (89 minutes vs 77), higher frequency of play (only 5.2 days between play sessions vs 9.6), and put more money in the machine per session (C$250 vs C$170).[6] However, in terms of game outcomes related to expenditure, adopters were more likely to withdraw or "cash out" money (76% vs 69%) and to cash out larger amounts (C$200 vs C$120) during play. Further, there were no statistical differences at the $p < .05$ level for total money spent per session (adopters C$45 vs non-adopters C$52), total money won per session (adopters C$775 vs C$672), and total money played per session (adopters C$821 vs C$725). The results of this analysis suggested that while adopters were more intensive gamblers than non-adopters, their outcomes were not worse. Adopters withdrew more money than non-adopters during a session, but ultimately they were found to be playing and spending similar amounts of money. The extent to which information from the pre-commitment system guided decision making is not known.

Further analyses were then conducted comparing EGM data before and after the introduction of the responsible gambling features for 122 testable adopters as a single group (this being people who had at least three sessions of pre-trial data and three sessions of post-trial data using the responsible gambling features) (Focal Research, 2007). These analyses showed that these adopters of responsible gambling features had a significant decrease in their per session expenditure, from C$47 to C$40. Interestingly, they had a significant *increase* in gambling session length pre- to post-trial (82 minutes to 98 minutes), but no change in the frequency of gambling per month (9.3 sessions). Focal Research suggested these results indicate that responsible gambling adopters were deriving more "play value" from using these features than non-adopters. Consequently, these results indicate that responsible gambling features might increase the enjoyment for some gamblers, although whether the experience is similar for different groups of gamblers needs further clarification. Trialling responsible gambling features with knowledge of gambling severity will help elucidate these issues.

Focal Research (2007) developed a model based on a selection of gambling behaviours (e.g., percentage of sessions where a gambler returned to gamble the next day after losing $200) to predict the PGSI scores of the panel from the third trial, which was then used to further categorise all participants as low- or high-risk gamblers. This model (low vs high severity) was applied to the EGM data of testable adopters pre- and post-adoption of the responsible gambling features. High-risk gamblers were found to have no significant changes ($p < .05$) on average money played (C$832–949), average session length (93–104 minutes), and days between sessions (5.2–3.5), pre- versus post-trial. However, the number of games played per hour fell significantly (from 637 to 611), while the cash-out rate increased (from 69% to 77%). Low-risk gamblers were found to have significant increases ($p < .05$) in average money played (from C$579 to $735), average session length (74 to 94 minutes), and cash-out rate (70% to 84%). However, low-risk gamblers had no change in days between sessions (3.4–3.0). These results suggest that the adoption of responsible gambling features resulted in no real change in gambling behaviour for higher risk gamblers, but allowed the lower risk gamblers to gamble with more freedom, although they appeared to be acting more responsibly by cashing-out at higher balances.

Study five

More recently, the province of Nova Scotia introduced My-Play jurisdiction-wide (Focal Research, 2010). During the first year of the program (August 2010 to August 2011), use of the gambling card was voluntary, so it was possible for gamblers to gamble outside of the system. Focal Research reported they planned to use a mix of approaches to evaluate the gambling of both card users and non-card users. The study included a panel of regular gamblers ($n = 1,039$), a benchmark survey at the launch of My-Play ($n = 500$), follow-up surveys of the benchmark sample, and a random sample of gamblers post-trial. Focal Research reported on the benchmark survey—the attitudinal evidence regarding My-Play and gambling behaviour—prior to an

6 In 2007, the Canadian dollar was very close in value to the Australian dollar.

analysis of the use of the system. The following discussion focuses on the attitudinal self-report evidence of respondents regarding their *perceptions* of My-Play, rather than their current gambling behaviour (as this behaviour was not relevant to the current report).

Focal Research (2010) reported that 51% of the regular gamblers[7] surveyed said they were in favour of the My-Play pre-commitment system being available in Nova Scotia. Higher risk gamblers, as defined by the PGSI, were more likely than others to be in favour of the system (non-problem 48%, low-risk 41%, moderate-risk 59%, and problem gamblers 68%). Almost a third (31%) of regular gamblers expressed some opposition to the program, with the lower risk gamblers generally most likely to be opposed (non-problem 33%, low-risk 38%, moderate-risk 25%, and problem gamblers 20%). Further, while there was an across-the-board preference for voluntary money and time limit setting, higher severity gamblers were more likely to support mandatory use of these features (monetary limits: non-problem 17%, low-risk 19%, moderate-risk 31%, and problem gamblers 41%; time limits: non-problem 16%, low-risk 11%, moderate-risk 26%, problem gamblers 38%).

The research also asked about intention to register for the system. Although the majority of the sample said they did not intend to obtain a card, high-risk gamblers were again more likely to say they planned to get a card compared to other risk groups (non-problem 14%, low-risk 23%, moderate-risk 28%, and problem gamblers 44%), while lower risk categories were more likely to be clear they did not plan to get a card (non-problem 75%, low-risk 71%, moderate-risk 68%, and problem gamblers 52%). Interestingly, however, lower risk gamblers were more likely to have already obtained a card (non-problem 11%, low-risk 6%, moderate-risk 4%, and problem gamblers 3%), although in all cases these were very small percentages. The primary reasons reported for not getting a card were: privacy concerns; having their own system of budgeting, tracking and monitoring gambling spend; not needing a card; or not playing or spending enough time gambling (21–26% of respondents). Problem gamblers were more likely to report having privacy concerns (32%) and not knowing enough about the card (19%) as reasons for not getting a card, compared to other risk groups. Importantly, they were also more likely to say they would quit EGM gambling if required to use a card (10% of problem gamblers compared to 2–3% of other gambler groups).

In addition, higher risk gamblers in general were more likely to report a desire to set limits for play per session/day/month compared to lower severity categories (monetary limits: non-problem, 30%, low-risk 37%, moderate-risk 60%, and problem gambling 55%; time limits: non-problem 21%, low-risk 28%, moderate-risk 45%, and problem gambling 43%). They were also more likely in general to report being somewhat or very likely to use limit-setting features (money limits: non-problem 33%, low-risk 59%, moderate-risk 72%, and problem gambling 62%; time limits: non-problem 26%, low-risk 39%, moderate-risk 53%, and problem gambling 55%).

These results suggest there was significant interest in using the My-Play system (particularly by moderate-risk and problem gamblers). Further, higher severity gamblers appeared to value the ability to set monetary and time limits, and the idea of mandatory limit setting, more than lower severity gamblers. The lower severity gamblers generally were less likely to want to use a pre-commitment system, which is likely to relate to them perceiving no need for the features. In contrast, the higher severity gamblers were more likely to see value in the features and to perceive a need for a more restrictive system.

However, there appears to be some disconnect between intention and behaviour, as lower severity gamblers were more likely to report having obtained a card than higher severity gamblers. This appears to be congruent with the higher percentage of problem gamblers compared to lower severity gamblers reporting they would quit if required to use a card, and also the higher levels of suspicion that problem gamblers have about privacy. Together, these results suggest that greater education is needed to assist all gamblers to see the protective benefits of the system rather than as a constraint or as something that is only applicable to people with a gambling problem. As the Focal Research (2010) noted, the results also support the argument that a mandatory system will provide better protection for higher risk gamblers.

7 Regular gamblers were defined as those playing once a month or more over the past year.

Summary

The Nova Scotia trials have produced a large amount of data. The key finding appears to be that although gamblers removed from the actual trials reported they would not be interested in the responsible gambling features, a significant number of gamblers in the trials did use the features. Importantly, some gamblers reported gambling more responsibly, although in many cases actual expenditure and session length were greater when responsible gambling features were adopted, which may mean they feel more freedom to gamble within pre-set limits. This would be a reasonable outcome if overall spending was contained within pre-set limits and additional time spent was not seen to be an issue. This is not clear, however, and other analyses have shown that adopters gambled less. Further, some analyses of adopters appear to show that low-risk gamblers increase their gambling intensity and problem gamblers' expenditure remains relatively stable. Therefore, these trials provide mixed evidence of effective harm minimisation for the groups who most require it, at least in the short term.

Again, the simultaneous introduction of a number of features compromises the degree to which we can attribute the positive results specifically to limit setting. That is, the drop in spend may be due to setting and reaching limits, or it may be due to providing transaction history information that can spur cognition about gambling expenditure.

Consultation information revealed that the largely positive findings from the first three trials led to the province-wide rollout of the My-Play pre-commitment system between 2010 and 2012. As reported above, an evaluation of the My-Play pre-commitment system in Nova Scotia is currently underway, with only the benchmark data having been reported as at 2013. Further analyses following up the benchmark survey respondents, and a random survey of card users and non-users is likely to provide further insights.

2.2 Partial systems

Partial pre-commitment systems do not require gamblers to register in order to gamble. That is, gamblers can gamble outside a pre-commitment system if they choose to. Partial systems therefore work predominantly by increasing awareness about pre-commitment and encouraging behaviour change in high-risk gamblers. Behaviour change cannot be enforced in a partial system as people are able to continue gambling outside the system.

Overview of partial limit-setting schemes in Australia

Commonwealth statutory framework

In addition to legislation in each Australian state and territory, the Australian Government has established national gambling legislation. The *National Gambling Reform Act 2012* sets out a package of harm reduction measures to address problem gambling. The Act sets minimum standards around these measures that apply in each state and territory in relation to EGMs and forms part of a broader commitment by the government to assist problem gamblers. The Act operates concurrently with state and territory legislation and is not intended to limit the ability of a state or territory to impose stricter measures. At the time of writing this report, the Commonwealth legislation was not yet operational and so has not been addressed in further detail as part of this report.

State and territory frameworks

Beyond the Commonwealth legislation, which has the effect of aligning the state and territory frameworks for limit-setting measures from 2018, there are currently limited policy settings in each jurisdiction that establish specific requirements in relation to limit setting.

In Victoria, the *Gambling Regulation Amendment (Licensing) Act 2009* and the Gambling Regulation (Pre-Commitment) Regulations 2012 both stipulate that from December 2010, prescribed EGMs must be capable of supporting a pre-commitment system. Accordingly, prescribed EGMs in Victoria must allow gamblers to set time and/or net loss limits. This is known as a pre-commitment session. The term "net loss limit" is not specifically defined in

the regulations but we understand the term to mean a limit on the amount of money that may be lost after wins are deducted.[8] If a gambler reaches a set time or loss limit, the EGM must display an alert for at least 15 seconds showing the amount of money the gambler has put into the machine during the pre-commitment session, the net win or loss for the pre-commitment session, and the duration of the pre-commitment session. The gambler may continue to play after reaching the set limits. Further, in late October 2013, the Victorian Government introduced the Gambling Regulation Amendment (Pre-commitment) Bill 2013 to amend the *Gambling Regulation Act 2003* to enable provision for a pre-commitment system to commence from 1 December 2015. Under this system, it will be compulsory for all EGMs in all venues in Victoria to be connected to a state-wide pre-commitment system. Gamblers will then be able to choose if they wish to use the pre-commitment system or not. A trial of a card-based pre-commitment system that could be used across multiple venues is presently underway in eastern Australian states, but no information on the trial outcomes was available at the time of writing.

At a regulatory level, most states and territories have developed a responsible gambling code of conduct (or similar), which provides some guidance to venues within each jurisdiction. For example, the Tasmanian Gaming Commission, the Queensland Office of Liquor and Gaming Regulation, the South Australian Office of the Liquor and Gambling Commissioner and the Northern Territory Government each have a Responsible Gambling Code of Practice. In Victoria, the Victorian Commission for Gambling and Liquor Regulation has the Responsible Gambling Codes of Conduct. However, only the Queensland code establishes a clear policy requirement that venues offer a mechanism for a limit-setting scheme (and in Queensland it applies only in relation to venues assessed as having a significant community impact). Victoria requires venues to encourage the use of a pre-commitment strategies/technology, with the legislation requiring this to be phased in over 2010–15.[9]

In most states and territories, limit-setting arrangements are currently established or codified at a venue level, but not all venues in all states and territories have these arrangements in place. Where venues do offer gamblers a choice to set limits, these arrangements are currently tied to a loyalty or membership scheme that allows members to set time and spend limits on their loyalty card, which may be per day or annually, depending on the venue and/or scheme. In all cases, gamblers may continue to play without using their loyalty card once they have exceeded their pre-set limits.

Venue trials and implementations

The Crown Group, which operates casinos in Western Australia and Victoria, offers the Play Safe Limits program that allows gamblers (who are members of Crown Signature Club, the operator's loyalty scheme) to set daily and annual spending limits, set a time limit for any given day and be notified when they have reached the pre-set limit. Gamblers can access this scheme by making contact with a specified staff member at the venue and completing the relevant forms.

Once a gambler has reached their limit, an audible warning sounds and a message appears on the EGM indicating that the limit has been reached. If a gambler decides to continue to play after they have reached the limit, they can continue to play, but they will not earn loyalty scheme points for the remainder of that day. Gamblers can request a change to, or removal of, the spending or time limit by approaching specified venue staff. A decrease to the limit will take effect immediately, whereas an increase to the limit will not take effect for at least 24 hours. In order for the increase to take effect, the gambler must confirm the increase with venue staff after the initial 24-hour period. If the increase is not confirmed within three visits, the previous lower limit will be reinstated.

Likewise, the casino in South Australia offers a pre-commitment program that allows gamblers to set individual limits in relation to the amount of money that they wish to spend, the amount

8 An example provided in the Victorian Government Gambling Regulation (Pre-commitment) Regulations 2012 s 6 is: "of the information that may be displayed if a gambler sets a net loss limit of $30 and reaches that net loss limit: Cash in $50.00(-Net Loss)(-$30.10) Total time played 1 hour and 23 minutes".

9 *Gambling Regulation Amendment (Licensing) Act 2009*; Gambling Regulation (Pre-Commitment) Regulations 2012.

of time that they wish to spend at the venue and/or the amount of visits they wish to make per week. As with the Crown group, the system does not stop gamblers from gambling once a gambler reaches a pre-set limit. As part of their Host Responsibility program, the SA casino offers an online tool that can estimate the annual cost of gambling and equate it to various items, for example, MP3 players, Sony PlayStations, average rent, European holidays, new cars, and house deposits. They also offer the "Eight" Gambling Screen—Early Intervention Gambling Health Test, which can be used by gamblers to identify possible gambling problems and provides links to gambling counselling services.[10]

Echo Entertainment, operating casinos in Queensland and NSW, offers the Absolute Assist program, which allows loyalty scheme members to open a card-based gambling account and to set daily spend limits. Gamblers are reminded of their spending limit and the percentage used that day when they insert their loyalty card into an EGM (by way of a balance displayed on the scrolling screen). When a gambler reaches their daily limit, the EGM and their account are locked and a message on screen shows that the daily limit has been reached. A gambler can continue to play beyond the daily limit by using cash or playing other games, such as table games. Gamblers may request a change to the limit at any point. An increase to the set limit will not apply for 24 hours after the request is made and removal of a limit altogether may take up to 48 hours.

Pre-commitment schemes are also available in a number of non-casino venues. For example, the PlaySmart scheme is available in over 70 EGM venues across South Australia. This scheme allows reward club members to set time and spend limits. Gamblers may register for the scheme and change their limits online or at the venue. Gamblers may continue to play after the limit is reached, but if they do a message displays on screen, a tone sounds and an alert is sent to nominated venue staff, who may intervene to encourage the gambler to take a break or cease play. Similarly, over 40 club and hotel venues in Queensland offer a voluntary limit-setting scheme, the features of which are largely the same as the scheme offered in Queensland casino venues by Echo Entertainment.

Most recently, information was provided during consultations regarding the design of a card-based system that would offer pre-commitment features such as limit setting and activity summaries (transaction history statements) and operate across multiple venues and operators. Trials are presently underway in eastern Australian states, with the system being set up to enable it to operate within current and proposed state and federal legislation. It has been designed to operate using a single identified card linked to venue-based loyalty programs and to use the existing Victorian state-wide monitoring system to run the pre-commitment aspect. In this way, loyalty cards from different venues (and across multiple operators, including both clubs and casinos) could be used to access the common pre-commitment system. Access to this system would be voluntary and would include both time and money limit-setting options. Therefore, while the individual loyalty programs would remain within the purview of each venue, the set limits would be carried across all venues within a region (e.g., within Victoria), so gamblers set limits once and have them cumulatively displayed in whichever venue they are currently playing (provided that venue belongs to the system).

In the trials, limits may be set for time and/or money and for periods of a day, week or month. Single-screen EGMs are used with options and messages displaying directly onto the playing screen rather than appearing in a secondary screen, as this is seen as best practice. The proposed process involves the gambler swiping their card in the EGM, which results in a series of options being displayed on screen, including one for pre-commitment features. The gambler can then choose to enter options as they wish.[11]

Review of trials conducted in Australia

Several trials have been conducted in Australia. Results from these studies have been equivocal, with trials showing evidence of success with gamblers valuing responsible gambling features

10 The casino website cites the "Eight" Gambling Screen—Early Intervention Gambling Health Test as having been developed by Sean Sullivan, Auckland Medical School, 1999.

11 At the time of consultation the details of the implementation process were still being adjusted.

(where they have been used), but often also reporting very low take-up of limit-setting features. This is an important consideration because features cannot be effective if gamblers do not use them. Findings from the various trials are discussed in detail below.

South Australian trials

PlaySmart

The PlaySmart system was trialled in South Australia (Schottler Consulting, 2010a & 2010b; stakeholder consultations), working in conjunction with the Jackpot Loyalty (J-Card) system. This system offered features such as breaks in play, personalised reminder messages that could be set by the gambler, progress reminder messages warning when approaching limits, and limit-setting capabilities. Gamblers could choose whether or not to register with the loyalty card system (making it a partial and voluntary system). However, unlike the high rates of limit setting use seen in the full systems operating in Nova Scotia and Norway, this trial registered fewer than 1% of all gamblers using any of the responsible gambling features ($n = 258$). However, consultees noted that the J-Card loyalty system is widely used in SA for a variety of non-gambling purposes, including alcohol and food purchases. There are many J-Card users who never gamble and, therefore, the proportion of users who have registered for limit setting is not directly comparable to other systems where the loyalty card may only be used for gambling.

Recruitment for the PlaySmart trial was conducted over three phases (Schottler Consulting, 2010b). Phase 1 (12 months, $n = 135$) was termed "natural recruitment", using no venue coaching or gambler incentives. Phase 2 (4 months, $n = 133$) was termed "coached recruitment",[12] where venue coaching was provided to assist in actively recruiting gamblers to PlaySmart, and a $50 voucher was offered to participate in the research survey. Phase 3 was termed "random recruitment", where messages suggesting gamblers set limit were presented to a random selection of J-Card gamblers who had not adopted PlaySmart. Schottler Consulting reported that they combined recruitment for Phases 2 and 3 into Phase 2, so no uptake of PlaySmart is reported separately for Phase 3.

While overall recruitment was low, this trial showed a very high rate of limit setting among those who used any of the responsible gambling features, with 94% of PlaySmart users who had signed on for the pre-commitment system and used any responsible gambling feature in Phase 1 setting a primary expenditure limit (Schottler Consulting, 2010a). This high percentage is probably not very surprising, as limit setting is a key feature of pre-commitment. Further, in a separate survey of 82 PlaySmart users, 62% ($n = 51$) agreed or strongly agreed that PlaySmart encouraged them to think about how much they could afford to spend on EGMs (Schottler Consulting, 2010b). Finally, analyses of EGM expenditure data from a small group of gamblers ($n = 67$; PGSI: 10 non-problem, 19 low-risk, 25 moderate-risk, 13 problem gamblers) showed that declines in spending were predominantly related to higher risk gamblers, as non-problem gamblers reduced their expenditure by 5%, compared to problem gamblers, who reduced their spend by 56% (Schottler Consulting, 2010b). Therefore, for those *who chose to engage with the system*, almost all trialled the limit-setting feature, and problem gamblers appeared to get significant benefits from setting limits. However, it is important to note that this result has been obtained with a small sample of self-selected gamblers who chose to take part and so may have been more motivated to reduce their spend than other gamblers. These results therefore may not translate to a broader implementation of pre-commitment within a mandatory system where everyone is required to set some type of limit. Many moderate-risk and problem gamblers, for example, may simply set very high limits and so do not reduce their expenditure.

Maxetag

Global Gaming Industries implemented a trial of the Maxetag system using the Maxetag loyalty system in the Adelaide area. This was a partial, voluntary limit-setting system but, rather than using a card, gamblers using their Maxetag to swipe a tag reader received a prompt to set a

12 "Coached recruitment" refers to a group-based meeting at the start of the phase and weekly telephone-based coaching for a period of approximately 6 to 8 weeks into the phase (and ran until venue staff reported that most "regular" gamblers had been already approached about PlaySmart).

limit for that day. Non-card gambling was possible if gamblers did not swipe on to the Maxetag system but gambled using cash. The pre-commitment features available in the Maxetag system were session statements and limit setting. Delfabbro (2012b) reported that gamblers did not swipe on in the vast majority of sessions (around 80%) during the trial. Approximately 2% ($n = 19$) of all Maxetag loyalty members ($n = 1,265$) set limits in the trial period. This again is consistent with the rates of participation in limit setting as a proportion of patrons where people could choose to sign up.

Interestingly, the study found that in half of the sessions where limits were set the limits were exceeded. This is similar to the findings of the first trial in Nova Scotia, suggesting that limit setting in a voluntary system acts more as an awareness-raising tool than behaviour-changing strategy. Similar to the second trial in Nova Scotia, gamblers generally reported that limit-setting features were of little relevance to themselves, as they did not perceive themselves to be problem gamblers. Further, only five gamblers completed the PGSI and none of these scored above 0, indicating all were recreational gamblers. Delfabbro (2012b) suggested the low rate of limit setting was related to the stigma associated with limit setting (e.g., perceptions that these are tools for problem gamblers rather than recreational gamblers).

Queensland trials

Grandview Hotel, Queensland

In the Grandview trial, pre-commitment card-based gaming technology was trialled from February to April 2005. The system allowed participants to set any of the following pre-commitment limits: maximum account limit, transfer limit, maximum transfer per day, minimum time between each transfer, session time limit, and daily/weekly expenditure limits. This was an early trial. It was not seen as particularly successful as it was found to have a number of design faults. However, a number of lessons were learned. In particular, it was concluded that a high number of pre-commitment limits available on the card-based gaming system is too confusing; that a user-friendly pre-commitment system and simple sign-up process are imperative to success; venue management and staff need to be strongly committed to the system to assist with uptake of card-based gaming and pre-commitment limits; venue staff require significant training on the functionality and available limits on the system in order to competently train participants; and a flexible regulatory approach is required (Office of Regulatory Policy, 2009; stakeholder consultations). Findings from this trial informed the design of later trials at the Sandgate and Redcliffe RSLs, discussed in more detail below.

Sandgate RSL, Queensland

The Sandgate RSL was the location of the trial of a card-based system, with a focus on pre-commitment that included limit setting, limit warnings, expenditure statements, and a 24-hour cooling-off period. In this system, loyalty club members were eligible to take part, but had to set up a new card to access the responsible gambling features. In all, 28% ($n = 18$) of the 64 gamblers who registered for the trial set a daily spend limit at Sandgate RSL (Office of Regulatory Policy, 2009; Schottler Consulting, 2008). This is a much lower percentage than was seen with the J-Card, but the sample size was very small. One of the benefits of signing up to the system was the ability to access cashless gaming, which may have attracted a proportion of this group. Further analyses found that the higher risk gamblers[13] agreed slightly more than recreational gamblers with survey statements that playing with the card encouraged them to think about the affordability of gambling and the time spent gambling. Recreational and higher risk gamblers equally agreed with the statement that playing with the card encouraged them to set a spend limit for pokies play, compared to regular cash-based gaming. These results suggest that higher risk gamblers recognised the benefits of limit setting, perhaps a little more than recreational gamblers, but although they seemed positive about the process, they were no more interested in changing their behaviour than recreational gamblers.

13 In this case "higher risk" was designated by a score of 3 or more on the PGSI.

Redcliffe RSL, Queensland

The Redcliffe trial was a card-based pre-commitment system that included histories, daily spend limits, a "session reminder", and a maximum card balance and transfer amount. As with the Sandgate trial, the system also allowed cashless gaming. This trial used the SIMPLAY feature that was enabled on existing club membership cards. The evaluation of the Redcliffe RSL trial (Schottler Consulting, 2009b) reported that 13–17% of regular gamblers were registered for pre-commitment (n = 341). This is higher than the overall pre-commitment sign up rates seen with the J-Card trial (of less than 1%) that also used a pre-existing card. The higher sign-up rate may again relate to interest in cashless gaming. Of those who signed up for the system, 13% (n = 45) set a daily limit, which is lower than the Sandgate trial but reasonably comparable given the very limited number of participants in the Sandgate trial.

Further analyses of the Redcliffe data revealed that the majority of gamblers across all severities agreed that card-based gaming should be made voluntary rather than compulsory, moderate-risk and problem gamblers perceived that card-based gambling reduced expenditure, and problem gamblers reported that playing with a card encouraged them to set a limit and think more about pokies expenditure. Further, problem gamblers were more likely than other gamblers to set a limit during the trial (33%, compared to moderate-risk 19%, low risk 8%, and non-problem gamblers 11%). These findings suggest that while uptake of limit setting in these trials was low, problem gamblers may be aware of limit setting and its potential value, indicating that implementation is raising awareness in those gamblers experiencing most harm.

Differences between trials

These Australian trials were all partial systems using voluntary limit setting. Although all trials except the Maxetag trial used a card-based system, there are important differences between them, and these differences may have affected who might have taken up the system. Those who are interested in pre-commitment and setting limits are likely to be more highly motivated to manage their limits. However, a proportion of those who participate in a cashless gaming system with a pre-commitment focus might be motivated to take part in order to facilitate gambling without using cash, rather than thinking about ways of managing their gambling. Further, the Maxetag system used another technology where the responsible gambling device was on a separate consol. This may have resulted in fewer people participating than if the system had been card based. These dissimilarities between implementation may have created differences in participation rates and in the type of participant.

The differences in systems mean direct comparisons cannot be made between the trials in terms of usage. The 94% noted in the PlaySmart (J-Card) group, for example, referred to the number who had set limits as a proportion of those who had used any responsible gambling feature in a system that was marketed as a specifically designed "pre-commitment system". This contrasts to the Queensland trials, which looked at the percentage who set a daily limit as a proportion of those who were interested enough to register for a card-based system that had a focus on pre-commitment. Therefore the J-Card trial is likely to have recruited a more motivated sample in terms of pre-commitment and limit setting. The Maxetag trial examined the proportion of loyalty members who used limit setting when it became available. Interestingly, the end result is that approximately 2% of regular gamblers within the Redcliffe trial were choosing to set daily limits when they became available, and around 2% of Maxetag loyalty members chose to set limits during the trial period. This figure is fairly consistent with the sign-up rate overall for patrons in the J-Card trial. Overall, all the trials suggest that only a very small minority of people who are part of a wider loyalty-based system will access limit setting in a voluntary setting in the short term, but that higher risk gamblers may be aware of the potential benefits of limit setting.

2.3 Hybrid systems

Hybrid systems are combinations of different types of systems, where gambler registration and pre-commitment features are only available or required on particular types of machines or games. Usually these machines/games are differentiated such that higher intensity machines (e.g.,

quicker play, more betting lines, etc.), which have more potential for losses, require gambler registration, while gamblers playing lower intensity machines/games can gamble anonymously. These hybrid options are similar to a suggestion made by the Productivity Commission (2010) that gamblers could have the option of playing free games or playing in a "safe mode" (where very small amounts can be gambled) as an alternative to registered play or once the gambler reaches their pre-imposed limits. One benefit of hybrid systems is they provide some flexibility and anonymity for recreational gamblers, but require registration for those who wish to play machines/games that are designed to encourage extended or higher intensity play and loss.

An example of a hybrid system is being trialled in Sweden. The Swedish Gambling Authority has overall responsibility for licensing, regulating and monitoring gambling in Sweden. Svenska Spel, the largest gambling company in Sweden, is state-owned and runs a variety of gambling activities, including sports betting, online and EGM gambling, bingo and lotteries. Corporate responsibility to provide safe gambling is of major importance, such that the company has a stated aim to prioritise social responsibility over maximising profit. Svenska Spel controls approximately 50% of the legal gambling market in Sweden and has over 6,000 EGMs in stores, restaurants, pubs and bingo halls as well as four casinos across the country. EGMs in Sweden have legislated maximum limits on bets of Kr5 (c. A$0.85c) and maximum win payouts of 100 times the bet. PlayScan has been used for some years in the company's online gambling business. The PlayScan system provides Swedish online gamblers with access to a variety of pre-commitment features and is designed to monitor spending and identify problematic patterns of gambling (for a review of the online pre-commitment features provided by PlayScan, see Griffiths et al., 2009). Currently Sweden is running a longitudinal study tracking 8,000 randomly selected respondents aged 16–84 years. The Swedish National Institute of Public Health (2013) reported that there has been a significant decline in gambling participation over the past decade (from 88% in 1998–99 to 70% in 2008). However, revenue has not declined during this period and problem gambling rates remain stable at 2% of the population.

Sweden has moved to extend their pre-commitment system to EGMs. A trial of pre-commitment on Vegas EGMs using the PlayScan system was undertaken in August–September 2013). There was no information available at the time of writing regarding trial outcomes but we were able to obtain some details of the system trialled (which is the system to be used in the full implementation) through consultations and some published and grey literature (Griffiths et al., 2009; Strand, 2013).

In this system, the EGMs offer two different levels of games on the same machine:

- Level 1 games, which are lower intensity, can be played anonymously using cash, and are the only games available that may be played without a card; and
- Level 2 games, which are higher intensity and include those that are potentially more likely to have harmful effects.

While Level 2 games comprise less than 10% of the EGM games available, they are the most popular with gamblers and contribute approximately 75% of revenue. In the current trial of pre-commitment features in Sweden, gamblers require a card to login to play Level 2 games. Gamblers must, on using their card for the first time, set three limits before commencing to play Level 2 games:

- money lost per day;
- money lost per month; and
- time limit per day.

Gamblers may set whatever limits they like (i.e., there are no mandated maximum limits). These limits can be set and changed at the EGM or via the Internet. A decrease in limits takes effect immediately and an increase in limits (both time and money) takes until the next business day/month (e.g., 30 days if a monthly limit is being increased).

In this Swedish pre-commitment trial, the card is simply a key to unlock Level 2 games on EGMs, and gambling is still undertaken with cash. The trial uses the Svenska Spel gambler card—well known in Sweden, with approximately 1.2 million cards already issued for use in online gambling and for sports betting. A single card, linked to the person's social security number, is issued to each gambler. Svenska Spel estimate that over half of gamblers already have this card, therefore they are familiar with using a card to gamble.

While some gamblers, particularly heavy gamblers, may not like pre-commitment, information from our consultations suggests that there is optimism that it will receive broad public acceptance over time, since cards are well known and gamblers may freely choose their own limits. For the same reasons, issues stemming from having multiple gambler cards or card sharing may be less of an issue. Consultation information suggests that some Swedish gamblers like the idea of a card as it reassures them to have a card for their sole use from a reputable and well-known company. While Swedish legislation curtails the amount of media advertising that may be carried out, a number of short videos have been specifically produced for gamblers and retailers that explain the purpose of pre-commitment and how it will work. The videos also demonstrate how gamblers can set their limits and what the screens will look like.

2.4 Sample sizes

An important consideration in comparing these studies is sample size. There was large variability in the number of gamblers surveyed across these trials and implementations. For example, the Norwegian data included the greatest number of gamblers (c. 105,000; Hoffman, 2012), while other implementations—for example, the first Nova Scotia study ($n = 121$; Omnifacts Bristol Research, 2005) and some Australian trials ($n = 64$; Schottler Consulting, 2008—had far fewer numbers. We can be more confident in the accuracy of findings from larger studies, specifically the Norway study (Hoffman, 2012), the third Nova Scotia trial (Focal Research, 2007), and the latest South Australian evaluation (Schottler Consulting, 2010a, 2010b). An important consideration for any future research conducted in this space is to use large and representative samples and consistent trial methodology.

2.5 Gambling outside the system

Limit setting will only be effective if gamblers consistently gamble within the system. Whenever people are able to continue playing outside the system, limit-setting data is no longer accurate. This reduces the ability of gamblers to keep track of time and money spent gambling and how this relates to their pre-set limits.

In any partial system gamblers are able to play on outside the system after they reach a pre-set limit (e.g., by removing their card). Systems that are seen as difficult to use, or where the ability to reset limits are restricted, may lead to an unintended consequence where gamblers choose to gamble at least some of the time outside the system. Therefore system design within a partial system should carefully consider ease of use so that gamblers do not feel the need to bypass the system.

In a full system, where gamblers are required to engage in order to gamble, this is much less likely to occur. However, our review found some gamblers were still finding ways to play on outside a full pre-commitment system. This is an important consideration, and design of new, full systems should work to minimise unintended gaps that could allow people to gamble outside the system. The different ways in which gamblers may gamble outside a full system are discussed in detail below.

Card swapping

Evaluations and consultations around trials and implementations suggest that card swapping happens in both partial and full systems. For example, the partial system trial of the PlaySmart system in Adelaide reported some gamblers swapped cards when limits ran out, while others merely withdrew their cards and continued playing (Schottler Consulting, 2010b; stakeholder consultations). Bernhard et al. (2006) found card sharing was a frequent occurrence in a Nova Scotia trial, with 37% of gamblers reported to have swapped cards or obtained cards from other people (including venue staff). This behaviour was particularly prevalent for problem gamblers (Bernhard et al., 2006; Omnifacts Bristol Research, 2007).

Consultations with government, researchers, and venue representatives indicate that the use of multiple cards and/or swapping of cards among family and friends are issues of some concern, especially in jurisdictions with full systems in place. In such cases, gamblers with

multiple cards can continue to gamble once the designated limit (either the global limit set by government or their own set limit) is reached, simply by switching cards. In our consultations, stakeholders reported that gamblers often obtained multiple cards via family and friends. Where identification was not required to obtain a card, some gamblers simply applied for extra cards themselves, which they then used to continue gambling after a limit was reached. Consultation information suggest that some card sharing and card swapping may be related to gamblers' resistance to a maximum limit being set by government, and/or a perception that the government was attempting to intrude too far into their personal lives through implementing a full pre-commitment system. For others, it may simply be a matter of convenience, with gamblers simply borrowing a family or partner's card.

There are two issues with card sharing and swapping from a harm minimisation/consumer protection perspective. Firstly, it means people can deliberately gamble beyond pre-set limits, which may mean gambling beyond a government set maximum, if one exists, or impulsively gambling beyond their own limits. In both cases this is more likely to involve high-risk or problem gamblers, the group the measure is primarily trying to affect. Secondly, whenever people swap cards or remove cards to continue playing, limit-setting data is no longer accurate. This reduces the ability of gamblers to keep track of, and control, how much time and money they are spending. This affects all gamblers and so reduces the effectiveness of limit setting as a consumer protection measure.

There have been some suggestions from consultations and published reports about potential ways to mitigate this consequence. One is that when gamblers receive moderate-to-high wins, those should be automatically deposited into a nominated personal bank account of the cardholder. This is likely to discourage people borrowing or swapping cards, as it will be more difficult for them to access any large wins. A similar strategy would be to require the gambling card and gambler identification to match for larger pay-outs (Productivity Commission, 2010). A more extreme strategy suggested is to use biometric implementations rather than using cards (i.e., identifying gamblers by their personal characteristics or traits, e.g., fingerprints, iris print), which would be more difficult to circumvent. For example, currently a facial recognition system to identify banned problem gamblers is being trialled at SkyCity casino in Auckland; however no data are available as yet evaluating its effectiveness (stakeholder consultations; Auckland University of Technology, 2013).

These strategies all emphasise oversight from venues and/or governments, but this may not be palatable in the Australian context. A common theme emerging from the consultations with Australian state and territory governments was that governments did not want to be seen as controlling gambler recreation, and industry members consulted reported that gamblers preferred not having to gamble under government-imposed restrictions. If gamblers feel that government is imposing limits to force behaviour change this could result in a public backlash and jeopardise the long-term success of the program. Our review found evidence that this may occur. Consultees in Australia and overseas noted some negative perceptions of pre-commitment, with consumers seeing this as an attempt to control behaviour and/or government acting as "Big Brother". This was observed even where there was broad community acceptance of the value of a pre-commitment system overall. Information from one consultation suggested that a loss of public confidence in the pre-commitment system did occur in one system, at least partly as a result of perceptions of governmental control and interference, and that it was then very difficult to re-engage gamblers in pre-commitment as a result.

It may be better, therefore, to educate and encourage gamblers so that they understand the system is there to help and protect them rather than control them. This should ameliorate negative perceptions and build public support for pre-commitment and limit setting as a positive self-management tool. Specific information about why it is important not to share cards would be part of this ongoing education. As well as more formal community education through government initiatives, consultations also suggest that appropriately targeted gambler information and encouragement through venues is crucial in overcoming any gambler resistance.

Extensiveness of the network

The extent of the network will also influence effectiveness. Networks that cover large areas are more effective, as gamblers need to go to more effort to gamble outside the system. For example, in the Nova Scotia trials (studies 1 and 3), some gamblers reported regularly gambling outside the trial area to avoid card use. Specifically, an adjacent jurisdiction (without limit setting) reported an increase in revenue of approximately 40% (Omnifacts Bristol Research, 2007). Further, if the system only covers one form of gambling, people may choose to gamble using alternative forms if they find the limits to be too restricting. Therefore, best practice would suggest systems should be designed to have wide geographical coverage and which can encompass multiple forms of gambling to provide more effective harm minimisation results. Where existing infrastructure is not already in place to support wide jurisdictional or multiple activity data linking, the costs involved to set this up should be taken into account in final decision making.

Setting risky limits

Another factor that may reduce the effectiveness of limit setting in systems with no mandated maximum limits, is that higher risk gamblers will simply set very high limits or no limits to enable them to continue gambling, effectively negating the system. There is some evidence of this happening. Findings from the 2010 PlaySmart trial show that 62% of gamblers reported selecting a limit that was higher than what they usually spent, and 27% of problem gamblers and 25% of moderate-risk gamblers increased their limit over time (Schottler Consulting, 2010a). Gamblers setting limits higher than what they intend to spend may not be confident of how much they will really spend and so are providing themselves with additional spending capacity. Alternatively, it may mean they do not want to "hit their limit" and so they are providing themselves with a buffer, with the intention of stopping before they hit their limit. If limit setting is used this way it will provide a basic safety net (stop gamblers spending much more than intended), but will not function as a regular reminder or cut-off once the gambler has reached a desired spend limit.

The fact that the higher risk gamblers are increasing their limits suggests that either they are setting very optimistic limits (to try to reduce spending) but are finding these frustrating, or that they are not very aware of their actual spending and having to compensate for this by increasing limits down the track. There is evidence of both explanations in further analysis conducted in the same study by Schottler Consulting (2010a). This showed that problem gamblers reported fluctuating estimated spend limits (the amount they preferred not to spend over) at different points of time—outside the venue (in an online survey) they estimated an average $105.40, before playing at the venue they estimated $128.80, and after playing at the venue they estimated $68.60. In contrast, the estimates of limits by non-problem, low-risk and moderate-risk gamblers remained relatively static across time (ranging from $31.60 to $29.20 for low-risk gamblers to $47.30 to $46.10 for moderate-risk gamblers). Further, analyses of spend data show that all gamblers underestimate how often they exceed their limit. Spend data indicate that 12–16% of gamblers exceed their limits, compared to the self-reported adherence to limits of only 7%. Moreover, all gambling groups showed some evidence of underestimating their expenditure compared to EGM analyses.

Together, these results seem to suggest that problem gamblers may experience some rising degree of excitement as they approach the opportunity to gamble, impairing their ability to make accurate judgements about appropriate budgets for gambling. After gambling, they sense some need to restrain from gambling so intensively, and so set lower limits for a subsequent gambling session. Although all gamblers appear somewhat unable to make accurate estimates about actual gambling, lower risk gamblers' estimates of what is an appropriate limit appears relatively stable, which contrasts with those of problem gamblers, who appear to experience difficulties in controlling their limit setting choices the closer they come to the machine. A system that prevents increases in limits from taking effect immediately would reduce the effects of this.

Provision of accurate spend data to gamblers by using transaction history statements may, over time, also mitigate this, as gamblers will have good information on their usual spend and can

use this to make long-term decisions that are reasonable for their particular circumstances. For moderate-risk and problem gamblers this information should hopefully lead them to reconsider decisions to set very high limits. This may be particularly effective if the statements include information about community-wide spending norms, including spending behaviours and patterns usual for their particular demographic. It should be noted that an unintended consequence of providing accurate data is that it may lead gamblers to try and chase their losses. Consequently, any information provided to gamblers regarding their spend data needs to have accompanying messages about the dangers of chasing, how to set a safe limit, and where to get help.

2.6 Chapter summary

Pre-commitment has been implemented in different parts of the world using full and partial designs using both mandatory and voluntary limit setting.

However, comparisons between different systems and implementations are difficult as they have had different design elements and, in the majority of cases, it has been difficult or impossible to tease out the effectiveness of limit setting as a specific feature. Where possible we have teased out findings in terms of limit setting and reported on findings across risk groups to articulate how effective they are for moderate-risk and problem gamblers, which are the groups the intervention is most interested in targeting. Unfortunately, these results are often unavailable. Further research is required that uses large samples, and is designed to allow testing of the effectiveness of different features of pre-commitment on different risk groups of gamblers.

Nonetheless, almost all data reviewed from trials and implementations show evidence of effectiveness for those who were engaging with the pre-commitment features (reduced expenditure and participation for gamblers in general, lower rates of problem gambling, increased awareness of spending across all PGSI categories), which is encouraging. It is less certain at this stage how effective limit setting is for problem gamblers, as some studies reported decreases in average expenditure for moderate-risk and problem gamblers, while other studies reported no change in average expenditure. This is particularly the case under a voluntary system, where gamblers are free to set no limit or very high limits. Having said this, there has been evidence to suggest that higher risk gamblers do perceive value in these features, and in some cases they more often said than lower severity gamblers that they would use these features. Over time, therefore, this group may achieve more control of their gambling when participating in a pre-commitment system. Trials using partial, voluntary systems show that only a small minority are likely to sign up for pre-commitment, at least initially, and only a proportion of this group will use limit setting regularly. At least part of the reason for this is that many people consider limit setting to be irrelevant to them as they do not have gambling problems. Those who do have issues controlling their gambling, but who are not yet ready to deal with this, are also unlikely to set limits.

In a full system, everyone is required to at least engage with the system and consider using pre-commitment features. Based on the findings of the trials to date, even if use of pre-commitment features (including limit setting) is voluntary, it is likely that a much higher proportion of gamblers overall will experiment with limit setting if it is offered within a full system rather than a non-compulsory partial system. Further, forcing people to set some kind of monetary and/or time limits (mandatory limit setting) will necessarily mean 100% participation. This, in theory, is best practice. Results from Norway suggest a mandated maximum within this type of full, mandatory system is likely to be an effective means of reducing harm. However, this may lead to discontent if the mandated maximum is seen as too restrictive. Substantial effort will need to be made to promote the benefits of participating in a mandatory pre-commitment system.

Further, it must be acknowledged that gamblers will find ways to circumvent the system if they are motivated to do so. This is more likely to happen if the system is perceived by gamblers to be paternalistic and restrictive and/or limits are restricted to specific gambling forms. The hybrid system being introduced into Sweden includes the best practice option of full participation and a requirement to set limits on higher risk machines, but retains the freedom for individuals to set their own limits or play outside the system on lower risk games (similar to the “safe mode” suggested by the Productivity Commission, 2010). Results from future evaluations of this system

will provide important insight to assist the best practice design of future implementations. In addition, an important part of any implementation must be education, so that people are aware of available pre-commitment features on offer and understand the potential benefits.

3 Design features of limit setting

In this chapter, a range of monetary and time limit-setting options that could be offered in pre-commitment systems are considered, and their usefulness to gamblers assessed.

Key messages

- Setting daily monetary limits is the most popular feature and is essential to reduce impulsive in-session overspends. It protects all gamblers, but particularly high spend and problem gamblers.
- Using longer term monetary limits is important to allow gamblers to budget for their spending, and will allow frequent gamblers, binge gamblers and problem gamblers to better control spending over a set period of time.
- Having transfer limits provides a useful control tool where pre-commitment incorporates cashless gambling. Default transfers need to be carefully planned so that they do not encourage higher than planned spending.
- A mandated maximum monetary limit has the potential to be a powerful harm minimisation tool in a full system, but limits need to provide a good balance between protecting problem gamblers and avoiding causing undue disruption to recreational gamblers.
- Setting time limits is less popular, possibly because its benefits are less well understood. Time limits are particularly helpful for those who find they lose track of time when gambling.

Customers can set both monetary and time-based limits in a pre-commitment system. These have been displayed in a program logic model (Figure 3.1 on page 30) and discussed in detail below.

3.1 Shorter and longer term monetary limits

An analysis of the literature suggests that developing a range of limit-setting options is desirable to provide protection for different groups of gamblers.

Short-term (per day/session) monetary limits are an essential element of limit setting as they provide gamblers with the ability to predetermine the amount of money they want to spend at that time, reducing the chance of impulsive overspends in the "heat of the moment" (Ariely & Loewenstein, 2006). The option of a daily monetary limit will be protective for all gamblers, as even low-risk gamblers gamble beyond what they planned at times, but it is particularly important for problem gamblers who tend to spend more in each session than lower risk gamblers (e.g., Thomas et al., 2013).

Setting daily limits is the most commonly offered type of monetary limit (e.g., bwin: Nelson et al., 2008; ebet/Odyssey & SIMPLAY: Office of Regulatory Policy, 2009; Maxetag: Delfabbro, 2012b; Multix: Hoffman, 2012; PlaySmart: Schottler Consulting, 2010b; Techlink: Focal Research, 2007;) and is the most popular choice with gamblers (Bernhard et al., 2006; Focal Research, 2007; Omnifacts Bristol, 2007; Schottler Consulting, 2010b). This has been found to be the case irrespective of the type of limit-setting system employed (mandatory or voluntary), although, as noted above, trials of partial systems have had much lower participation rates and some

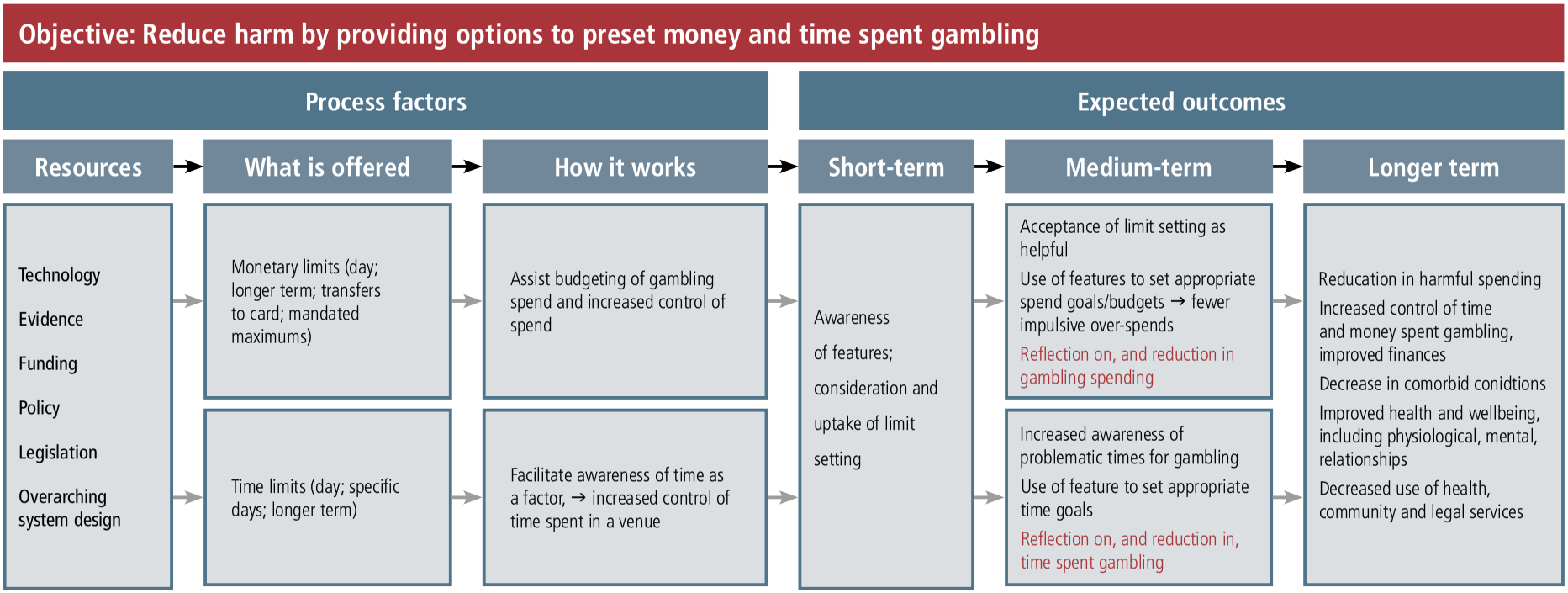


Figure 3.1: Program logic model for limit-setting features

have had quite small sample sizes so the generalisability of results from these are less certain (Hoffman, 2012).

Daily limits run for 24 hours and will often run with specific roll-over times, for example, from 6.00 am to 5.59 am the next day. Consultation information similarly shows that gamblers primarily think in terms of sessional affordability, with daily spend being the most commonly used limit. The one slight exception is a study that included both session and daily limits as options (McDonnell-Phillips, 2006), and found that session limits were the most popular. This difference is minor in terms of land-based EGMs, as most gamblers would not play multiple sessions in a day. It may become more relevant for some other forms and mediums. Gamblers placing online sports or race bets, for example, may log on and off multiple times in a day. From a harm reduction point of view, daily rather than session limits should be considered best practice as they will prevent very heavy gamblers from impulsively circumventing limits by stopping gambling for a short break and then starting a new "session"; that is, a new period of continuous gambling (Delfabbro & O'Neil, 2011).

In addition to daily limits, options to set monetary limits for longer time periods (e.g., weekly, fortnightly or monthly) should also be incorporated as they can also be effective and, in fact, have been found to be the preferred option by a sizable minority (28%; Schottler Consulting, 2010a).

Setting longer term monetary limits can have several benefits to gamblers. They encourage them to think about the need to set a limit around gambling spending as part of their overall budget rather than based on any particular day, which can be more subject to impulsive decisions (Delfabbro & O'Neil, 2011). Higher risk gamblers would therefore benefit from use of these longer term limits, which would encourage them to think about how much they can really afford to spend as part of their budget, rather than just focusing on one time point. Restricting losses over a week or month would also stop moderate-risk and problem gamblers from returning to a venue to chase losses from a previous session. Frequent gamblers in general should also find monetary limits set over longer time periods to be a more effective management system than daily monetary limits alone, as even if a gambler sets reasonable daily limits, losses can easily accumulate to unmanageable levels with frequent gambling (Delfabbro & O'Neil, 2011). Another group that would benefit from longer term limits is binge gamblers. Binge gambling is thought to affect approximately 7% of gamblers (Gupta, 2011). Unlike most irregular gamblers who play once or twice a month with good control, binge gamblers play fairly infrequently but may spend a large amount of money over a number of days. Weekly or monthly limits would provide better protection for this small group.

Weekly, fortnightly, and/or monthly monetary limit options are often offered (these are typically pre-set and to our knowledge no research exists examining the effectiveness of flexible/adjustable longer term monetary limits). Weekly limits have been found to be the more popular of these longer term monetary limits, probably because they are easier for gamblers to envision as part of a regular budget. This is not to say that monthly limits would not also be effective. Norway's full limit-setting system includes monthly limit setting as a mandatory feature. Evidence suggests that the mandated monthly limits did modify gamblers' spending over the month (Engebo, 2012). Examination of their monthly play patterns indicate a "saw-tooth" pattern, with higher rates of play observed at the start of the month compared to the end of the month (Delfabbro & O'Neil, 2011; Hoffman, 2012). This "saw-tooth" pattern indicates that people were gambling at greater rates at the beginning of the time period and either reached their limit or slowed down as they approached the end of the time period.

Monthly limits may mean that the time between reset options for this limit could frustrate gamblers if they wanted to reset a limit upwards, but were unable to change the limit until the end of the current period (Delfabbro & O'Neil, 2011). Research suggests that gamblers significantly underestimate their past month's expenditure compared to daily expenditure by a factor of 2.5 (Blaszczynski, Ladouceur, Goulet, & Savard, 2008). An inability to reset limits upwards for up to a month may lead some gamblers to subsequently opt out or set much higher limits, effectively making the limits meaningless. It is stressed, however, that this suggestion is purely speculative at present. Of course, if the longer term limit was based on budgetary needs, any frustration may be seen as a positive by gamblers as it means the measure is working as intended to restrict impulsive overspending beyond a pre-set budget.

As noted above, the technology behind longer term monetary limits should prevent irregular but excessive gambling sessions becoming a catalyst for chasing losses. However, if the time period set is too long, excessive gambling could occur over several consecutive days, leading to significant losses that have a negative effect on life, while still being under a monthly or yearly limit. Thus, for binge gamblers, an appropriate weekly limit may be a better option (Delfabbro & O'Neil, 2011; Nower & Blaszczynski, 2003).

A clear message, from consultations in particular, was the need for systems to be simple, with a limited number of options from which to choose. Daily limits are clearly essential, and longer term limits are also likely to be effective for a sub-group of regular and problematic gamblers. In the interests of simplicity it would be optimal if a single longer term option was offered. It is unclear at this point, however, whether weekly or monthly limits are preferable. Further research is required to tease this out.

3.2 Calculating monetary limits

Monetary limits can be calculated in numerous ways, including the average turnover by a gambler (the total value of money through the machine), or net expenditure (the total amount spent after taking into account the amount bet, won and lost). An important finding from the literature and our consultation data is that the system needs to be easy for gamblers to understand so that they do not feel confused by the process and disengage from setting limits, or set nonsensical limits (Centre for Advancement of Best Practices, 2009; Hare, 2010; Schottler Consulting, 2010b). Systems using fairly complex calculation options have found gamblers can get confused and may not really understand what they were choosing (Schottler Consulting, 2010b). Average turnover has a further issue in that it can vary from one EGM to the next due to different pay out rates and prize limits, making "turnover" an imprecise concept to measure gambling (Toneguzzo, 1996).

Accordingly, the method of calculating limits used by most limit-setting systems, and currently considered best practice, is one based on net expenditure (Delfabbro & O'Neil, 2011). This method counts how much a gambler has inserted into the machines as well as the amount won. For example, if a person sets a limit of $100 and subsequently wins $50, he or she would not reach their limit until $150 had been spent ($100 plus $50 winnings).

Another important issue is when the calculation takes effect. Delfabbro (2012b), in an evaluation of the Maxetag budget setting feature on an existing loyalty program, reported that gamblers thought the budget setting process was not intuitive and was potentially confusing because they could set budgets either when they first sat down or after they already had money inserted into the machine. Consequently, gamblers were faced with two different methods of setting a budget or limit. Further, gamblers who had money in the machine and then subsequently set a limit had a larger amount of money to gamble, as their deposit and their limit would be added together. For example, if an individual set a limit of $100 at the beginning of the night, he/she would have $100 to gamble; however, a second gambler who had already inserted $50 and started to gamble but then decided to set a budget of $100 would actually have an *additional* $100 to gamble (over and above the $50 already inserted). Such complexities were thought to have dissuaded some gamblers from continuing to use the feature (Delfabbro, 2012b). Best practice, therefore, would suggest having a single time point at which the calculation takes effect. Consultations with industry members who had considered the time period of monetary limits said that, to reduce confusion for patrons, it was better to have a common rollover time. For example, regardless of when limits were set, all daily limits would run from 6.00 am to 5.59 am, and monthly limits would run from the 1st of the month. If someone wanted to reset a limit, this would take effect from the next rollover point.

3.3 Money transfer limits

Some systems have been set up to allow money transfers to gambling cards or cashless gaming systems. Transfer limits are restrictions on the amount of money that can be: (a) transferred onto or held on the card during daily, weekly, and monthly periods; and (b) transferred from the card onto the machine/into a bet. In addition to any mandated maximum limits, gamblers

may be able to set their own limits on transfers. This type of limit has been less commonly applied on land-based limit-setting systems to date; however it is relatively more common in online implementations, and results have some applicability to EGM pre-commitment systems so they will be discussed here.

Schottler Consulting (2008, 2009b) conducted two evaluations of pre-commitment systems, including transfer limits, in Queensland. The Queensland Government trials of pre-commitment were an investigation of gambler attitudes to pre-commitment as a control strategy for problem gambling (Office of Regulatory Policy, 2009). Transfer limits onto the card and onto the machine were offered in addition to daily monetary limits and session time limits. The two Schottler Consulting reports found that the most common type of transfer limits set by gamblers in both studies were the set default amounts. In both trials the default maximum card limit was $1,000. In the earlier Sandgate trial the default value to transfer from card to machine was $100, while the default transfer in the later Redcliffe trial was $20. This suggests it is important that defaults set on transfer limits are carefully considered from a harm minimisation point of view, as few people will go to the effort to change them. They further reported that while the majority of gamblers found transferring money to and from the card to be very easy, some gamblers reported having trouble understanding how money was transferred between the card and the machine.

Positively, there was also some evidence of gamblers using the transfer feature as a harm minimisation tool. For example, one gambler reported: "It's a lot easier monitoring spending on the card. If I feel I'm spending too much, I ramp the transfer amount down, especially if I'm feeling I'm going too close" (Schottler Consulting, 2008, p. 23). Gamblers can therefore use this feature as an informal way of temporarily adjusting monetary limits.

Secondary analysis has also been conducted on the bwin online betting system. The bwin system has a default feature where gamblers have a comparatively high daily transfer limit of €1,000 (A$1,500) and a 30-day transfer limit of €5,000 (A$7,500) for deposits to the gambler's betting account. The bwin system also allows variations to the default transfer limit such that gamblers can set lower transfer limits, add their winnings to the transfer limit maximum, or, after providing evidence of exceptional financial means, apply for higher transfer limits. Exceeding a limit results in the online system informing the gambler they have exceeded their limit (and rejecting the transfer). The two most recent papers to review the bwin dataset (at the time of writing) are Nelson et al. (2008) and Broda et al. (2008).

Nelson et al. (2008) analysed betting transactions over an 18-month period (February 2005 to September 2006), focusing on the differences between gamblers who self-imposed stricter personal limits compared to those who gambled under the default bwin-imposed transfer limits. Nelson et al. found that 1% (n = 567) of all gamblers (n = 47,134) used the self-imposed transfer limit feature to (typically) reduce their limits below the default maximum.[14] This group, referred to as self-limiters, appeared to play in a wider variety of gambling activities and placed more bets than non-self-limiters, prior to self-imposing new limits. The authors suggested those opting-in to the self-limit program may have recognised they needed to moderate their gambling and were using this feature to do so. After imposing self-limit transfers, these gamblers reduced their frequency of gambling (i.e., the number of days on which they placed bets and the number of bets they placed per day), and also the total amount of money gambled.

Broda et al. (2008) analysed the sports betting behaviour of 47,000 bwin subscribers over a similar two-year period as Nelson et al. (2008), although Broda et al. focused on the difference in gambling behaviour between those who tried to exceed their transfer limit and those who did not. Broda et al. found that only 160 subscribers attempted to exceed their transfer limits and, compared to non-exceeders, this group gambled more intensively. Those who did try to exceed their limit made a higher average number of bets per active betting day and had a higher average size of bet than gamblers who did not exceed deposit limits. Exceeders also made substantially higher losses than non-exceeders. Further, Broda et al. identified that exceeding limits was a stronger predictor of being in the top 1% of the sample in terms of the total number of bets, the total monetary amount of bets, and total net loss (i.e., the total amount of money gambled, less total winnings). Gamblers who exceeded these transfer limits were 6 to 14 times

14 Although it should be noted the self-limiting option was only available from November 2005.

more likely to be in the top 1% of gamblers. However, exceeding limits had only had a modest effect on subsequent gambling behaviour. Although the number of bets slightly decreased, and the number of days of gambling and the percentage of losses fell, there was a steep increase in the size of bets.

These results suggest that transfer limits can be an effective limit-setting tool for gamblers to control their spending if transfers are available through cashless gambling. However, care must be taken in setting any transfer defaults to ensure these do not lead to over-spending by gamblers.

3.4 Maximum monetary limits

Maximum limits refer to a mandated maximum amount of money that can be gambled in a gambling system. These limits are different from other types as they are imposed by the gambling system or by regulatory bodies. Maximum monetary limits can be set in a variety of ways, including a maximum account balance limit (which is the maximum amount of credit able to be stored on a gambler's cashless account), and/or a maximum daily net expenditure limit (defined as the maximum daily net gain and loss by a gambler). They would only be useful in a full pre-commitment system in which everyone must take part in order to gamble.

Information on this feature is scarce, as it has rarely been introduced. Norway introduced maximum limits within their full EGM pre-commitment system with global (i.e., government-imposed) limits, including maximum limits on daily and monthly monetary losses, maximum bet size, and maximum wins per bet. New Zealand's online lotteries have also introduced government maximums. No evaluations of the New Zealand implementations have been reported to the authors' knowledge.

Results from gambler data in Norway reveal that 24% of gamblers on the low-intensity (Multix) machines reached their monthly loss limit, while 12% of gamblers on the higher intensity (Belago) machines reached their monthly loss limit (Engebo, 2012), while very few (around 3%) set personal loss limits below the mandated maximum. This suggests mandated maximum limits in Norway are sufficiently low for the vast majority of gamblers.

The rationale for mandated maximum limits being part of a pre-commitment system is that they will force behaviour change for people who are gambling excessively. The system currently being rolled out in Sweden is, like Norway, a full, mandatory system, but gamblers are still able to set monetary loss limits as high as they wish. The systems in both these countries have been set up to encourage responsible gambling by offering good tools to support decision-making around controlled gambling. The ultimate decision about how much to gamble, however, remains with the gambler in Sweden.

Setting mandated limits has the potential to be a very powerful harm minimisation tool that should reduce excessive spending in problem gamblers. However, it may lead to push back from gamblers who have been used to a consumer-driven system where they are able to determine their own level of gambling. This is particularly likely to be the case if the maximum limits are viewed by the general community as being too restrictive, thus disrupting what is seen as responsible gambling. This could lead to an unintended outcome whereby gamblers become motivated to find ways to gamble outside the system, as discussed in the previous chapter. This then could leave them unprotected by any sort of pre-commitment system. On the other hand, if maximum limits are set at very high levels they will be relatively ineffectual, as many gamblers could still cause themselves serious harm gambling within the limit. Given the potential usefulness of mandated maximums to minimise harm, research should be conducted to provide more clarity around an appropriate maximum amount of money (for daily and longer term periods), as well as to articulate the attitude of the community to the introduction of such limits in Australia.

3.5 Time limits

Time-based limits refer to setting a limit on the length of time that gambling can occur within a wider time frame. For example, someone may decide to gamble up to 5 hours over a week.

Time limits are generally offered alongside monetary limits and can be configured at daily, weekly, fortnightly, monthly, or yearly time periods (Bernhard et al., 2006; Focal Research, 2007; Hoffman, 2012; Office of Regulatory Policy, 2009; Schottler Consulting, 2010a; 2010b). Time limits can also be set such that specific days are allocated to be gambling free or so that an individual session ends at a particular time; for example, to ensure the session ends in time for the gambler to pick up children from school or go home for dinner. Time limits can also include reminders at specific intervals; for example, to alert the person that they have been gambling for X hours, or at specific times.

Therefore, setting time limits is a tool that can allow quite sophisticated control over behaviour. However, this feature tends to be less preferred and less frequently used compared to monetary-based limit-setting features (Delfabbro & O'Neil, 2011; Ladouceur, Blaszczynski, & Lalande, 2012; Office of Regulatory Policy, 2009). For example, Ladouceur and Sevigny (2009) investigated the influence of three features of EGMs on behaviour (clock, cash display, and pre-commitment on gambling time) for a small group of gamblers ($n = 38$) who were using their own money in an actual gambling environment. They reported that the vast majority of gamblers (82%) said that selecting a period of time did not generally make them stop playing once that period had expired, and 73% said time was not important when they gamble.

Consistent with this, evaluations of limit-setting systems show that take-up rates are generally quite low for time-based limits. For example, most reports suggest that only 3% of gamblers set time limits, even under full systems where gamblers are engaged with the system as a whole (Engebo, 2012; Focal Research, 2007; Hoffman, 2012). Further, even in implementations that have reported higher participation rates, time-based limits are still used far less frequently than monetary limits. For example, 10% of PlaySmart gamblers set a primary time limit, compared to 94% who set monetary limits (Schottler Consulting, 2010b), and 28% of gamblers in the Play Safe Limits program reported setting a time limit, compared to 80% of gamblers setting a bet size limit (Schottler Consulting, 2010a).

The major consequence of problematic gambling is excessive expenditure. It is not surprising therefore that people focus on monetary rather than time limits. Further, time is not necessarily linked to gambling problems. For example, a person may spend a long period of time on a machine without spending a great deal of money (e.g., by playing few lines and/or bets on a low-spend machine), while another person may gamble for a shorter period of time but spend more money by playing more lines and/or multiple bets on a higher spend machine. However, research has indicated that frequency/time spent gambling as well as the amount of money spent gambling is significantly related to gambling problems (Allen Consulting Group, Problem Gambling Research and Treatment Centre, & Social Research Centre, 2011; National Centre for Social Research, 2010). Further, gambling as a way of cognitively avoiding problems is a known motivator and correlate of gambling problems (Thomas, Allen et al., 2011). This can lead to gamblers losing track of time or experiencing dissociation (Stewart & Wohl, 2013), which in turn leads to excessive spending. Setting time limits may be a very helpful tool for managing gambling in this group.

The focus on monetary limits therefore suggests gamblers may be ignoring an important predictor of problem gambling. Some trials did find evidence that a minority of gamblers recognised the value of time-based limit setting. Bernhard et al. (2006) found a small minority of gamblers endorsed the statement: "I absolutely love the time limit and the days excluded", while some problem gamblers felt that this feature could reduce conflicts between gamblers and those "left behind at home" (p. 24). The right marketing to educate people about the usefulness of this feature, therefore, may lead to greater use of this feature.

3.6 Chapter summary

A range of limit-setting options is typically used in a pre-commitment system. Research evidence and our discussions with industry stakeholders regarding limit setting suggest that offering a choice of limit-setting options is useful for gamblers. Daily monetary limits are clearly preferred, and they should be considered essential in any pre-commitment system as they assist in controlling impulsive overspends in a session. Longer term monetary limits are also important as they provide an opportunity to budget gambling spending properly and provide more

effective protection for problem gamblers, gamblers chasing their losses, and binge gamblers. It is not yet clear whether weekly or monthly monetary limits are equally effective. Transfer limits can provide an additional useful tool where cashless gaming is introduced. Mandated maximum limits may provide a powerful harm minimisation tool, but the monetary amounts set are important to balance protection of high-risk gamblers with minimising disruption to responsible gamblers. Self-limits on the amount of time that can be spent gambling appear to be an underused tool at present, but may be an effective control mechanism for moderate-risk and problem gamblers who lose track of time when gambling on EGMs.

4 Encouraging limit setting and safe limits

This chapter examines limit setting and other factors associated with a pre-commitment system overall that can encourage gamblers to set their own safe limits. This is an important aspect in the design of a successful limit-setting system, as gambler endorsement is critical for high participation rates.

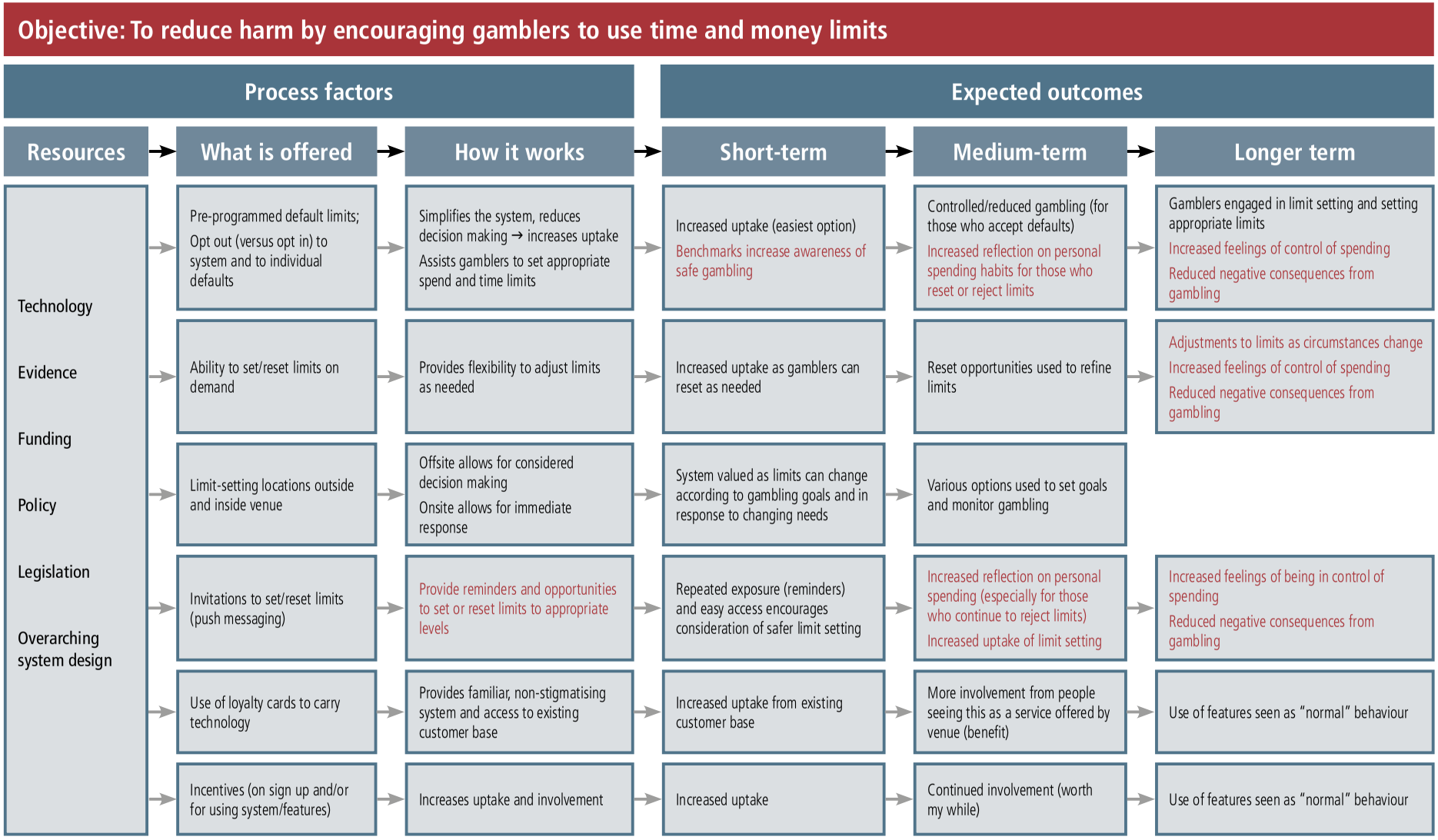
Key messages

- Theoretically, default limits are likely to be effective at encouraging uptake and use of limit setting, though there is little clear evidence of the effectiveness of implementations to date.
- A starting point for calculating daily default limits is prevalence expenditure data, which would suggest $40 for a "low" daily default limit and $125 for a "high" daily default limit (as at 2013).
- Gamblers should be able to set and reset limits regularly, with downward resets taking immediate effect but upward resets having an effective time delay of at least 24 hours (with potentially longer delays for longer time periods).
- Regular invitations to set safe limits should be sent to gamblers who set high/no limits.
- Information on safe limits should be provided in a variety of ways. Social comparisons may encourage gamblers to set and maintain safe limits; however, safe limits will ultimately depend on an individual's financial circumstances.
- Linking pre-commitment to loyalty cards may increase familiarity and uptake. It may also reduce any stigma attached to limit setting and help normalise the behaviour. However, it may also send mixed messages about gambling if loyalty cards incentivise additional play.
- Incentives may encourage limit setting, with non-gambling incentives (e.g., vouchers for meals) being the most protective.
- Effective social marketing is essential to increase knowledge and uptake of limit setting. It will make the products and services familiar to people and normalise their use. The language used should personalise the services, making messages clear and easy to understand, and matching the context.
- Industry input and support should be encouraged in the design of systems and to provide support and promotion within venues, but this needs to be carefully managed.
- Adequate in-venue training is vital to ensure staff are knowledgeable about, and encouraging of, various features.

See Figure 4.2 (on page 51) for a program logic model, and the detailed discussion below, of how gamblers can be encouraged to set limits that are safe.

4.1 Implementing defaults

Defaults are pre-set limits that are programmed into an overarching limit-setting system. Defaults can be applied to all limit-setting options as well as to gambler participation in the limit-setting system (i.e., the system can be set to default to either opt-in to or opt-out of partial limit setting). Defaults can also be applied to the amounts that can be transferred to cards or machines.



Note: All behaviour change is theorised to relate to EGM gambling. Red text indicates additional aspects that may be relevant to all gamblers, but particularly related to higher risk gamblers.

Figure 4.1: Program logic model for options to encourage gamblers to set money and time limits

continued on next page

continued from previous page

Risks and unintended consequences	Mitigation strategies
Reduced uptake of limit setting if defaults are set too low and/or higher proportion may reject default and set risky limits. Gamblers tempted to gamble up to pre-set limit and/or high default, therefore gambling more than before. This could, in turn, mean a possible risk of government liability.	Trial proposed default values to determine attitudinal and behavioural responses across gambler risk groups. Design system so rejection of default requires additional effort. Provide messages about setting limits and spending appropriate to personal circumstances. Provide transaction history statements with accurate information about spending.
Ability to reset limits on demand may lead to impulsive decision making.	Time delay for increases but not reductions of limits.
Too-frequent invitations to set/reset limits may lead to annoyance. Low infrequent invitations may reduce effectiveness.	Trial different frequencies to determine most effective frequency for reminders. Provide invitations only to those with no or high limits.
Loyalty cards as vehicle for offering pre-commitment features sends mixed messages about gambling and the safety of gambling environment.	Conduct research to articulate how gambling and pre-commitment are perceived when offered within loyalty card system. Separate loyalty programs from pre-commitment systems if possible
Incentives may encourage gambling.	Provide non-gambling incentives for setting limits.

Figure 4.1: Program logic model for options to encourage gamblers to set money and time limits

How do defaults work?

Evidence from the human decision-making and judgement literature suggests that defaults and an opt-out system will automatically encourage higher rates of participation in limit setting (Goldstein, Johnson, Herrman, & Heitmann, 2008). Delfabbro and O'Neil (2011) and the Productivity Commission (2010) pointed to evidence where defaults have been used successfully in other public health approaches, leading to higher participation rates in harm minimisation strategies. Organ donation rates, for example, have been found to be dramatically higher in countries where people have to opt-out of the system compared to systems where people have to opt-in (e.g., almost 100% of people in France participate in an opt-out system, compared to 4% of people in Denmark, which has an opt-in system, despite the fact that both countries show general public support for organ donation; Thaler & Sunstein, 2008).

Defaults are thought to be effective because of a range of psychological factors that are predicated on people's preference for using a range of heuristics or "short cuts" in the decision-making process. The most potent factors appear to be:

- the effect of human passivity or response inertia in decision-making situations (Anderson, 2003); that is, people accept the default position because it means no "decision" needs to be made, resulting in less cognitive effort; and
- cognitive biases or short cuts lead to habitual patterns of behaviour (possibly because of the cognitive ease of these behaviours) resulting in a "status quo" bias (Samuelson & Zeckhauser, 1988); that is, people prefer to follow previous choices.

These factors and other heuristics mean that people will generally choose the easy option or "go with the flow". To encourage limit setting, the system should be set up so that taking part appears to be easier than not taking part. This includes setting up the overarching system so the default situation is where a gambler automatically has a limit (i.e., a gambler must choose to opt-out of taking part in limit setting). This does not mean that people are forced to take part or to set a limit; rather that it is psychologically easier to take part and more effortful to choose not to take part.

Presentation of defaults

In addition to the structure of the default limit-setting system, the manner in which the message regarding gambler participation is presented also has an effect on participation rates. Basically, this means that take-up is affected by whether the person has to select "yes" to set a limit (a positive frame) or "no" to not set a limit (a negative frame). The default research suggests that in an opt-out system where the positive frame is already selected (as the default), most gamblers would choose this option (Delfabbro & O'Neil, 2011). Moreover, even if gamblers did want to change this selection, they would be forced to do so in three or four steps, each giving an opportunity for gamblers to re-think their decision, and possibly give up on changing the default.

Prospect theory has shown that people are consistently risk averse when facing gains, but risk prone when facing losses (Kahneman & Tversky, 1979; Mishra, Gregson, & Lalumiere, 2012). For example, in an examination of framing effects, defaults, and response inertia, Johnson, Bellman, and Lohse (2002, experiment 1) examined choices made by participants regarding their interest in receiving an email about future health surveys. Two types of questions were developed, one was: "Notify me about more health surveys" (a positive frame), and the second was: "Do NOT notify me about more health surveys" (a negative frame). These two questions were each presented in two different ways: one where the participants had to make an active response (select the option required), or one in an opt-out format where the options were already selected and the respondent had to either accept the default response (leave the option selected) or remove it (deselect the option). Johnson et al. (2002) reported higher participation rates for questions with default options set and a negative frame (default—negative: 96% cf. positive: 74%; non-default—negative: 69% cf. positive: 48%). These results show that defaults are very powerful influences on behaviour, with participation increasing for opt-out options. Framing effects also influence behaviour, where it appears participants would prefer to deselect a default or actively choose an option, perhaps because people do not like the thought of

missing out on something useful. In other words, they are risk averse for losing the possibility of making a gain (Delfabbro & O'Neil, 2011).

Default levels

The level that defaults are set at is an important consideration. While defaults can be used for any type of limit, most consideration of this aspect to date has centered on monetary defaults. This discussion will also focus on monetary defaults as money limits are used much more often by gamblers than time limits, so they are a key default to get right. The general arguments, however, would extend to other limits, such as on time spent gambling.

Monetary defaults set at relatively high levels (e.g., approximately $125 per day, based on the known spending of problem gamblers; see section 4.5) have the advantage that they will be acceptable to the majority of gamblers (as few would want to spend above the default). However, there is more potential for harm within high defaults as gamblers would still be able to spend a relatively high amount and still remain under the default. Further, a high default may lead to increased spending by some gamblers if they believe that the default is being "endorsed" by the government or by "experts" as a safe or normal amount to spend (Delfabbro & O'Neil, 2011). An analogy might be the maximum road speeds that people have adopted as the required or average speed to travel, when in fact this is the maximum speed at which transport experts believe it is safe to travel when driving conditions (e.g., weather, visibility, road conditions, etc.) are ideal. Drivers are expected make their own judgement about appropriate lower speeds when faced with adverse driving conditions.

An alternative is to set defaults at lower levels (e.g., $40 per day, based on the spending of recreational or low-risk gamblers; see section 4.5). This takes a stronger harm minimisation approach, sending clear messages about "safe" levels of gambling. However, there is a cost, as lower defaults will almost certainly lead to reduced uptake in a partial system (where people can either choose not to set limits or to set their own limits) as more gamblers will want the ability to spend above the suggested default. While gamblers in such a system can simply reject the default and set their own limits, this may not happen. As discussed above, defaults are designed to reduce decision-making. If the individual decides to reject a default, the next easiest option may be to reject limit setting altogether (rather than come up with their own limit).

Another issue with low defaults is that those who accept the default and then find that it is too low may feel frustrated, particularly if they are unable to reset this for some time. An example of this can be seen in Norway, which has a fairly low maximum monthly default. Data examining spend patterns in the population show a saw-tooth pattern of falling gambling expenditure at the end of each month, when gamblers appear to hit the limit. In a partial system, regularly running out of money due to a default limit (as opposed to a personally chosen limit) may increase the likelihood of gamblers resetting future limits much higher or opting out altogether. Very low default limits may also lead to a backlash as gamblers may see the defaults as an attempt by the government to control their recreational spending.

Opt-in/opt-out

Professionals in a number of government, industry and researcher consultations view opt-out systems as offering potentially more effective pre-commitment options, but have noted that appropriate defaults and communication strategies need to be in place to promote public awareness and to encourage gamblers to see the value in participating in such a system. One venue operator also expressed a view that an opt-out system may be preferable in order to maximise harm minimisation, provided correct defaults limits were offered. However, most Australian government and venue consultations thought that an opt-in option was more aligned with a voluntary system, while others argued that providing defaults is no more paternalistic than other more laissez-faire approaches, as both systems allow the same individual rights and responsibilities (Halpern, Ubel, & Asch, 2007).

Default limit-setting implementations

Only limited examination of defaults within limit-setting systems has occurred. Some defaults have been discussed in the implementations at the Sandgate RSL Club (Odyssey/eBet: Schottler Consulting, 2008), the Redcliffe RSL Club (SIMPLAY: Schottler Consulting, 2009b), across South Australia (Maxetag: Delfabbro, 2012b), and online as part of a transfer maximum (bwin: Broda et al., 2008).

In the Sandgate RSL implementation, the card-based pre-commitment system, eBet, incorporated a $100 transfer default from card to machine and a $1,000 default maximum card balance. Schottler Consulting (2008) reported that these defaults were the preferred choice by gamblers. The few gamblers who changed the transfer default from card to machine decreased the transfer amount. No further evidence was reported but it appears that these transfer defaults were acting as they should (i.e., gamblers adopted them), as gamblers preferred to leave these pre-set arrangements on their gambling in place. In the Redcliffe RSL implementation, SIMPLAY similarly incorporated a $1,000 default maximum card balance. The automatic default for transfer from card to machine was much lower than in the Sandgate trial, at just $20. This transfer amount could not be changed from the machine, only from a kiosk. Again, the majority of gamblers retained the default transfer amounts. Some of them found the inability to easily change the card-to-machine amount annoying, as they typically wanted to transfer smaller amounts. Transferring larger amounts than the person intends to gamble can be problematic as gamblers have a tendency to play out their money, and some people in this study reported feeling the urge to gamble all the transferred money, not just the (smaller) amount they would normally spend (Schottler Consulting, 2009b). Interestingly, the majority of the participants who did change the transfer amounts increased rather than decreased the amount transferred. The results again demonstrate the power of defaults as well as the need for defaults to be carefully set so that they do not encourage higher spending than normal.

While default limit setting is likely to increase participation by reducing the need to make active decisions, it is important that people understand what they have done. Delfabbro (2012b) examined the implementation of a budget setting feature within the Maxetag loyalty system in three South Australian venues. Limit setting was voluntary (opt-in), with gamblers asked whether they wanted to set a limit when they first started gambling. They could respond "yes" or "no", or ignore the prompt and allow the system to time out for this feature. In the last two months of the implementation a $25 default budget was applied to gamblers who pressed "yes" to set a budget but who did not proceed to actually set a budget. Participation in the Maxetag budget setting system rose from 2% at the beginning of the implementation to 20% by the end using this method. However, it is arguable whether members were really agreeing to participate in the limit setting, as most swiped their Maxetag on the EGM then let the limit-setting feature time out. Certainly, system data suggested there was no evidence that the introduction of the default limit led to any changes in the behaviour patterns of gamblers, who could continue to gamble beyond any pre-set limit (Delfabbro, 2012b). A further issue with this style of passive default setting was that anyone using their Maxetag who had a net expenditure greater than $25 (in other words exceeding the default budget) started to receive budget-exceeded messages. This is likely to be quite confusing and possibly upsetting to gamblers who had not realised they had actually "set" a limit.

The bwin online gambling service provides a daily transfer default (€1,000, A$1,430) and a 30-day transfer default (€5,000, A$7,150). These amounts can be easily reduced, but only in exceptional circumstances can they be increased. However, very few gamblers used these amounts; the vast majority of the sample (95%) never deposited more than €500 (A$710) per 24 hours and never deposited more than €1,050 (A$1,500) per 30 days. These results suggest that gamblers do evaluate the default amount and will make a change to this amount if they believe, as in this case (Broda et al., 2008), that the default was too high.

4.2 Setting and resetting money and time limits

On demand

The frequency of resetting limits, or the restrictions and requirements for resetting limits, have implications on gambler interactions with the limit-setting system (Delfabbro & O'Neil, 2011). Some implementations have required gamblers to set a limit each time they gamble, or at least be asked if they wished to opt in to setting a limit for that day/24-hour period (Maxetag: Delfabbro, 2012b). Other trials and implementations have imposed a 24-hour restriction before resetting can occur (Maxetag: Delfabbro, 2012b; PlaySmart: Schottler Consulting, 2010b). Still other systems only allow gamblers to change personal limits once a month (Svenska Spel: Griffiths et al., 2009).

The frequency with which limits can be reset is important as it can affect gambler participation. A strict requirement to opt in to limit setting each session is likely to be too onerous and could reduce participation (Delfabbro, 2012b). Another consideration is the potential for frequent resetting opportunities to undermine the effectiveness of the program. Obviously, the ability to reset limits allows gamblers to manage their gambling with more sophistication, but resetting limits with little time delay increases the potential that some higher risk gamblers will be tempted to gamble beyond currently committed limits. For example, if a gambler is able to increase their limits with immediate effect at the venue, or even after they have commenced a gambling session, it undermines the premise of limit setting.

Consultations show that most systems control for this by having at least a 24-hour delay on resets when increasing limits, but allowing immediate resets when reducing limits. This design had strong support from consultees from all sectors, and was seen as current best practice for daily limits, as it restricts impulsive increases in the heat of a gambling session but also provides gamblers with the ability to initiate an immediate reduction in gambling at any point in time.

In practice, restricting the ability to reset limits to once a day, or even once a week would only affect a fairly small proportion of gamblers (very regular gamblers). The figures available at the time of writing suggest that 30% of the total population gamble on EGMs at least once per year, but only 3–4% of the population gamble on a weekly basis (Delfabbro & O'Neil, 2011). Therefore, restricting limit resets to once a day or once a week would be of little inconvenience to most recreational gamblers. Some designs have restricted resets to the next rollover time period, such that monthly limits can only be reset to take effect at the beginning of the next monthly cycle. This provides fewer opportunities to adjust any longer term limits, but aligns with common practice in other commercial agreements such as changing mobile phone or Internet access plans.

Making the time period between resets too long may be counterproductive. Circumstances can change and gamblers need to be provided with regular opportunities to adjust money and/or time limits as needed. One consultee recommended that a regular review of limits can be helpful for gamblers whose circumstances change, but that the optimal time period between reviews will vary for each individual gambler. In addition, gamblers may find their initial limits need some adjustments over time, and regular opportunities need to be provided to help them shape safe spending and/or time limits. If too few opportunities are provided to reset limits, a sense of frustration might lead these gamblers to set excessively high limits at the next opportunity to avoid future inconvenience, or to drop out of a voluntary system.

Locations

There is general support for having a variety of ways available for gamblers to set limits, as gamblers differ in their experience of and confidence in using different technologies (Delfabbro, 2012b). Our consultation data also suggest that new technologies (such as online access, and smart phone applications) allow more flexibility for gamblers to set their limits.

To date, limit setting has primarily been available on the gambling machine or using a set-up kiosk. Other implementations have used the Internet, although those have primarily been for online gaming systems (Broda et al., 2008). The PlaySmart implementation (Schottler Consulting,

2010b), however, allowed gamblers to set limits on the machine and online. Usage results seemed to be divided based on age, where older gamblers participating in usability testing were not sufficiently familiar with the Internet to give considered feedback on the PlaySmart website, and younger gamblers were very positive about the concept of remotely changing limits but still reported preferring to change their limit at the venue. For example, one gambler stated, "I think it's a good site. I wouldn't personally change limits online though. I would probably do it at the cashier" (Schottler Consulting, 2010b, p. 99).

Setting and resetting limits at the venue is a very convenient option for gamblers and allows for an immediate response to changing needs. However, from a harm minimisation perspective, limit setting may be more effective if the gambler is at a greater physical and temporal distance to gambling at the time of making the decision to set a limit. This distance approach allows for a greater chance of more rational decision-making to occur in the "cold light of day", away from the gambling environment, compared to decision-making in the presence of gambling stimuli (Ariely & Loewenstein, 2006; Gupta & Derevensky, 2005). Similarly, government consultees strongly felt that trials in Australia had clearly indicate that a best practice approach is for gamblers to register and set up their limits away from the venue, to facilitate clear and logical thinking about an appropriate budget. Consultations also suggested that venue kiosks should provide helpful promotional materials around pre-commitment and have knowledgeable staff who can encourage a greater number of gamblers to set limits.

Invitations and reminders

Gamblers who have chosen to opt out of limit setting, or who have set very high limits, will miss out on the protective benefits that limits provide. As a good harm minimisation practice, these gamblers should receive regular messages inviting them to re-engage and set realistically safe limits (Delfabbro & O'Neil, 2011). Reminders using generic messages of encouragement around limit setting could be sent to all gamblers at venues through pop-up messages on machine screens, or as part of in-venue promotions (e.g., marketing displays with "set a gambling budget", voice-overs, etc.). Similar messages could form part of transaction histories or other mail-outs, and be included in community-wide information. Messages could be similar to those used in other public health forums; for example, "budget your gambling", "isn't it time you set a budget", or "gambling past your budget is a problem".

Further, reminder messages/invitations could be tailored to high- and non-limit setters and sent by email/mail, with transaction histories or as screen messages inviting them to set/reset their limits. At the same time, those who have already set safe limits could either be left alone or could be sent messages of support and encouragement, giving positive affirmation on their choices. Alternatively, limits could naturally expire at regular intervals or revert back to a default if the limit is higher than the default. The gambler will then have to recommit to a limit. These reminders will keep limit setting as a conscious activity for gamblers, even if the gambler chooses not to set limits at that time. Care needs to be taken that reminders are sent frequently enough to lead to behaviour change but not so often as to annoy people within a voluntary system. For those gambling outside the system or who have set very high limits, messages could be sent daily or whenever the person gambled, as these people are at the most risk of making significant losses. However, sending messages this frequently is likely to create a degree of annoyance for the individual, which may, in the long-term, be counter-productive. Sending messages weekly, or perhaps even monthly, may be more effective. For those with lower limits, the appropriate message frequency would be when their limit was due to expire (to prime their thinking for when the limit needs to be reset), or monthly perhaps, with an invitation to add a longer time-based limit to their daily limit. Further research is required to more clearly articulate the appropriate frequency with which to send messages inviting people to set or reset limits.

4.3 Using loyalty cards to carry the technology

Some trials have used pre-existing venue loyalty card systems as the vehicle through which to offer pre-commitment, including limit setting. Consultation data also reveal that a pre-commitment system could be linked to another card such as a driver's licence or a venue membership or loyalty card. This strategy would mean those choosing to use pre-commitment

features would not be identifiable through having dedicated pre-commitment cards in a wallet and so on. Situating pre-commitment options within venue loyalty programs could have certain advantages:

- A loyalty card would be familiar to gamblers and help to alleviate privacy concerns as gamblers are used to providing personal details to the venue and to venue staff.
- Loyalty cards attract high sign-up rates, which means that more people would become aware of the pre-commitment and limit setting features.
- Limit setting could be offered as an additional service within the program (e.g., marketed as a bonus rather than a limitation).
- It may soften the existence of a mandatory pre-commitment system.
- Linking limit setting to incentives within a loyalty program may increase uptake.
- It may help to remove the stigma of the process and normalise it as something that is available for *all* gamblers, not just those who have gambling problems.

Offering pre-commitment within a loyalty card system may also be attractive to operators, who may potentially gain new customers and maintain existing customer bases through offering attractive loyalty programs that may be more visible to customers if they are required to use their cards on every visit (as part of the pre-commitment system). It could also encourage support of venues if use of the pre-commitment features resulted in loyalty points that were redeemable at that venue. It may, however, be an issue for smaller venues that have not invested in loyalty programs. Consideration will have to be made as to whether a dedicated pre-commitment card would be offered at those venues.

However, for this to work effectively, the individual loyalty cards operating in different venues would need to be linked to an overarching network so that limits set are recognised across all venues. Otherwise a gambler would need multiple cards and limits would not carry across different venues. Some consultees discussed ways of linking these cards through the state-wide monitoring programs currently operating. At present, however, there are significant technical and legislative issues related to networking across venues within other states.

Moreover, there may be some unintended consequences that stem from incorporating pre-commitment features within existing loyalty systems. Loyalty cards are often used by venues to promote gambling products and offer benefits to gamblers who spend a certain amount of money. Linking pre-commitment to these cards therefore is likely to send mixed messages to gamblers, as they may be used to promote gambling rather than harm minimisation objectives. This could therefore mean that gamblers feel encouraged rather than discouraged to spend money gambling. The Parliamentary Joint Select Committee on Gambling Reform (2011) recommended that linking of pre-commitment to loyalty schemes be included as an issue for the Productivity Commission to consider in its review of the assessment of progress in complying with pre-commitment. Research should be conducted to see how pre-commitment is perceived within a loyalty card system compared to when it is presented outside a venue-based card.

4.4 Using incentives to increase uptake

Incentives have been found to increase participation in a range of prosocial behaviours across a variety of risk populations, and these behaviours appear to be maintained after the incentives have been withdrawn (Petry, 2012). Incentives could be linked to limit-setting programs in a range of different ways, including through loyalty card systems. There could be incentives to sign up, and additional benefits for continuing to take part, such as obtaining credits to gamble; participating in prize draws or jackpots; or having access to greater venue privileges related to non-gambling activities, such as car parking, meal vouchers, or lower membership fees for allied services (e.g., sports games at a sporting club).

A panel of industry stakeholders, technology experts, focus group members, academic researchers, and representatives from several jurisdictions have suggested that incentives are key to promoting limit-setting take-up. Some Australian jurisdictions are interested in, or have suggested, applying incentives for increasing participation in limit-setting systems (Department of Justice, 2011; Independent Gambling Authority, 2005). However, a clear proviso is that

incentives do not encourage further gambling (Centre for the Advancement of Best Practices, 2009). Best practice, therefore, would require non-gambling incentives.

Interestingly, evidence from an evaluation of one trial suggests that while incentives may be of assistance, they are often not a key motivator for participation in limit setting. In that Australian trial, gamblers were provided with a $20 sign-on gift in SIMPLAY points (credit on the SIMPLAY system) and entry into a weekly draw of $500 (for 10 weeks) to encourage registration (Schottler Consulting, 2009b). However, analysis of gambler responses suggests that gamblers mainly joined for the convenience of cashless gaming or in response to staff and other gambler discussions about the program, rather than for the incentives. This may have been exacerbated by the fact that the program may not have been well known, as some participants reported that they did not know about the weekly draws.

In contrast, other Australian trials that have used incentives have found them useful, especially for recruiting otherwise difficult-to-engage groups. For example, Schottler Consulting (2010b) evaluated the PlaySmart pre-commitment system that used incentives to attract participation in the evaluation of the trial. Schottler Consulting reported that the incentives were seen as "key" to promoting wider uptake, particularly for signing up night-time gamblers, who were reported as being heavier gamblers and seen as more difficult to engage in the limit-setting system. Problem gamblers were the least likely category to report they would have signed up to Playsmart and the survey without incentives (non-problem 67%, low-risk 61%, moderate-risk 53%, and problem gamblers 44%). Further, Schottler Consulting reported that focus group participants (who were gamblers using PlaySmart) suggested that an effective approach for increased participation in a limit-setting system would be to use incentives. Some gamblers thought offering a small one-off incentive of J-Card loyalty points (e.g., equivalent to $5), might be sufficient to increase uptake. However, interestingly, Schottler Consulting also reported that an initial reluctance to try limit setting for many gamblers was due to lack of product knowledge, where survey findings showed that 78% of users felt that they would probably have signed up without an incentive. Therefore it would appear that some gamblers will sign up to a limit-setting system without incentives if they have sufficient knowledge of its benefits, but that greater uptake of some of the more difficult-to-reach groups may be achieved with incentives.

Consultation data suggest there are benefits both ways. Some governmental and industry consultees suggested that there could be advantages to introducing systems in a low-key manner without incentives and allowing natural uptake to happen. This would have the advantage that the initial group of people taking part would be naturally motivated to use the program. Initial glitches would presumably be less likely to annoy this group. Other consultations with government, industry and researchers suggest that incentives such as cashless gaming or loyalty card points would be very useful to encourage early participation in the system.

Incentives could also discourage participation if not carefully thought through. For example, an evaluation of the ChangeTracker program in South Australia (Department of Treasury and Finance, 2010) found that although providing a gift bag influenced participation in the limit-setting system, gamblers who joined reported that keeping a track of their gambling was the "key driver" for participating. Further, the most prominent *barrier* to take up of the card by non-limit-setting card users was a perception that the brightly coloured incentive gift bag was identifying or labelling card users.

Given the lack of clarity regarding the usefulness of incentives, particularly across different risk groups, it may be useful for research to examine this. For example, trials could be set up to allow natural recruitment initially and then introduce incentives to increase uptake. Comparisons could be made between those who sign up for the system regardless of incentives compared to those who only signed up with incentives. For example, do those who required incentives to take part still find benefits from setting limits? Do they use the limits to reflect on their gambling? Does it still change behaviour?

4.5 Setting safe limits

What is a safe limit?

Determining what is a safe limit is a relatively new area of research. The Productivity Commission (2010) suggested that default limits need to be constructed that are considered "safe" without stymieing recreational gamblers; in other words, high enough to avoid interfering with the enjoyment of recreational gamblers but low enough to reduce the harms to moderate-risk and problem gamblers.

Using prevalence data to inform safe limits

A recent report using data from the Productivity Commission (2010) on estimated session expenditure found that, although there was some variation across states, problem gamblers typically spent around $200 or more per session on EGMs, while moderate-risk gamblers typically spent between $75 and $100, and recreational gamblers around $20 or less (Delfabbro & O'Neil, 2011). Consequently, Delfabbro and O'Neil estimated a default of $100 per day would be unlikely to be exceeded by moderate-risk gamblers but may encourage reduced spending by problem gamblers. Delfabbro and O'Neil also estimated problem gambler total spend to be consistently around $10,000 to $20,000 or more per year. They suggested that these session amounts were analogous to daily amounts, then converted these "daily" amounts to weekly amounts and, to address the variability in the data, chose the mid-point for daily amounts across states as a suggested default limit ($250–300 per week).[15] This allows gamblers to spend $100 per day, 2.5–3 times per week, while remaining under these default amounts.

However, these estimates were based on the spending habits of higher risk gamblers and so, while a limit such as this will likely be protective of high-risk gamblers, it will still have the potential for harm for many gamblers (as discussed in section 4.1 on defaults). We took the analysis of Delfabbro and O'Neil (2011) as a starting point, then also considered the most recent Australian prevalence surveys available at the time of writing where average session EGM spend was reported, or could be estimated by problem gambling severity using the PGSI. Table 4.1 displays average spend per session data from five recent state gambling prevalence surveys, by PGSI scores.

Table 4.1: EGM average spend per session, by gambling severity

	N	Recreat-ional/non-problem ($)	Low-risk ($)	Moderate-risk ($)	Problem ($)
Three states (Vic., Qld, SA) 2010	200	29.90	33.50	48.20	85.30
New South Wales 2006 [a]	5,029	40.23	70.13	121.43	303.11
Queensland 2006–07 [a]	30,000	20.00	43.00	77.00	283.00
Victoria 2008	15,000	45.48	68.22	117.72	219.19
Tasmania 2011 [95% CI] [b]	4,303	35.66 [29.12, 40.51]	64.44 [37.29, 76.10]	n. a.	77.24 [128.05, 66.14]

Notes: [a] Reported by the Productivity Commission (2010) using an averages analysis or calculated on reported data using an equivalent but simplified approach. [b] 95% CI = 95% confidence intervals. n. a. = data not available. Although studies conducted in Queensland 2010, New South Wales 2010, and the ACT are more recent, they either reported data in a non-comparable format or did not report expenditure data, and so were excluded from this review. PGSI categories were identified differently between states: Tasmania 2011 standard; three states 2010 unknown (probably modified anchors), NSW 2006 and Queensland 2006–07 modified anchors. Modified anchors may alter the average expenditure across PGSI categories (possibly increasing moderate and problem expenditure), compared to the standard PGSI.

Sources: Allen Consulting Group et al. (2011); Brockelsby, Kenrick, & A C Nielsen (2006); Gambling Policy Directorate, & Office of the Government Statistician (2008); Schottler Consulting (2009a, 2010a).

15 Please note, these figures are based on historical data and used as an example. Future limit amounts need to be adjusted for the current economic situation; for example, using the consumer price index.

Uniquely, the Tasmanian 2011 survey presented lower and upper 95% confidence intervals. It should be acknowledged that there was still some variability in the surveying procedures for these studies as the scale anchors were slightly different between surveys,[16] and participants in one survey were self-selected from an online panel (the 2010 three-state survey).

Table 4.1 shows some variability across surveys, especially at the problem gambler level. Specifically, the lowest average session expenditure for problem gamblers was in Tasmania, which reported $77.24, while the highest problem gambler expenditure was in New South Wales, which reported an average session expenditure of $303.11. This variability may come from a variety of sources, including differences in the administration of the PGSI (Productivity Commission, 2010), economic differences between the states, or time periods (before and after the global financial crisis). In particular, the variability in expenditure is likely the result of the divergent sample sizes in the surveys. Expenditure at the recreational gambler end also displayed some variability, ranging from $20 through to $45 on average.

Given there appears to have been significant variation between and within surveys, determining what might be an appropriate default level likely requires a nuanced analysis of reported expenditure amounts. Unfortunately, only the Tasmanian survey provided confidence intervals across gambling severities. Although using only survey data is less than ideal, comparing average session expenditure across surveys is likely to give a more accurate indication of the appropriateness of a proposed limit than any one survey.

A "safe" limit could, as per the argument put forward by Delfabbro and O'Neil (2011), mean a spending limit that is likely to restrict the spending of problem gamblers, but not impede the gambling of others. Using this as a starting point, an examination of the data in Table 4.1 shows that problem gamblers spend, on average, somewhere between $77 and $303 per session (analogous to a per-day spend). To restrict problem gamblers, the limit should consider amounts below their average spend. Delfabbro and O'Neil estimated the upper end of moderate-risk gamblers to be around $100, and the data presented in Table 4.1 suggests the highest average spend of moderate-risk gamblers is around $121. Using the confidence intervals provided by the Tasmanian data, the lower 95% confidence interval for problem gamblers is $128 per day. To be conservative, a starting point for consideration of a high-level "safe limit" would be $120–125. Based on the most recent prevalence data, this amount should constrain the spending of most problem gamblers, but few lower-risk gamblers would be affected if limits were set at this level as they would be unlikely to spend this much in a session.

Alternatively, a "safe limit" could be argued to be more appropriately calculated based on the spending habits of recreational or non-problem gamblers. Using this as a starting point for consideration, Delfabbro and O'Neil (2011) suggested that non-problem gamblers tend to spend under $20 per session. Table 4.1 data suggest that non-problem gamblers spend somewhere between $20 and $45 per session on average, with the Tasmanian data suggesting that the spend is under $40. The low end for low-risk gamblers suggests that this group tend to spend somewhere between $30 and $40 per session. Considering all these data, a starting point for a lower "safe limit" could be $40 per session/day. This is a level of spending that very few recreational gamblers would reach during an average visit gambling on EGMs.

We also considered whether a similar approach could be used to determine safe monetary limits for longer time periods. Table 4.2 (on page 51) shows the average annual EGM spend by problem gambling severity. The data show sizable variation across surveys and time periods, and these differences have larger relative differences than were shown for session spend. In particular, the Tasmanian survey reported much lower expenditure for average annual spend for problem gamblers than other states, such that the lower and upper 95% confidence intervals for Tasmanian problem gamblers do not cover the average problem gambler spend found in other surveys. This makes estimation using these data alone more difficult.

However, as longer term limits have important protective effects for a range of gamblers (problem and binge gamblers), we calculated some very tentative assessments for an annual limit. To address the very low annual amounts reported in the Tasmanian survey for problem

16 PGSI anchor "almost always" was changed to "always" in the New South Wales, Queensland, and three-states surveys, with the effect that problem gambler prevalence rates were slightly depressed (Productivity Commission, 2010).

gamblers, we used session frequencies from all the surveys in Table 4.2 rather than just the confidence interval data from the Tasmanian study.

Table 4.2: EGM average annual spend, by gambling severity

	N	Recreational/non-problem ($)	Low ($)	Moderate ($)	Problem ($)
Three states (Vic., Qld, SA) 2010	200	n. a.	n. a.	n. a.	n. a.
New South Wales 2006 [a]	5,029	696	3,668	6,618	20,642
Queensland 2006–07 [a, b]	30,000	176	837	3,867	20,370
Victoria 2008	15,000	322	1,078	2,676	12,356
Tasmania 2011 [95% CI] [c]	4,303	280 [196, 363]	1,247 [433, 2,061]	n. a.	6,124 [3,642, 8,607]

Notes: [a] Reported by the Productivity Commission 2010 using an averages analysis or calculated on reported data using an equivalent but simplified approach. [b] 5% winsorised (5% of the extremes are excluded). [c] 95% CI = 95% confidence intervals. n. a. = data not available. Although studies conducted in Queensland 2010, New South Wales 2010, and the ACT are more recent, they either reported data in a non-comparable format or did not report expenditure data, and so were excluded from this review. PGSI categories were identified differently between states: Tasmania 2011 standard; three states 2010 unknown (probably modified anchors), NSW 2006 and Queensland 2006–07 modified anchors. Modified anchors may alter the average expenditure across PGSI categories (possibly increasing moderate and problem expenditure), compared to the standard PGSI.

Sources: Allen Consulting Group et al. (2011); Brockelsby, Kenrick, & A C Nielsen (2006); Gambling Policy Directorate, & Office of the Government Statistician (2008); Schottler Consulting (2009a, 2010a).

Approximating our approach for calculating daily amounts, we combined the average number of monthly sessions for moderate-risk and problem gamblers as an estimation of a "high" number of sessions per month. Similarly, we combined the average number of sessions for recreational and low-risk gamblers as an estimation of a "low" number of sessions per month.[17] From these analyses we found that the average number of sessions per month for moderate-risk and problem gamblers was approximately four sessions per month, while the average number of sessions for recreational and low-risk gamblers was approximately two sessions per month. Using the daily amounts calculated earlier, we estimated $960 (i.e., $40 per session/day ´ 2 sessions/days a month ´ 12 months) as a "low" annual amount, and $6,000 (i.e., $125 per session/day ´ 4 sessions/days a month ´ 12 months) as a "high" annual amount. These amounts sit approximately between the reported recreational and low-risk gambler annual expenditure and between the reported moderate-risk and problem gambler expenditure amounts shown across surveys in Table 4.2. The high limit also sits well below what Delfabbro and O'Neil (2011) reported as the annual spend for problem gamblers (approximately $10,000–20,000). This therefore provides a lower annual amount than is likely to be spent by those experiencing problems. These figures could then be converted to monthly gambling limits of $500 for a high limit or $80 for a low limit. Again, the high limits cohere fairly well with Delfabbro and O'Neil (2011), who suggested $250–300 per week.

Nevertheless, we feel that further research with large sample sizes is required before any estimate can be implemented widely. If these limits are used in trials, they could act as a starting point that is then tested by incremental variations to better approximate what might be the actual best "low" or "high" limit. Such iterative analytical approaches have been extensively used in the behavioural economic literature (Bickel et al., 2011).

It is not known at this point how gamblers will interpret suggested safe limits. In particular, the high limits calculated may be interpreted as indicating a safe level to gamble, as opposed to a high-end safety net to prevent very excessive gambling. **We therefore do not recommend these amounts are used without full testing in experimental trials that include comprehensive examination of the interpretation of the different limits, attitudes to them, and the potential effects on gambling behaviour.**

17 These two annual calculations function in a similar way as daily limits; a "high" number that is still low enough to provide some protection for problem gamblers, and a "low" amount that is still high enough that recreational gamblers would typically gamble under it.

Using community norms to inform safe limits

Another method of estimating safe limits is to use community norms or attitudes around safe limits. One way of doing this is to look at what community members set as their own limits. Interestingly, an evaluation of limit setting, conducted by Schottler Consulting (2010b), found that 62% of gamblers ($n = 56$) set a limit that was *higher* than the amount that they would normally spend. These results suggest that gamblers also often conceive of limit setting as a type of "safety net" rather than a tool to monitor and control their gambling (Delfabbro & O'Neil, 2011; Hare, 2010). Extrapolating from this would suggest that the higher limits discussed above would be preferred by gamblers. Higher severity gamblers tend to set higher limits than others (Schottler Consulting, 2010b), so the introduction of even a high default could assist many in this group if they accept the default.

An alternative would be to conduct research asking community members to nominate what they think would be safe limits, and using this information, together with information from prevalence studies on average expenditure (as discussed above), as a basis for determining safe default limits.

However, what none of these calculations take into account is that a "safe" limit will vary depending on an individual's financial situation as well as their gambling behaviour. Gambling at the "safe" daily maximum suggested by Delfabbro and O'Neil (2011), for example, would be problematic for many high frequency gamblers, as it could result in losses of over $30,000 per year for those who gamble most days, and even the much lower "safe" limits discussed above would still be too high for some gamblers. Some consultations suggest that, ideally, people would set safe limits by relating their gambling spending to their personal budgets. Delfabbro and O'Neil (2011) suggested default systems should use language that encourages gamblers to consider what might be an appropriate limit for an individual's particular financial situation (e.g., "budgets"). Further, some governmental consultees suggested incorporating personal budgeting tools into government websites to allow gamblers to work out a budget that includes gambling spending. These tools could, for example, allow patrons to work out what proportion of their income that various gambling limits represent.

Encouraging safe limits

Information about safe limits can be provided to gamblers in a variety of ways. Messages can be "pushed" to gamblers within venues using promotional flyers, via kiosks, and on machines. Information about safe limits and the benefits of using limit setting as a form of pre-commitment can also be delivered more broadly to customers and gamblers at venues through communication, education and social marketing campaigns.

Another way of providing information about safe limits would be to link it to the person's own limits and/or spending. In other words, provide the information at the time people are setting or resetting their own limits or when gamblers receive information on their spending in activity or transaction history statements. Providing comparative information at these times, known as "social nudging", can be extremely powerful at creating behaviour change. For example, Thaler and Sunstein (2008) reported on a study involving energy consumption. Three hundred residents were informed about how much energy they had used in previous weeks and also the average household consumption in their neighbourhood. Over the next few weeks the above-average energy users significantly decreased their energy use, while the below-average energy users significantly increased their energy use, indicating both groups were trying to behave as the average consumer. Interestingly, a sub-section of the households were also given an emoticon (a small face-like image), depending on whether they consumed less or more energy than the average (happy icon for less energy use; sad icon for more energy use). Above-average energy users showed an even larger decrease when they received the unhappy emoticon, while the below-average energy users did not increase their energy consumption when they received a happy emoticon, which contrasts to the increase in energy use for the low energy consumption users who did not receive a happy emoticon.

Similar approaches could also be applied to gambling and setting limits. Gamblers may struggle to come up with an appropriate limit alone, particularly if they have not considered putting

limits around their gambling before. As discussed earlier, without any other information to go on, even low-risk gamblers tend to set limits higher than they intend to gamble. Provision of relevant comparative data at the point when gamblers set limits and/or as part of transaction history statements may provide useful benchmarks. Re-analysis of existing datasets or secondary data analyses of data from pre-commitment programs could be used to create a picture of community-wide spending and/or limit setting (e.g., 50% of people spend/set limits of $40 a day; only 2% of people spend/set daily limits of $100).

Using public health approaches, this information could be combined with commonly used colour coding to indicate greater or lesser risk; that is, a sliding scale from green (safe, low-risk limits), to orange (higher risk limits), to red (very high-risk limits) (Delfabbro & O'Neil, 2011). This approach has been implemented in Sweden using the PlayScan tool, where gambling behaviour and risk is evaluated using a traffic light system (green—stable behaviour without risk, yellow—some risk, and red—serious problems). The system was evaluated by Griffiths et al. (2009), who found that approximately half of the online gamblers surveyed reported that viewing their gambling profile using the traffic light system was useful. Applying a similar tool to limit setting would provide benefits to gamblers as they would be provided with clear information about the potential level of risk related to their chosen limit. This may operate in a similar manner to the happy/sad emoticons in the neighborhood study (Thaler & Sunstein, 2008) to encourage people to lower spending/limits but not increase existing safe spending/limits.

This type of approach could also incorporate earlier discussed safe limit defaults, which can also provide a useful benchmark for people. However, if defaults are set to minimise the day-to-day effects on recreational gamblers (i.e., high defaults intended to affect the spending of problem gamblers only), they have the potential to be misunderstood. Specifically, gamblers may take the suggested amount as a recommendation or as a "reasonable" or "normal" amount to gamble when, in fact, they are proposed as maximum safe limits, with the expectation that most gamblers would spend far less than this. These unintended consequences are most likely to arise in the absence of any other relevant information. Providing a relatively high default within the context of other information about safe limits may reduce these misunderstandings and increase the chances of gamblers selecting a lower, safer limit (see Figure 4.2).

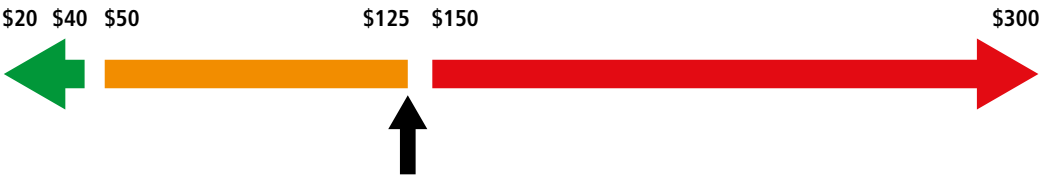


Figure 4.2: Example of a limit-setting scale

Figure 4.2 shows how the proposed "high" daily monetary limit might be presented. Higher limits are in red (possibly with an accompanying risk message saying that very few people set a limit this high and this has significant associated dangers). Lower limits are in green (also with a risk-orienting message about how even low-level gambling may cause harm and the need to take personal budgets into account).

While this generic information will provide gamblers with some useful benchmarks, they still take no account of a gambler's individual financial situation. As discussed in the previous section, some government consultees discussed incorporating personal budgeting tools on their website to assist gamblers to personalise their limit setting to their own circumstances. Longer term, these types of tools could be integrated into the system such that gamblers are prompted to use them as an integral part of their limit-setting considerations. However, in the interests of a simplified system, it may be better to offer this type of feature to gamblers at a later point in time, after they have had time to experiment with limit setting and more clearly understand the system.

4.6 Promoting and supporting limit setting

It is important that systems are put in place to support the implementation of pre-commitment features. The ways in which media/communication and industry engagement/support can be used to support the implementation of limit setting is presented in a program logic model (Figure 4.3 on page 53) and discussed in detail below.

Media and communication

Part of the process of designing a system that encourages limit setting is marketing it to gamblers so that they are aware of its existence and benefits. Social marketing refers to a process that uses marketing tools and techniques to show how the desired behaviours benefit society as well as the target audience (Kotler, Lee, & Rothschild, 2006, cited in Kotler & Lee, 2008). Social marketing has been used in various campaigns regarding health promotion, injury prevention, community mobilisation, and related behaviour issues such as tobacco use, heavy/binge drinking, wearing seatbelts, gun storage, organ donation, voting, and animal adoption (Kotler & Lee, 2008). The main aim of social marketing is to change behaviour. These campaigns use psychologically based methods designed to influence behaviour by analysing factors that determine the receptivity of audiences to messages and using strategic marketing approaches to deliver them to their target audiences in the most effective ways (Evans, 2006). These strategies may include the analysis of audience segmentation, media reach, brand association, and message characteristics.

Meta-analyses of 48 US social marketing campaigns in mass media have shown that approximately 9% of the change in health behaviours can be attributed to such programs; for example, decreases in risky behaviours like smoking and increases in health promoting behaviours like condom use (Snyder & Hamilton, 2002). Social marketing campaigns are less successful when the program only provides health information or when the target behaviour requires repetition and maintenance over time (Hornik, 1997; Snyder, Badiane, Kalnova, Diop-Sidibe, 2003). Consequently, similar social marketing approaches for limit-setting will require messages to be repeated as limit setting needs to be continually maintained or reset.

Media can be used to educate patrons so that they understand the potential benefits of limit setting as well as how to use the technology. Messages can be targeted to specific groups who may have preconceived ideas about the benefits of pre-commitment but may benefit from its protection (e.g., low-risk or moderate-risk gamblers). Information can be provided generally about the need to set limits and also to inform people as to what a safe limit might look like. As discussed earlier, this could include comparative information about community spending. Information needs to be presented at various places, including on machines, within the venue, and external to the gambling environment. A variety of media should be used in conjunction with this to raise awareness and encourage engagement with the technology.

Consultees were broadly in agreement regarding the need to normalise limit setting in the public mind so that it becomes seen as a part of normal budgeting that all gamblers undertake, rather than, as is currently the case, being largely seen as a process for people with gambling problems (Bernhard et al., 2006; Delfabbro, 2012b). In some consultations it was proposed, for example, that if gambling is frequently undertaken as a recreational activity, it should be included in personal budgets as part of regular entertainment/socialising expenditure. Ongoing social marketing, therefore, should emphasise the benefits of setting limits for all gamblers, not just those experiencing problems.

Familiarity can improve attitudes. Evidence from different implementations has suggested that limit-setting participation rates are better when gamblers have had time to adapt to the overarching technology prior to limit setting being introduced. For example, Norway introduced card-based cashless gaming several years prior to the development of limit-setting capabilities, with gamblers required to use cards to gamble across a range of different activities. Consultations suggest that these gamblers were very familiar with the need to use cards to gamble and that this may have contributed to the subsequent general acceptance of card-based limit setting when it was introduced. In the same vein, the Productivity Commission (2010) suggested a phased approach for introducing limit setting in Australia, whereby a partial system is gradually

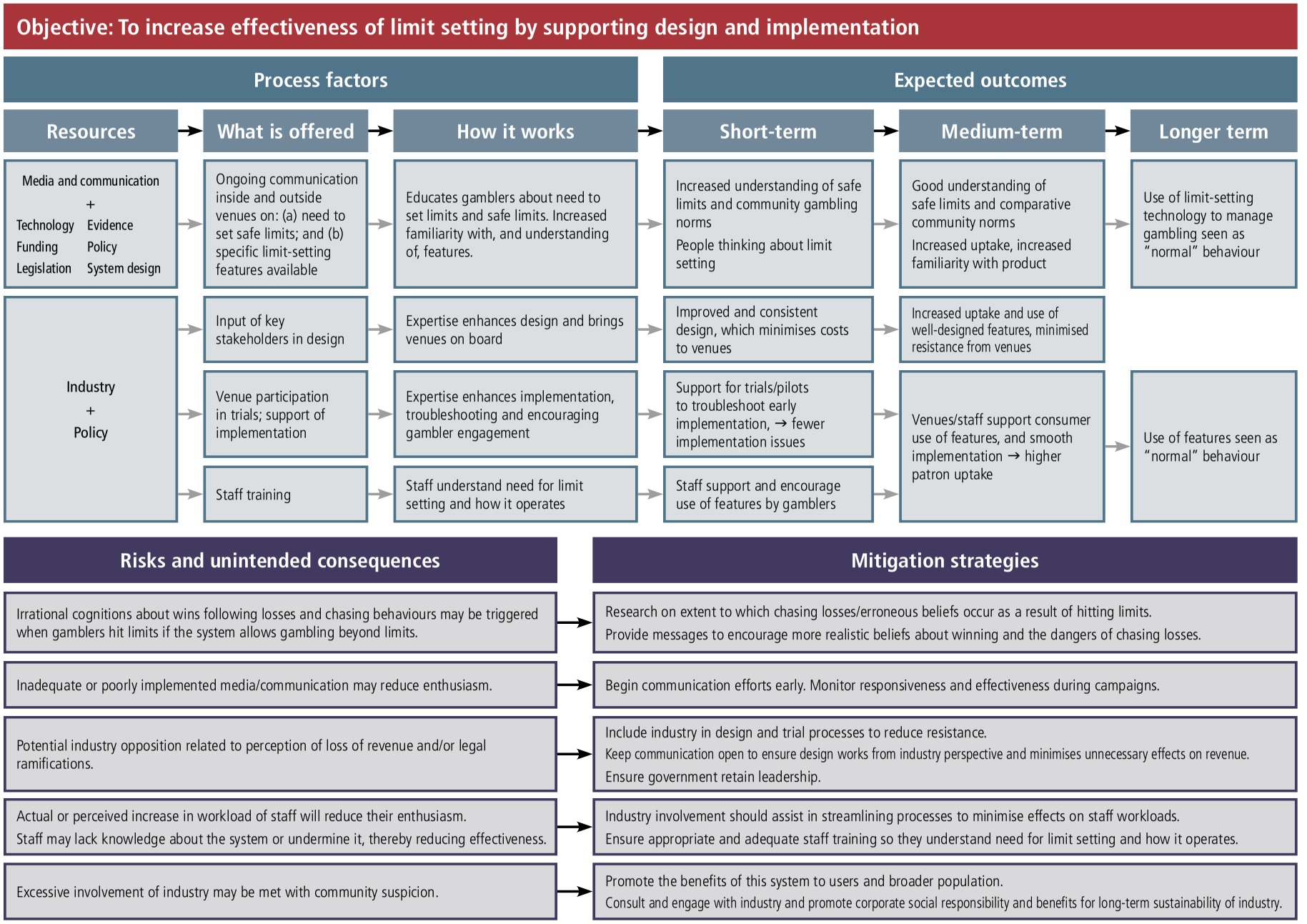


Figure 4.3: Program logic model for promoting and supporting limit setting

introduced as machines are updated to allow people to experiment with limit setting. They recommend that the partial system be followed by the introduction of a full system. This plan would allow people to become familiar with the technology and for industry and government to identify any issues and amend these prior to full implementation. Related to this is that media and communication about pre-commitment and features such as limit setting should begin early, possibly even before the technology is launched so that people begin to understand its potential benefits.

The language of the messages affects the acceptability of the behaviour change program. For example, although the Maxetag implementation was mostly ineffectual, the "My-Budget" phrasing for the limit-setting system was thought to be a better approach than the word "limit". Griffiths et al. (2009) reported that gamblers did not like the word "limit". This was verified in our consultations where it was recommended that terms such as "limit", "monitor", and "control" be replaced by "spend" and "budget". These latter terms provide an association with personal circumstances; that is, the perception that it is a service offered to the gambler, rather than the venue or government setting or requiring a constraint on gambling (Delfabbro, 2012b). These types of messages also promote the idea that the technology is there to support the user rather than control their behaviour.

Further, as venues are busy places, **presentation and language needs to be direct and easy to understand** to compete with the stimulating experience of gambling and the other activities in the venue. At the same time, these **messages need to be discrete** as gamblers wish to maintain their privacy, and some may be embarrassed if they are identified as meeting their limit.

The idea of **providing a tailored or personalised service** may be enhanced by advertising limit setting as a personalised service within venues or loyalty card systems. However, as discussed in the loyalty card section, there are some issues with this as it may send mixed messages to gamblers about spending.

An unintended consequence of a gambler hitting their limit in a partial or voluntary system, where the gambler is able to play past a pre-set limit, is that it could trigger erroneous gambling cognitions such as the gamblers' fallacy, where the gambler thinks a win must be due as it has not happened so far. To mitigate against this, **messaging should encourage realistic beliefs about winning**, such as to expect losses rather than wins and that gambling should be about entertainment rather than winning. Messaging should also increase understanding about the dangers of chasing losses and the odds of winning. These messages can be placed where limits are set, as a gambler approaches a limit, and more generally in the venue.

Importantly, and related to the above point, the **tone or expression of the messages** influences whether the content of message can "break through" emotional and cognitive barriers for gamblers. In the venue, gamblers are more likely to be in a "hot cognition" state, where they feel stimulated and are extremely responsive to powerful emotionally salient cues (e.g., distressing or exciting images). Research examining hot/cold cognitions has found "hot cognitions language" activates similar states. Therefore, for messages to break through to gamblers when they are in the venue, hot tone messages should be used; for example, "losses are depressing", "I feel bad when I lose a lot", and "power is sticking to my limit". In contrast, research in other fields of human behaviour has shown that "cold" messages (objective, rational, and factual information) have less salience when people are proximal to the behaviour (e.g., providing factual information about safe sex to people close to points where they may be thinking of engaging in risky sex; Figner, Mackinlay, Wilkening, & Weber, 2009; Gold, Skinner, Grant, & Plummer, 1991). Cold cognition language may have more influence if provided to gamblers outside the gambling environment; for example, through transaction history statements or community messaging.

Industry engagement and support

This section considers ways in which groups responsible for system implementation—venue operators, governments and regulators—can provide knowledge and support in the design and implementation of EGM pre-commitment features. Consultations were undertaken with industry stakeholders in accordance with the terms of reference for this review. It should also be acknowledged that community groups and consumers have significant expertise and

knowledge that could also inform the development of limit-setting features within a pre-commitment system.

Consultations and literature evaluating voluntary pre-commitment systems have found that venue engagement, staff knowledge, and support from industry associations are influential in obtaining gambler participation (Delfabbro, 2012b; Department of Justice, 2011; Department of Treasury and Finance, 2010; Hare, 2010; Office of Regulatory Policy, 2009; Responsible Gambling Working Party, 2012; Schottler Consulting, 2010a). The knowledge and expertise of gambling industry representatives (manufacturers, EGM operators, venues, etc.) should be obtained at various stages of the system design, implementation and evaluation. This should facilitate industry stakeholders feeling that they have had a voice in the process rather than having the final product imposed on them. This in turn could reduce the potential for them to undermine any system that is introduced.

However, this input needs to be carefully considered against the potential conflict of interest of the gambling industry in promoting and encouraging consumption of their product. This means that any engagement with the industry—including hotels, clubs, casino operators and manufacturers—needs to be conducted to ensure the expertise and concerns of industry are heard, but with the knowledge that this advice may not align with a public health approach that seeks to minimise harm. Care must be taken to ensure that commercial and/or vested interests do not exert undue influence on the design and evaluation of a pre-commitment system.

High-level industry consultation may be worthwhile at the design stages to inform useful features and provide an early alert to particular features that may be problematic. It was noted in government and industry consultations that it was important for these two stakeholder groups to communicate regularly when legislation and technology are being developed, to ensure that systems are designed such that the features align with relevant legislation, and that legislation is designed to encourage best practice but not stymie design unnecessarily. Inconsistent legislative requirements across states or between state and federal legislation, for example, can cause unnecessary design and implementation issues where groups offer products across multiple states.

Some regulators also suggested that **industry involvement in the testing and trialling of limit-setting features** could provide an early alert to design or implementation issues such as were incurred in previous limit-setting systems. For example, prior implementations have included multiple and advanced feature options that have led to confusion, frustration and disengagement with the pre-commitment system. Stakeholders with whom we consulted confirmed that, in their experience, once gamblers have tried a system and rejected it, a sizeable number would not be willing to try pre-commitment a second time. This may be less of an issue in a full, mandatory system where gamblers would be required to persist in order to continue accessing EGMs, but it may be more problematic in a voluntary or partial system.

Consultations with government regulators also suggest that it is important to consider whether **the design minimises costs to industry** where possible. For example, incorporating business benefits such as cashless gaming, which would reduce industry overhead costs (e.g., staffing, money transportation) and provide greater security regarding holding monies. Venue and government consultations also suggested that a best practice approach could be achieved through regulators and industry working together, as these two sectors have differing areas of expertise that are both needed to develop an integrated and useable system that is acceptable to gamblers.

The support of **industry peak bodies to promote the use of pre-commitment features such as limit setting to venue operators and managers** would also be useful, as venues are in direct contact with gamblers, and support at the venue level will enhance the success of programs. This could include information flow from peak bodies to venue operators, outlining the potential value of measures to their customer base and to venues as applicable (e.g., cashless gaming, corporate social responsibility). This is more likely to happen if peak bodies feel that they have had some voice in the design and trial stages. Venue-level support could mean providing prominent displays of information, making announcements in venues, encouraging enrolment and use of the pre-commitment features, and promoting the venue as a "responsible gambling environment". All of this would lead to a smoother transition and normalisation of the use of features to better support safer gambling.

Finally, industry support is needed at the staffing level. **Staff can promote the system on the ground**, and will be required to assist EGM users to adopt the system, including troubleshooting system glitches. This is likely to mean that gamblers will understand the value of these features. Industry engagement with the promotion and support of limit setting currently does occur. Most implementations appear to instruct staff to encourage gamblers to sign up to a limit-setting system, help gamblers use the system, and provide some degree of marketing and promotion about the system or its responsible gambling features (Delfabbro, 2012b; Department of Treasury and Finance, 2010; Hare, 2010). For example, some venues have staff designated to assist gamblers with the limit-setting process of setting up and resetting their limits. Industry representatives said they believed this was a positive interaction, as gamblers are given a clear understanding about how to use the system and set a limit. One operator reported promoting limit setting as part of gambler awareness information in their venue newspaper and at the information kiosk. Staff at this venue are advised to explain the system but do not advise gamblers on specific limits to set beyond saying "what you consider within your budget".

However, staff support is not a given. Venues often have a high staff turnover, which makes keeping staff training up to date an issue. Literature and consultations also show that operators and venue staff involved in some pre-commitment systems have been engaging in behaviour that has undermined the system. Consultations with regulators across jurisdictions suggest some venue owners are passively or actively resisting engaging in and promoting limit-setting features. Further, in some instances there is evidence of staff choosing not to encourage user involvement, assisting gamblers to override defaults, ignoring card swapping, and in some cases participating in card swapping, for example by providing "courtesy" cards (Bernhard et al., 2006; Delfabbro & O'Neil, 2011; Focal Research, 2007). Some of these examples are clear breaches of regulation and should be overcome by tightening and enforcing legislation. Others, however, show more passive resistance and reveal the influence that staff on the ground can have on the acceptance and uptake of pre-commitment.

One way to increase staff support and cooperation is to ensure that there are sufficient resources allocated to staff education in relation to: (a) why the measure is important; (b) what each feature is designed to do and how it will assist gamblers control their gambling; and (c) how to assist customers to sign up and use the features. An example of this can be found in the work that venue support workers currently do in Victoria, providing industry staff with education and training around harm reduction measures as well as general support and information. Further, consultations at industry level suggest that programs that do not include sufficient staffing resources or that have ongoing technical issues will lose vital staff support, leading to a flow-on effect of low gambler participation. Well-designed and tested systems that emphasise simplicity in initial versions should minimise gambler confusion and frustration and ensure that staff do not feel overwhelmed with additional work.

4.7 Making it simple and easy to use

When considering limit-setting designs, a balance must be struck between considerations of flexibility and simplicity. Although complex systems with multiple options can be viewed as being "superior" (Hare, 2010), they have also been found to be confusing to many gamblers, something that is likely to reduce limit-setting participation (Delfabbro, 2012b; Schottler Consulting, 2010b). For example, Schottler Consulting examined accuracy of recall around limits that people had set in a system that provided options for a variety of different limits. They reported that only 17% of surveyed gamblers were actually able to correctly remember even the first expenditure limit they had set in the system.

A major theme to emerge from our consultations was a need to carefully consider the effects of technology and ensure that the design of the system was not driven by the technology. Technology is clearly at the core of pre-commitment and can facilitate a convenient and sophisticated system whereby the gambler is more aware of their spending and able to monitor and control their gambling. However, consultations with a variety of participants show that there has been a history of technological features being designed without a focus on the gambler. This has particularly been the case for early versions of software.

Consultations with regulators indicate that manufacturers have designed systems of such complexity that they become ineffective as harm-minimisation approaches. For example, a number of consultation participants reported that gamblers are often confused by complex limit-setting protocols. They have difficulties understanding the system, are confused by the number of options and buttons on the screen, and find the messaging (messages to the gambler on the screen) annoying. This is particularly so when gamblers are not used to card-based gambling systems. This results in gamblers setting limits without knowing what they are doing, leading to many false negatives (unintended limits). This frustrates gamblers and puts additional stress on staff (who have to deselect them). Related to this, if defaults are introduced and not clearly communicated to the gamblers, it could result in mistrust of the system. Consultations with different groups suggest that this is a vital consideration because limit-setting systems that are not set up in a useable way will frustrate gamblers, and may lead them to reject it and gamble outside a limit-setting system.

Hare (2010) noted that effective systems have a common set of characteristics, including "clear and concise product literature (materials which can be read in under 30 seconds and clearly outline product benefits), and easy-to-follow sign-up and pre-commitment processes" (p. 18). Focal Research (2010), for example, reported that gamblers' positive evaluations of the My-Play system were partly due to the ease of tracking the money they had spent each month, while gamblers in the Schottler Consulting (2010b) evaluation of the Play-Smart system valued the ease of the sign-up procedure. The need for simple and easy-to-use systems is now generally supported (Delfabbro & O'Neil, 2011; Parke, Rigbye, & Parke, 2008), and considered to be a best practice goal for future limit-setting systems (Responsible Gambling Working Party, 2012).

All consultations with government, research and industry stakeholders similarly endorsed the need for a very simple, quick and easy system—particularly while it is being introduced—to ensure people considering signing up for limit setting are not discouraged. A number of consultations also suggest that building in additional capacity at the design stage is prudent but that these more advanced and complex options should only be gradually introduced after people are comfortable with the system, and that this would take a considerable period of time.

Limit-setting systems can be made simple and easy to use in a number of ways:

- Arrange the system to be opt-out (rather than opt-in) and with good use of defaults.
- Focus on the essential limit-setting options (e.g., monetary limits), and either eliminate non-essential limits (e.g., time limits) or offer these within "advanced options" screens or at a later time.
- Provide multiple ways of setting limits inside and outside venues to increase the flexibility of the system and cater for different groups (e.g., young people may prefer online, older gamblers or those who have literacy issues may prefer staff support or a kiosk at the venue).
- Use good system design that is intuitive and easy to understand, with clear instructions (no jargon/technical terms). This will encourage uptake and minimise confusion among those experimenting with the system.

4.8 Chapter summary

A consistent finding in this review is that limit-setting systems need to be simple and easy to use and focus on essential limit-setting options in early iterations. More complex options could be offered at a later stage as gamblers become more familiar with the technology. Defaults have been used in other public heath domains to improve participation rates and would likely improve limit-setting participation, particularly opt-out designs; however extreme care needs to be taken in structuring defaults so that they do not inadvertently encourage increased gambling. Information on safe limits can be provided in a variety of ways, including providing comparative information on community gambling and encouraging people to consider personal budgets.

Linking pre-commitment to loyalty card systems and incentives may increase participation in limit-setting systems, although evidence to date suggests incentives are not the primary reason gamblers try pre-commitment. It is important to provide gamblers with regular opportunities and invitations to set and/or lower limits, especially those who are gambling outside the system and those who have set very high limits. Social marketing strategies may be helpful for encouraging

understanding of, and participation in, limit setting. Finally, industry involvement will assist at the design/development stage, and as part of promoting the system in venues. Education and training of staff in limit-setting features should be seen as vital to ensuring a smooth transition.

5 Summary and conclusions

5.1 Effectiveness of different system designs on limit setting

Limit setting has been trialled or implemented in various jurisdictions. Australian trials have been on partial, voluntary systems, while Canada has trialled both a partial, voluntary system, as well as a full, voluntary system. Norway has implemented a full, mandatory system with mandated maximum monetary limits, while Sweden is currently rolling out a full, mandatory system with no mandated maximum limits. Examination of various trials and implementations showed:

- There is evidence of effectiveness for those who use pre-commitment features, including limit setting.
- There is evidence that higher risk gamblers are aware of the potential value of limit setting as a way of managing their gambling, and that its presence encourages them to think about limit setting.
- There is mixed evidence that moderate-risk and problem gamblers who participate in pre-commitment reduce their expenditure, as some studies reported decreases in average expenditure for moderate-risk and problem gamblers, while other studies reported no change.
- Uptake of limit setting within partial, voluntary systems is likely to be slow, at least initially, as most gamblers who do not think they have a gambling problem see limit setting as irrelevant.
- Those who do have gambling problems, but who are not yet ready to deal with these, are also unlikely to set limits in a voluntary system.
- Even where problem gamblers do set limits under a voluntary system, they will have limited effectiveness if the individual is able to impulsively exit the system or continue playing past set limits.
- In a full system, everyone is required to at least engage with the system and consider limit setting. This appears to result in a much higher proportion of gamblers experimenting with limit setting.
- A full, mandatory system forces some type of limit setting on all gamblers. This is likely to be a more effective means of reducing harm in theory, particularly if it includes non-exceedable limits, is offered with wide reach (i.e., state- or nation-wide and covering multiple forms) and/or includes mandated maximum monetary limits. However, if the system is seen as too restrictive or paternalistic the community may reject it (e.g., by gambling outside the system by swapping to different forms of gambling, accessing additional cards or sign-in options, or setting very high limits).
- Some problem gamblers in particular will try to circumvent the intention of a full, mandatory system if it is seen as too restrictive and/or they are not yet ready to deal with their issues.
- The system being developed in Sweden should be examined for effectiveness over the coming months and years as it uses the protective full, mandatory system offered in Norway, and includes wide jurisdictional coverage, but without mandated maximum limits, thereby

retaining gambler autonomy. This design may be seen to be congruent with the Productivity Commission's (2010) desire to balance non-interference of recreational gamblers with good protective harm minimisation measures for problem gamblers.

5.2 Limit-setting design

The evidence regarding monetary limits shows that:

- Setting daily monetary limits is the most preferred option as it assists gamblers to control impulsive over-spending. It is protective for all gamblers, but particularly for higher risk gamblers, who tend to spend more per session.
- Using longer term monetary limits is also likely to be efficacious, as it assists in budgeting. It is particularly protective of high-risk and frequent gamblers.
- Further research is needed to determine whether weekly or monthly limits are better.

In terms of time-based limits, the review found that:

- Setting time-based limits is a sophisticated control tool allowing gamblers to pre-commit to the amount of time spent per day, week and so on, as well as to set specific gambling-free days, end session times, and receive timely reminders.
- It is less preferred and less frequently used than monetary limit-setting features.
- Time-based limits may be very helpful tool for managing gambling for those who lose track of time or experience dissociation while gambling. This is likely to include large percentages of moderate-risk and problem EGM gamblers.
- Effective marketing will be required to educate gamblers about the usefulness of time-based tools.
- Time-based limits may need to be provided in an advanced (secondary) menu, or introduced some time after monetary limits commence, to reduce confusion for users in the early stages.

5.3 Encouraging gamblers to set safe limits

The way in which the limit setting is implemented is critical. Previous trials and implementations have struggled to engage gamblers because of poor implementation approaches. As such, implementations have significant risks, but there are a variety of ways these may be overcome.

The most effective way to increase gamblers' participation is to require them to do so (i.e., under a mandatory limit-setting system). However, if a voluntary system is chosen, other approaches will increase participation, including:

- using defaults that require the gambler to opt out from a pre-commitment system;
- providing defaults for the most important limits (e.g., daily money limits);
- sending regular invitations to gamblers to opt in to the limit-setting system and reconsider their limits, especially for those who have opted out or who have set very high limits;
- providing a means to set and reset limits at regular intervals, both at the venue (to respond to immediate needs) and outside the venue (likely to lead to more considered limit setting); and
- ensuring that downward resets take effect immediately to facilitate good harm minimisation, and upward resets have time delays of at least 24 hours to reduce impulsive decisions in the heat of a gambling session. More research is required to determine if longer time periods are needed before limits can be effected (particularly longer term limits).

Setting safe limits

- It is unclear at the moment what constitutes a safe limit. Data from recent prevalence studies suggests that most non-problem gamblers would spend less than $40/session, so this amount would be likely to be a safe limit for most gamblers. While gamblers other than problem gamblers are likely to spend less than $125/session, this amount may constitute a high-end safety barrier.

- Limits based on population-wide averages take no account of personal financial situation or budgets. Facilitating the use of budget tools would present best practice for encouraging safe personal limits.
- It is important to provide information on what constitutes a safe limit. The provision of comparative information (on wider community spending on gambling; demonstrating what constitutes safer and riskier spending) may encourage setting of safe limits.
- Messaging around safe limits using comparative data should occur at the point of setting limits (e.g., a visual graph could show the relative riskiness of particular monetary limits according to prevalence data) and in regular reminders (e.g., transaction history statements could show personal losses over a period of time as a percentage of different income brackets).

Educating and informing through media and communication

Media and communication is an important tool for educating and informing gamblers about limit setting:

- Information about the benefits of limit setting, and the new technology to facilitate this, needs to be presented at various places and using different media to raise the awareness of the protective benefits of limit setting, safe limits, and to encourage engagement.
- Social media campaigns, and information at venues and on machines should use appropriate psychologically based approaches to influence behaviour.
- Familiarity can improve attitudes, so a gradual introduction of limit setting and/or use of familiar technology, such as existing gambling-related technology, can assist.
- The language and messaging used should personalise the features, suggest a beneficial service rather than an imposed regulation, be simple and easy to understand, and match the environment in which it is being presented.

Engaging industry

Industry engagement can assist, but involvement should be managed carefully as part of the overarching process:

- Peak body expertise can contribute to design options (e.g., ways to minimise the effects on the industry and identify problematic design features), and to facilitate venue involvement in trials and pilots.
- Support at the venue level may involve hosting trials, informing on early implementation issues and encouraging consumer involvement.
- Comprehensive staff training on the need for limit setting and the use of features is essential for smooth implementation.
- Ensuring that costs to industry are minimised and that the system is evidence based, well thought out and fully tested should increase industry support.

Designing for simple and easy use

Overall, to encourage use of the system and the setting of safe limits, the system needs to be designed to be simple and easy to use:

- Make opting out the default on participation and essential limits.
- Focus on essential limits in the initial phase of sign up to avoid confusion and overload.
- Introduce additional limits in a staged manner (over time or using secondary screens).
- Provide regular opportunities to reset limits to safe levels.
- Use optimal system design that is easy to understand and good media/communication to sell important messages about limit setting.
- Make features easy to access and reset.

5.4 Avenues for further research

There has been enormous variability in the design of limit setting within electronic pre-commitment systems implemented around the world. Further, there has been limited evaluation of these features to-date. The following are some of the key avenues for further research in this area:

- Setting daily limits has been consistently reported as being the most preferred limit-setting choice and it has clear benefits. Using longer term money limits is also likely to be beneficial but it is less clear whether weekly or monthly options are better. Offering only one of these two choices aligns with the need to keep the system simple. Research should be conducted to determine which are the most beneficial for gamblers of different severities (e.g., by examining attitudes to limit setting and the effects on behaviour over time; examining the ability to accurately set appropriate limits).
- The review showed monetary limits are preferred over time-based limits, and that it is important the system be simple and easy to use. However, evidence suggests that time-based limits can be a useful and sophisticated tool, especially for those who lose track of time or experience dissociative states when gambling. This is particularly likely to be problem gamblers, and the combined effect of both monetary and time limits may provide significant benefits to this group. It would be useful, therefore, to examine whether time-based limits increase the effectiveness of limit setting over and above what is provided by monetary limits alone. Examining these issues will help define optimal initial "splash" pages (where "core" limits are set).
- Suggesting suitable defaults is likely to offer significant benefits by increasing participation rates and encouraging gamblers to set appropriate limits. However, it is still very unclear what the defaults should be. In this report we have made suggestions regarding initial daily monetary limits that could be trialled. However, more research must be conducted to determine: (a) whether it is more appropriate and acceptable to set a "high" safe default (i.e., something aimed at stopping overspending in high-risk gamblers) or a "low" safe default (i.e., aimed at sending a clear message about what is safe gambling); and (b) to clarify what an appropriate "high" or "low" amount would be.
- Initial testing of defaults should be conducted within a clearly defined research scenario and should test with consumers the relative appropriateness of high compared to low defaults. This would help to measure the relative effects of these two types of defaults in terms of:
  - gamblers' attitudes toward defaults and their beliefs about the likely effects of these on their behaviour (e.g., Does it influence beliefs about "normal gambling"? Will it lead to increases in gambling in some people? Do people consider the defaults in terms of personal financial circumstances?);
  - the effects of both types of defaults on behaviour over time (e.g., reductions in gambling spend and severity of problems);
  - the different effects of defaults across gambling severity status; and
  - whether a high default limit should be considered as a maximum mandated limit (such as in the Norwegian system).
- If feasible, it would be valuable for research to test the relative efficacy and effectiveness of partial versus full pre-commitment, including an evaluation of the cost-effectiveness of each implementation. For example, the system could be set to run initially as a partial system (where consumers can elect to be part of the system or not), and then as a full system (where consumers must be identifiable to play). An evaluation could then determine the costs and effectiveness of a partial system, and the relative costs and benefits of a full system, over and above what is offered by a partial system.
- Further, if a full system of pre-commitment was being designed, it would be valuable to test the relative efficacy of mandatory versus voluntary limit setting. In a full system, everyone must be identifiable to play, but within this overarching system, limits can be made mandatory or voluntary. If there is no mandated maximum limit, similar outcomes may happen in either system for high-risk gamblers who are not ready to set limits (e.g., by setting very high limits under a mandatory system or electing not to set a limit in a voluntary system). Mandated versus voluntary limits may, however, lead to differential outcomes for

other groups of gamblers. For example, in voluntary limit-setting trials our review found the majority of gamblers did not set limits because they did not think this applied to them (as non-problem gamblers). Mandatory limit setting could lead people to think more about what they want to spend and so, over time, set better limits (compared to where people can opt-out of limit setting). Alternatively, people may be annoyed at a mandated system—finding it too paternalistic—and rebel against it, whereas those in a voluntary system may feel more empowered to make their own decision, knowing that any limits set will be enforced. It would therefore be useful in a trial system of full pre-commitment to test voluntary versus mandatory limit setting to see how it affects behaviours and attitudes across risk groups of gamblers.

- The ability to set and reset limits on demand requires research. In particular, should people be able to reset limits daily or weekly? Should time periods between resets be longer for longer term limits?
- Research needs to examine the likelihood of certain unintended consequences that may flow from setting a limit or exceeding a limit and ways to minimise these. For example, reaching a limit may trigger erroneous cognitions and/or emotional reactions for some gamblers (e.g., urges to chase wins or losses, strong negative affect).
- Incentives are consistently thought of as a means for improving gambling participation, but gamblers report that receiving incentives is a minor reason for participation in a limit-setting system. It is not clear therefore whether incentives would increase participation in any meaningful way, or whether those who participate because of incentives find the system offers effective control once they have signed up. A variety of incentives have been discussed, including credits to play on EGMs, inclusion in jackpots or prize draws, and meal or drink vouchers. The safest approach, and one most consistent with evidence and best practice in the addiction literature, is to use non-gambling incentives to promote participation in limit-setting systems. These could include discounts or vouchers for other services provided by the gambling venue or vo,uchers that could be used to purchase other goods and services (e.g., a supermarket shopping voucher).
- It has also been suggested that it would be better for the system to allow natural uptake by those who want to use limits. Therefore, it would be useful for research to examine the uptake of pre-commitment with and without incentives. For example a new trial or implementation of pre-commitment could introduce the system without incentives, and then introduce incentives after a period of time to see if this increases participation significantly. This type of research should also compare those who choose to set limits because of incentives to non-incentivised participants, in terms of attitudes to limit setting, usefulness of limit setting, and effects on behaviour. Importantly, this type of research could test the effects of incentives across gambler risk groups.
- Loyalty cards offer a potentially useful vehicle to carry pre-commitment technology, but these are also likely to send mixed messages about gambling to those using them, and may have serious and severe consequences if they encourage spending that may lead to the development of gambling problems. If such as system is proposed, research is needed to investigate the nature and extent of the effects of gambling loyalty programs on the development and maintenance of gambling problems.
- The timing of invitations/reminders to participate in limit setting should be examined in terms of whether messaging should be run at specific times, after a period of time (similar to a time-based limit), or under particular conditions (after a series of losses, using a high limit, gambling outside the system etc.).
- As with any research, large and representative samples and consistent trial methodology are important considerations for future research. Future trials should also try, where possible, to introduce features separately and include detailed comparisons across gambler risk groups to more clearly articulate any differences found.

5.5 Final remarks

The evidence across jurisdictions indicates the particular type of system adopted has an important effect on limit setting. Full, mandatory systems with non-exceedable limits offered

with a wide jurisdictional reach provide the best level of protection in theory, but they may be rejected by the community, and fail if the system is seen as too restrictive or paternalistic. It is also important to balance the potential efficacy of a system against the likely cost of implementation. What is clear is that the way in which the system is designed and marketed to consumers is important, as gambler engagement is essential. A basic system that includes essential limit-setting options in an easy to use and clear manner, and regular opportunities to reset limits is optimal. Additional limits can be offered through advanced screens and/or through irregular invitations. A gradual rollout to increase familiarity and iron out any issues is likely to increase participation in a pre-commitment system.

A clear finding from consultations was that early pre-commitment systems and limit-setting features were based on minimal evidence, with design being driven by technological capability rather than theory or any clear understanding of gambler behaviour. There were important lessons learned from these early implementations, and consultation data show that later designs have been strongly influenced by the evidence and experiences of earlier trials and implementations. This review provides a consolidated summary and critique of limit setting, including best-practice design options. It provides a valuable resource that could be used by both state and federal governments to inform their design and implementation choices within pre-commitment systems.

Instruments and references

Legislation

Gaming Control Act, SNS, 1994–95, C4 (Nova Scotia)

Gambling Regulation Amendment (Licensing) Act 2009 (Victoria)

Gambling Regulation (Pre-Commitment) Regulations 2012 (Victoria)

Gambling (Harm Prevention and Minimisation) Regulations 2004 (New Zealand)

National Gambling Reform Act 2012 (Cth)

Industry guidelines/codes of conduct

Gaming Machines Responsible Gambling Codes of Practice (South Australia)

Gambling Regulation Act 2003 Ministerial Direction Responsible Gambling Codes of Conduct (Victoria)

Queensland Responsible Gambling Code of Practice.

Northern Territory Code of Practice for Responsible Gambling

Responsible Gambling Mandatory Code of Practice for Tasmania

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Appendices

Appendix A: Methodology

Rapid evidence assessment

Stage 1: Identify sources to be searched and pilot search terms

The research team searched 50 databases through EBSCOhost, which hosts academic, scientific and grey literature. These included:

- EconLit, the American Economic Association's electronic database, which covers virtually every area related to economics and is the world's foremost source of references to economic literature;
- PsycARTICLES, from the American Psychological Association, which is a definitive source of peer-reviewed, scholarly and scientific articles in psychology;
- Psychology and Behavioural Sciences Collection, the world's largest psychology database;
- PsycINFO, the largest resource devoted to peer-reviewed literature in behavioural science and mental health; and
- Hospitality and Tourism Complete, which includes industry publications and scholarly journals such as *International Gambling Studies*.

Eleven databases were searched through Informit, which primarily contains Australian content. These included:

- Attorney-General's Information Service, which covers all aspects of law;
- Health Collection, which includes evidence-based treatment practices for addiction; and
- Multicultural Australia and Immigration Studies, which covers a wide range of material on cross-cultural topics.

Ten Australian institutions with specialist gambling-related websites were identified and searched manually. These were:

- Gambling Research Australia;
- Victorian Responsible Gambling Foundation;
- Melbourne Monash Problem Gambling Research & Treatment Centre;
- Gambling Research Unit, University of Sydney;
- Centre for Gambling Education and Research, Southern Cross University;
- Centre for Gambling Research, Australian National University;
- South Australian Centre for Economic Studies, University of Adelaide;
- Offices, Departments or Commissions of Liquor, Racing and Gaming, VIC, NSW, QLD, SA, TAS, NT, WA;
- Australian Productivity Commission; and
- Parliament of Australia, Parliamentary Joint Select Committee on Gambling Reform.

Search terms were developed and piloted, with searches confined to post-2000 references. The search terms were:

- gamb* *and* limit setting;
- gamb* *and* limit setting *and* pre-commitment;
- gamb* *and* limit setting *and* self-exclusion;
- gamb* *and* limit setting *and* voluntary;
- gamb* *and* limit setting *and* involuntary;
- gamb* *and* limit setting *and* third party;
- gamb* *and* limit setting *and* self-report;
- gamb* *and* limit setting *and* harm;
- pre-commitment *and* limit setting; and
- pre-commitment *and* limit setting *and* harm.

In addition to literature searches, the research team identified the relevant primary and subordinate legislation for the Commonwealth and each state and territory. This was done by manually searching relevant legislative databases (for Australia, New Zealand and Canada), and the respective databases for the parliament in each state and territory as well as for the Commonwealth. To supplement the legislation, the research team also identified the regulatory body concerned with gambling in each state and territory and searched the regulator's website for details of non-legislative regulatory tools. These were noted along with the legislation. Finally, the research team reviewed the responsible gambling policies of major venues/licensees in each state and territory.*

Stage 2: Initial search and creation of reference database

Search terms were entered into each of the identified databases. The research team maintained and shared notes as to how the search terms were entered into the databases. This ensured transparency and replication of approach.

The research team used Endnote, a reference management program, to keep a record of the references identified. Each relevant "hit" was downloaded or entered manually into Endnote. The information retained for each reference was:

- author;
- year of publication;
- title;
- type of publication (e.g., book, journal article, fact sheet, grey literature);
- publication details (e.g., volume and page numbers for journals, publisher name and city for books); and
- electronic full text where available.

Stage 3: Removal of duplicates and application of inclusion/exclusion criteria

The "remove duplicates" function on Endnote was used to remove duplicates. Further duplicates that were not removed by this function were extracted by hand when encountered.

Three researchers read the title and abstract for all references recorded in Stage 2, and independently applied the initial inclusion/exclusion criteria shown in Figure A1.

The researchers collaborated to cross-check how the criteria were applied to the first 10 references and found unanimity in decisions to include or exclude.

* No legislative documents were available in English for Norway and Sweden.

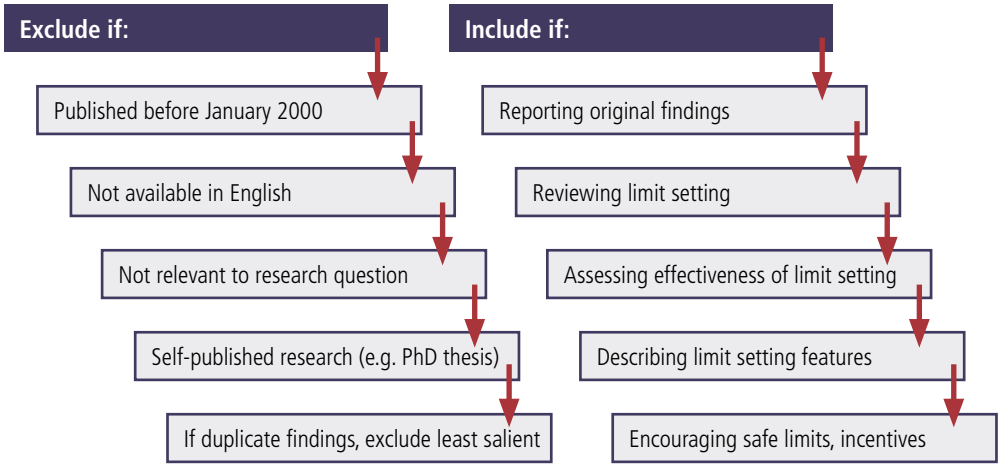

Figure A1: Criteria for including or excluding reference sources

Stage 4: Categorising by research question and reviewing

After the initial exclusion criteria were applied, the hits were categorised according to the research questions to which they applied. The researchers identified those research questions that had a large or small number of hits through this process. The number of hits was judged to be of a manageable magnitude for each research question. No revision was made to the exclusion criteria.

Three members of the research team reviewed a pool of references where their inclusion or exclusion was undecided and made unanimous decisions as to the correct categorisation.

Stage 5: Reading and extracting data

Members of the research team read each reference that had been retained. References that were agreed to be especially relevant to the research questions were assigned for full data extraction. Additional literature was read and integrated as appropriate.

Information was extracted from each source using the categories shown below. This template provided information for study descriptions and quality assessment.

- Citation information
- Publication type
- Study aims:
  - focus
  - purpose
- Sample characteristics:
  - population
  - sample
  - age
  - country
- Methodology:
  - study timing
  - data collection
  - sample selection method
  - recruitment method
  - incentives

  - data analysis methods
  - variable measurement
  - method used
  - drop-out rate
- Limit setting intervention characteristics:
  - hypothesis/research question
  - year and duration of intervention
  - program logic/theory
- Limit setting features:
  - limit setting options
  - limit setting time period
- Results

A similar approach was also applied in relation to reviewing the legislation in each state and territory and the Commonwealth. Having identified relevant Acts and Regulations the research team identified the specific provisions, and using a data extraction tool, noted the applicable items. Where the state or territory relied on a Code of Conduct or similar as the regulatory framework, this was also reviewed against the data extraction tool.

Stage 6: Manual search and follow-up of references and citations

The systematic database and specialist website search was followed up with a manual search of the bibliographies and references for highly cited references. This allowed the team to identify the following prominent EGM gambling researchers:

- Alex Blaszczynski, University of Sydney;
- Paul Delfabbro, University of Adelaide;
- Sally Gainsbury, Southern Cross University;
- Mark Griffiths, Nottingham Trent University;
- Sarah Hare, Schottler Consulting;
- Nerilee Hing, Southern Cross University;
- Robert Ladouceur, Laval University;
- Sharen Nisbet, Schottler Consulting; and
- Lia Nower, Rutgers University.

A manual search of the works of these researchers was performed to identify key ideas, concepts of relevance, or historical knowledge that may have been overlooked.

Stage 7: Quality assessment, reporting and synthesis

Data extracted from the studies identified were used to write the report. The researchers internally discussed the value and contributions of papers to the research questions. Strengths and limitations of the studies were considered in the weight given to their influence over the report. Behavioural studies, studies of implementations, and studies with large samples were given the greatest prominence.

Stakeholder consultations

Communication

Consultations were conducted primarily over the phone, with a small number conducted face-to-face with stakeholders in Australia. The discussions took place between June and August 2013. Consultations involved between one to three participants and took between approximately 35 and 100 minutes. With the participants' consent, consultations were recorded (but not transcribed) to ensure that the content of discussion was accurately documented, and to allow a detailed review of the discussion to be undertaken. Extensive notes were taken and the recordings were destroyed once the accuracy of the notes was verified.

The information provided by these discussions was provided confidentially and any information that may have identified an individual or venue was removed.

Consultation schedule and extraction of data

The consultation schedule was structured to inform the topics shown below, which provided information related to the research questions. These topics formed a data extraction template into which the information gathered from each consultation was partitioned and organised.

- Location
- How measures were developed
- Consultant type
- Influences on choices made
- Professional background
- Cash or card
- Purpose of limit setting measures (in place, under consideration, trialled/trialling)
- Target groups
- Full or partial system
- Evidence supporting choice
- Mandatory or voluntary
- What should be implemented and why
- Opt-in or opt-out
- What research/evidence would help
- Single location or wider
- Amendments being considered
- Relation to social setting
- Unintended consequences
- Relation to legislation
- Technology

Data synthesis

Data extracted from the consultations were synthesised into responses to each of the research questions. Synthesised responses were further integrated into the report to inform the design of pre-commitment limit-setting features.

Appendix B: Current legislation in New Zealand

The New Zealand Gambling (Harm Prevention and Minimisation) Regulations 2004 set out a series of measures that, although not specifically requiring all venues to offer a pre-commitment scheme, support gamblers to monitor their EGM losses. That is, the regulations require that EGMs allow gamblers to elect to have messages displayed on the machine during play relating to the duration of the session of play, the amount (expressed in dollars and cents) that the gambler has spent during the session of play, and the gambler's net wins and losses during that session of play.

Regardless of whether a gambler elects to have messages displayed on the machine, EGMs in New Zealand are required by law to support a "break in play" feature. In accordance with this requirement, EGMs will interrupt play at irregular intervals—timed so that a gambler cannot engage in more than 30 minutes of continuous play—and ask the gambler if they wish to continue with their session of play. At each "break in play", the EGM is required to display a message on screen showing the duration of the session of play, the amount (expressed in dollars and cents) that the gambler has spent during the session of play, and the gambler's net wins and losses during that session of play.

At the time of writing there was a Bill before the New Zealand parliament that, if enacted, would establish a regulation that would enable the government to make regulations requiring the use of pre-commitment devices in EGMs.

In addition to these more general measures, an agreement was executed in July 2013 between the New Zealand Government and the SkyCity Entertainment Group to allow a new convention centre to be built in Auckland. As part of this agreement, which also included approval for additional EGMs and other regulatory concessions, SkyCity must implement a number of harm minimisation measures at the Auckland Casino. These measures include introducing a voluntary pre-commitment scheme that allows gamblers to choose to set time and spend limits on EGMs. This scheme must be introduced prior to the regulatory concessions coming into effect (i.e., prior to the passage of legislative instruments granting, among other elements, the additional EGM licenses).

The features of the Auckland Casino limit-setting scheme prescribed in the agreement are as follows:

- access to the pre-commitment scheme will be provided via SkyCity's loyalty card;
- each time the card is inserted the pre-commitment scheme will be activated;
- the scheme will allow gamblers to define their own time and spend limits;
- enrolment for the pre-commitment scheme can occur at either the EGM by the gambler or a loyalty member's workstation;
- an "Approaching Limits" and "Reached Limits" notification will be displayed on the EGM;
- if limits are relaxed then the new limits must not be available to the gambler for a period of 24 hours;
- once the limit is reached no more loyalty points may be accumulated or entries to promotions earned, but gamblers can still keep playing;
- specified SkyCity staff will be alerted once limits are reached;
- no SkyCity loyalty points can be earned by a gambler for the 24 hours following a limit being reached; and
- the system provides information, support and advice to the operational business units.