NATIONAL CENTER FOR RESPONSIBLE GAMING
Advancing Research, Education and Awareness

INCREASING THE ODDS
A Series Dedicated to Understanding Gambling Disorders

VOLUME 4

Gambling and the Public Health, Part 2

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INTRODUCTION

USING SCIENCE TO GUIDE PUBLIC HEALTH POLICY AND RESPONSIBLE GAMING

by Phil Satre
Chairman, National Center for Responsible Gaming

This volume of *Increasing the Odds: A Series Dedicated to Understanding Gambling Disorders* features scientific research that could serve as the foundation for public health strategies and responsible gaming programs designed to reduce gambling-related harms. These studies demonstrate that the young field of gambling studies has begun to provide the building blocks for practical applications to the problem.

A key issue for understanding gambling disorders is comorbidity, or the co-existence of other psychiatric and substance use disorders with the gambling problem. Researchers and clinicians have known for some time that people with gambling problems usually have other problems. However, the relationship between these co-occurring disorders has not been clear. Now, thanks to the landmark National Comorbidity Survey Replication (NCS-R) study, we are developing a better understanding of these relationships. Ronald Kessler recaps the findings of the first study to analyze the gambling data in the NCS-R in "Not So Strange Bedfellows? Pathological Gambling and Co-occurring Disorders." The study's focus on the "the age of onset" — the age at which the respondents report first having symptoms of a problem — has implications for how and when health care providers screen patients for gambling problems.

In "A Strategic Plan for Responsible Gambling," Alex Blaszczynksi presents guiding principles for gaming industry operators, health care providers, community groups, consumers, and policy makers committed to preventing and reducing gambling-related harms. This summary of the "Reno Model" highlights the position paper's objectives of stimulating public discussion, encouraging a research-based approach to responsible gaming, and promoting collaboration among the various stakeholders.

New gambling technology, from online gaming to electronic gaming machines, has rung alarm bells about the potential for increased gambling problems. Many claim the dangers can be avoided through technological interventions. But does the research support these assumptions? In "New Gambling Technology Calls for New Research," Allyson Peller summarizes a published review of the scientific research that uses a public health approach to offer insight into the connection between gambling behavior and emerging technology.

Giving gamblers the opportunity to exclude themselves from a gaming establishment is a common form of intervention for disordered gambling behavior. Two studies profiled in this volume examined self-exclusion programs in the U.S. and Canada. In "How Self-Exclusion Programs Can Inform Public Health Strategies," Richard LaBrie summarizes a study of the Missouri Voluntary Exclusion Program that demonstrated how data about the self-excluders can provide a valid measure of the prevalence of gambling disorders and inform public health planners about where prevention and treatment resources should be targeted.

In "Early Benefits to Gamblers through Self-Exclusion," Robert Ladouceur recaps the findings from a study of gamblers enrolled in a Quebec casino self-exclusion program. The two-year study showed that the self-excluders benefited from the program in the early stage of the program. The study raises important questions and suggests the need for additional studies to demonstrate the effectiveness of the self-exclusion model.

The NCRG believes the public policy debate about gambling should be grounded in rigorous scientific research. The studies featured in this volume have contributed to the knowledge base that should guide the efforts of scientists, health care providers, community organizations, policy makers, and the gaming industry in efforts to reduce gambling-related harms.

SUMMARY

DSM-IV Pathological Gambling in the National Comorbidity Survey Replication

Authors: Ronald C. Kessler, Irving Hwang, Richard A. LaBrie, Maria Petukhova, Nancy Sampson, Ken C. Winters, & Howard J. Shaffer

Published in *Psychological Medicine*
(2008, volume 38, number 9, pp. 1351-1360)

Not So Strange Bedfellows? Pathological Gambling and Co-occurring Disorders

by Ronald C. Kessler, Ph.D.
Department of Health Care Policy, Harvard Medical School

According to the fourth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual (DSM-IV),* pathological gambling is an impulse-control disorder. Pathological gamblers exhibit recurrent gambling behavior that is disruptive to their personal lives and careers.

Research has consistently found that pathological gambling usually co-exists with other mental health disorders. The order in which mental health problems develop, however, has not been clear. For example, did the depression come before the excessive gambling, or was it the other way around? This study investigated the co-existence, or comorbidity, of pathological gambling with other disorders, and the age at which symptoms of a gambling problem first appeared.

KEY FINDINGS

The lifetime prevalence — the proportion of a population with a lifetime history of a disease — of problem gambling[1] was 2.3% and lifetime prevalence of pathological gambling[2] was 0.6%. Lifetime pathological gambling was associated with other mental health disorders; 96.3% of the lifetime pathological gamblers also met lifetime criteria for one or more of the other disorders assessed in the survey.

As illustrated in table 2, in the majority of cases where the respondent with a history of pathological gambling also met criteria for another lifetime disorder, at least one other disorder began at an earlier age than the pathological gambling. This suggests that some mental health disorders might be risk factors for developing pathological gambling. In those cases where pathological gambling began at an earlier age than the other disorder(s), it is possible that those disorders may be a consequence of pathological gambling.

TABLE 1
Lifetime Pathological Gamblers with Comorbid Disorders

Number of Disorders	Prevalence
Any disorder	96.3%
One disorder	22.0%
Two disorders	9.9%
Three or more disorders	64.4%

[1] The study defined "problem gambling" as a history of at least one symptom of pathological gambling as defined by the *DSM-IV*. American Psychiatric Association. (1994). *DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (Fourth ed.).* Washington, DC: American Psychiatric Association.

[2] A *DSM-IV* diagnosis of pathological gambling requires "persistent and maladaptive gambling behavior," as indicated by at least five of 10 symptoms that include preoccupation with gambling, loss of control over the gambling, irritability when cutting back or stopping the gambling, and negative effects on personal relationships and work.

In addition, there were more significant statistical associations found for other disorders predicting the subsequent onset of *pathological gambling* than for *problem gambling* predicting the subsequent onset of other disorders. Pathological gambling was predicted by panic disorder, generalized anxiety disorder, and intermittent explosive disorder; problem gambling predicted post-traumatic stress disorder and nicotine dependence. The odds of other disorders predicting pathological gambling were generally higher than the odds of problem gambling predicting others disorders.

TABLE 2
Sequence of Onset for Pathological Gambling (PG) and Comorbid Disorders

	Among those with PG, prevalence of disorder	Sequence of Onset	
		PG first	Other first
Any mood disorder	55.6%	23.1%	65.1%
Any anxiety disorder	60.3%	13.4%	82.1%
Any impulse control disorder	42.3%	0.0%	100%
Any substance abuse disorder	76.3%	36.2%	57.4%

Editor's note: Mood disorders include major depression, dysthymia, and bipolar disorders; anxiety disorders include panic, generalized anxiety, phobia, and post-traumatic stress disorders; impulse-control disorders include attention-deficit/hyperactivity, oppositional-defiant, conduct, and intermittent explosive disorders; substance use disorders include alcohol and drug abuse/dependence and nicotine dependence.

Other important findings to highlight include:

- The median age of onset for *first gambling* for respondents without any symptoms of pathological gambling was 21; for respondents who went on to develop problem gambling, the age of onset for *first gambling* was 18.
- For pathological gamblers, the onset for *gambling problems* was age 23.
- Respondents with lifetime pathological gambling reported an average of 9.4 years with gambling problems.

Although nearly half (49%) of respondents with lifetime pathological gambling received treatment for emotional or substance abuse problems, none reported treatment for gambling problems.

DISCUSSION

The results of this study are consistent with other large-scale studies in finding a relatively low prevalence of pathological gambling. Pathological gambling is a comparatively rare, yet seriously impairing and under-treated disorder. Although nearly half (49%) of respondents with lifetime pathological gambling received treatment for emotional or substance abuse problems, none reported treatment for gambling problems.

While no concrete conclusions can be drawn about whether primary mental disorders cause the subsequent onset of pathological gambling or vice versa, the results do show that individuals with pathological gambling almost always have one or more lifetime comorbid mental health disorders.

IMPLICATIONS FOR FUTURE RESEARCH AND PREVENTION

The study has important implications for public health. Because three-fourths of pathological gambling cases occur after the onset of other disorders, many of which are treated, increased monitoring of risk factors and emerging gambling problems by clinicians may be able to prevent the onset of pathological gambling. This might be particularly true among patients with bipolar spectrum disorders, where risk of pathological gambling is relatively high. More research is needed, however, to confirm the associations between the age of onset of pathological gambling and comorbid disorders.

BACKGROUND

The Study's Objective

The study used data collected in the U.S. National Comorbidity Survey Replication (NCS-R), a nationally representative household survey that assessed lifetime gambling symptoms and prevalence of pathological gambling (PG), along with a wide range of other mental health and substance disorders. The survey was the first to gather retrospective age of onset (AOO) information on gambling disorders. In other words, the respondents were asked to recall the first time they had a symptom or the problem. Knowing the age of onset enabled the study of the associations between primary disorders and the subsequent risk of secondary disorders.

SAMPLE & METHODOLOGY

Sample

- The NCS-R was a face-to-face household survey of 9,282 English-speaking respondents ages 18 and older carried out between February 2001 and April 2003.
- Response rate was 70.9%. All data were weighted to be representative of the U.S. population.
- All NCS-R respondents were administered a Part I diagnostic interview, while a sub-sample of Part I respondents was also

THE NATIONAL COMORBIDITY SURVEY REPLICATION

The National Comorbidity Survey Replication (NCS-R) is considered a landmark study of mental health in the United States. Supported by the National Institute of Mental Health (NIMH), this household survey of 9,282 English-speaking respondents, ages 18 and older, is an expanded replication of the 1990 National Comorbidity Survey, which was the first to estimate the prevalence of mental disorders (using modern psychiatric standards) in a nationally representative sample. The NCS-R researchers studied a new nationally representative sample of the U.S. population, repeating many of the questions from the original NCS and expanding the original study's scope by incorporating updated disease assessment criteria based on the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV),* including pathological gambling.

The NSC-R addressed the gap in knowledge about people with severe mental disorders who never come to the attention of mental health professionals. Nearly 300 trained interviewers employed by the Survey Research Center of the Institute for Social Research at the University of Michigan traveled about eight million miles over 18 months. They knocked on doors at all hours of the day and night to ensure they would not systematically miss alcohol abusers who spend their days at bars, people with depression who can go weeks hardly able to pull themselves out of bed, and people with social phobia who only rarely answer the phone.

For more information, visit the Web sites of the NIMH and the NCS-R at Harvard Medical School: www.nimh.nih.gov/health/statistics/ncsr-study/index.shtml and www.hcp.med.harvard.edu/ncs/.

administered a Part II interview that assessed additional disorders. Part II respondents included all who met lifetime criteria for any Part I disorder.

- PG was assessed in a probability sub-sample of 3,435 Part II respondents, plus a probability sub-sample of other respondents weighted to adjust for their under-sampling.

Diagnostic Assessment

- NCS-R diagnoses were based on the World Health Organization Composite International Diagnostic Interview (CIDI)[3], which used *DSM-IV* criteria.
- Diagnoses included three broad classes of disorder (anxiety, mood, substance use) plus a group of five disorders that share a common feature of difficulties with impulse control:
  1. pathological gambling
  2. intermittent explosive disorder
  3. oppositional-defiant disorder
  4. conduct disorder
  5. attention-deficit/hyperactivity disorder
- CIDI assessment of PG included 16 questions and asked respondents
  - the number of times they ever gambled in their life
  - the types of gambling they engaged in
  - the age when they first gambled
  - the largest amount of money ever lost gambling in any single year
- A *DSM-IV* diagnosis of PG requires at least five of 10 symptoms that are similar to the symptoms of substance abuse and dependence.
- Clinical significance was indicated by respondents classified as having pathological gambling reporting a mean of $4,800 in gambling losses in the year of their greatest losses.
- Nearly four times as many respondents reported ever having any of the 10 PG symptoms as reported meeting full criteria of PG (five or more symptoms).
- To study the transition from non-problem to problem gambling and from problem gambling to PG, "problem" was defined as a history of at least one symptom of PG.

[3] The CIDI is a comprehensive, fully-structured interview designed to be used by trained lay interviewers for the assessment of mental disorders according to the definitions and criteria of ICD-10 and *DSM-IV*. It is intended for use in epidemiological and cross-cultural studies as well as for clinical and research purposes. The diagnostic section of the interview is based on the World Health Organization's Composite International Diagnostic Interview (WHO CIDI, 1990). The CIDI allows the investigator to:

- measure the prevalence of mental disorders
- measure the severity of these disorders
- determine the burden of these disorders
- assess service use
- assess the use of medications in treating these disorders
- assess who is treated, who remains untreated, and what are the barriers to treatment

- Because *DSM-IV* requires symptoms not be due to a manic episode for a diagnosis of PG, respondents with a lifetime CIDI/*DSM-IV* diagnosis of bipolar-I disorder were excluded from a diagnosis of PG (respondents with bipolar-II disorder were not excluded).
- The CIDI assessed AOO of disorders retrospectively. Because evidence indicates that these reports are often erroneous, a special question sequence was designed to emphasize the importance of accurate response and improve the accuracy of AOO reporting.

Other Measures

- Socio-demographic variables used to predict PG included three that could not be caused by PG (age, sex, race-ethnicity) and two others that could be dated in relation to AOO of PG so as to exclude the possibility that they were influenced by PG (education, marital status).
- No other socio-demographic controls (e.g., occupational status, income) were included in the study because there is no way to adjust for the possibility that they were influenced by PG.
- Respondents defined as having lifetime PG were asked if they ever obtained professional treatment for their gambling.
- All Part II respondents also were asked if they ever received treatment for problems with emotions/nerves or use of alcohol/drugs.

This study was funded by the National Center for Responsible Gaming through the Institute for Research on Pathological Gambling and Related Disorders, now known as the Institute for Research on Gambling Disorders.

About the author…

Ronald C. Kessler, Ph.D., is a professor of health care policy at Harvard Medical School. His research deals broadly with the social determinants of mental health and illness as studied from an epidemiological perspective. He is the author of more than 500 publications and the recipient of many awards for his research, including senior scientist and MERIT awards from the National Institute of Mental Health. He has been rated by ISI Web of Knowledge as the most widely cited researcher in the world in the field of psychiatry for each of the past nine years. He has been a member of the Institute of Medicine since 1999 and was elected this year to the National Academy of Sciences. Kessler is the principal investigator of the U.S. National Comorbidity Survey, the first nationally representative survey of the prevalence and correlates of mental disorders in the United States (www.hcp.med.harvard.edu/ncs). He is a co-director of the World Health Organization's World Mental Health Survey Initiative, a series of comparative community epidemiological surveys of the prevalence of mental disorders, patterns of help seeking for these disorders, and barriers to treatment for these disorders in 28 countries around the world (www.hcp.med.harvard.edu/wmh). In addition to his epidemiological studies, Kessler is involved in evaluating a number of innovative programs for the prevention and treatment of mental disorders in high-risk segments of the population.

SUMMARY

A Science-Based Framework for Responsible Gambling: The Reno Model

Authors: Alex Blaszczynski, Robert Ladouceur, & Howard J. Shaffer

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(2004, volume 20, number 3, pp. 301-317)

A Strategic Plan for Responsible Gambling

by Alex Blaszczynski, Ph.D.
University of Sydney

In 2004, Phil Satre, then the chairman and CEO of Harrah's Entertainment, Inc., in collaboration with the Australian Gaming Council, convened a meeting in Reno, Nev., to examine responsible gambling. My colleagues, Robert Ladouceur and Howard Shaffer, and I discussed formalizing our ideas for a strategic plan on responsible gambling. The result was a position paper that can serve as a framework for industry, communities, policy makers, researchers, and health care providers to use when collaborating to develop responsible gambling policies and programs. The paper is not a set-in-stone plan for groups to follow, but rather a guiding document to stimulate discussion and collaboration.

To be successful, responsible gambling programs and policies should promote public health and welfare while recognizing the need for gaming operators to maintain a sustainable industry.

Our goal was to spark the development of tools and parameters for successful responsible gambling programs and effective public policy based on scientific evidence. It is based on the premise that complete prohibition of gambling is unlikely, given the negative consequences associated with illegal gambling. To be successful, responsible gambling programs and policies should promote public health and welfare while recognizing the need for gaming operators to maintain a sustainable industry. The ultimate goals are the reduction and prevention of gambling-related harms and excessive gambling behaviors.

Outlined below are key points from the original paper.

KEY STAKEHOLDERS

The primary stakeholders in the field of gambling are consumers, gambling industry operators, health and other welfare providers, community groups, governments, and regulatory agencies. These stakeholders often pursue differing and competing interests, and they define responsible gambling in different ways. Reaching consensus and then successfully implementing responsible gambling initiatives requires a collective approach that takes into account the interests of all stakeholders.

BARRIERS

There are two essential barriers preventing the implementation and evaluation of responsible gambling strategies:

1. **Conceptual chaos –** The variety of terms, definitions, and criteria used to identify gamblers with gambling-related harms is confusing. For example, a gambler may be labeled as compulsive, disordered, problem, or pathological, but these terms

mean different things to different people. The stakeholders must agree on the defining features of gambling-related harms and those who suffer with the conditions in order to communicate clearly about the nature of the problems.

2. **Absence of consensus –** Different strategies are being implemented by industry, government, and health organizations, all in the public's interest, yet without a common framework guiding the efforts. Clear agreement on "responsible gambling practices" is needed to develop an empirical base for research, which should, in turn, drive public policy and industry decisions.

THE BASICS OF RESPONSIBLE GAMBLING

An effective responsible gambling strategy defines measurable objectives built on the foundation of six fundamental assumptions:

1. Safe levels of gambling participation are possible.
2. Gambling provides a level of recreational, social, and economic benefit to individuals and the community.
3. A proportion of participants, family members, and others can suffer significant harm as a consequence of excessive gambling.
4. The total social benefits of gambling must exceed the total costs.
5. Abstinence is a viable and important, but not necessarily essential, goal for individuals with gambling-related problems.
6. For some gamblers who have developed gambling-related problems, controlled participation and a return to safe levels of play represents an achievable goal.

WHO SHOULD RESPONSIBLE GAMBLING PROGRAMS TARGET?

The vast majority of the adult population gambles responsibly; only a small minority develops gambling-related harms (Kessler, Hwang, LaBrie, Petukhova, Sampson, Winters, & Shaffer, 2008; Petry, Stinson, & Grant, 2005; Shaffer, & Hall, 2001). A responsible gambling strategy should identify those at risk and target efforts toward them. Also important is the need to clarify and separate the principles of responsible gambling from other efforts directed toward assisting gamblers that already have problems. The treatment of gamblers who are already experiencing gambling-related harms is the domain of public health and treatment specialists.

INFORMED CONSUMERS

Any responsible gambling program rests upon two fundamental principles: 1) the decision to gamble is the individual's choice, and 2) to make the best decision, individuals must be informed. While the choice is the individual's, a gaming operator should take reasonable and practical steps to ensure that patrons are not taken advantage of or exploited.

Responsible gambling is best achieved with the player using all of the information available to form decisions, and by the industry providing relevant, timely, and accurate information on which such decisions can be based.

Responsible gambling is best achieved with the player using all of the information available to form decisions, and by the industry providing relevant, timely, and accurate information on which such decisions can be based. To ensure informed choice for the patron, the gambling industry should adopt a policy of accurate disclosure regarding probabilities, likelihood of winning, and payouts, as well as the availability of treatment providers.

COLLABORATION IS ESSENTIAL

Key stakeholders must clarify their respective roles and promote collaboration between industry, research institutions, government, communities, health care providers, and consumers to fully achieve the goals of responsible gambling practices. A global body also is needed in order to advance fully worldwide understanding of gambling-related harms and to ensure standardized terminology and comparable research.

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About the author…

Alex Blaszczynski, Ph.D., is a professor of psychology in the School of Psychology at the University of Sydney and co-director of the University of Sydney's Gambling Research Unit. He is a clinical psychologist with a long history of involvement in gambling treatment and clinical research. He has published extensively in the field of pathological gambling, and was the chairman of the Working Party for the Australian Psychological Society and committee member of the Australian Medical Association's position papers on problem gambling. He is a founding member of the Australian National Council for Problem Gambling and the National Association for Gambling Studies, and a foundation director of the Australian Institute of Gambling Studies. He is on the advisory board for the International Centre for the Study, Treatment and Prevention of Youth Gambling Problems of McGill University, Canada; editor of *International Gambling Studies*; and international advisory committee member for the *Electronic Journal of Gambling Issues*. In 1995, Professor Blaszczynski was a co-recipient of the American Council of Problem Gambling Directors' Award, and in 2004 received the Senior Investigator Award from the National Center for Responsible Gaming for his distinguished contributions to the field of gambling studies.

SUMMARY

Parameters for Safer Gambling Behavior: Examining the Empirical Research

Authors: Allyson J. Peller, Debi A. LaPlante, & Howard J. Shaffer

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New Gambling Technology Calls for New Research

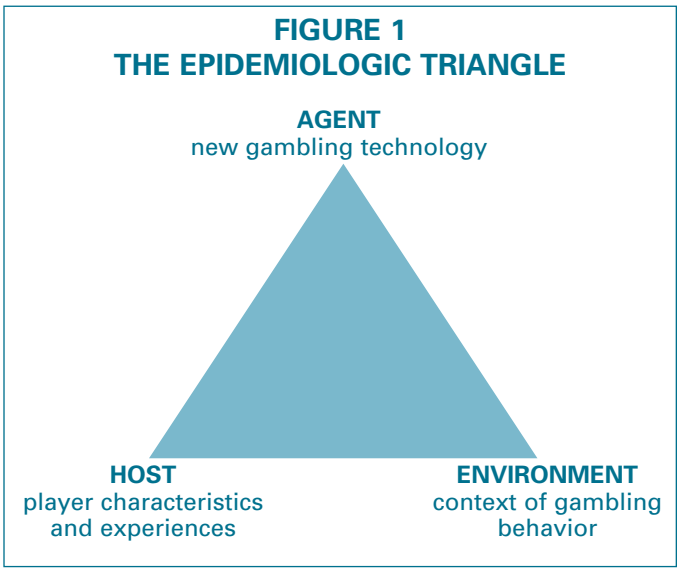
by Allyson J. Peller, M.P.H.
Division on Addictions, Cambridge Health Alliance, Harvard Medical School

Historically, the introduction of new technology has sparked public scrutiny about whether users can manage the application of it without adverse consequences. New gambling technology, such as video lottery terminals, the Internet, and electronic gaming machines, is no different. Some public health and treatment professionals have expressed concerns. For example, the fact that individuals can now use technology to gamble remotely instead of on-site at a casino or racetrack means that some traditional safeguards to control gambling behavior (e.g., monitoring by casino employees) cannot be implemented. Can safeguards be created for new gambling technology to promote safer gambling behavior? Are there public health consequences that come with the new gambling technology?

To offer insight into the relationship between gambling and emerging technology, we conducted this literature review of 47 studies using a public health perspective — the Epidemiologic Triangle — to critically examine existing empirical research. The Epidemiologic Triangle employs a three-part model consisting of agent, host, and environment as a framework for categorizing the existing research:

1. The *agent* is a single factor or variety of factors essential to the occurrence of a health problem — in this case, new gaming technology, such as an online game.
2. The *host* refers to the player's biological, social, and behavioral characteristics that are relevant to the health problem — a player's characteristics and experiences, such as the player's mood during gambling.
3. The *environment* refers to factors external to the host — the context of gambling behavior, such as the audio and visual elements of games or the availability of alcohol.

FIGURE 1
THE EPIDEMIOLOGIC TRIANGLE



Using this approach to review the literature resulted in several clear findings, which are detailed below. However, there was a lack of consistency in the results of the studies reviewed. Thus, at this time it is premature to come to definitive conclusions that will help with public health interventions to prevent problem gambling.

PUBLIC HEALTH INTERVENTIONS

The goal of public health interventions is to control at least one of three factors — agent, host, or environment — to stop or minimize the effect of a health problem. Research about gambling-related technology has not yet considered comprehensive public health strategies that address these three interactive components. The development of new research; improved study methods; and collaboration among policy makers, manufacturers of gambling products, and researchers, will increase the understanding of how new gambling technology affects the public health; improve safe gambling practices for new and emerging technology; and stimulate new strategies for implementing effective public health intervention efforts.

KEY FINDINGS

Agent

Some of the research reviewed involved manipulating gambling tasks within laboratory settings to assess whether certain game features seem to provoke changes in gambling behavior; these studies showed that game features can affect player behavior.

Of those studies, two indicated that self-limits (features that allow individuals to control or limit their gambling activity) and manufacturer-imposed limits for Internet gambling might be an important product safety measure to help prevent Internet gamblers from losing large sums of money.

Other laboratory-based studies found that gambling scenarios offering a moderate number of near wins (approximately one-third of attempts) lead to more persistent gambling behavior than gambling scenarios offering either a higher or lower proportion of near wins.

Host

Researchers have conducted experiments examining the mood (e.g., depression) and physical response (e.g., heart rate) of players. This type of research aims to investigate the characteristics that might predispose people to develop disordered gambling behaviors. Results from these studies were inconclusive. Some showed disordered gamblers displaying significantly higher levels of certain psycho-physiologic characteristics during gambling — such as arousal indicated by increased heart rate, impaired impulse control and negative affect like depression or loneliness — than non-disordered gamblers. However, other studies showed no difference between disordered and non-disordered gamblers' psychological or physical characteristics during gambling.

Environment

There were also mixed findings in the research related to how the gambling environment might lead to problematic gambling behavior. Some studies suggested casino design can interact with player traits to shape a player's at-risk gambling intentions. Other studies suggested consumption of alcohol and tobacco, substances often served in gambling venues, might encourage or soothe players, thereby increasing the risk of disordered gambling. Yet, other research indicated that the intense focus of disordered gamblers resulted in a disassociation from their environment.

DISCUSSION

The advent of new technology has resulted in a wider array of gambling venues other than traditional gaming environments, such as casinos and racetracks. Players can participate in gambling activities remotely, such as from home computers or in bars,

making it more challenging to regulate the gambling environment and also to establish safe gambling parameters.

Although the research is insufficient to mold public health interventions that target agent and environment factors, there is evidence to suggest some strategies have potential for modifying player, or host, characteristics, such as:

- educational interventions that promote rational gambling perceptions and behavior by teaching principles of randomness and reminding participants of how these principles apply to gambling situations
- cognitive behavior therapy to correct erroneous perceptions
- public health strategies that consider the interaction between player characteristics (host) and accessibility to gambling (environment)

Although the research is insufficient to mold public health interventions that target agent and environment factors, there is evidence to suggest some strategies have potential for modifying player, or host, characteristics.

IMPLICATIONS FOR FUTURE RESEARCH

Increased attention to the interaction between host, agent, and environment components of the Epidemiologic Triangle can increase understanding of how new gambling technology affects the public health and help develop strategies for implementing effective public health interventions. Researchers can use the Epidemiologic Triangle as a theoretical framework to guide future research.

Agent

Audiovisual game features (e.g., game speed, presence of sound, or visual complexity) show promise to increase safer gambling, but the evidence is not conclusive. It is important for studies to determine if there are specific patterns of audiovisual features that increase or satisfy gambling persistence. This research can then be used to inform public health actions to help prevent problem gambling.

Host

Expanding research about the interaction of player characteristics and experiences with new gambling technology can help define interventions to target players who exhibit high-risk traits.

Environment

Further research is needed to determine how particular environmental factors might impact gambling behavior and to develop parameters for regulating these factors. To date, there is no empirical research examining how environmental factors unique to specific gambling settings (e.g., a casino, bar, or home) influence gambling behavior.

BACKGROUND

Intent of the Study

The review was conducted to offer insight about emerging technology and identify areas that indicate a need for additional research.

Sample and Methodology

To identify studies focusing on gambling and technology, the researchers conducted a comprehensive literature search of scholarly, peer-reviewed articles published through July 2007 using the PUBMED and PsychINFO search engines.

First, we conducted a keyword search using the terms "Internet gambling," "electronic gaming machine," and "video lottery terminal." Next, we conducted a combined keyword search using the terms "gambling" and "technology." Lastly, we conducted a search for articles published in the *Journal of Gambling Studies*.

Of the 159 studies identified by the specified keyword searches, 47 studies satisfied the inclusion and exclusion criteria for this literature review.

For studies to be included in the review, they must:

1. have been peer-reviewed, refereed articles
2. have been about new gambling technology since the 1990s
3. be relevant to the field of gambling studies
4. contain empirical outcome data about new gambling technology
5. have been published in English

Studies were excluded if they:

1. were not peer-reviewed, refereed articles
2. contained no original empirical data (e.g., studies that only described an assessment instrument, studies presenting opinions, studies presenting qualitative findings from a focus group, reviews of existing literature)
3. were not relevant to the field of gambling studies
4. did not include new gambling-specific technology
5. were case studies
6. were from our own research

This research was funded by the National Center for Responsible Gaming through the Institute for Research on Pathological Gambling and Related Disorders, now known as the Institute for Research on Gambling Disorders. The Division on Addictions also receives research support from bwin.com Interactive Entertainment AG, the National Institute on Alcohol Abuse and Alcoholism, the National Institute of Mental Health, the National Institute on Drug Abuse, the Massachusetts Council on Compulsive Gambling, the Nevada Department of Public Health, and others.

About the author…

Allyson J. Peller, M.P.H., is a research associate at the Division on Addictions, Cambridge Health Alliance. Her primary research interest is the development and evaluation of public health interventions for individuals at-risk for developing addictive behaviors. She has collaborated with other members of the Division on Addictions research team on several projects, including an assessment of the utility of a self-help gambling toolkit intervention and analyses of the betting transactions of more than 47,000 gamblers who subscribed to an online betting site. Peller received her Master's of Public Health from Yale University and currently is a doctoral student at the Brandeis University Heller School for Social Policy and Management.

SUMMARY

Missouri Casino Self-Excluders: Distribution Across Time and Space

Authors: Richard A. LaBrie, Sarah E. Nelson, Debi A. LaPlante, Allyson J. Peller, Gabriel Caro, & Howard J. Shaffer

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How Self-Exclusion Programs Can Inform Public Health Strategies

by Richard A. LaBrie, Ed.D.
Division on Addictions, Cambridge Health Alliance, Harvard Medical School

Casino self-exclusion programs provide gamblers an opportunity to voluntarily limit their access to gambling venues. The gamblers pledge to stay out of participating casinos for an agreed time period, often for the rest of their lives.

The number of people enrolling in self-exclusion programs can serve as a barometer of the concentration of disordered gambling in an area. This study analyzed the distribution across time and geographic areas of 6,599 people who applied to exclude themselves from Missouri casinos during the period from November 1996 through February 2004.

KEY FINDINGS

The results found relationships among gambling proximity (distance to gambling venues), gambling availability (number of casinos), and self-exclusion rates (proportion of residents voluntarily participating). The relationships took into account the local differences in vulnerability to addictive behaviors.

- Missouri self-excluders were younger, slightly more likely to be male, and more likely to be non-Caucasian than the general population. These findings reflect differences often found between disordered gamblers and the general population and support the argument that self-exclusion rates are good indicators of disordered gamblers in a region.
- Self-exclusion enrollment patterns were consistent with typical exposure patterns of other public health concerns, such as environmental pollution or a cold virus. Self-exclusion rates increased during initial exposure and then leveled off as adaptation occurred.
- The analysis of the proportion of total self-excluders added in later years shows that in the regions where casinos were present in all years there were fewer enrollments in the later years. This pattern is consistent with the major effect of adaptation on gambling-related behavior (LaPlante, 2008; LaPlante, & Shaffer, 2007).
- There was a geographic clustering of counties with similar levels of self-exclusion, as well as a relationship between the location of gambling venues and self-exclusion rates; the closer people were to casinos, the higher the rate of self-exclusion.
- In Missouri, distance to the nearest casino (dose) was a much stronger predictor of self-exclusion than the number of casinos available (potency). This may be due to the clustering of casinos in two large population areas, St. Louis and Kansas City, and several areas with smaller populations served by a single casino.

…these findings suggest that measuring participation in self-exclusion programs can help assign public health resources efficiently to areas according to level of need and help evaluate the effect of new interventions for disordered gambling.

DISCUSSION

The pattern of self-exclusion over time mimics a typical course for illnesses of exposure and adaptation. The novelty of new gambling opportunities can exploit weaknesses or vulnerabilities in some people, but gradually people adapt to a no-longer-novel experience and develop personal and social strategies to prevent excessive and disordered behavior.

IMPLICATIONS FOR FUTURE RESEARCH AND PREVENTION

More research is needed to examine the effectiveness of self-exclusion programs. However, these findings suggest that measuring participation in self-exclusion programs can help assign public health resources efficiently to areas according to level of need and help evaluate the effect of new interventions for disordered gambling. Data collected by various governmental agencies on gambling and other health issues, such as alcohol misuse, can be combined into indicators of the relative prevalence of health problems across areas.

BACKGROUND

The Study's Hypotheses

1. Because self-exclusion rates are associated with the rates of gambling disorders, self-exclusion rates will be higher in areas with nearby access to casinos.
2. Exposure to new gambling opportunities will result in an initial period of increased self-exclusion rates followed by a leveling off of rates during later years.
3. Regional exposure will have an effect on self-exclusion rates after controlling for the regional vulnerability to addiction in general.

Sample & Methodology

The Missouri Gambling Commission (MGC) provided a censored roster of people who applied to exclude themselves from Missouri casinos from the beginning of the Missouri Voluntary Exclusion Program in November 1996 through February 2004. The final study roster of valid self-excluders included 6,599 people.

The areas of interest in Missouri are the 114 counties and the City of St. Louis (referred to as "counties") and the six State of Missouri public health planning regions. The U.S. National Census population estimates of the number of adults (ages 21+) was used to generate population-adjusted rates of self-excluders for Missouri and its constituent counties, and to compare self-excluders to the general Missouri population. There were 11 casinos within Missouri and 91 casinos and racinos (race tracks with slot machines) within the eight states that border Missouri.

Two exposure measures were used in the analyses:

1. Dose: the distance of the geographic center of each self-excluder's county of residence to the nearest casino.
2. Potency: the number of casinos clustered with the closest casino.

The need for treatment for alcohol use disorders was used as a preliminary estimate of regional vulnerability to addictive disorders. Specifically, Missouri's county-level estimates of need for alcohol treatment were used, and included county-level information from 1993 to 1996 on measures with explicit mention of alcohol: alcohol-related arrests; mortalities; auto accidents; and live births with excessive maternal alcohol use. This methodology produced an Alcohol-Related Relative Needs Assessment Scale (ARNAS) measuring the proportion of people at risk for alcohol-related problems. Each geographic unit (114 counties and the City of St. Louis) received a single score on the scale representing its need for alcohol treatment relative to other geographic units. This measurement of regional vulnerability was used to analyze the relationship between measures of exposure and prevalence of self-excluders after adjustment for underlying vulnerability.

For the final analysis, we compared the demographics of Missouri self-excluders to self-excluders from other states who enrolled in the Missouri program and to the Missouri population at-large. The relationship between self-exclusion rates and time was measured. The distribution of self-exclusion rates across public health management regions was compared to measure the effect of location. The introduction of new casinos during the period of the study allowed an examination of the immediate influence of new gambling opportunities on disordered gambling. We conducted regression analysis to determine how county differences in self-exclusion enrollment could be explained solely by exposure variables and underlying vulnerability.

VULNERABILITY TO ADDICTION

Assessing exposure to an object of addiction — such as gambling — for a particular area requires consideration of the region's overall vulnerability to addiction. Elevation of prevalence of problems with one form of addiction is often associated with elevation in problems with other forms. Consequently, regional variability in the need for treatment of one type of addictive behavior tends to correlate with the need for treatment of other types.

For this study, the need for treatment of alcohol use disorders was used as a preliminary estimate of regional vulnerability to addictive disorders. Alcohol disorders are the best-studied form of addictive behavior, and information related to regional variations in alcohol use and abuse was readily available. The information on the regional vulnerability to disordered gambling measured by self-exclusion indicated both a shared vulnerability with alcohol misuse and unique vulnerabilities attributable to the dose (distance to casinos) and potency (number of casinos) resulting from casino locations.

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This project was supported by grants from the Greater Kansas City Community Foundation's Port Authority Problem Gambling Fund, and the National Center for Responsible Gaming through the Institute for Research on Pathological Gambling and Related Disorders (now known as the Institute for Research on Gambling Disorders).

About the author…

Richard A. LaBrie, Ed.D., is an instructor in psychiatry at Harvard Medical School (HMS) and the associate director for research and data analysis at the Division on Addictions, Cambridge Health Alliance. He has led research investigations of the Iowa Gambling Treatment Program and Missouri's self-exclusion program, as well as the first national study of gambling among college students, and a multi-year study of Internet gamblers. Previously, LaBrie served as deputy director of the National Technical Center for Substance Abuse Needs Assessment at HMS, where he worked on instrumentation and research procedures to measure the need for substance abuse treatment throughout the nation and, with Dr. Howard Shaffer, the development of the Massachusetts Gambling Screen for Pathological Gambling.

SUMMARY

Self-Exclusion Program: A Longitudinal Evaluation Study

Authors: Robert Ladouceur, Caroline Sylvain, & Patrick Gosselin

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Early Benefits to Gamblers through Self-Exclusion

by Robert Ladouceur, Ph.D.
School of Psychology, Laval University

Programs that allow gamblers to voluntarily exclude themselves from gaming establishments are becoming increasingly popular in Canada, the United States, and other countries. Self-exclusion programs are designed to help problem gamblers cease or limit their gambling behavior. Typically, self-excluders sign a contract, agreeing to be denied entry to specified gaming venues for a specified period of time that can range from six months to a lifetime.

Despite the growing use of the self-exclusion strategy, few programs have been evaluated. This study of participants enrolled in a Quebec casino program was one of the first to rigorously examine the effectiveness of a self-exclusion program. The participants, grouped by the self-exclusion time period they chose — six, 12, and 24 months — were followed by the researchers during a two-year time span.

KEY FINDINGS

The study showed that the self-exclusion program had a positive impact on the majority of participants within the first six months of enrollment:

- The urge to gamble was significantly reduced.
- The perception of control over the gambling was significantly increased.
- The intensity of negative consequences from gambling was significantly decreased in the areas of daily activities, social life, work, and mood.
- Scores on the instruments used to identify and diagnose gambling disorders, the SOGS[4] and *DSM-IV*[5], showed significantly reduced problems with gambling.

> …the self-exclusion program had a positive impact on the majority of participants within the first six months of enrollment.

However, over time, the study showed a decline in the program's impact on some of the participants:

- At the six-month follow-up interview, 40.5%, 42.3%, and 22.2% of the self-excluded patrons had returned to a casino at least once (six-, 12-, and 24-month groups, respectively).

[4]The South Oaks Gambling Screen (SOGS) is a 20-item questionnaire that evaluates the presence of pathological gambling and is widely used in studies measuring the prevalence of gambling disorders in populations. Lesieur, H. R., & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry, 144*(9), 1184-1188.

[5]The *Diagnostic and Statistical Manual of Mental Disorders, 4th edition,* provides criteria for identifying pathological gamblers. American Psychiatric Association. (1994). *DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (Fourth ed.).* Washington, DC: American Psychiatric Association.

- At the 12-month follow-up, self-exclusion was still active for those who chose 12- and 24-month exclusion periods, but results revealed that 55.3% and 10.5%, respectively, had breached their contracts within the past six months.
- At the 18-month follow-up, 26.6% of the 24-month group had returned once to a casino.

People who remained in the program for a greater length of time believed more strongly in the self-exclusion program's effectiveness and were more convinced the program had helped them than those who participated for shorter periods. They also had a greater perception of control over their gambling behavior and believed gambling was interfering less with their daily activities.

TABLE 1
Rates of Return to Gambling Venues

PARTICIPANT GROUPS	6-month follow-up	12-month follow-up	18-month follow-up
6-month contract	40.5%		
12-month contract	42.3%	55.3%	
24-month contract	22.2%	10.5%	26.6%

DISCUSSION

We observed several positive changes in the self-excluders, including a reduction in the urge to gamble; greater control over gambling behavior; and fewer problems with daily activities, social life, work, and mood because of their gambling. Despite these benefits, this research raised important questions about self-exclusion as an effective intervention. The study demonstrated that over time the entire group of participants seemed to perceive the self-exclusion program as less effective in helping disordered gamblers. By the six-month follow-up interview, more than half of the participants had returned to a casino or breached their contracts. Some reported that they were not identified when they returned to the casino, raising questions about the viability of the program, and many had unclear expectations for the program.

In view of these findings, we raised the following questions.

- **How can operators improve identification of self-excluders who try to enter the gaming establishment?** A computerized face recognition program that would improve monitoring should be considered.
- **Should there be penalties for breaching the self-exclusion contract?** The Quebec casino program, the focus of this study, offered no legal penalties for individuals who return to the casino during the period of self-exclusion. However, self-excluders in other jurisdictions face trespassing charges if they enter the casinos. The limited research on self-exclusion offers no clear-cut solution to the question of how to enforce self-exclusion without criminalizing the individual.
- **What criteria should be used to determine the effectiveness of the program?** Does the return of self-excluders to the casino mean that the program is not working, or are these breaches inevitable but temporary detours characteristic of the long, difficult road to recovery?
- **What should be the length of the self-exclusion?** The Quebec casino that was the focus of this research offers time periods ranging from six months to five years. Several U.S. jurisdictions require a lifetime ban. We conjectured that a longer self-

exclusion period could help reduce the risk of relapse and, therefore, support self-exclusion contracts that are irrevocable and irreversible. However, we acknowledge that there is little empirical data about the period of abstinence required to prevent relapse.

- **Who should be in charge of the self-exclusion program, the gaming operator, or an independent authority, such as a government regulator, or both?** Operators play a key role in self-exclusion by, for example, removing self-excluders from mailing lists used to promote the casino. However, the necessary systematic monitoring and constant evaluation is best done with the operators cooperating with independent evaluators to periodically and randomly verify adherence to the program.

IMPLICATIONS FOR FUTURE RESEARCH

Even if some people eventually return to a casino, the act of self-exclusion could curtail gambling activity and lead to a potential improvement in behavior control, as well as a reduction in negative impacts among more gamblers. Further study should be given to gamblers who "fall off the wagon" to determine this potential.

Additional study also is needed in the area of motivation, which can provide greater insight into why some gamblers breach their contracts and others do not. Among those who did not return to a casino, 45.3% said they decided to respect their commitment. For 38.5%, the idea of being caught during the self-exclusion period did not invoke any particular feelings, although 34.1% stated they would feel shame, guilt, and humiliation if they returned and were caught.

BACKGROUND

The Study's Goals

This study had two main goals:

1. Assess changes in gambling behavior and gambling problems of self-excluded patrons.
2. Follow self-excluded gamblers for two years (during and after the self-exclusion period).

More specifically, this study focused on the following questions:

1. Will gamblers change their gambling pattern during the self-exclusion period?
2. How will gamblers cope with their decision?
3. What happens at the end of the self-exclusion period?

Sample and Methodology

A total of 161 individuals who excluded themselves from a Quebec casino participated in the study. They were recruited at the time they signed the self-exclusion agreement. This was the first self-exclusion contract for all participants.

> *Early Benefits to Gamblers through Self-Exclusion*

Participants were divided into three groups according to the length of the self-exclusion period they selected for themselves: 33.3% excluded themselves for six months, 45.9% for 12 months, and 20.8% for 24 months or more.

Each participant was contacted by telephone every six months for two years, for a total of five interviews. Because of drop-outs from the study, the six-month follow-up interview included 117 participants. The 12-, 18-, and 24-month follow-ups decreased to 83, 60, and 53 participants respectively.

The interviews lasted 30 to 45 minutes and were conducted by clinical psychologists or graduate students in psychology. The questionnaire included four sections.

Section 1 examined the motives for self-exclusion, the triggers that led to this decision, and the person's gambling history.

- During the first interview, 62% believed that self-exclusion would be an effective program, and 79.8% thought that taking this step would be a great way to help them.
- 2.6% reported having not lost any money in a casino while 50.3% had lost more than $25,000.
- 60.5% had borrowed money to gamble during the past six months.
- 11.5% realized they wanted to stop gambling.
- 45.3% intended to return to a casino once their self-exclusion period was over, and 29.1% of these hoped to do so in the context of vacationing and recreation.

RECOVERY OPTIONS FOR GAMBLERS

Worldwide prevalence studies estimate that anywhere from less than 1% to 2% of the adult population suffers from pathological gambling (Reilly, & Shaffer, 2007), but very few seek professional help for this problem. In the U.S., 97% of problem gamblers do not seek treatment (National Gambling Impact Study Commission, 1999). Possible causes include the individual's denial that there is a problem, ambivalence about changing the gambling behavior, lack of health insurance or access to professional treatment, and the dearth of treatment strategies adapted to the gambler's needs (Petry, 2005; Shaffer, & Simoneau, 2001).

Approximately one-third of people with a gambling problem seem to recover on their own, without formal treatment (Hodgins, Wynne, & Makarchuk, 1999; Slutske, 2006; Slutske, 2007). This estimate is consistent with the rates of natural recovery in other addictions (Nathan, 2003; Sobell, Ellingstad, & Sobell, 2000). The presence and extent of natural recovery suggests that brief interventions, such as self-help workbooks, or self-exclusion programs, might be effective strategies for some individuals.

Other resources for recovery include self-help fellowships such as Gamblers Anonymous and cognitive-behavioral therapy (talk therapy with a treatment professional or a self-help guide). Also promising are several classes of drugs for gambling disorders including antidepressants, mood stabilizers, and opioid antagonists (Reilly, & Shaffer, 2007). For a review of recent research on treatment and recovery, see Roads to Recovery from Gambling Addiction, a publication from the National Center for Responsisble Gaming available for download at www.ncrg.org/resources/monographs.cfm.

Section 2 assessed the urge to gamble, the consequences of gambling, confidence in the success of the self-exclusion program, and compliance with the program.

- 81.4% reported the urge to gamble over the past six months at a very high level.
- 65.4% considered themselves to have very little or no control over their gambling habits during the past six months.
- 65.8% believed that gambling interfered greatly with their daily activities, specifically their social life (32.7%), their work (10.9%), and their mood (27.9%).
- 19.5% stated that self-exclusion would change their gambling habits outside the casinos.

Section 3 assessed the participants for disordered gambling behavior using the SOGS and the *DSM-IV* criteria for pathological gambling.

- According to the *DSM-IV*, 73.1% of the participants were pathological gamblers.
- According to the SOGS, 88.8% met the criteria for pathological gambling, 6.8% were considered at-risk gamblers and 4.3% had no gambling problems. (The self-excluders who did not meet the threshold for a gambling problem probably enrolled in the program as a preventative step to avoid future gambling problems.)

Section 4 collected socio-demographic data about the participants.

- 60% of the sample was men.
- The average age of a participant was 43.5 years.
- 45% completed high school while 20% and 26.3%, respectively, held college or university degrees.
- 72% were employed.
- 15% had a household income of $25,000 or less, 34% earned between $25,000 and $50,000, and 43.4% had an income of over $50,000.
- 56.9% were married or living with a partner.

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The program described in the study was run by the casino's security department and advertised through a pamphlet in different areas of the casino. Participants received no monetary compensation for their participation.

About the author…

Robert Ladouceur, Ph.D., is a professor of psychology at Laval University in Quebec City. After his doctoral studies, he completed post-doctoral fellowships at Temple University in Philadelphia and at Geneva University in Switzerland. During his career, he has published 450 scientific papers, made 500 presentations, and published five books. Ladouceur's work on gambling is internationally known, and he has been honored by many organizations, including the National Center for Responsible Gaming, which awarded Ladouceur the NCRG Scientific Achievement Award in the senior investigator category in 2003. Ladouceur is a member of the scientific advisory board for the Institute for Research on Gambling Disorders.

RESOURCES AND PROGRAMS

While research on gambling disorders is still a relatively young field of study, it is already yielding valuable information and guiding practical applications. Programs and tools are being developed and put into practice to aid the gaming industry in increasing awareness of disordered gambling and implementing responsible gaming practices and programs. A few examples are listed below.

AGA Code of Conduct for Responsible Gaming

The American Gaming Association and its members enacted the AGA Code of Conduct for Responsible Gaming as a pledge to industry employees and patrons to make responsible gaming an integral part of daily operations across the United States. This pledge encompasses all aspects of the business, from employee assistance and training to alcohol service, advertising, and marketing. The AGA Code of Conduct also covers the commitment of AGA members to continue support for research initiatives and public awareness surrounding responsible gaming and underage gambling. Information about the Code, including details about how its provisions are fulfilled, can be found at **www.americangaming.org/programs/responsiblegaming/code_public.cfm**.

The House Advantage: A Guide to Understanding the Odds

This publication, which fulfills a provision of the AGA Code of Conduct for Responsible Gaming, explains the house advantage, providing typical ranges of odds for specific games, along with other factors that should be taken into account when betting on casino games, such as the amount wagered, the length of time played, and, to a degree, a player's skill level. It also debunks common myths about gambling and provides an explanation of regulatory procedures in place to ensure all the games in a casino are fair. This publication can be purchased in packs of 100 by visiting **www.americangaming.org/store/general.cfv?subject=3**.

PEER Program

The Partnership for Excellence in Education and Responsible Gaming (PEER) is a dynamic, one-of-a-kind program created by the National Center for Responsible Gaming to provide gaming entities with the tools and resources needed to develop comprehensive and world-class responsible gaming program(s). Based on the AGA Code of Conduct for Responsible Gaming, the PEER program offers members full access to the blueprint needed to implement the Code, as well as collateral materials, best practices, and in-depth, how-to instructions to put these words into action. PEER members also have access to unique employee training opportunities, on-call implementation assistance, and an annual report card to demonstrate progress on their initiatives. To learn more about the PEER program and how it can help your organization, visit **www.ncrg.org/peerprogram/index.cfm**.

EMERGE Program

The *Executive, Management and Employee Responsible Gaming Education (EMERGE)* program is a ground-breaking science-based training program developed by scientists at Harvard Medical School and the Institute for Research on Gambling Disorders. *EMERGE* is the only program of its kind grounded in scientific research that has been translated into an accessible training tool for gaming employees at all levels. *EMERGE* content has been approved by an international, third-party credentialing agency and exceeds the requirements of current gaming regulations regarding training of employees. The online training allows users to move at their own pace so that they can easily learn about the science behind gambling addiction and the importance of responsible gaming. Because of its Web-based design, *EMERGE* is available to employees at any time and requires no special software or equipment. Employees can use the program and take certification tests at their own leisure. *EMERGE* is an important component of the PEER program. For more information, download the brochure at **www.ncrg.org/public_education/emerge.cfm** or contact Christine Reilly at 978-299-3040 or via e-mail at creilly@gamblingdisorders.org.

Facing the Odds: The Mathematics of Gambling and Other Risks

Facing the Odds is a middle-school curriculum on probability, statistics, and mathematics developed by the Division on Addictions atCambridge Health Alliance, a teaching affiliate of Harvard Medical School, and the Massachusetts Council on Compulsive Gambling with support from the National Institute on Drug Abuse. With the proliferation of gambling opportunities throughout America, young people have exposure to and inherent curiosity in gambling-related matters. This curriculum is designed to enhance students' critical thinking, number sense, and knowledge of the mathematics of gambling so that they can develop rational views about gambling and make informed choices when confronted with gambling opportunities. Facing the Odds provides an opportunity for students to learn about contemporary social issues and has the potential to diminish the likelihood of the development of addictive behaviors. The curriculum is available in PDF format due to support from the National Center for Responsible Gaming and can be found at **www.divisiononaddictions.org/curr/facing_the_odds.htm**.

Talking with Children about Gambling

Talking with Children about Gambling is a research-based guide designed to help parents and mentors discuss this subject with children, deter children from gambling, and recognize possible warning signs of problem gambling and other risky behaviors. The brochure was developed by the Institute for Research on Gambling Disorders. It includes research-based information about the games young people play, the prevalence of gambling-related problems among youth, preventative measures for parents of children who may be at risk and other resources. The NCRG has dedicated a section of its Web site to Talking with Children about Gambling. A downloadable PDF of the brochure, as well as other helpful information, is available at **www.ncrg.org/public_education/talking-with-children.cfm** at no cost.

ABOUT THE NATIONAL CENTER FOR RESPONSIBLE GAMING

The National Center for Responsible Gaming (NCRG) is the only national organization exclusively devoted to funding research on gambling disorders. Founded in 1996, the NCRG's mission is to help individuals and families affected by gambling disorders by supporting the finest peer-reviewed, scientific research into pathological gambling; encouraging the application of new research findings to improve prevention, diagnostic, intervention and treatment strategies; and advancing public education about responsible gaming.

More than $22 million has been committed to the NCRG through contributions from the casino gaming industry, equipment manufacturers, vendors, related organizations, and individuals. The NCRG is the American Gaming Association's affiliated charity.

Research funding is distributed through the Institute for Research on Gambling Disorders.

For more information, visit **www.ncrg.org** and **www.gamblingdisorders.org**.

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