B2 Gaming Machines Research Programme (Stage 2)

Aims and objectives

To develop a programme of research directed at the following questions posed by RGSB[1]:

- *Can we distinguish between harmful and non-harmful gaming machine play?*

- *If we can, what measures might limit harmful play without impacting on those who do not exhibit harmful behaviours?*

The first step in understanding whether harmful and non-harmful patterns of play can be identified is to understand what patterns of play are evident across the data to start with. This is likely to involve a combination of descriptive and exploratory data analysis to document and examine this.

In conjunction with this, assessment should be made at this point about how robust and reliable data are. This involves assessment of what types of players use player tracking and how their basic patterns of play compare to non-tracked data. This requires use of non-tracked transactional data for comparative purposes. Qualitative investigation would provide insight into these issues also. Proxy session data should be analysed to consider how accurate the proxy session algorithms are. This could be achieved by comparison with player tracked records. This requires three different types of data to be used to achieve this: player tracking, proxy and transactional in order to assess the reliability of each.

The second step is to develop a strategy for how to categorise and identify harm. The RGSB objectives aim to identify harmful vs non-harmful play. To do this, we need understanding of which patterns and behaviours are considered 'harmful' and which are not. ***The reality is that some patterns and behaviours will be harmful for some people under certain circumstances.*** Even with player tracking data, these circumstances are highly unlikely to be evident in the information available to us (i.e. personal circumstances, internal states of mind etc). Therefore, ***it needs to be recognised that what we will be attempting to identify is not harmful patterns of play in a definitive sense but patterns of play that suggest probabilistically that harm might be experienced***. The challenge is ensuring that this balance of probability is sufficiently robust to (potentially) offer some protection to those who may need it whilst minimising burden on those who are less likely to be experiencing harm (assuming that harm-minimisation measures are implemented if probabilistic patterns of harm are identified).

In short, we are dealing with a probabilistic continuum of harm rather than a dichotomy of harmless vs. harmful. The task, therefore, is to identify what patterns are likely to be more harmful and what patterns are likely to be less harmful.

How to integrate the theory of a probabilistic continuum of harm into RGSB objectives?

There are two main ways to approach the potential identification of more or less harmful behaviour:

- The first is based on theory, drawing on what is known about potentially more harmful patterns of play

- The second is based on external metrics whereby people who exhibit more harmful patterns of play are identified and their patterns of play are examined

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[1] The language and construction of the questions raise important issues of meaning, which the proposed early development of a 'theory of plausible harm' will seek to investigate and refine

Both theoretical principles and external metrics need careful review relating to how plausible and robust the resulting information is. Essentially, we are looking for plausible patterns that suggest a great likelihood of experience of harm.

Category B2 Gaming Machine Research Programme

The research program is split into three component parts. These are shown below:

Machines Research Programme		
Core • This package of work will be the primary vehicle exploring the extent to which the RGSB's questions can be addressed. Because this is ground-breaking work, the research will be exploratory in nature. Work will be conducted in two phases: the first phase will aim to assess what patterns exist in industry-held data that could indicate plausible risk of harm. The second phase will attempt to assess how robust and reliable these patterns are. More detail about this work package is given on page 2.	**Contextual** A contextual series of research providing more detailed understanding of who plays machines, what happens when they play, and improving information provision. This will provide insight into potential patterns of harm among machine players and help to contextualise findings from the core package of research. Projects include: • An experimental study of the impact of higher stakes and prizes on player. • A survey of machines players aimed at exploring changes in play behaviour and attitudes towards machine play. • Cognitive testing of players understanding of return to player information and other information given about machines. • Understanding patterns of staking behaviour on B2 machines and how they vary	**Evaluation** Programme of evaluation of proposed changes to machines, including: • Evaluation of changes in stakes and prizes on B1 machines • Evaluation of the Association of British Bookmakers Code of Practice (focus on impact upon players and play) Evaluations to be ongoing throughout 2014.

A) **Core -** The core work package will aim to assess whether it is possible, using data currently available, to distinguish between harmful and non-harmful machine play and, if so, how robust this assessment is. This will be achieved through an examination of industry-held data, survey work, qualitative work and exploratory data analysis. The project will be phased so that early findings can be shared and the next stage of work refined based on early learning.

This core work package will be conducted by a consortium of NatCen, Geofutures and Featurespace. The NatCen team includes Heather Wardle (NatCen), Fatima Husain (NatCen) and Dr. Georgiy Bobashev (RTI International, an expert in addiction studies and predictive modelling). Geofutures work will be led by Mark Thurstein Goodwin and Gaynor Asbury. They will work close with ***Featurespace, who will be conducting the substantial work in relation to Core Phase 1*** – see below.

B) **Contextual -** The contextual packages of work will provide useful understanding to help inform thinking around appropriate harm-minimisation interventions. For example, if the survey work demonstrates that those increasing their engagement in B2 machine play have a particularly risky profile, this will have implications for the types of harm minimisation interventions recommended. Ensuring that information currently provided to machine players about the way machines operate is understandable is an important harm-minimisation objective. Further understanding how B2 behaviour varies across Britain is also a useful for thinking about appropriate harm-minimisation techniques. This requires understanding about what staking patterns (for example) look like to start with and then assessment of how this might vary in different ways (i.e., by areas of high density of machine provision, areas of greater deprivation etc). This insight might lend itself to the development of different harm-minimisation strategies for different regions with different risks of harm.

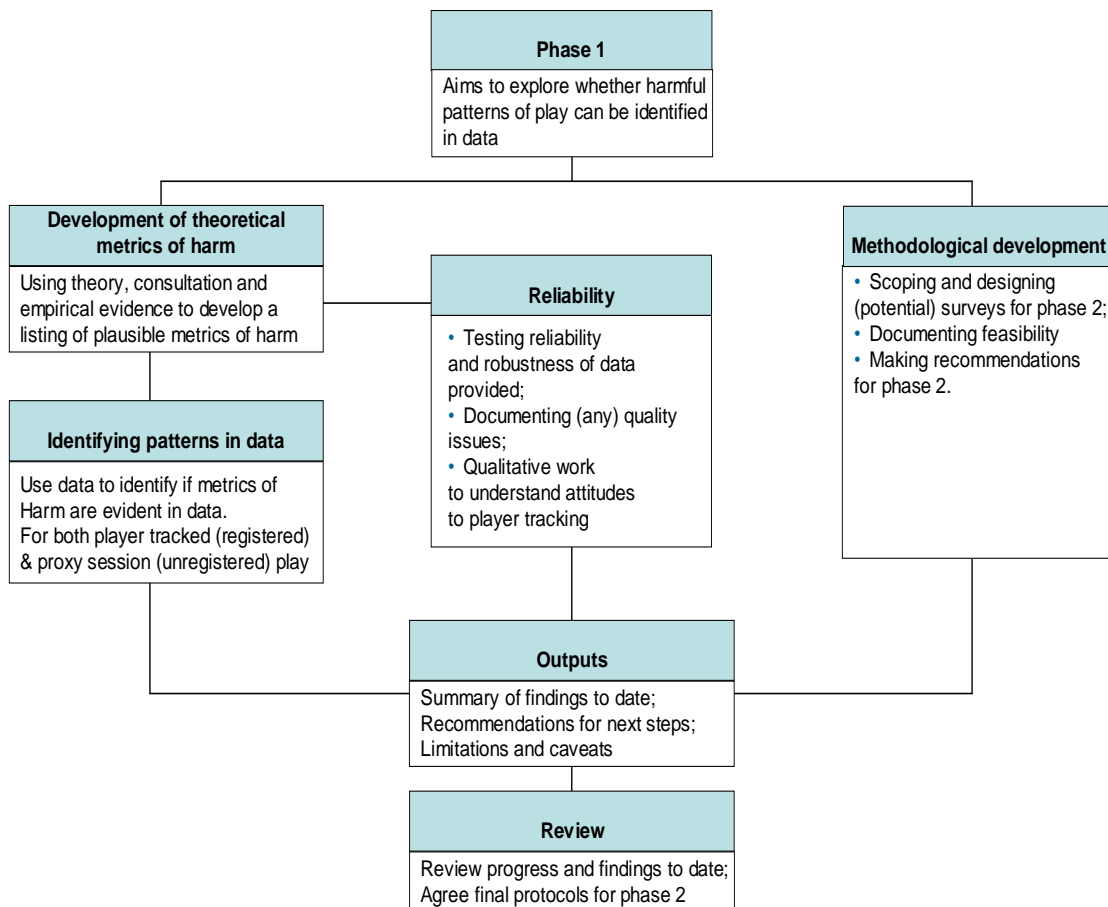C) **Evaluation -** Finally, there will be some ongoing evaluation of the ABB's new code of practice in relation to responsible gambling as well as of the changes to stakes and prizes on B1 gaming machines, which will provide useful insights to inform the research into B2 gaming machines. This will be informed by an overview of the international evidence-base on harm minimisation effectiveness.

A) Core (Phase 1):

Aims: The aim of this phase is to identify the types of patterns that could, plausibly, indicate risk of harm and to examine industry held-data for B2 machines to see if these patterns exist, and if so, to what extent.

Considerations: We recognise that some patterns of behaviour will be harmful for some people under some circumstances. These circumstances are largely unknown. To build towards a more nuanced understanding of how patterns of behaviour relate to harm, we must first identify what patterns exist and how they relate (if at all) to theories of harm. This is what this stage is designed to do.

Design: The diagram below shows the different stages of work in this phase, starting with developing a concise listing of likely patterns which might indicate harm, testing this against the data, examining how reliable the data provided is and also planning for a (potential) phase 2 at the same time.
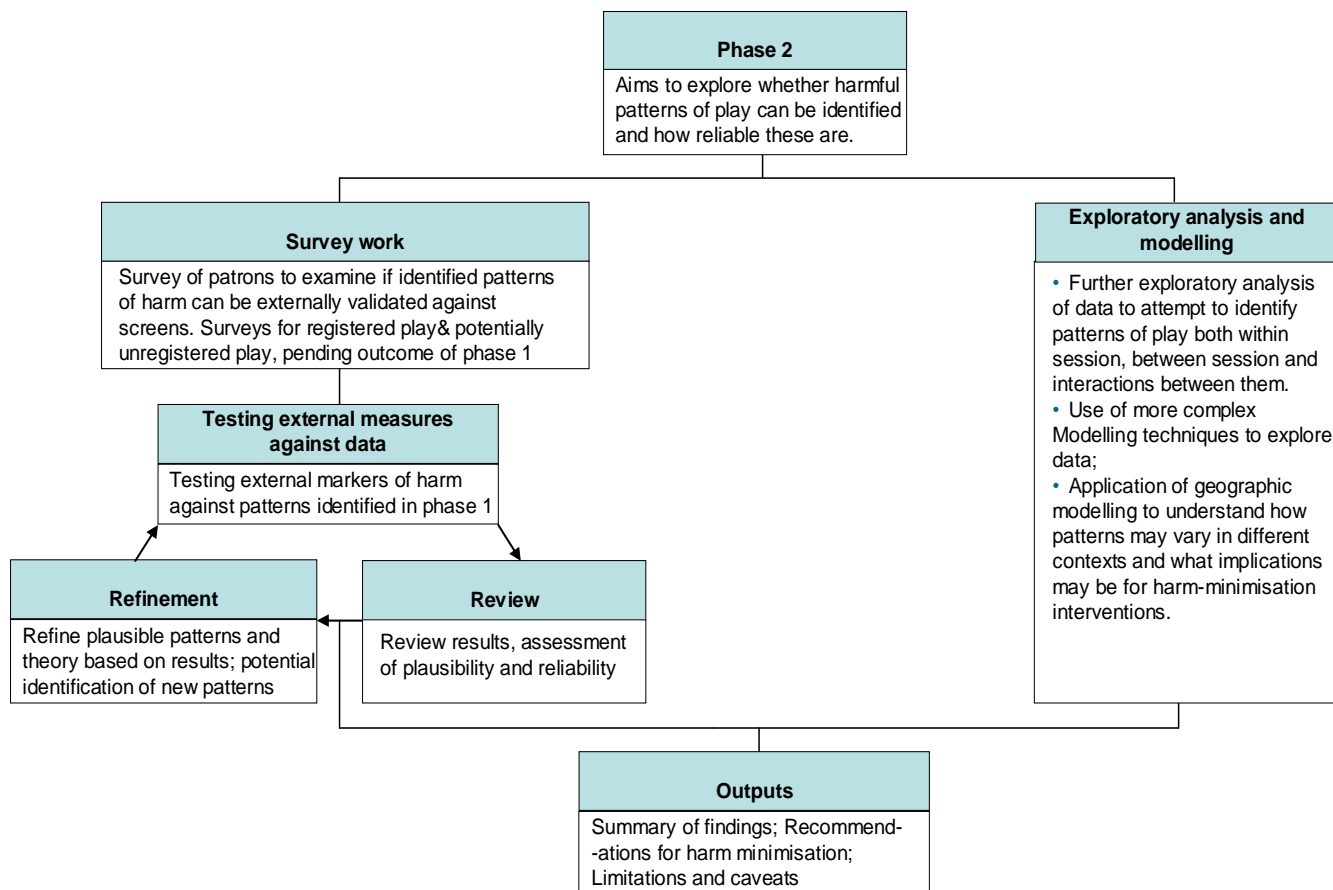
Phase 1
Aims to explore whether harmful patterns of play can be identified in data

Development of theoretical metrics of harm
Using theory, consultation and empirical evidence to develop a listing of plausible metrics of harm

Reliability
• Testing reliability and robustness of data provided;
• Documenting (any) quality issues;
• Qualitative work to understand attitudes to player tracking

Methodological development
• Scoping and designing (potential) surveys for phase 2;
• Documenting feasibility
• Making recommendations for phase 2.

Identifying patterns in data
Use data to identify if metrics of Harm are evident in data.
For both player tracked (registered) & proxy session (unregistered) play

Outputs
Summary of findings to date;
Recommendations for next steps;
Limitations and caveats

Review
Review progress and findings to date;
Agree final protocols for phase 2

Limitations/risks: This phase relies on industry providing good quality data, in formats requested, in a timely fashion. Data quality is also unknown. The quality and representativeness of industry-held data needs to be examined. Therefore, a review stage at the end of phase 1 to review progress, findings and agree next steps is recommended.

A) Core (Phase 2):

Aims: This phase aims to explore whether the patterns observed in phase 1 are patterns of behaviour exhibited by those (likely) to be experiencing harm. It also seeks to perform further exploratory work to identify other patterns in the data and how these vary across different contexts (i.e., by geography, by venue, by deprivation etc).

Considerations: We recognise that some people who are not gambling harmfully may have similar patterns of play to those who are. Policy and regulatory perspectives wish to explore the extent to which impact of intervention on non-harmful play can be minimised. This means that some form of external validation is needed to assess what proportions of people who exhibit patterns of potentially harmful behaviour are actually experiencing harm. This has not been attempted before in the UK. This phase is an attempt to explore how achievable this is.

Design: The different stages of work for this phase are shown below. There are two approaches, one where we survey patrons and use their data to help assess if the patterns of harm identified in phase 1 indicate real experience of harm. The other conducts further exploratory analysis to identify if other common patterns are evident in the data which might be useful for harm-minimisation purposes and uses geographic information analysis to provide further context about variations in behaviour nationwide.

Limitations/risks: This phase is high risk as it relies on patrons co-operating with surveys (in a timely fashion) and linking this data to player records. This is an untested methodology. There are also some legal issues to consider, such as whether external survey organisations can contact LBO loyalty card holders direct (surveys administered via telephone are likely to yield better response and requires experts in this technique to conduct). To make sense of complex data relies on common patterns to be identified from those experiencing harm – this too is unknown especially as the experience of problems may vary across time and space.

B) Contextual:

- **Harm Minimisation Review** - Professor Alex Blaszczynski, University of Sydney

  This will provide an overview of the international evidence-base on harm minimisation effectiveness.

- **Interrogating transactional level data and providing basic overviews of volume of play** - H Wardle, NatCen

  This will provide a descriptive understanding of what aggregate patterns of play look like for the B2 sector. This includes description of staking levels, transaction types etc at different levels of aggregation. Understanding what basic patterns of play and staking behaviour look like provides important contextual information against which variations can be examined and plausible patterns of harm identified. In this way, this package of work provides useful context for the 'identifying markers of gambling-related risk and harm projects'.

- **Impact of Higher Stakes and Prizes on Players** – Dr A Parke, University of Lincoln

  This will explore the cognitive and physiological impact of higher stakes and prizes on players. The findings of the proposed study will be able to determine whether gambling at higher stakes CAUSES a reduction in decision making ability, and therefore whether gambling at higher stakes is a risk factor for gambling-related harm or irrational gambling. This is likely to be the first in a series of studies which provides evidence for whether harm minimisation approaches need to address the magnitude of stakes and prizes, and if so, the most effective means for doing so.

- **Geographical Modelling -** Geofutures/NatCen

  Geographic modelling will be used to explore how other contextual variables around where bookmakers are situated and the populations they serve may influence patterns of behaviour. This is pertinent to understanding harm as people living in areas of high deprivation, for example, may have a greater risk of harm than those who do not. Understanding how play varies by these variables is therefore an important component of attempting to understand the plausible risk of harm in certain contexts. The geographical modelling work will run concurrently with the projects aimed at identifying gambling-related risk and harm and the exploratory analysis projects, and although contextual effectively forms part of the Core project work.

- **Survey of machine players** - H Wardle, NatCen

  Understanding more about who plays machines, what their play trajectories are and who is starting machine play is very important in terms of developing a more nuanced theory of plausible risk. Survey work with machine players (either recruited in venues or followed-up from other surveys or both) provides an opportunity to explore behaviour in-depth and to examine these behaviour against markers of risk (for example, if people who typically play machines late at night have elevated rates scores on problem gambling scales, harm minimisation measure implemented during evenings may be different in form and function to those who play during the day). Developing information like this will help us better theorise about what effective harm minimisation might look like for people in different settings.

- **Return to Players cognitive testing -** D Collins, Cognitive Testing Unit, NatCen

  This is a highly practical project in that it is clear that players do not understand the current information that is provided about machines. Information provision is a potential harm-minimisation technique and therefore ensuring that any information provided is clear,

understandable and fit for purpose is a key component of this. This project will use cognitive testing techniques with players to assess this and make recommendations for changes.

C) Evaluation:

- **Systematic review of ABB code of practice** – Steve Morris, Evaluation Unit, NatCen

  This will evaluate the implementation of the proposed codes of practice and assess short-term and long-term impacts on behaviour (and plausible harm where possible).

- **Impact of B1 Uplift in stakes and prizes** – Professor David Forrest, University of Salford/ Heather Wardle, NatCen

  This will examine the impact on behavioural and transaction variables as a result of uplift in stakes and prizes in B1 machines in the casino sector, and is anticipated to further inform the overall research into B2 gaming machines

Timescales

Below are the anticipated project timelines for core, contextual and evaluation research project *subject to a number of external dependencies including continued support from RGSB, the Gambling Commission and the DCMS, continued access to industry data, access to customers for survey purposes and customers' response to surveys*.

Area of Research	Month (2014)												2015
	J	F	M	A	M	J	J	A	S	O	N	D	
Core Phase 1: Listing metrics of harm Identify patterns in the data Test reliability of data Attitudes to player tracking		▭	▭										
Core Phase 2: Validating patterns (survey work) Exploratory analysis and modelling Geographic modelling				▭	▭	▭	▭	▭	▭	▭			
Contextual Harm minimisation review	▭												
Contextual Impact of higher stakes & prizes			▭	▭	▭	▭	▭	▭	▭	▭			
Contextual Transactional data interrogation			▭	▭	▭	▭	▭	▭	▭	▭			
Contextual Survey of machine players				▭	▭	▭	▭	▭	▭	▭			
Contextual Return to players (cognitive testing)				▭	▭	▭	▭						
Evaluations ABB evaluation Higher stakes and prizes - B1 machines			▭	▭	▭	▭	▭	▭	▭	▭	▭	▭	→