Change is coming: but not one person at a time

A population approach to alcohol-related harm

5th Alcohol Action New Zealand Conference

Te Papa, Wellington, 20 March 2014

Kypros Kypri PhD

School of Medicine & Public Health, University of Newcastle, Australia

Department of Preventive & Social Medicine, University of Otago, New Zealand




Outline

1. The ubiquitous risk factor

2. Individual vs population approaches to public health problems

    a) Web-based screening and brief intervention
    b) Closing pubs and bars earlier

3. Unexpected and unpredictable change

4. Myths and mindless mantras

Healthcare Otago health promotion field worker Terry Sarten beside a beer billboard on Andersons Bay Rd, which has prompted a complaint to the Advertising Standards Complaints Board.

Beer goes down wrong way

Part 1: The ubiquitous risk factor

- The “AIDS of injury control” (Foege, 1987)

- “It is unlikely that there is any other risk factor that accounts for so many preventable injuries” (Pless, 2000)

- A Grade 1 carcinogen and a causal factor in 70 diseases

Cause specific relative risks by alcohol consumption.

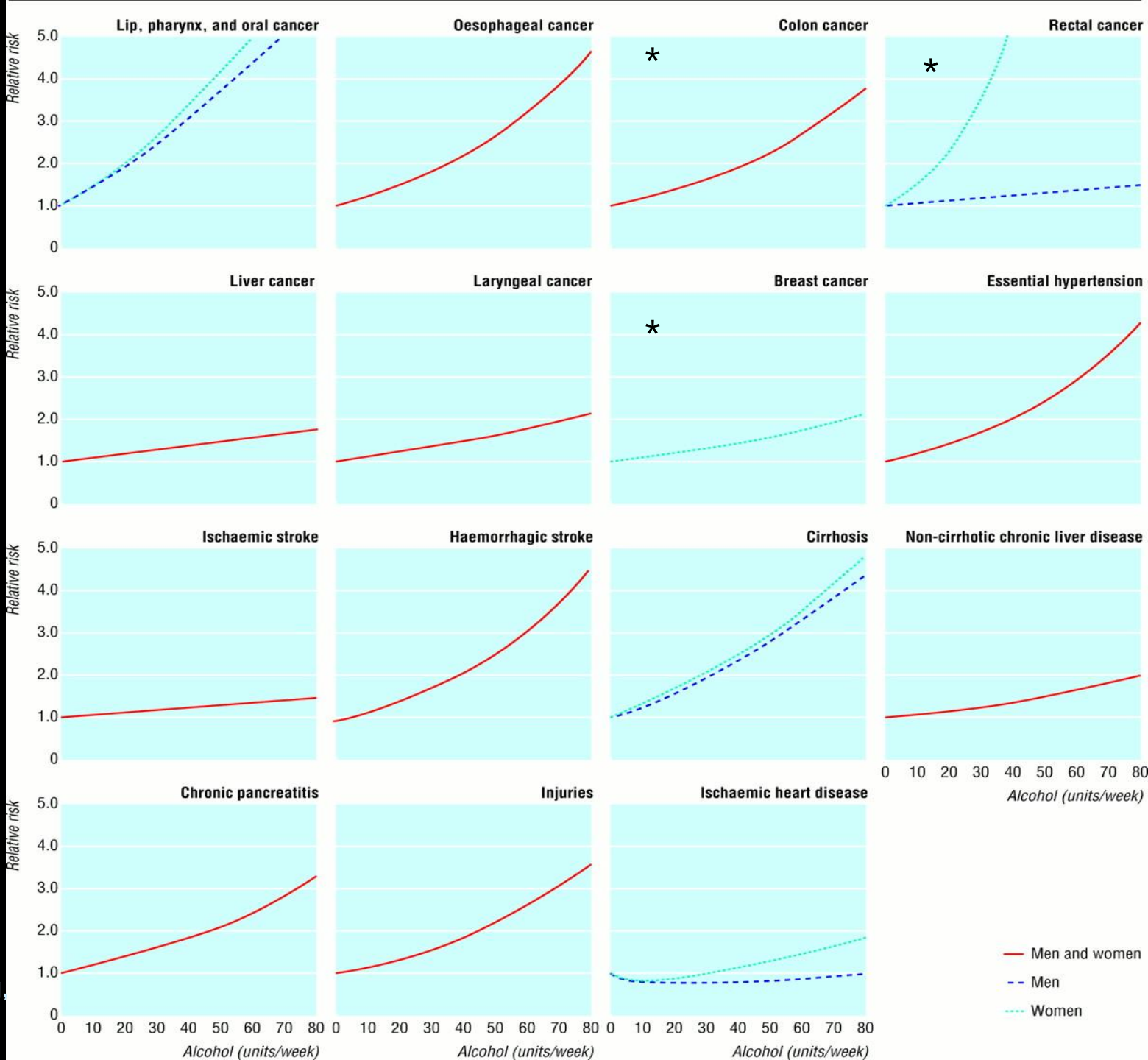
Source:

White et al. Alcohol consumption and mortality: modelling risks for men and women at different ages. *BMJ 325*:191-198, 2002

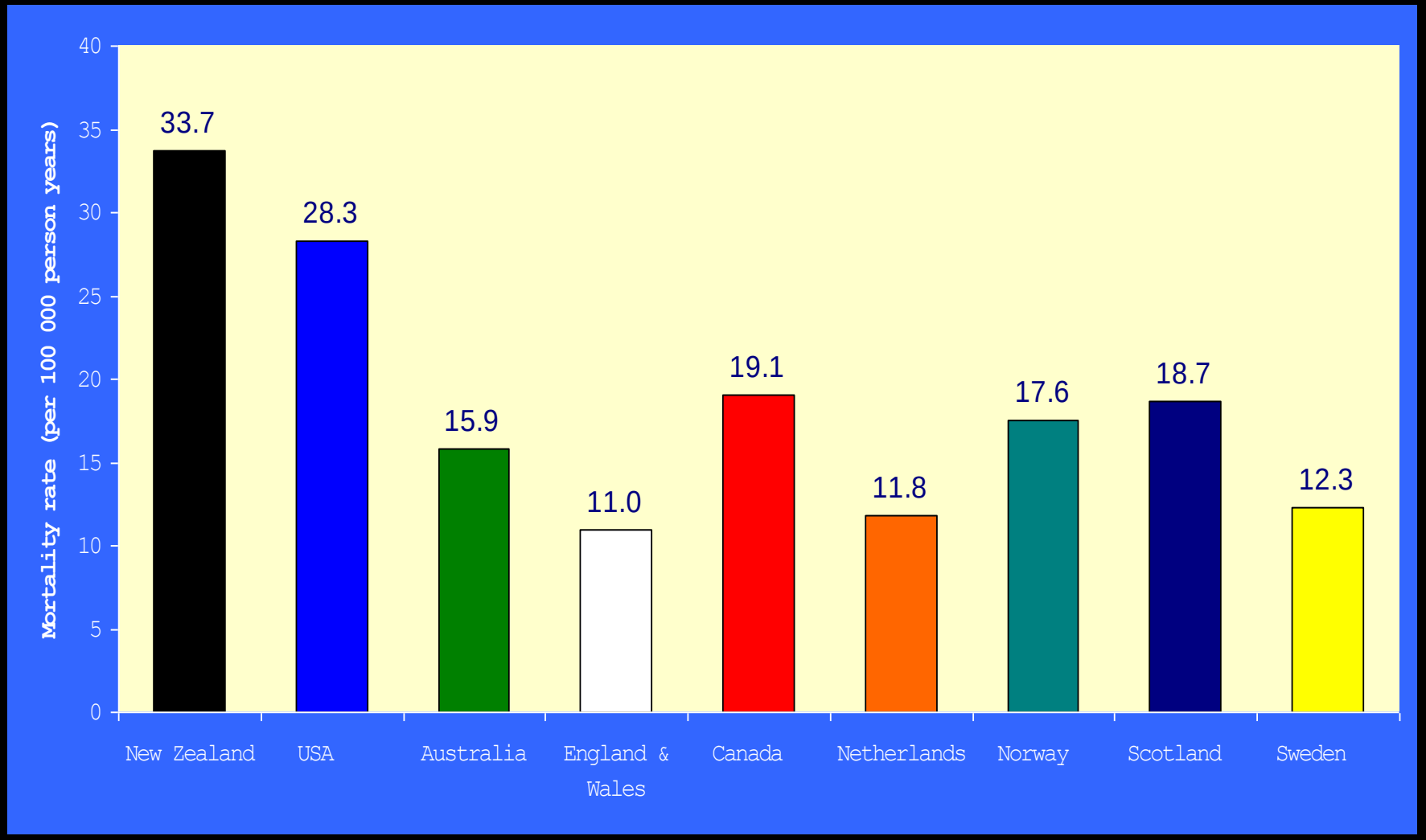
***Note:** Most common cancers

Men: prostate, lung, colorectal

Women: breast, lung, colorectal



Injury mortality 0-19 year-olds



Child and adolescent injury mortality in New Zealand and eight other OECD countries. Paper presented at the Third National Conference on Injury Prevention and Control, Brisbane, 1999. [Injury Prevention Research Unit, University of Otago]

Part 2: Individual and population approaches to public health problems

Rose G. Sick individuals and sick populations.

***International Journal of Epidemiology*. 1985;14:32-38.**

High-risk approaches: protect susceptible individuals (interventions applied to people who drink at risky levels)

Population approaches: control the causes of incidence (interventions applied to the entire population)

Not usually in competition, but the priority should always be to discover and control the causes

Note: Industry, government orientations

The Prevention Paradox

"A large number of people at a small risk may give rise to more cases of disease than the small number who are at high risk"
(this is true for alcohol in New Zealand and Australia)

"A preventive measure which brings much benefit to the population offers little to each participating individual"
(e.g., vaccination, seatbelts)

Alcohol: No Ordinary Commodity - Research and Public Policy Babor., et al. Oxford: OUP, 2003.

Ratings of 31 Policy-relevant Prevention Strategies and Interventions

1) Evidence of Effectiveness[a] – the quality of scientific information
2) Breadth of Research Support[a] – quantity and consistency of the evidence
3) Tested Across Cultures[a], e.,g. countries, regions, subgroups
4) Cost to Implement and Sustain[b] – monetary and other costs

[a]Rating Scale: 0, +, ++, +++, (?)

[b] Rating Scale: Low, Moderate, High

Strategy or intervention **SUPPLY-SIDE**	Effectiveness	Breadth of research support	Cross-cultural testing	Cost to implement and sustain
Regulating physical availability				
Total ban on sales	+++	+++	++	High
Minimum legal purchase age	+++	+++	++	Low
Rationing	++	++	++	High
Government monopoly of retail sales	+++	+++	++	Low
Hours and days of sale restrictions	++	++	++	Low
Restrictions on density of outlets	++	+++	++	Low
Server liability	+++	+	+	Low
Different availability by alcohol strength	++	++	+	Low
Taxing and Pricing				
Alcohol Taxes	+++	+++	+++	Low
Altering the drinking context				
Outlet Policy to not serve intoxicated patrons	+	+++	++	Moderate
Training bar staff and managers to prevent and better manage aggression	+	+	+	Moderate
Voluntary codes of bar practice	0	+	+	Low
Enforcement of on-premise regulations and legal requirements	++	+	++	High
Promoting alcohol-free activities and events	0	++	+	High
Community mobilization	++	++	+	High

DEMAND-SIDE

Strategy or intervention	Effectiveness	Breadth of research support	Cross-cultural testing	Cost to implement and sustain
Education and persuasion				
Alcohol education in schools	0	+++	++	High
College student education	0	+	+	High
Public services messages	0	+++	++	Moderate
Warning labels	0	+	+	Low
Regulating alcohol promotion				
Advertising bans	+	++	++	Low
Advertising content controls	?	0	0	Moderate
Drinking-driving countermeasures				
Sobriety check points	++	+++	+++	Moderate
Random breath testing (RBT)	+++	++	+	Moderate
Lowered BAC Limits	+++	+++	++	Low
Administrative licence suspension	++	++	++	Moderate
Low BAC for young drivers ('zero tolerance')	+++	++	+	Low
Graduated licensing for novice drivers	++	++	++	Low
Designated drivers and ride services	0	+	+	Moderate
Treatment and early intervention				
Brief intervention with at-risk drinkers	++	+++	+++	Moderate
Alcohol problems treatment	+	+++	+++	High
Mutual help/self-help attendance	+	+	++	Low
Mandatory treatment of repeat drinking-drivers	+	++	+	Moderate

Case study 1:

Web-based alcohol screening and brief intervention (e-SBI) for university students

NATIONAL STUDENT SURVEYS

(funded by HRC and ALAC / HPA)

2005: 5 universities, N=2,550 (65%)

2007: 6 universities, N=3,300 (67%)

2009: 7 universities, N=3,500 (52%)

2013: 5 universities, N=2,683 (47%)

Random samples from each campus:

430 Maori, 430 non-Maori

Measures:

Alcohol consumption

Harms: social, health, legal, academic, sexual

Perceptions of availability and promotion

Other health behaviour

Connectedness to community

Demographic characteristics

Proximity to licensed premises

Massey – Albany (05,07,09)

AUT (09)

Auckland, (09,13)

Waikato (05,07,09,13)

Massey P Nth (05,07,09)

Victoria (05,07,09,13)

Massey Wellington (07,09)

Canterbury (07,09)

Lincoln (05,07,09,13)

Otago (05,07,09,13)

“As a result of drinking alcohol, have you experienced the following over the past 4 weeks: ”

	Women	Men	
	%	%	
Vomited	17	18	
Had a heated argument	10	10	
Was physically aggressive towards someone	3	5	c. 13,000 per month across NZ
Had a blackout	27	26	
Was unable to pay bills	4	3	
Stole public or private property	4	8	c. 20,000 thefts per month across NZ
Committed an act of vandalism	2	7	
Was removed from a pub/club	2	6	
Was arrested for drunken behaviour	0	0	
Sustained an injury requiring medical attention	1	1	c. 3,300 injuries per month across NZ

Drinking and alcohol-related harm among New Zealand university students: Findings from a national web-based survey. *Alcoholism: Clinical & Experimental Research*, 33(2) 307-14

I'm not gonna drink much piss this year...

Yeah, right

“Glug, glug, glug…second-year students…break into bottles of free vodka…They were part of a free package whereby girls were offered vodka and guys beer…600 bottles of alcohol were given out at lunch time”

Otago Daily Times, 20 February 2000

Modifiable individual risk factors:
Norm misperception

Your drinking compared with Otago students of the same gender	Women (n=841) **%**	Men (n=617) **%**	All (n=1458) **%**
A lot less	34	33	34
A bit less	30	26	28
About the same	28	31	29
A bit more	7	10	8
A lot more	1	1	1

Perceived norms and their relation to university student drinking. *Journal of Studies on Alcohol* 64, 2003, 829-834.


RECEPTION

Web-based motivational feedback

1. Assessment of drinking and related harm
2. Criterion feedback – individual's drinking against medical guidelines
3. Normative feedback – individual's drinking against drinking of relevant peer groups
4. Correction of norm misperceptions
5. BAC feedback – estimate for recent heavy occasion along with physiological and behavioural sequelae of various BAC levels
6. Expenditure feedback – $ spent per month / year
7. Chronic health effects information - optional
8. Access to care and further information

Photo: Patient completing e-SBI at Student Health

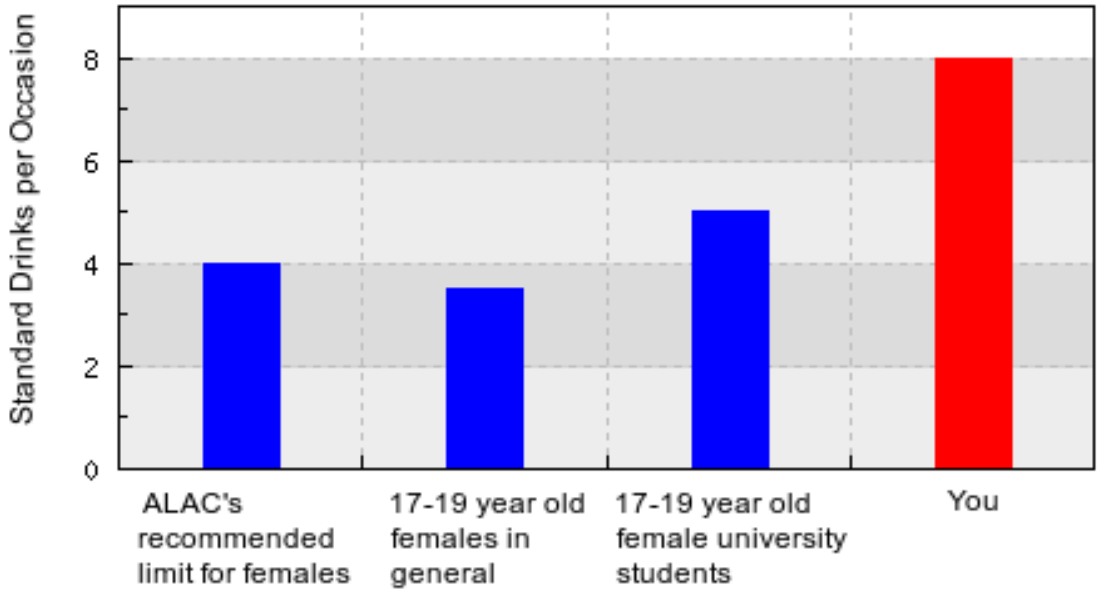
Intervention group...Personalised Feedback

Tertiary Student Health Project

YOUR DRINKING AMOUNT COMPARED

Standard Drinks Consumed Per Occasion

You reported having approximately 8 drinks on a typical occasion. The graph on the right shows how this compares to other people your age and gender.



Health, 2007.

IMPAIRED CONTROL AND YOUR RISK OF ALCOHOL DEPENDENCE

How in control of your drinking are you? The 10 questions you answered at the end of the questionnaire were from the Leeds Dependence Questionnaire, a validated clinical measure of the severity of alcohol dependence.

Generally speaking, the higher the score the more reason for concern that your drinking may be out of control. **Your Leeds score was** 12 and suggests that you have significantly impaired control over your drinking and may well have some degree of alcohol dependence. It is likely that alcohol is causing problems and that you would benefit from changing your drinking. You will probably find it easier to do this by getting help.

Please go to the support page for information about where you can find help if you want it.

Contact us

e-SBI in primary healthcare
Intervention effects at 12 months

Alcohol per week	-23% (-5%, -37%)
Academic problems	-20% (-3%, -34%)
AUDIT score	-2.2 points (-1.1, -3.2)

Randomized controlled trial of web-based alcohol screening and brief intervention in primary care. *Archives of Internal Medicine.* (2008). 168(5)530-6

Pro-active e-SBI (THRIVE) trial

- 13,000 university students recruited from the enrolment list of Curtin University, Perth

- 7,237 respondents (56%); 2,435 hazardous drinkers randomised:

  - Control: screening only
  - Intervention: assessment and personalised feedback

  Assessed 1m and 6m later

Development of a web-based alcohol intervention for university students: processes and challenges. *Drug & Alcohol Review* (2009) 28(1)31-39

THIRVE intervention effects at 6 months

Alcohol per week	-11% (-4%, 18%)
Academic problems	-5% (-8%, +9%)
Above guidelines for chronic risk (♀ >14 drinks / ♂ >28 drinks)	-35% (-8%, -54%)

Randomised controlled trial of proactive web-based alcohol screening and brief intervention for university students. *Archives of Internal Medicine* (2009) 169(16)1508-1514

The e-SBINZ trials: effectiveness across campuses for Māori and non-Māori

- Equal Explanatory Power Model (Mana Whakamārama)
- Parallel RCTs: Māori and Non-Māori - Effect estimates directly comparable
- All Māori students and random samples of non-Māori students aged 17-24 years from 7 Universities invited to participate
- Auckland, Waikato, Massey, Victoria, Canterbury, Lincoln, Otago

Results

	Māori	Non-Māori
Frequency of drinking	**-11%**	-5%
Amount per typical occasion	**-8%**	-7%
Volume per week	**-22%**	-9%
Academic problems	**-19%**	-9%
Above acute risk guidelines (♀ >4 drinks, ♂ >6 drinks)	**-20%**	-16%
Above chronic risk guidelines (♀ >14 drinks / ♂ >21 drinks)	**-35%**	-23%

Web-based alcohol intervention for Māori university students: double-blind, multi-site randomised controlled trial. *Addiction* 2013, 108(2):331-8

Web-based alcohol screening and brief intervention for university students: Randomised trial. *JAMA*, 2014, March 26 .

http://survey.alac.org.nz/index.php?sid=74867

survey.alac.org.nz/index.php?sid=74867

Google

alac

Media Centre | Blog | Events | Newsletters & Subscriptions | Community Action

ABOUT ALAC | ACTIVITIES & SERVICES | ALCOHOL & YOU | LEGISLATION & POLICY | RESEARCH & RESOURCES

Tertiary Student Alcohol Health Check

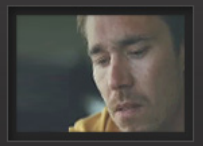
This survey is part of the *Tertiary Student Health Project* which aims to improve the health of tertiary students. The main focus of this questionnaire is *student alcohol use over time and its consequences*.

The information you provide is **confidential**. The site is protected by secure socket layer (SSL) technology such that all data are encrypted during transmission. Your answers will be used only for the purpose of producing summary statistics.

There are up to 24 questions in this survey.

Next >> | Exit and clear survey

Contact Us | Useful Links
Partners | Partner Login
Sitemap | Terms of Use
Glossary | FAQ
RSS Feeds



EASE UP ON THE DRINK

LIKE A DRINK

WHERE'S THE LINE

Need to talk? Call the Alcohol Drug Helpline
0800 787 797
Lines open between 10am and 10pm

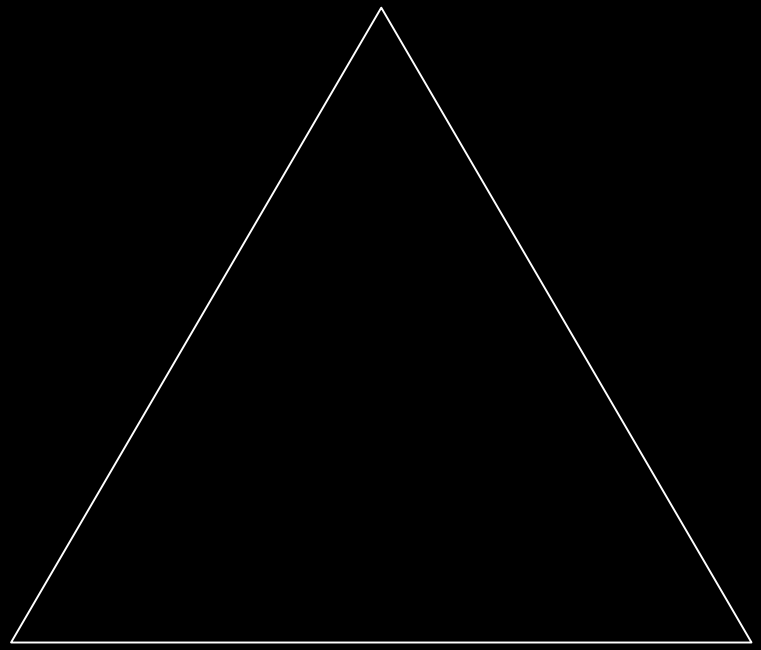
Made by Sparks Interactive

e-SBI timeline

- 1999 literature review and consultation
- 2000-1 instrument development
- 2002 proof of concept trial; funding appl
- 2003-4 large efficacy trial
- 2005 1st meeting with University directors
- 2007 THRIVE trial
- 2008 Funding applications
- 2010 e-SBINZ trials
- 2011 MoU between Universities and ALAC
- 2013 Partial implementation…

Essential ingredients for getting research findings into practice

Motivated, patient, evidence driven/sympathetic, practitioners



Committed, knowledgeable, flexible funder

Outcome oriented, persistent researchers

Conclusions

- Individually focused low intensity* interventions generally produce small effects
- They are hard to implement and sustain, even in the best conditions
- They may be part* of a broader strategy but should not be the sole approach nor a core element

Case study 2:
Closing pubs earlier

The Newcastle experiment

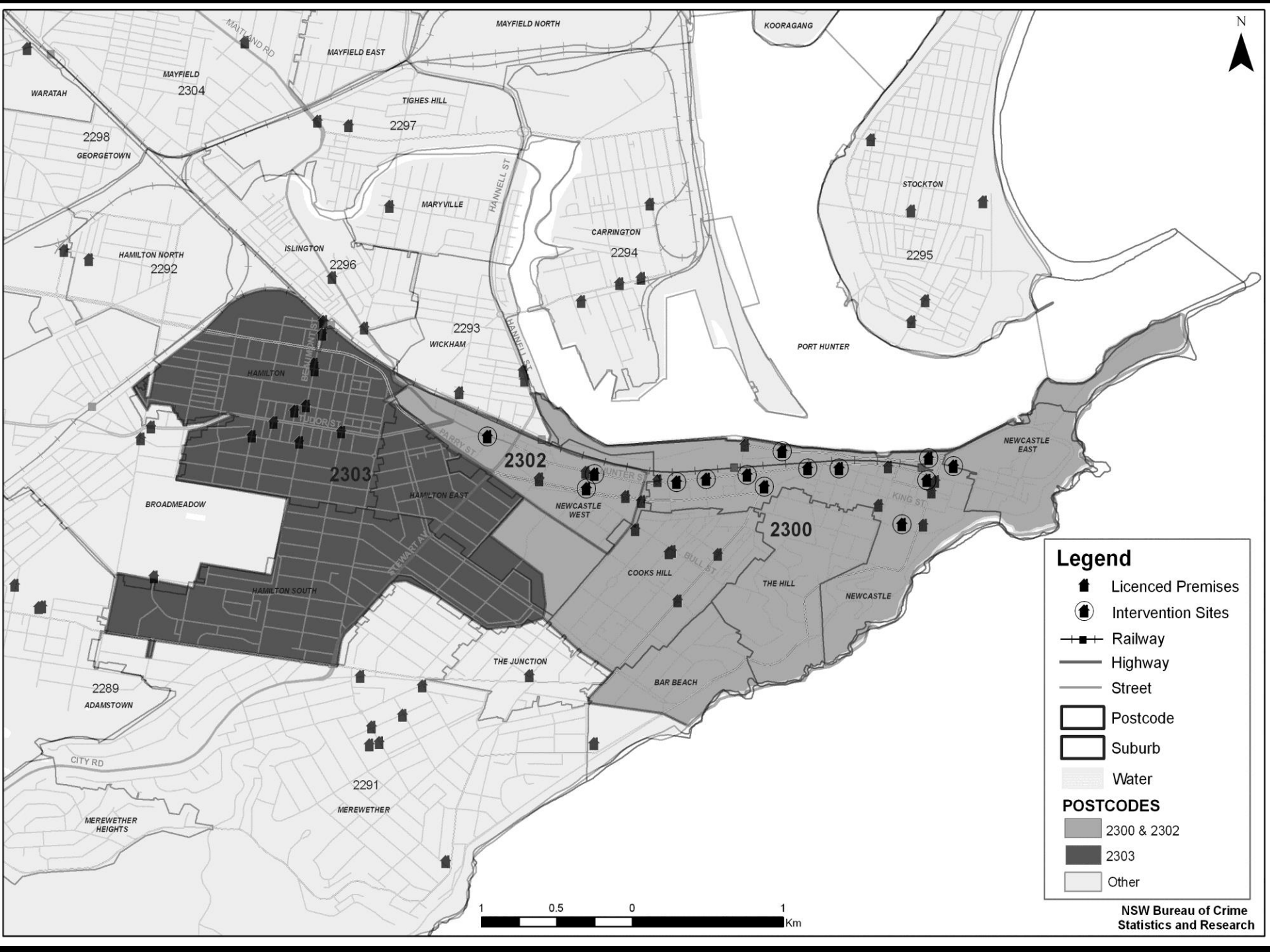
- Police and community complain to state govt about high levels of crime from pubs in CBD
- Liquor Administration Board forces 14 pubs to close earlier: 3am (with 1am “lockout” / “one-way door”) – previously 5am
- Took effect 21 March 2008 (weakened to 3.30am/1.30am on 29 July 2008)

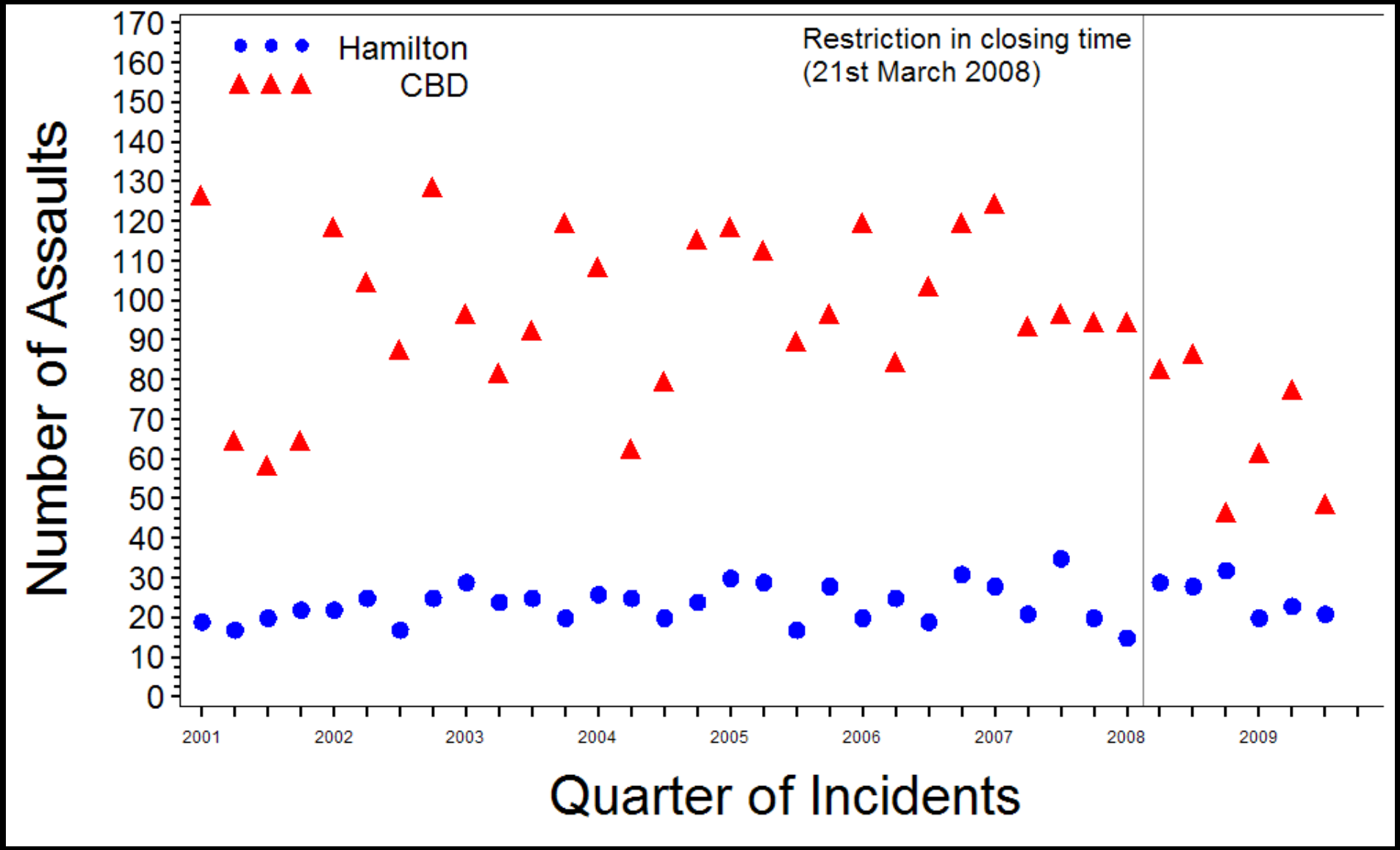
Pop. 530,000
6th largest city in Australia

Aims

- To test the hypothesis that this intervention reduced the incidence of assault in the Newcastle CBD.

- To determine whether there was displacement in assault incidence from the CBD to the nearby control area and to earlier in the evening. (no evidence of geographic or temporal displacement)


N
MAYFIELD NORTH
KOORAGANG
MAITLAND RD
MAYFIELD EAST
MAYFIELD
2304
WARATAH
TIGHES HILL
2297
2298
GEORGETOWN
HANNELL ST
MARYVILLE
STOCKTON
CARRINGTON
2294
2295
HAMILTON NORTH
2292
ISLINGTON
2296
2293
WICKHAM
PORT HUNTER
BELMONT ST
HAMILTON
TUDOR ST
PARRY ST
2303
2302
HUNTER ST
NEWCASTLE EAST
KING ST
BROADMEADOW
HAMILTON EAST
NEWCASTLE WEST
2300
STEWART AV
COOKS HILL
BULL ST
THE HILL
NEWCASTLE
HAMILTON SOUTH
THE JUNCTION
BAR BEACH
2289
ADAMSTOWN
CITY RD
2291
MEREWETHER
MEREWETHER HEIGHTS
1 0.5 0 1
Km
Legend
Licenced Premises
Intervention Sites
Railway
Highway
Street
Postcode
Suburb
Water
POSTCODES
2300 & 2302
2303
Other
NSW Bureau of Crime Statistics and Research



Effects of restricting pub closing times on night-time assaults in an Australian city. *Addiction*, 2011. Open access – google the title

Assaults per quarter before and after the change in closing time

	Before N	After N	After-to-Before incidence rate ratio (95% CI)	Relative After-to-Before incidence rate ratio (95% CI)	*P*
CBD (Intervention area)	99.0	67.7	0.68 (0.58 to 0.80)	**0.63 (0.48 to 0.82)**	0.0005 [a]
Hamilton (Control area)	23.4	25.5	1.09 (0.88 to 1.35)	1.00 Reference	-

[a] For area*time interaction term in negative binomial regression model

Were the effects sustained?

“The Sydney lockout: new location, but the same old mistakes” Sydney Morning Herald, 24 February 2014 (Nick Reece, Policy Fellow, University of Melbourne)

“In 2008, [the Victorian Premier] cited the "Ballarat model" as the basis for the lockout for inner-city Melbourne.”

“A recent a study of 10 years of crime data from Ballarat found the lockout had no discernible long-term impact on alcohol-related emergency department attendances. It remains to be seen what a similar study will find in Newcastle.”

Kypri K. Earlier pub closing times key to reducing alcohol-fuelled assaults. *The Conversation*, 3/3/2014, https://theconversation.com/earlier-pub-closing-times-key-to-reducing-alcohol-fuelled-assaults-23829

Drug and Alcohol Review (2014)
DOI: 10.1111/dar.12123

BRIEF REPORT

Restrictions in pub closing times and lockouts in Newcastle, Australia five years on

KYPROS KYPRI[1], PATRICK McELDUFF[1] & PETER MILLER[2]

[1]*School of Medicine and Public Health, University of Newcastle, Newcastle, Australia,* [2]*School of Psychology, Deakin University, Geelong, Australia*

Abstract

Introduction and Aims. *In 2008 pub closing times were restricted from 5am to 3:30am in the central business district (CBD) of Newcastle, Australia. A previous study showed a one-third reduction in assaults in the 18 months following the restriction. We assessed whether the assault rate remained lower over the following 3.5 years and whether the introduction of a 'lockout' in nearby Hamilton was associated with a reduction in assaults there.* ***Design and Methods.*** *We used a pre-post design with comparison against two post-change periods. The setting was Greater Newcastle (population 530 000) and subjects were persons apprehended for assault in the CBD and nearby Hamilton, an area with late trading pubs where a lockout and other strategies were implemented in 2010. Cases were police-recorded assault apprehensions occurring from 10pm to 6am in one pre-change period: January 2001 to March 2008, and two post-change periods: (i) April 2008 to September 2009 and (ii) October 2009 to March 2013. Negative binomial regression with terms for secular trend and seasonal effects was used to estimate Post1: Pre and Post2: Pre Incidence Rate Ratios and confidence intervals.* ***Results.*** *In the CBD recorded assaults fell from 99/quarter before the restriction to 68/quarter in the first post-change period [incidence rate ratio (IRR) 0.67, 95% confidence interval (CI) 0.55–0.82] and 71/quarter (IRR: 0.68, 95% CI: 0.55-0.85) in the later post-change period. In the same periods in Hamilton, assault rates were 23, 24, and 22 per quarter respectively.* ***Discussion and Conclusions.*** *The restriction in closing time was associated with a sustained lower assault rate in the Newcastle CBD. We find no evidence that lockouts and other outlet management strategies were effective in Hamilton.* [Kypri K, McElduff P, Miller P. Restrictions in pub closing times and lockouts in Newcastle Australia 5 years on. *Drug Alcohol Rev* 2014]

Key words: alcohol, assault, pub, licensed premise, trading hour.

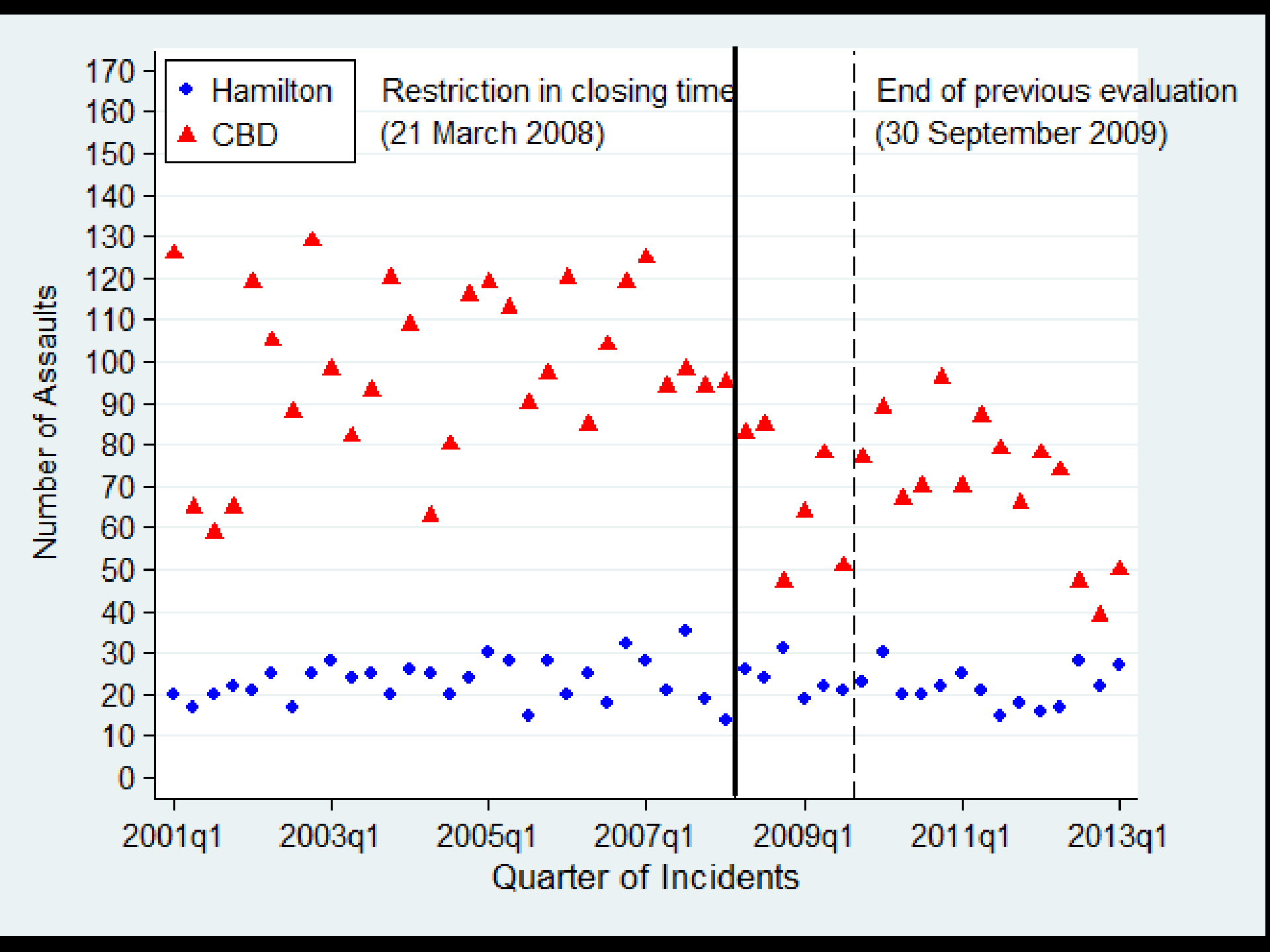
Introduction

In March 2008, the liquor licensing authority of New South Wales, Australia, imposed a restriction on 14 pubs in the central business district (CBD) of Newcastle requiring them to close by 3am and to disallow patrons from entering venues after 1am (a 'lockout'). After a legal challenge, this was relaxed to 3.30am and 1.30am, respectively from July 2008 [1]. Licensees were also required to adopt management plans, were subject to compliance audits, had to have a dedicated *Responsible Service of Alcohol* officer from 11pm until closing, could not serve shots after 10pm, had to cease selling alcohol 30 min before closing, could not permit drink stockpiling, had to adopt shared radio procedures and all staff had to be notified of the conditions.

We published a study showing that this intervention reduced assaults in the CBD by 34% [95% confidence interval (CI) 20% to 45%] in the 1.5 years to 30 September 2009. Taking account of the trends in the neighbouring area of Hamilton, which was not subject to the restriction, the intervention effect was estimated to be

Kypros Kypri, PhD, Professor, Patrick McElduff, PhD, Associate Professor, Peter Miller, PhD, Associate Professor. Correspondence to Professor Kypros Kypri, Centre for Clinical Epidemiology & Biostatistics, School of Medicine and Public Health, University of Newcastle, Callaghan, NSW 2308, Australia. Tel: +61 2 4042 0536; Fax: +61 2 4042 0044; E-mail: kypros.kypri@newcastle.edu.au

Received 31 October 2013; accepted for publication 25 January 2014.


Hamilton
CBD
Restriction in closing time
(21 March 2008)
End of previous evaluation
(30 September 2009)
Number of Assaults
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
2001q1
2003q1
2005q1
2007q1
2009q1
2011q1
2013q1
Quarter of Incidents

Other evidence

Hahn, R.A., et al., Effectiveness of policies restricting hours of alcohol sales in preventing excessive alcohol consumption and related harms. *Am J Prev Med*, 2010. **39**(6): p. 590-604

Stockwell, T. and T. Chikritzhs, Do relaxed trading hours for bars and clubs mean more relaxed drinking ?A review of international research on the impacts of changes to permitted hours of drinking. *Crime Prevention and Community Safety*, 2009. **11**(3): p. 153-170

Rossow, I. and T. Norstrom, The impact of small changes in bar closing hours on violence. The Norwegian experience from 18 cities. *Addiction*, 2012. **107**(3): p. 530-7.

Part 3: Unexpected change

Daniel Christie, age 18, died on 11 January 2014 after 12 days in a coma

He had been punched in Kings Cross on New Year's Eve

Pressure on the NSW govt

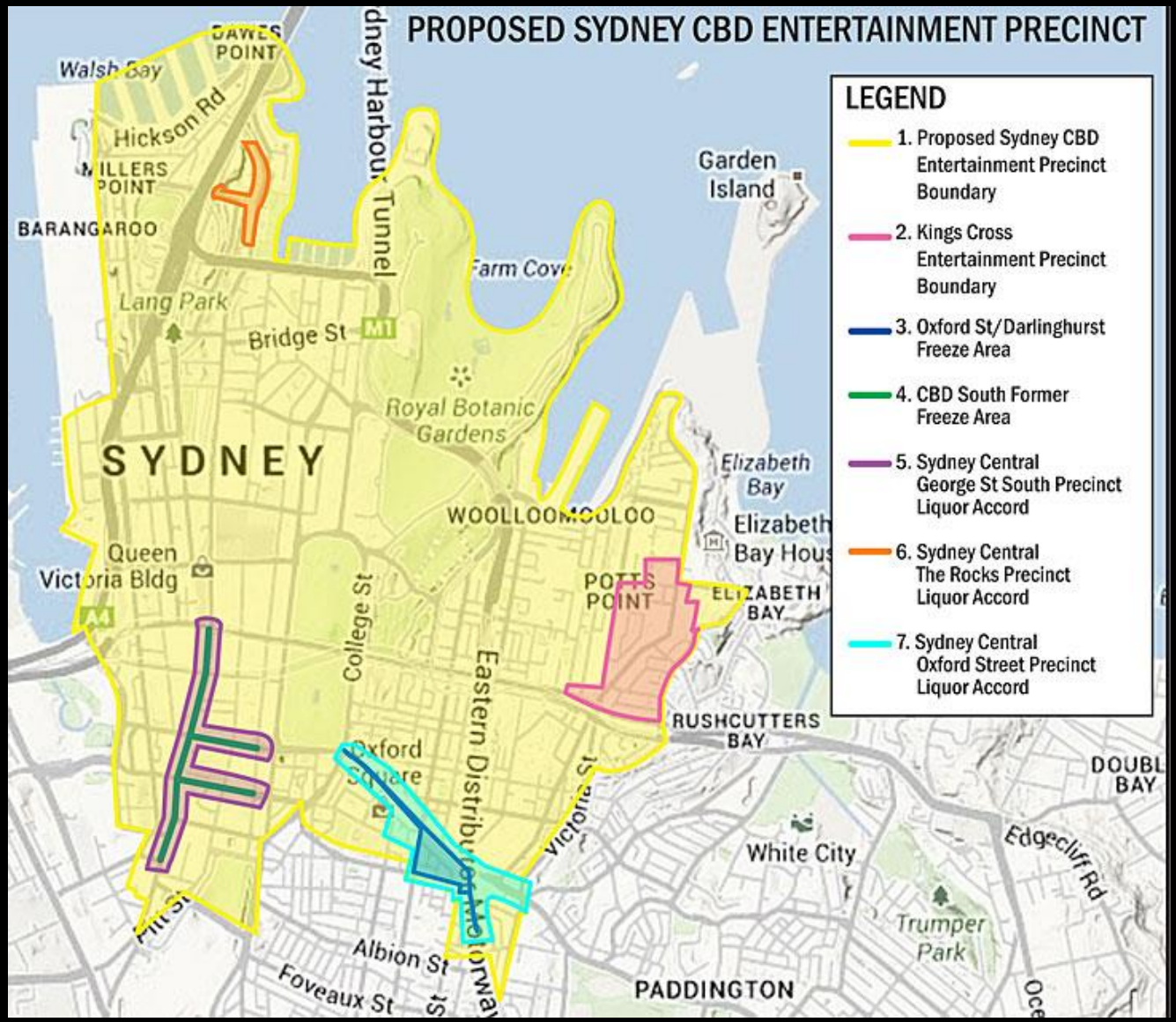
- Death of Thomas Kelly, aged 18 years, 7 July 2012

Both incidents occurred well before midnight

Why the change?

- The timing and nature of the deaths (young, innocent men, a 12 day coma)
- Sustained efforts by high profile, influential, articulate parents
- Public opinion
- Murdoch Press
- AHA internal politics
- The summer break ?
- Policy relevant research and advocacy for its use in policy formation

The "Newcastle Solution" applied to Sydney CBD



Part 4. Myths

"The problem will simply move somewhere else or to earlier in the evening"

~ geographic and temporal displacement

“We need to educate young people about alcohol and how to drink sensibly”

At best a naïve statement, at worst, Liquorspeak for ‘don’t interfere with the availability of alcohol to young people, our heaviest and most important consumers’.

“Young people are safer drinking in pubs than in unsupervised places”

A favourite of the liquor industry. Three quarters of assault fatalities that occur outside the home occur in or around licensed premises

Langley, J., Chalmers, D. and Fanslow, J. (1996) Incidence of death and hospitalization from assault occurring in and around licensed premises: A comparative analysis. *Addiction* **91**, 985-93.

Mindless mantras

"You have to change the drinking culture"

- Said as if the law wasn't a determinant of culture and often to avoid action

"There are no silver/magic bullets"

- "If we can't eliminate the problem we wont do anything" ?!

[Note confusion of prevention with elimination]

"There are no one size fits all approaches"

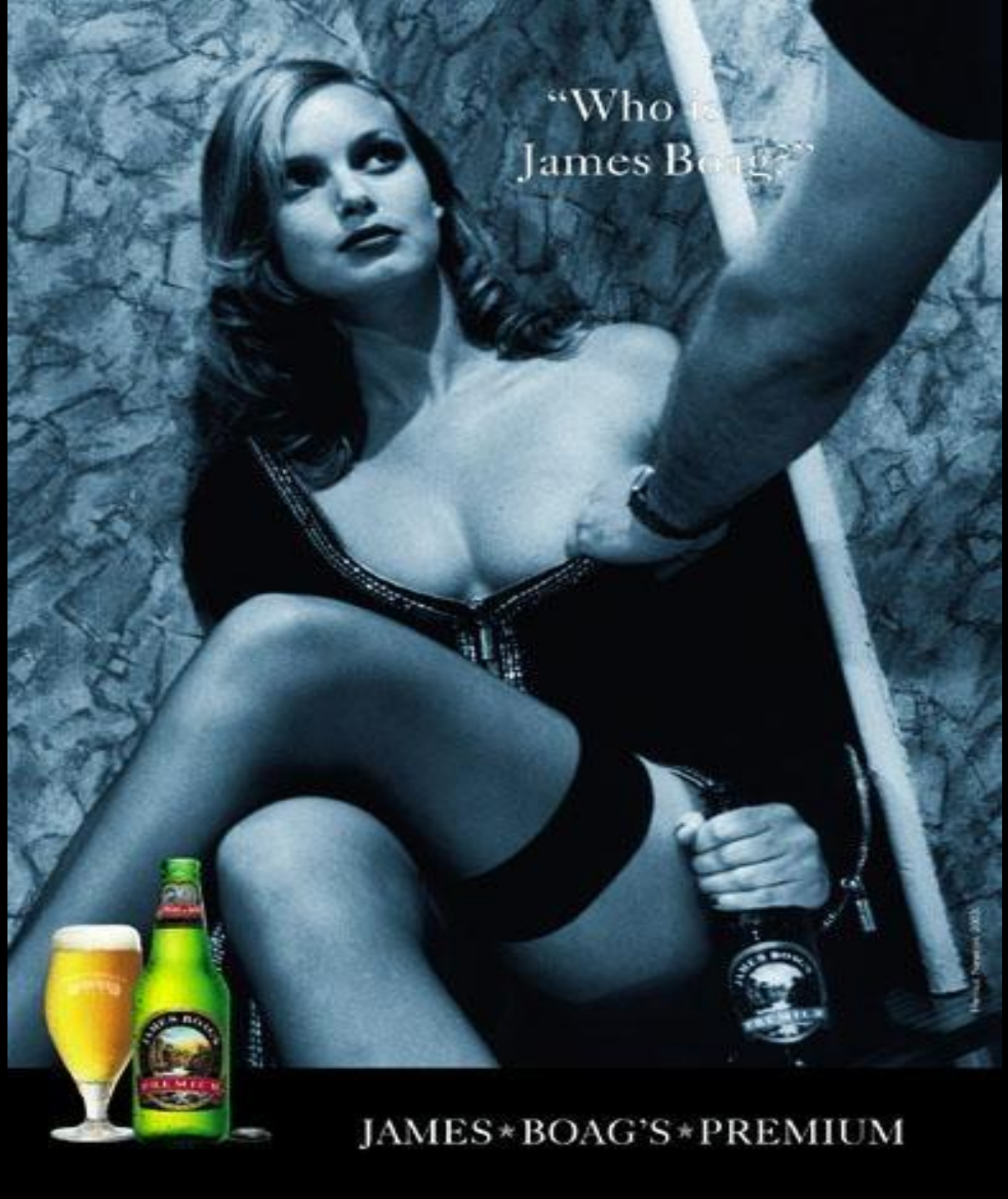
- "We have to limit the spread of an intervention that will reduce profits"

"It might work in X but it won't work here"

- NZ Govt on 0.05. Imagine if we applied that thinking to cancer drugs

Conclusions

- Population approaches are effective in reducing alcohol-related harm
  - ~ Price, density, hours, and advertising
- Individual / high-risk approaches may be supplementary but not core
- Governments policy making is often unpredictable
- We have to be ready with science and reason and keep advocating for principled, humane, evidence-based policy


"Who is
James Boag?"
JAMES★BOAG'S★PREMIUM


"Who is James Boag?"
J.BOAG & SON
JAMES * BOAG'S * PREMIUM

Alcohol Beverages Advertising Code Complaints Panel:

“The panel does not believe the advertisement breaches the ABAC.

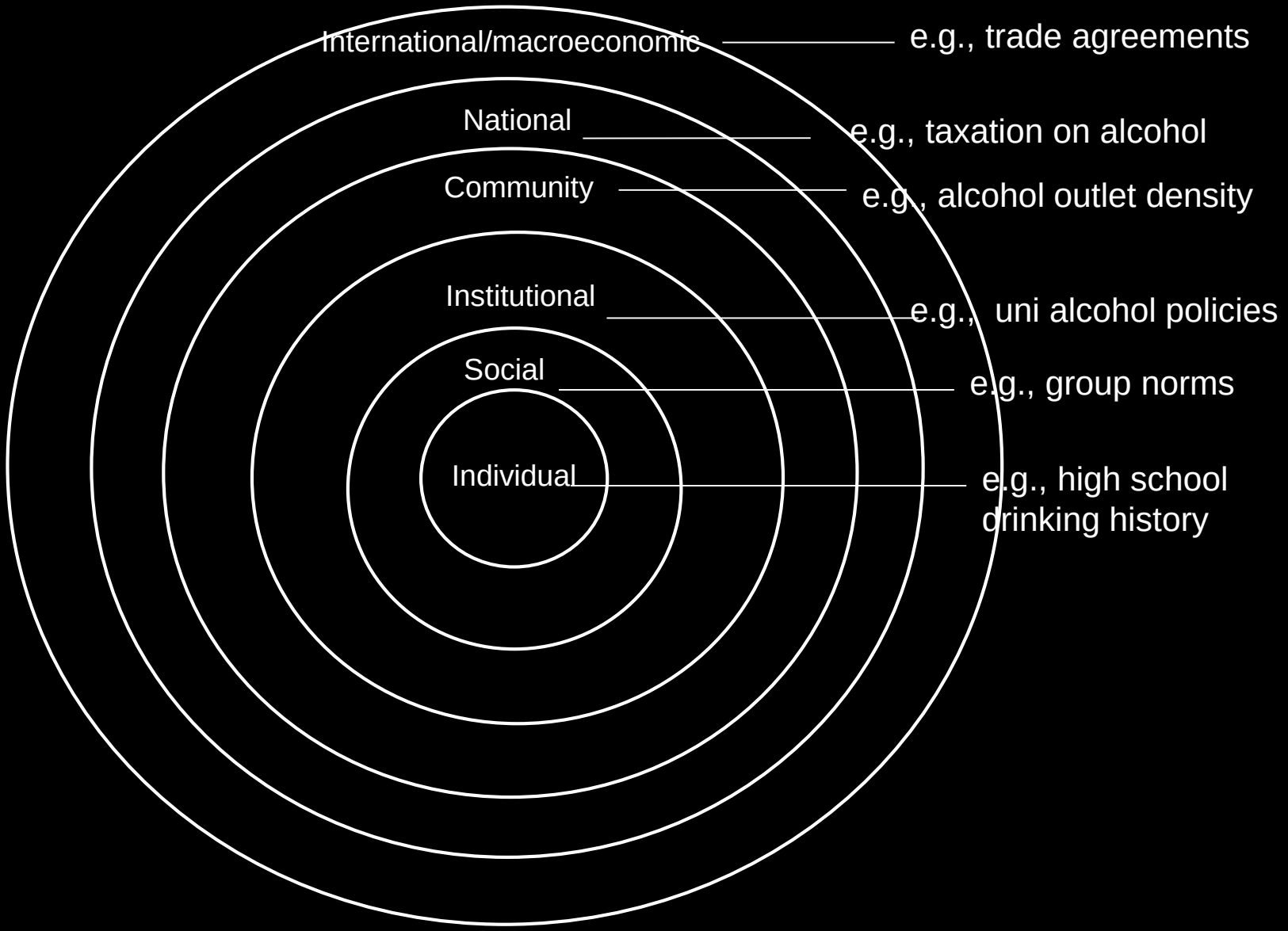
“The advertisement does not display any personal or sexual interaction, nor does it show how the “mood” has been altered by the product.”

9 December 2004

Thank you

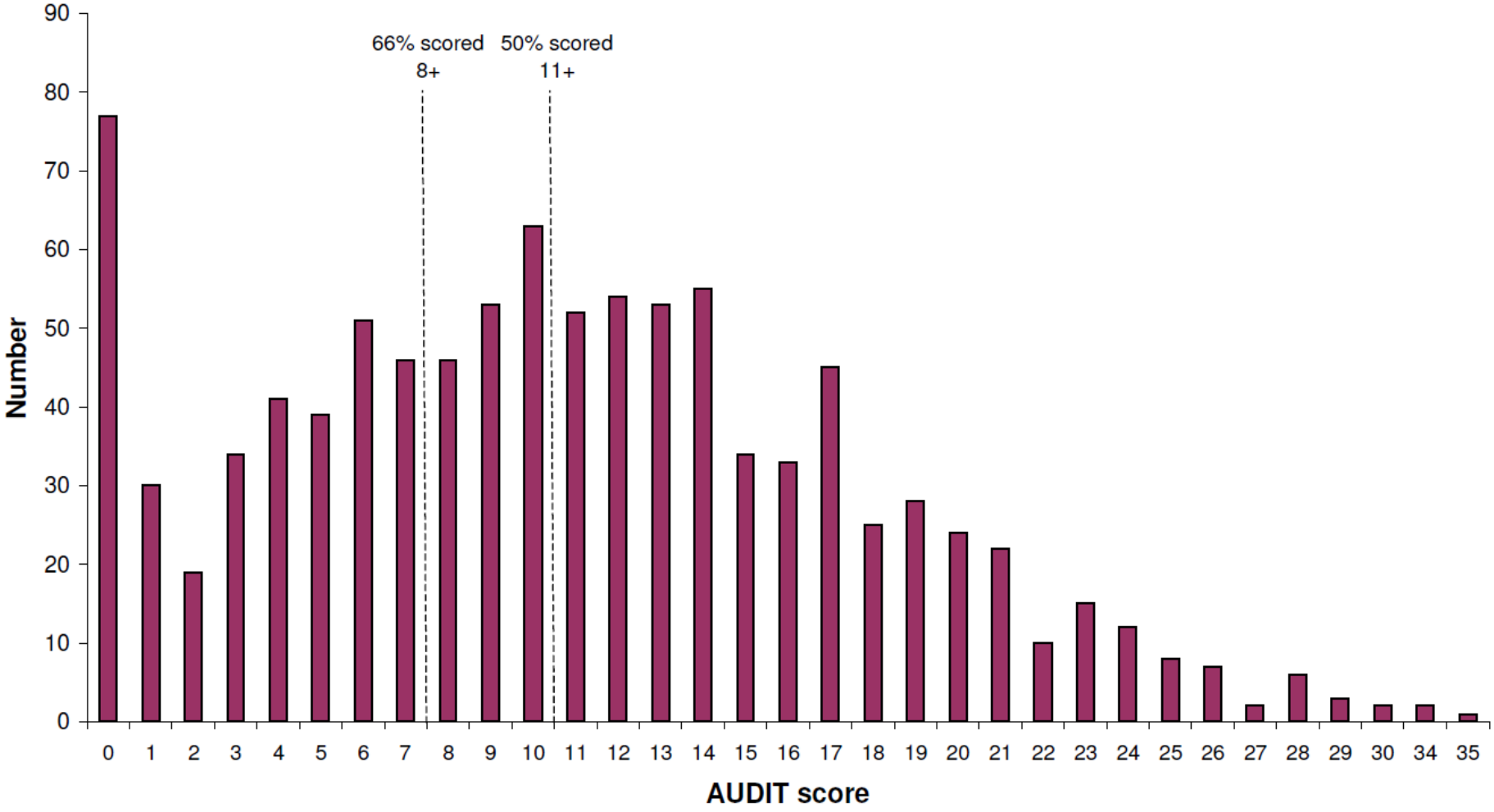
kypros.kypri@newcastle.edu.au

An ecological model of university student alcohol consumption



Alcohol Use Disorders Identification Test (WHO screening instrument)

Figure 1. AUDIT scores of Student Health Service users (N=975)



Computerised screening for hazardous drinking in primary care.
New Zealand Medical Journal, 2005, 118(1124)1-10

Assaults per quarter before and up to 5 years after the restriction in closing time

	Mean number of assaults per quarter			**Post/Pre Incidence rate ratio (95% CI)**	
	Pre Apr 2001 to Mar 2008	Post 1 Apr 2008 to Sep 2009	Post 2 Oct 2009 to Mar 2013	Post 1/Pre (Replication of previous study)	Post 2/Pre (New finding)
CBD (Intervention area)	99	68	71	**0.67** (0.55 to 0.82)	**0.68** (0.55 to 0.85)
Hamilton (Control area)	23	24	22	0.97 (0.73 to 1.28)	0.86 (0.61 to 1.20)

Kypri K, McElduff P, Miller P (2014). Restrictions in pub closing times and lockouts in Newcastle Australia 5 years on. *Drug & Alcohol Review* [available early on-line]