MAGIC

MASSACHUSETTS GAMBLING IMPACT COHORT STUDY

UNIVERSITY OF MASSACHUSETTS SCHOOL OF PUBLIC HEALTH AND HEALTH SCIENCES

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WAVE 2: INCIDENCE AND TRANSITIONS

Rachel A. Volberg, PhD

Overview of Presentation

- Defining key terms
- Background
- Study goals & current status
- Key findings
- Implications
- Future directions

Type of Study

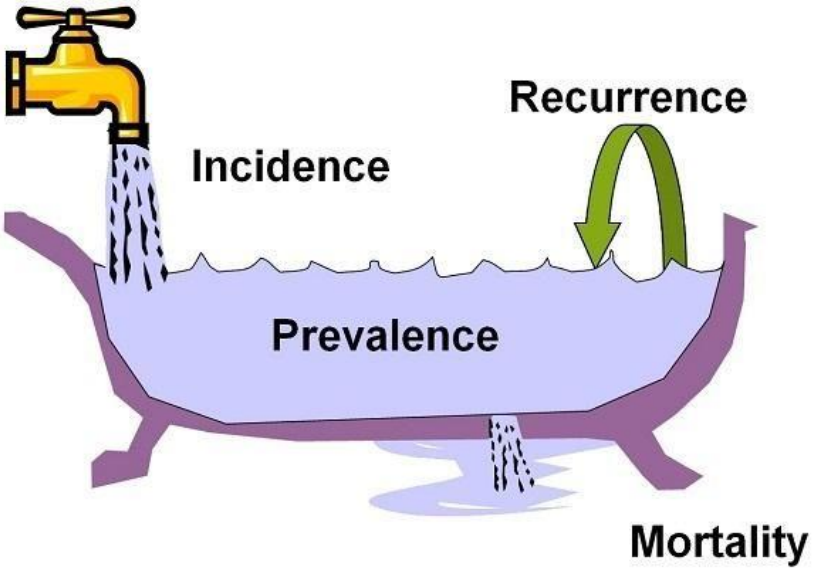
SEIGMA:
REPEAT CROSS-SECTIONAL STUDY

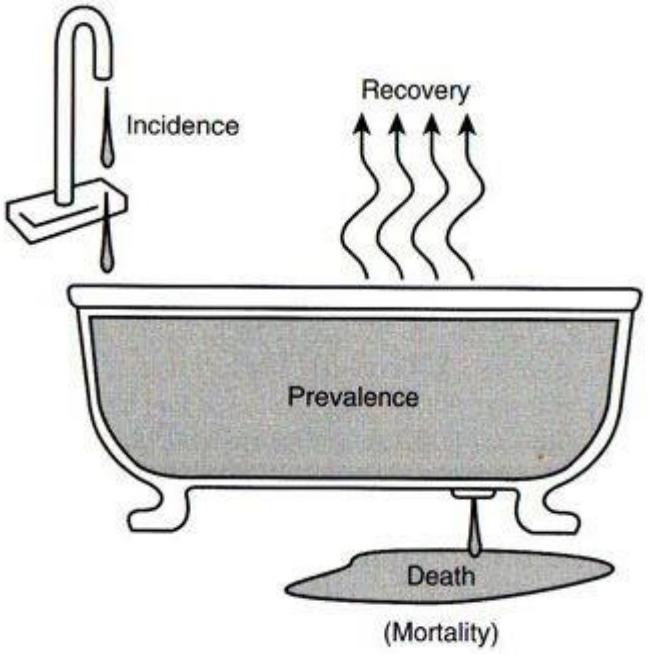
- Collecting data ***"snapshots"*** at designated points over a period of time
- ***Not*** the same people in each snapshot

MAGIC:
LONGITUDINAL COHORT STUDY

- Collecting a ***"moving picture"*** of data from a group of people at designated time points
- Following ***the same people*** over a period of time

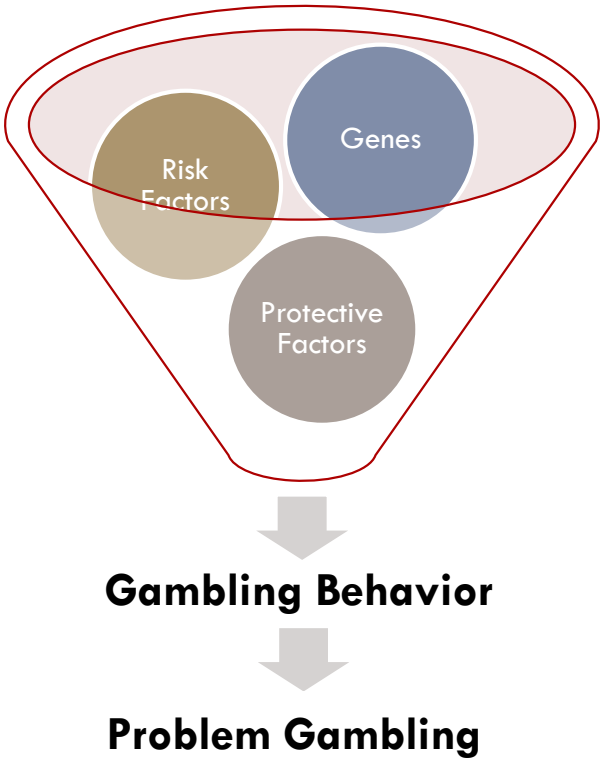
Epidemiological bathtubs





Etiology

- The study of causation, or what causes a particular condition
- The study of how a condition, in this case problem gambling, develops and fluctuates over time



Background

- Early small-scale cohort studies of gambling & problem gambling all have serious limitations

- These limitations led to launch of 5 large-scale cohort studies in 4 countries

Comparing Large-scale Cohort Studies

	Alberta, Canada LLLP	Ontario, Canada QLS	Sweden Swelogs	Australia VGS	New Zealand NGS
Data collection period	2006-2011	2006-2011	2008-2014	2008-2012	2012-2015
Recruited sample	1,808	4,123	8,165	15,000	6,251
Assessment length	2-3 hour	1-2 hour	15-25 min	15-25 min	45 min
Interval (months)	17-22[1]	12	12[2]	12	12
PG Measure	CPGI 5+	PPGM	CPGI 5+	CPGI 8+	CPGI 8+
Baseline PG prevalence	3.6%	3.1%	1.0%	2.6%	2.5%
Wave 2 PG prevalence	2.0%	2.9%	1.1%	1.5%	2.0%
Incidence (Wave 1 – Wave 2)	N/A	1.4%	0.8%	0.12%	0.28%
Proportion of Wave 2 PGs that are new cases	N/A	49.0%	73.5%	33.3%	51.6%

[1] This is the median elapsed time between waves for all respondents.

[2] Between Wave 1 and Wave 2; the interval between subsequent waves was 24 months.

Why MAGIC?

- There have been no major cohort studies of gambling in the US
- Change in gambling availability in MA during this study will be much more substantial than other cohort studies conducted internationally
- Addresses limitations & builds on findings of previous studies
- Synergistic with SEIGMA study, producing results richer than either study alone

Goals

- Examine incidence of problem gambling in Massachusetts
  - Proportion of a population that newly develops a condition over a specified period of time
  - New cases vs. relapsing cases require different mix of services
- Examine stability and transitions associated with problem gambling
  - Patterns of continuity and discontinuity among different risk groups
- Develop an etiological model of problem gambling
  - Etiology – cause or causes of a disease or condition
  - Identifies risk & protective factors
  - Utility in guiding development of prevention, intervention, treatment, recovery support strategies

Current Status

- Wave 1 = Baseline General Population Survey (BGPS) (n=9,578)
  - Stratified sample drawn based on risk profile (n=4,860)
- Wave 2
  - Data collection launched March 2015, completed Sept 2015
  - Cohort established (n=3,139)
- Wave 3
  - Expanded questionnaire to capture etiological factors more comprehensively
  - Data collection launched April 2016, completed August 2016 (n=2,455)
- Wave 4
  - Expanded questionnaire includes additional etiological factors
  - Data collection to launch March 2018

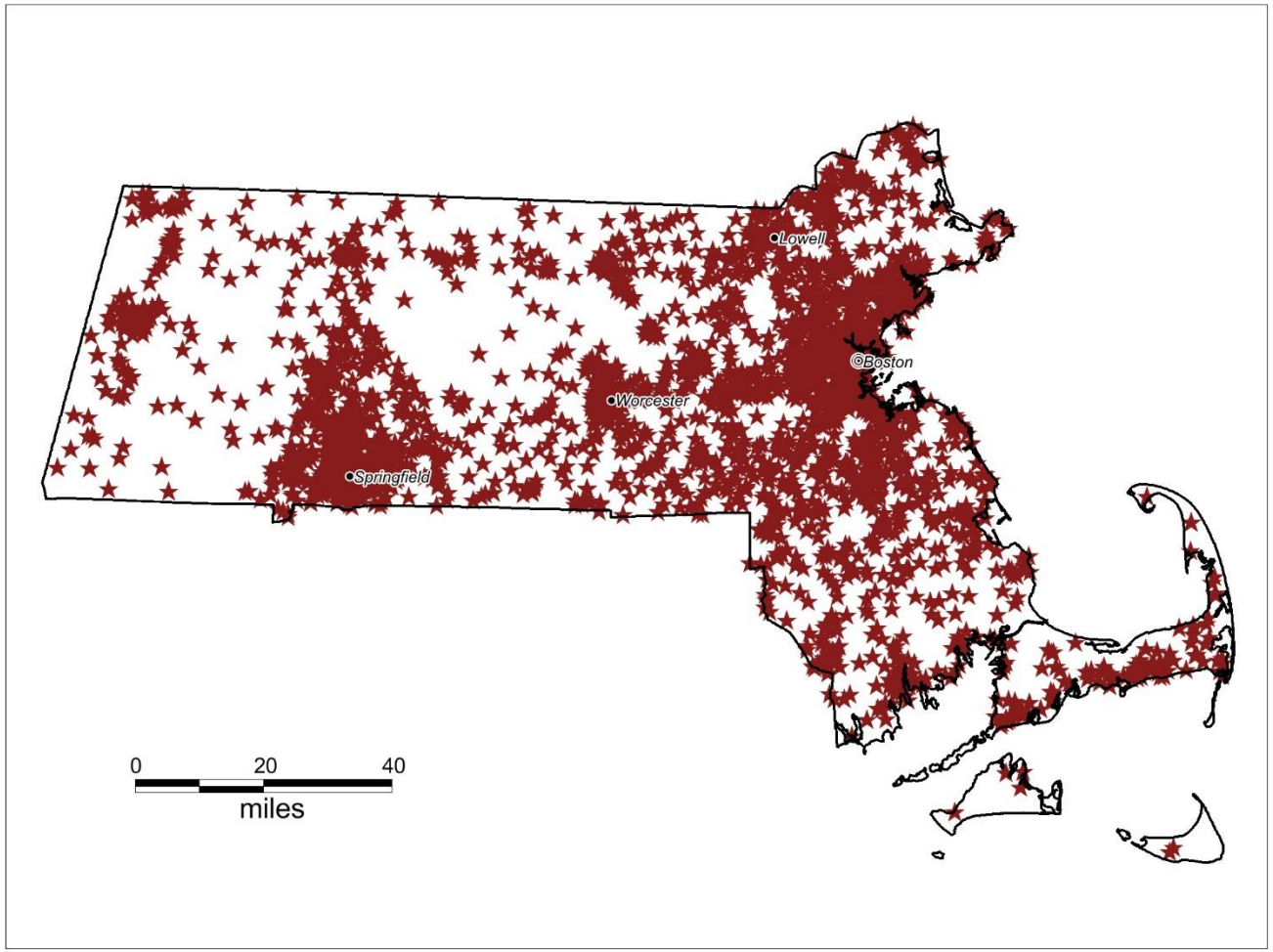
Weighting

- Weighting accounts for stratified sample design and differential response rates by risk group
- Weights include adjustments for gender, age, race/ethnicity, education
- Additional weighting to adjust for likely participation bias
- Weighted data used in calculating incidence to allow for more confident generalizing to MA adult population

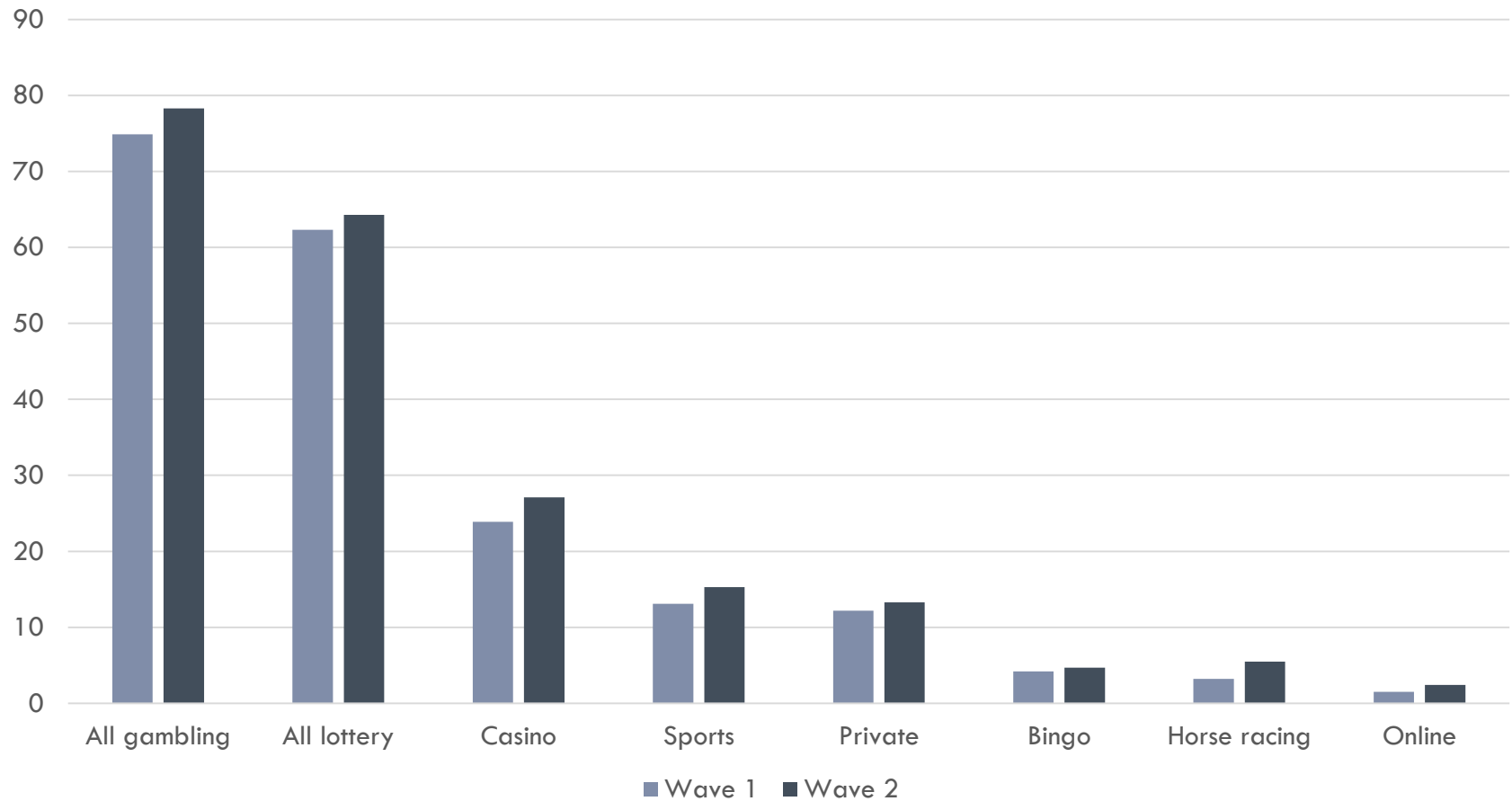
Establishing the Cohort

Group	Drawn Sample	Achieved Sample	Response Rate by Group %
Problem Gambler	133	81	61.4
At-Risk Gambler	450	295	65.7
Spends $1,200+ annually	1,088	726	67.2
Gambles weekly	792	534	67.6
Military service Sept 2001 or later	49	37	78.7
All other BGPS participants	2,348	1,466	63.1
Total	4,860	3,139	65.1

Where the cohort comes from



Changes in Gambling Participation



Changes in PG Status

Wave 1	Wave 2	Frequency
Not a problem gambler	Not a problem gambler	2,943
Not a problem gambler	Problem gambler	60
Problem gambler	Not a problem gambler	40
Problem gambler	Problem gambler	39
	Wave 2	3,082
Missing	Not a problem gambler	45
Missing	Problem gambler	4
Not a problem gambler	Missing	8
	Total	3,139

Calculating Incidence

Group		UN[1]	N[2]	% [2]	95% CI[2]
Not problem gambler --> not a problem gambler		2,943	5,032,690	95.5	(93.9, 96.6)
Not problem gambler --> problem gambler		60	123,631	2.3	(1.5, 3.6)
Problem gambler --> not a problem gambler		*40*	*57,385*	*1.1*	*(0.6, 2.0)*
Problem gambler --> problem gambler		*39*	*58,764*	*1.1*	*(0.6, 2.1)*

[1]Unweighted N refers to the total number of respondents who answered this question
[2]Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Italics indicates estimates are unreliable, relative standard error > 30%

Stability and Change

Complete data Wave 2												
		Non-Gambler		Recreational Gambler		At-Risk Gambler		Problem or Pathological Gambler		Shift		Total
	Wave 1: PPGM status	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
Complete data Wave 1	Non-Gambler	298	64.4	158	34.1	*7*	*1.5*	0	0.0	165	35.6	463
	Recreational Gambler	177	8.3	1,723	80.3	223	10.4	22	1.0	422	19.7	2,145
	At-Risk Gambler	*8*	*2.0*	201	50.9	148	37.5	38	9.6	247	62.5	395
	Problem/Pathological Gambler	---	---	16	20.3	23	29.1	39	49.4	40	50.6	79
Total		484		2098		401		99				3,082

[1]Unweighted N refers to the total number of respondents who answered this question
Note: Cells with sample size of 5 or less are blank
Note: Italics indicates estimates are unreliable, relative standard error > 30%

Discussion

- Small but significant increases in gambling participation

- PG incidence, prior to casinos, appears high but is subject to methodological limitations
  - Differential response rates may have resulted in over-enrollment of heavier gamblers
  - Longer inter-assessment interval (16.5 months vs. 12 months)
  - Reliability of PG measures based on self-report

- Stability and change similar to other cohort studies although transition rates appear higher
  - May be due to longer window between assessments
  - May also be due to differences in PG measures

Implications

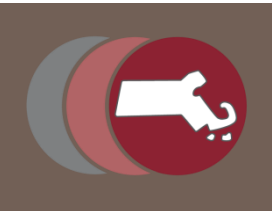
- If incidence rate is accurate, reasons are unclear
  - No changes in availability of legal gambling
  - Substantial prevention resources may be needed well ahead of casinos opening to reduce rate of "new" PGs

- Remission rate also high
  - If accurate, treatment & recovery support resources may also be needed well ahead of casinos opening
  - Treatment to accelerate remission for existing PGs
  - Recovery support to assist in maintaining remission, preventing recurrence

Future Directions

- Triangulate incidence rate using other data sources
  - Plainville Targeted baseline and follow-up surveys
  - Springfield BGPS and Targeted baseline surveys
  - Incidence in Wave 3 of MAGIC
  - Secondary data (DPH, MCCG, GA)

- Deeper analyses of Wave 1 – Wave 2 data
  - Differences in incidence, transitions by gender
  - Involvement with specific types of gambling
  - Predictors of change, focus on PG onset & remission



Questions?