



# Alcohol Harm in the Night Time Economy: Risks and Remedies from Across the Tasman

A/Prof Peter Miller

- 1 School of Psychology, Deakin University
- 2 National Addiction Centre, Institute of Psychiatry, King's College London, UK
- 3 NDRI, Curtin University
- 4 Commissioning Editor, Addiction
- 5 Centre for Addiction and Mental Health, Ontario, Canada







# Why are we here?





# Two studies

- Dealing with Alcohol and the Night Time Economy - (DANTE)
- Patron Offending and Intoxication in Night-Time Entertainment Districts - (POINTED)

• Both studies were primarily funded by the National Drug Law Enforcement Research Fund (NDLERF) , which is funded by the Australian Government Department of Health and Ageing.





# DANTE Research Design

- Compare Geelong and Newcastle
  - 18 months of data collection
  - 10 +yr retrospective and 2yr prospective police, ED, ambulance data
  - 4000 patron interviews (90% response rate)
  - Community attitude surveys (CATI; N=700)
  - Venue Observations (N=129)
  - 123 Key informant interviews
    - 97initial, 26 follow up





# Geelong interventions

Intervention (voluntary)	Police	Date
Liquor Accord in various forms		1991
Safe City CCTV network		2004
Dry zones		2006
Safe Taxi Rank		Jan 2005
Nightlife 1 (increased policing, police working with licensees)		Jan 2007
Geelong night watch radio program		April 2007
ID scanners		Dec 2007
Nightlife 2 (Linking of scanners, NWRP, CCTV – more activity)		Jan 2009
Nightrider bus		Nov 2009
Nightlife 3 (Renewed activity – change in focus to fines)		early 2010
Increased Fines and focus – State government		Aug 2010

Safer streets taskforce / Operation Razon



# Newcastle intervention

## Trading restrictions

- **Reduced trading hours:** all premises are prohibited from trading later than **3.30am**
- **Lock-out:** patrons must be prohibited from entering after **1.30am**

## Alcoholic drink restrictions (after 10pm)

- No shots
- No mixed drinks with more than 30mLs of alcohol
- No RTD (ready to drink) drinks with an alcohol by volume greater than 5% alcohol
- Not more than 4 drinks may be served to any patron at the one time

## Responsible service of alcohol actions

- Free water stations on all bar service areas
- Responsible Service of Alcohol Marshall from 11pm until closure (staff member with the sole responsibility of supervising RSA practices and consumption).
- No stockpiling drinks/more than 2 unconsumed drink
- Ceasing the sale and supply of alcohol at least 30 minutes prior to closing time.



# POINTED

- 6961 interviews in 5 cities:
  - Perth, Melbourne, Sydney, Geelong, Wollongong
    - systematic random sample (every 3rd person)
    - 5-10 minute interviews
    - All people breathalysed
    - 503 randomly selected also drug tested



- 898 venue observations
- 68 venues
  - Teams of 2-3
  - Hourly observations
  - Incident observations
  - 1 venue per team per night





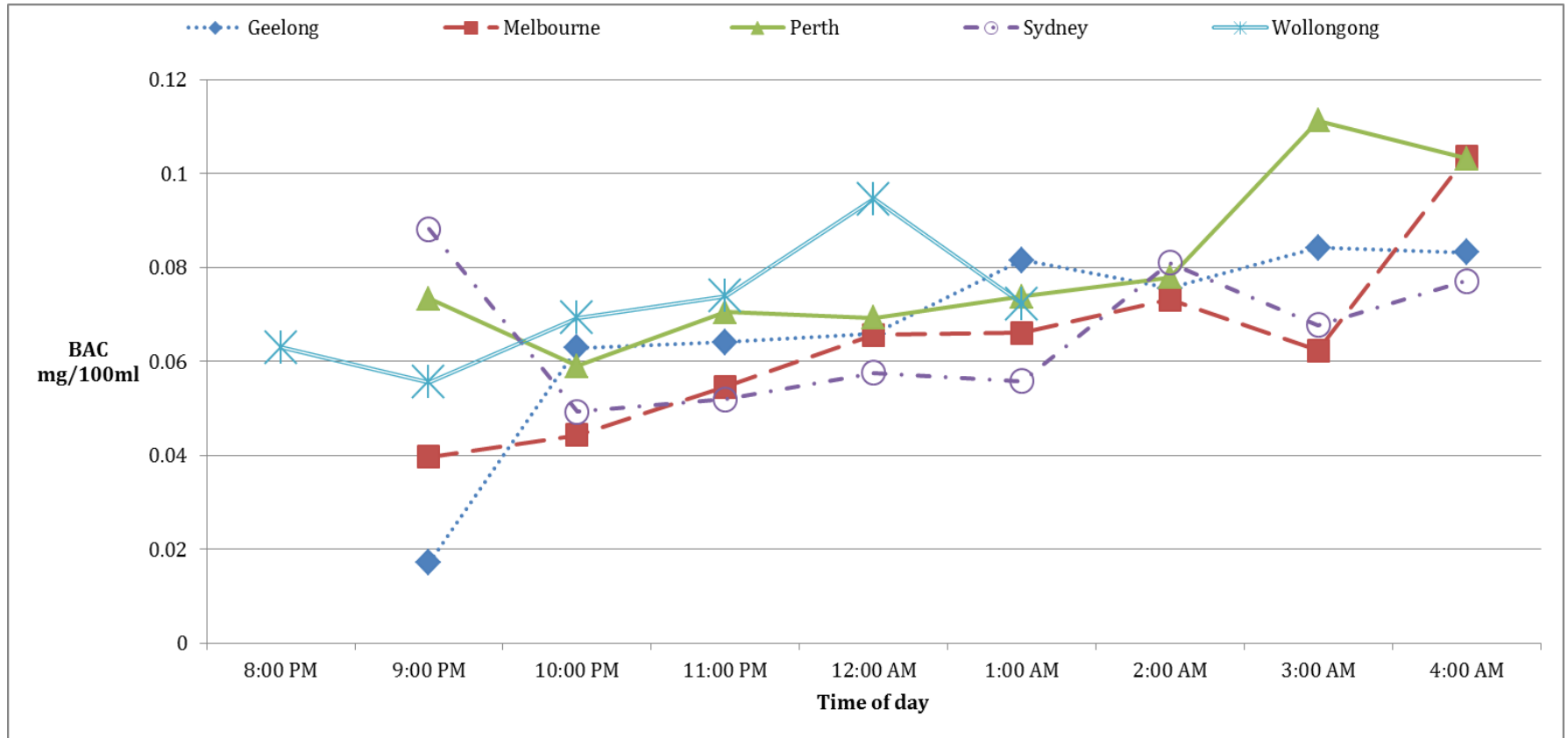
# Key findings

- Patterns across Australia
- Community attitudes
- Risk factors
- Intervention effectiveness (what works?)



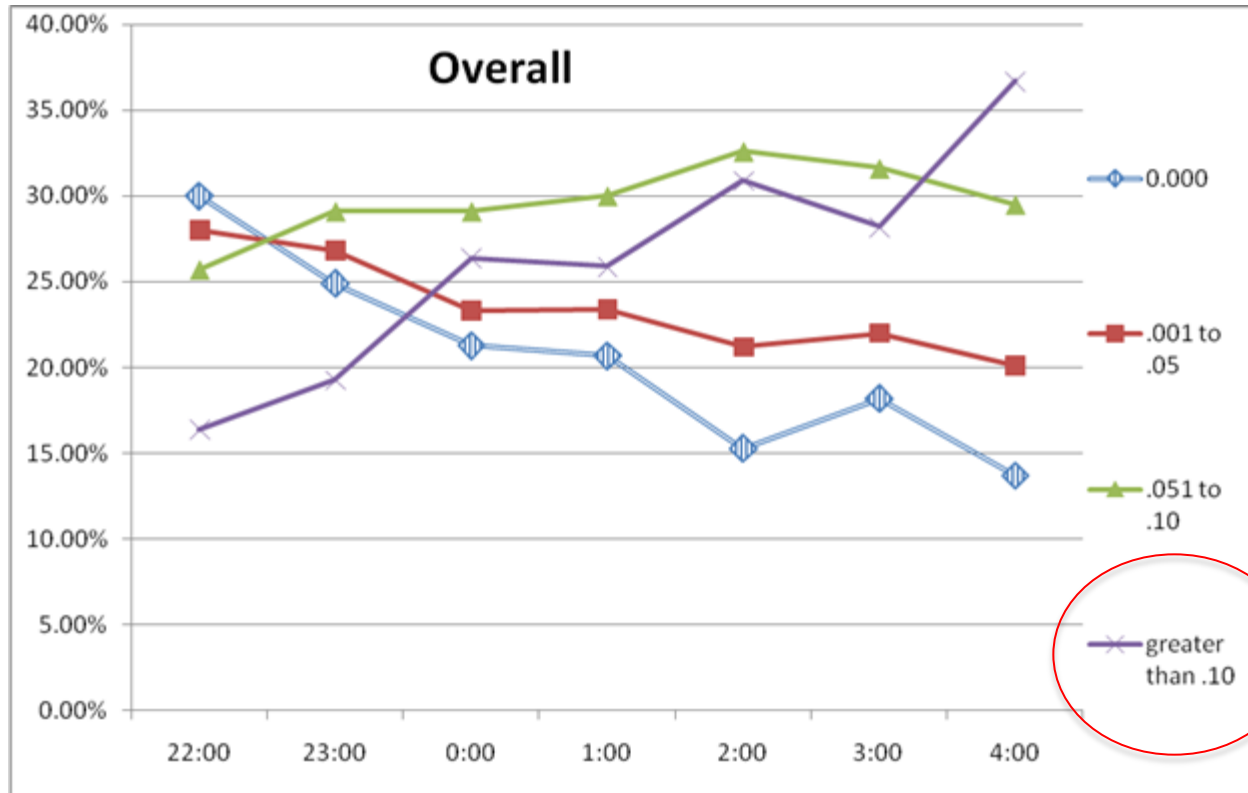


# Patterns across Australia





# BAC levels for all sites per hour





## Harms

- 15% involvement in aggression
- 4% caused property damage
- 14% injury
- 14% drink driving





# Harms

**Table 27** Self-reported involvement in aggression in the last three months, by sex, age and city/interview site

Variable	Aggression type			
	ANY n (%)	Verbal n (%)	Physical n (%)	Sexual n (%)
Sex				
Male (n=4,112)	769 (19)	405 (10)	531 (13)	66 (2)
Female (n=2,566)	375 (14)	218 (9)	194 (8)	56 (2)
City/interview site				
Geelong (n=1,255)	283 (22)	179 (14)	204 (16)	37 (3)
Melbourne (n=1,905)	272 (14)	149 (8)	146 (8)	25 (1)
Perth (n=1,214)	193 (16)	65 (5)	111 (9)	17 (1)
Sydney (n=1,536)	302 (19)	165 (11)	203 (13)	33 (1.2)
Wollongong (n=729)	80 (11)	56 (7.7)	52 (7.1)	9 (1)



# DANTE Summary table – Patron Interviews

Item	Geelong	Newcastle	Total	
Standard drinks consumed pre 'going out'				
- 0	27.9%	37.1%	32.8%	<div style="border: 1px solid red; padding: 5px; display: inline-block;">30%</div>
- 1-5	38.7%	37.8%	38.2%	
- 6-10	24.2%	19.1%	21.5%	
- 11+	9.1%	5.9%	7.4%	
Why do you Pre-drink				
- Price	34.8%	35.3%	35.1%	
Involved in fight	15.7	15.3	15.5	
How often have you seen police tonight?				
- never	58.0%	53.1%	55.4%	$\chi^2=9.372,$ $p=.002$
- once	23.2%	26.1%	24.7%	
- twice	8.5%	9.9%	9.2%	
- a few times	6.0%	8.0%	7.1%	



# POINTED Summary table – Patron Interviews

Self-reported behaviours	TOTAL	Male	Female	Geelong	Melbourne	Perth	Sydney	Wollongong
How intoxicated do you feel tonight (0–10)?*	n=5,354 4 (0–10)	n=3,297 4 (0–10)	n=2,035 4 (0–10)	n=1,065 5 (0–10)	n=1,294 4 (0–10)	n=1,074 4 (0–10)	n=1,188 4 (0–10)	n=671 4 (0–10)
Median rating (range)								
BAC reading median (range)	n=6,557 0.054 (0–0.35)	n=4,032 0.059 (0–0.34)	n=2,489 0.046 (0.00–0.35)	n=1,235 0.067 (0–0.23)	n=1,890 0.048 (0–0.33)	n=1,185 0.066 (0–0.29)	n=1,683 0.033 (0–0.35)	n=699 0.066 (0–0.28)



# Community Attitudes





# Computer Assisted Telephone Interviews (CATI)

Item	Total % (693)	% Reside in each city			% Patron of premises in the last year		
		Geelong (n=318) (95% CI)	Newcastle (n=376) (95% CI)	P <.01	Patron (n=247) (95% CI)	Non-patron (N=446) (95% CI)	P <.01
Feel very unsafe/unsafe walking alone in the precinct area after dark:	21.5	21.8 [16.3-28.5]	21.3 [16-27.6]	-	36.6 [28.1-46.1]	13.3 [9.8-17.7]	<0.001
Increasing penalties for premises and staff who neglect to serve alcohol responsibly	87.2	88.5 [82.9-92.3]	86.2 [80.4-90.4]	NS	87.2 [80-92.1]	87.2 [82.4-90.8]	NS
Police asking intoxicated offenders location of their last drink, and warning premises	77.3	79.8 [73.3-85]	75.3 [68.6-80.9]	NS	70.8 [61.8-78.4]	80.9 [75.7-85.2]	0.008



Strategy	Total % (693)	% Reside in each city			% Patron of premises in the last year		
		Geelong (n=318) 95% CI	Newcastle (n=376) 95% CI	P <.01	Patron (n=247) 95% CI	Non-patron (n=446) 95% CI	P <.01
<b>1. Restrict alcohol access</b>							
Closing all late-night licensed premises earlier	71.1	71.5 [64.7-77.6]	70.7 [64.3-76.7]	NS	55.1 [46.6-63.7]	79.8 [74.5-84.2]	<0.001
If supported, appropriate closing time:							
• Before 12am	21	11.7 [8.1-16.8]	28.5 [22.9-35.7]	<0.001	8.5 [5.3-14.4]	27.7 [22.3-34.1]	<0.001
• 12.01am to 1am	20.7	14 [9.9-19.6]	26.1 [20.3-33.2]	<0.001	15.3 [10.1-22.8]	23.6 [18.7-29.5]	NS
• 1.01am to 2am	25.1	29.3 [22.9-36.7]	21.8 [16.7-28.1]	NS	24.6 [17.8-33.3]	25.4 [20.4-31.3]	NS
• 2.01am to 3am	23	31.9 [25-39.5]	15.9 [11.5-21.5]	<0.001	32.6 [24.5-41.9]	17.9 [13.7-23]	<0.001
• After 3am	8.1	11.8 [7.6-17.5]	5.1 [2.8-8.7]	<0.001	16.7 [10.7-24.8]	3.4 [1.9-6.1]	<0.001
Reducing trading hours of premises located in high-risk areas	79.2	78.2 [71.7-83.7]	80.1 [74-85.1]	NS	65 [55.9-73.3]	87 [82.5-90.5]	<0.001
Stricter restrictions on alcohol discounts and promotions	71.9	72.1 [65.1-78.3]	71.8 [65.1-77.8]	NS	65 [56-73.2]	75.7 [70.1-80.6]	NS



# Risk factors

- Intoxication
- Pre-drinking
- Energy drinks
- Illicit drugs



# Intox

- Approx 50% of participants showed some sign of being intoxicated
- At least one interviewer-recorded intox sign ( $=.08$  BAC) more likely to:
  - be male ( $\chi^2=41.99, p<0.001$ ),
  - record a higher BAC reading ( $z=-30.98, p<0.001$ ),
  - report 'going for' more hours ( $z=-12.23, p<0.001$ ),
  - Pre-drank more ( $z=-20.46, p<0.001$ ),
  - consuming energy drinks ( $\chi^2=47.57, p<0.001$ ),
  - mix energy drinks with alcohol ( $\chi^2=38.79, p<0.001$ ), and
  - consume drugs pre-interview ( $\chi^2=170.83, p<0.001$ );



**Table 13** BAC reading, by number of interviewer-recorded signs of intoxication (only: slurred speech, spilling drinks, staggering/falling over and glassy/red eyes)

Number of interviewer-recorded signs of intoxication	BAC reading Median (range)
0	0.035 (0–0.35)
1	0.067 (0–0.34)
2	0.092 (0–0.28)
3	0.122 (0–0.34)
4	0.155 (0.08–0.22)



# POINTED pre-drinking

**Table 14** Pre-drinking behaviours by sex, age and city/interview location (entire sample)

Variable	Pre-drank (%)	Median no. drinks (range)*
Sex†		
Male (n=4,151)	2,762 (67)	6 (0.5–100)
Female (n=2,605)	1,617 (62)	4 (1–50)
Age†		
18–19 (n=1,606)	1,241 (77)	6 (0.5–100)
20–24 (n=2,833)	1,906 (67)	6 (0.5–50)
25–29 (n=1,503)	770 (57)	5 (0.5–60)
30–39 (n=548)	363 (52)	5 (1–37)
40+ (n=230)	101 (44)	3 (1–20)
City/interview location†		
Geelong (n=1,260)	1,019 (81)	6 (1–100)
Melbourne (n=1,927)	1,085 (56)	4 (0.5–25)
Perth (n=1,242)	993 (80)	6 (0.5–40)
Sydney (n=1,558)	805 (52)	5 (1–32)
Wollongong (n=730)	440 (60)	4 (0.5–24)
TOTAL (N=6,798)	4,396 (65)	5 (0.5–100)



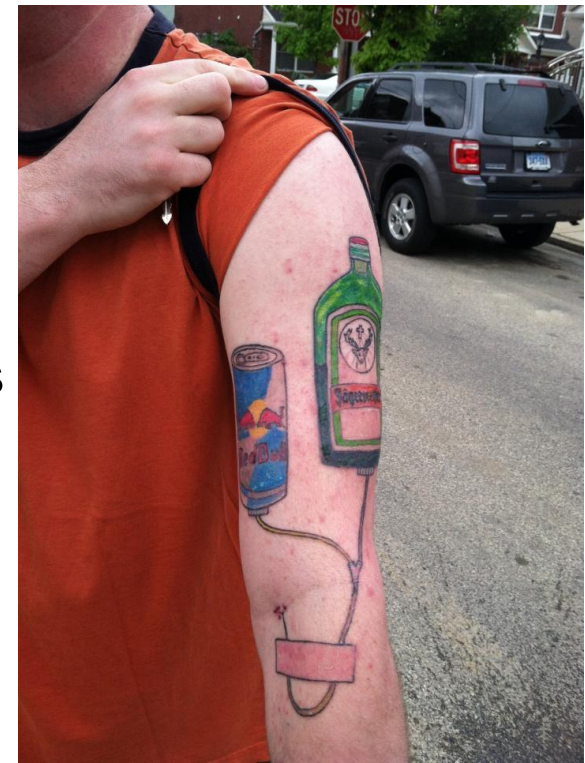
# DANTE Pre-drinking

- People who pre-drank were **significantly more likely to be in a fight** ( $\chi^2=25.47$ ,  $p<.000$ ).
  - 5+ drinks = 2 times more likely
  - 11-25 drinks = 2.8-3.8 times more likely
  - 25+ drinks = 4.5 times more likely
- **side drinking- ‘loading’** also the norm.



# Energy drinks

- 23% of participants had consumed energy drinks
- 14.6 % combined energy drinks with alcohol.
- Males and females similar.



- Participants who consumed **energy drinks with alcohol:**



- consumed significantly **more energy drinks**
- consumed significantly **more alcohol**
- significantly more likely to report **illicit drug use**



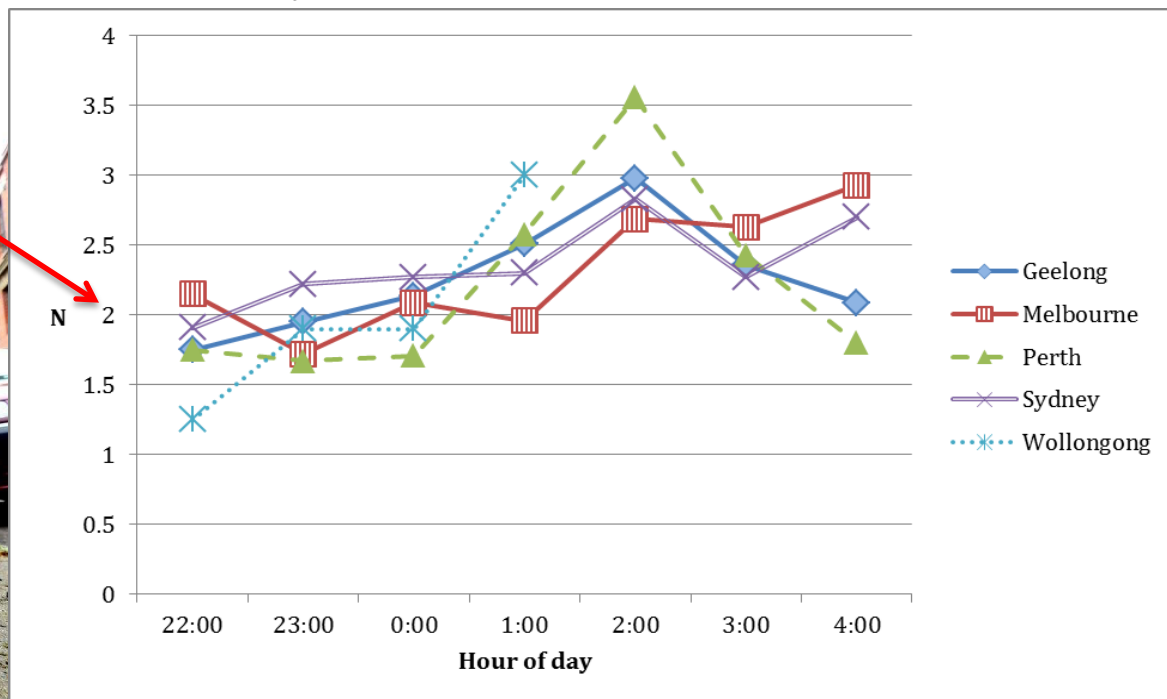
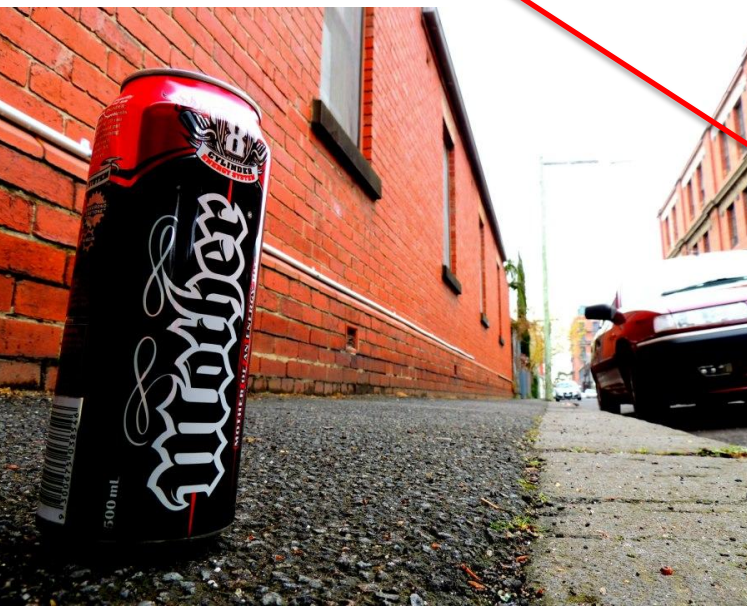


# Energy drinks (cont)

participants who reported consuming **energy drinks** with/without alcohol prior to interview were **significantly more likely to** :

- record a higher BAC reading
- report higher levels of intoxication (4.56 versus 3.95)
- report any form of aggression
- report been refused entry to a venue in the past three months
- report driven while drunk
- report committed property crime

Daily recommended limit



# Illicit drugs



- 16% of the overall sample reported using substances other than alcohol during their current night out (prior to interview)
- A small number of participants (n=44, <1%) refused to answer
  - 20% of people tested positive for illicit drugs.
  - 20% declined.
  - Estimated 20-40% of people taking drugs

Drug	TOTAL	
	n	%
Ecstasy	231	3
Cannabis	196	3
Methamphetamine	179	3
Cocaine	97	1
Pharmaceutical stimulants	30	<1
LSD	15	<1
Opiates	10	<1
Benzodiazepines	8	<1
GHB	8	<1
Mephedrone	6	<1
Ketamine	5	<1
Other	32	1
ANY	1,072	16





# Illicit drugs

- People who used illicit drugs were significantly more likely to:
  - Physical aggression
  - Verbal aggression
  - Sexual aggression
  - Property Crime
  - Drink-driving
  - Any alcohol-related injury





# What works?



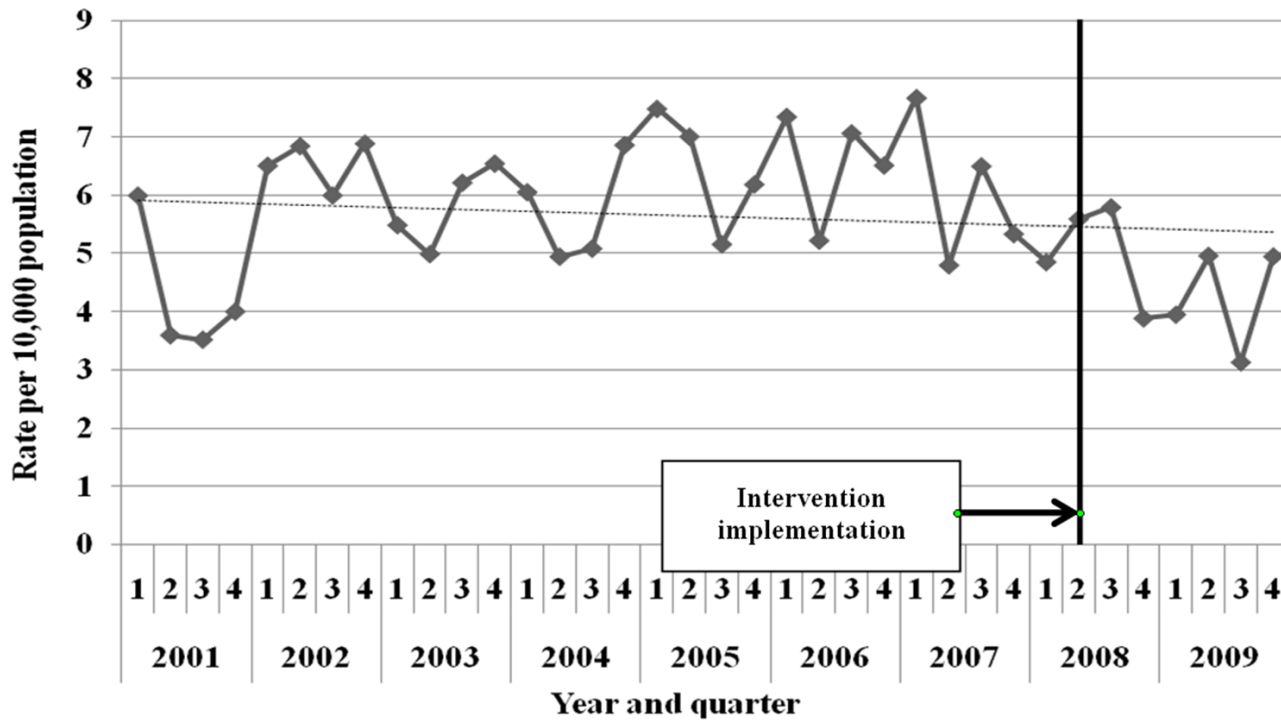
# Closing venues earlier – previous research

- Newcastle, 37% reduction in assaults (Kypri et al)
- Perth/Fremantle studies (Chikritzhs et al)
  - For every hour a venue is open after midnight, there was a 17% increase in harm (drink driving, assaults, ED attendance)
- Norway (Rossow and Norstrom, 2012)
  - In Norway, each additional 1-hour extension to the opening times of premises selling alcohol is associated with a 16% increase in violent



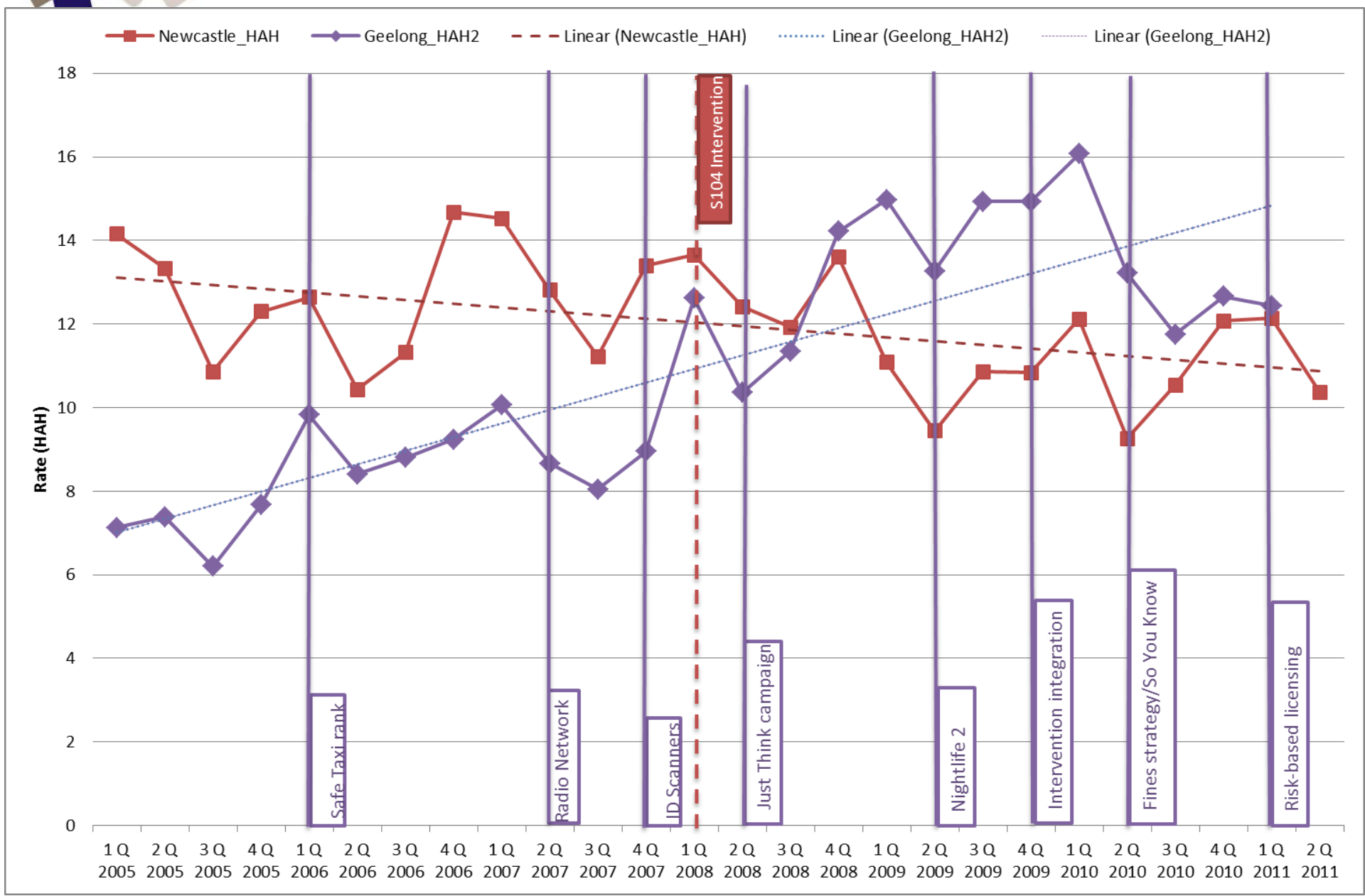
# Closing venues earlier

- Previous research confirmed



- And extended

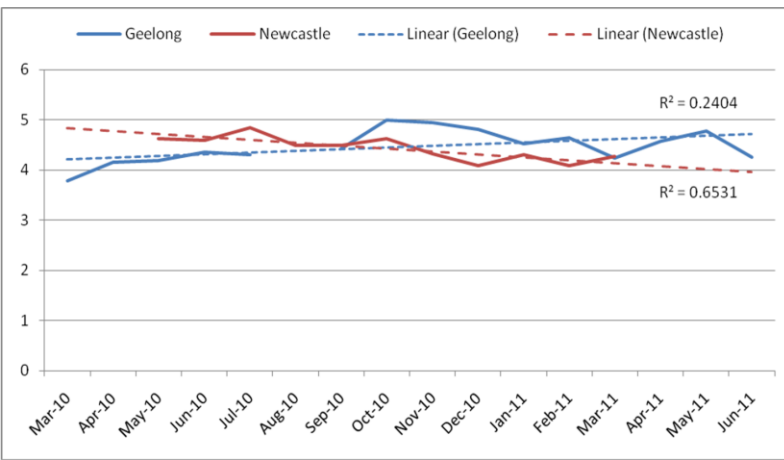
# Injury during high alcohol hours by year, Jul 99-Aug 09





# Closing venues earlier

- Key informants
  - Licensees don't mind early closing as long as it applies to all and is mandatory
  - Can't rely on market forces
- Patron interviews showed changes in culture
  - declining levels of pre-drinking and people going out earlier



Self-rated intoxication (mean) over time

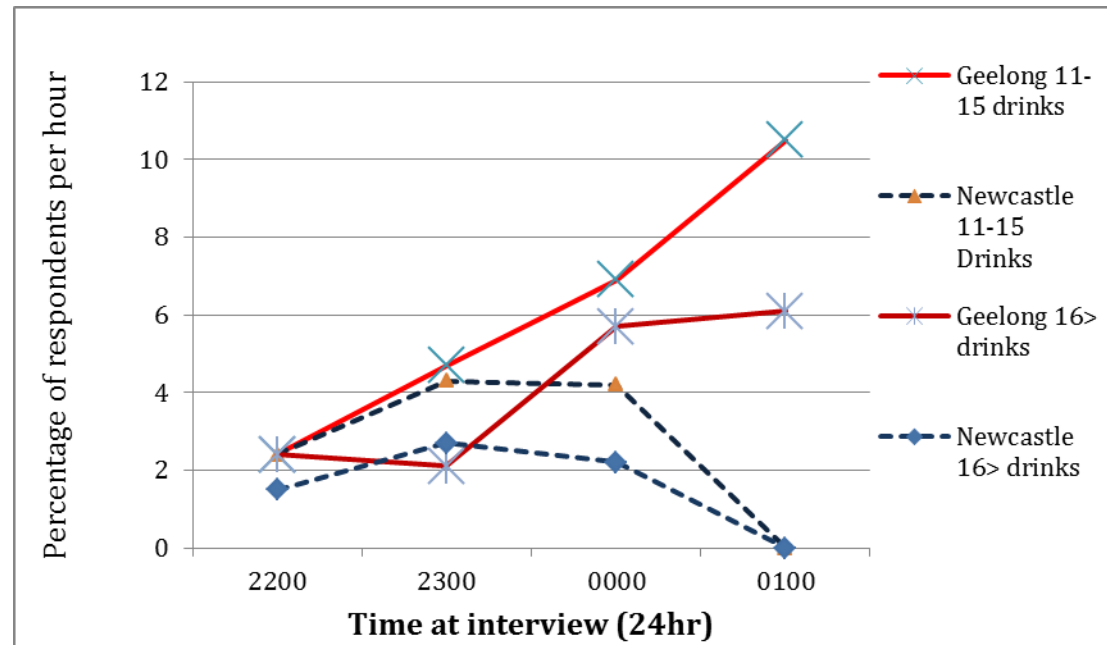




# The impact of trading hours on pre-drinking

- Participants in Geelong reported increasing rates of heavy pre-drinking (11 drinks or more) as the night wore on (aka they enter the entertainment area later),

• whereas heavy pre-drinking was declining at midnight and had reached zero by 1am in Newcastle.





# Impact on drinking culture?

- Interviews commenced in Newcastle at 9pm,
- Could not start in Geelong until 11:30pm

Item	Geelong	Newcastle	Total
<b>Money spent tonight (\$):</b>			
• 0–20	44.8%	35.2%	39.6%
• 21–50	27.7%	<b>30.1%</b>	29.0%
• 51–100	16.7%	<b>21.8%</b>	19.4%
• 101–200	7.5%	<b>8.4%</b>	8.0%



# Postscript



## Newcastle venues removed from 'most violent' list

Updated Fri 31 May 2013, 11:00am AEST

The State Government says the latest list of the most violent venues in New South Wales shows that a crack-down on alcohol-fuelled violence in Newcastle is working.

Date: Aug 29, 2013 08:03am AEST

News Geelong

### Geelong assaults soar 27.7 per cent

Erin Pearson | August 29th, 2013

Recommend

Be the first of your friends to recommend this.

**ASSAULTS** have skyrocketed 27.7 per cent in Geelong during the past financial year.

That's an extra 402 assaults in the city, taking the total to 1852 incidents for the 12-month period.

Geelong's overall crime rate leapt 5.9 per cent, almost double the state's 3.4 per cent rise, and while the numbers are disappointing, they reassured residents assaults were a major focus.



# Venue closures

- **Newcastle**
- Reported that 7 venues closed due to implementation of S104 conditions (contested).
  
- **Geelong**
- No trading hours or mandatory conditions in place
- 12 venues since 2009, 1 by court order

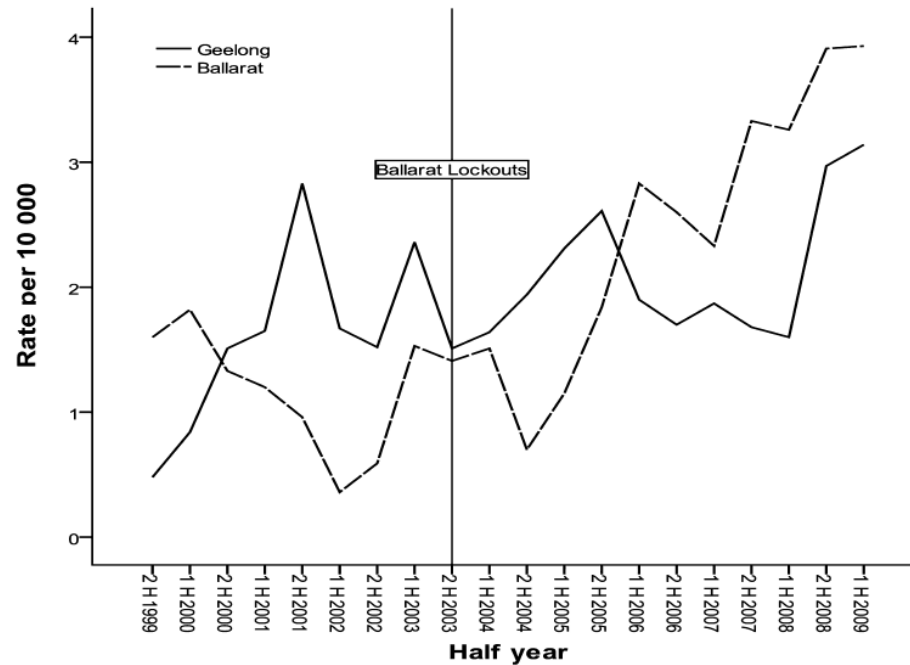


# Lockouts

- Previous literature mixed

## The long-term effect of lockouts on alcohol-related emergency department attendances within Ballarat, Australia

PETER MILLER, KERRI COOMBER, ANDERS SØNDERLUND & STEPHEN MCKENZIE





# Lockouts - Previous literature



LAW & POLICY

UNIVERSITY OF  
DENVER

## Violence in and around Entertainment Districts: A Longitudinal Analysis of the Impact of Late-Night Lockout Legislation

LORRAINE MAZEROLLE, GENTRY WHITE, JANET RANSLEY, and  
PATRICIA FERGUSON

*“lockouts cut the level of violent crime inside licensed premises by half. Despite these impressive results for the control of violence inside licensed premises, we found no evidence that the lockout had any impact on violence on streets and footpaths outside licensed premises that were the site for more than 80 percent of entertainment district violence.”*



# Lockouts

- Difficult to untangle from trading hours effects
- Key informants:
  - Reduces people on streets after lockout period
  - Improved business for large/late trading venues
  - Very harmful for small/earlier closing venues



Can't rely on market forces



# Newcastle/Hamilton follow up

Kypri, Miller et al (in press)

- All of the Newcastle measures EXCEPT shutting pubs earlier
  - Lockouts, drinks restrictions, water stations, etc
- No significant change 5 years later in Assaults, compare to continuing decline in Newcastle



# Drinks restrictions



Again, hard to disentangle results based on indicator data

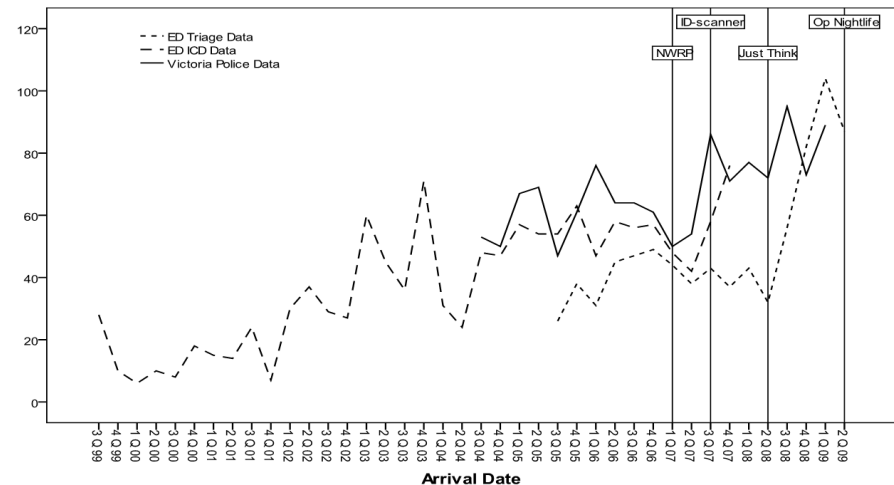
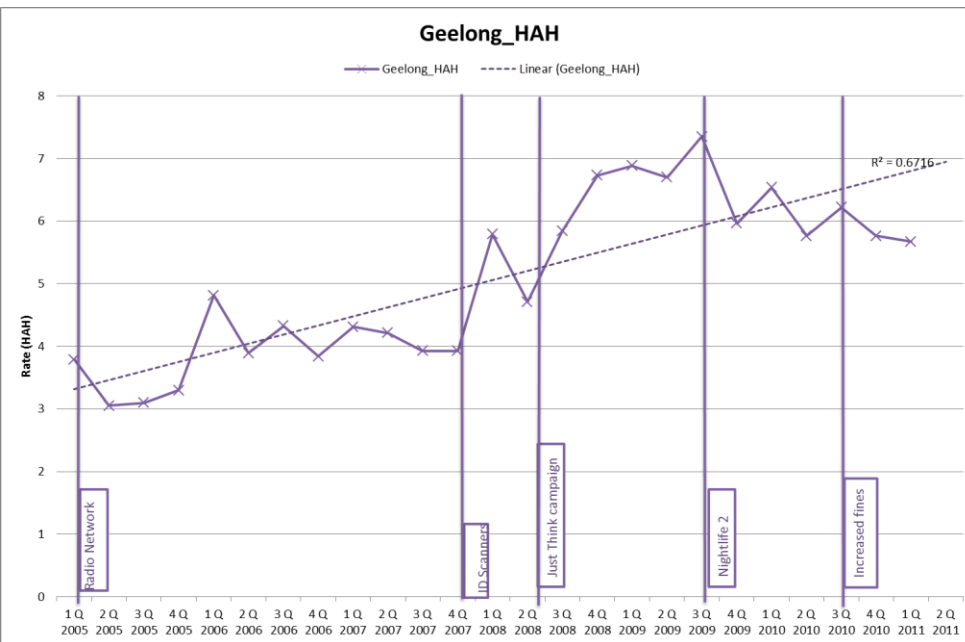
- Key informants:
  - many of the licensees in favour of some drink restriction strategies.
  - not effective as a stand-alone measure
- Patrons:
  - Second highest ranked intervention
  - 6/10 effectiveness





# Geelong voluntary interventions

- CCTV + radio network + ID scanners
- Overall, little or no effect on assaults, ED attendances, ambulance attendances.
- But, some other important findings





# CCTV + radio network + ID scanners

- No obvious preventative effect, BUT
- Increased **detection of crime**
- **Early detection of crime**, allowing for early intervention
- Increased and faster **solution of crime**
  - Often cases that would never be solved
- Venues report significant reductions in incidents inside venues – assist with patron management
  - Also, high perception of safety in patrons



# Education campaigns

- ‘Just Think’ – since June 2008
- Separate from Accord/Community Safety
- Awareness campaign featuring battered ‘heads’ beside footy players
  - no practical strategies
- Geelong Advertiser/ Geelong Footballers
- Some Drinkwise funding (industry body)



Intervention	$\beta$	$t$
1. Night Watch Radio Program	.007	.08
2. ID-scanners	.016	.14
<u>3. Just Think Campaign</u>	<u>.433</u>	<u>4.7*</u>
4. Operation Nightlife	-0.006	-1.10



# VOLUNTARY vs MANDATORY

- DANTE:
- Late-night venues were significantly more likely to adopt practices if they are **mandatory**
- Compliance in Newcastle high
- Few Geelong venues adopted voluntary measures
- Only 52.6% of observers' IDs scanned at venues trading after 1am
- Of the people who were observed as being too drunk to be on premises, **over 80% were able to buy another drink**

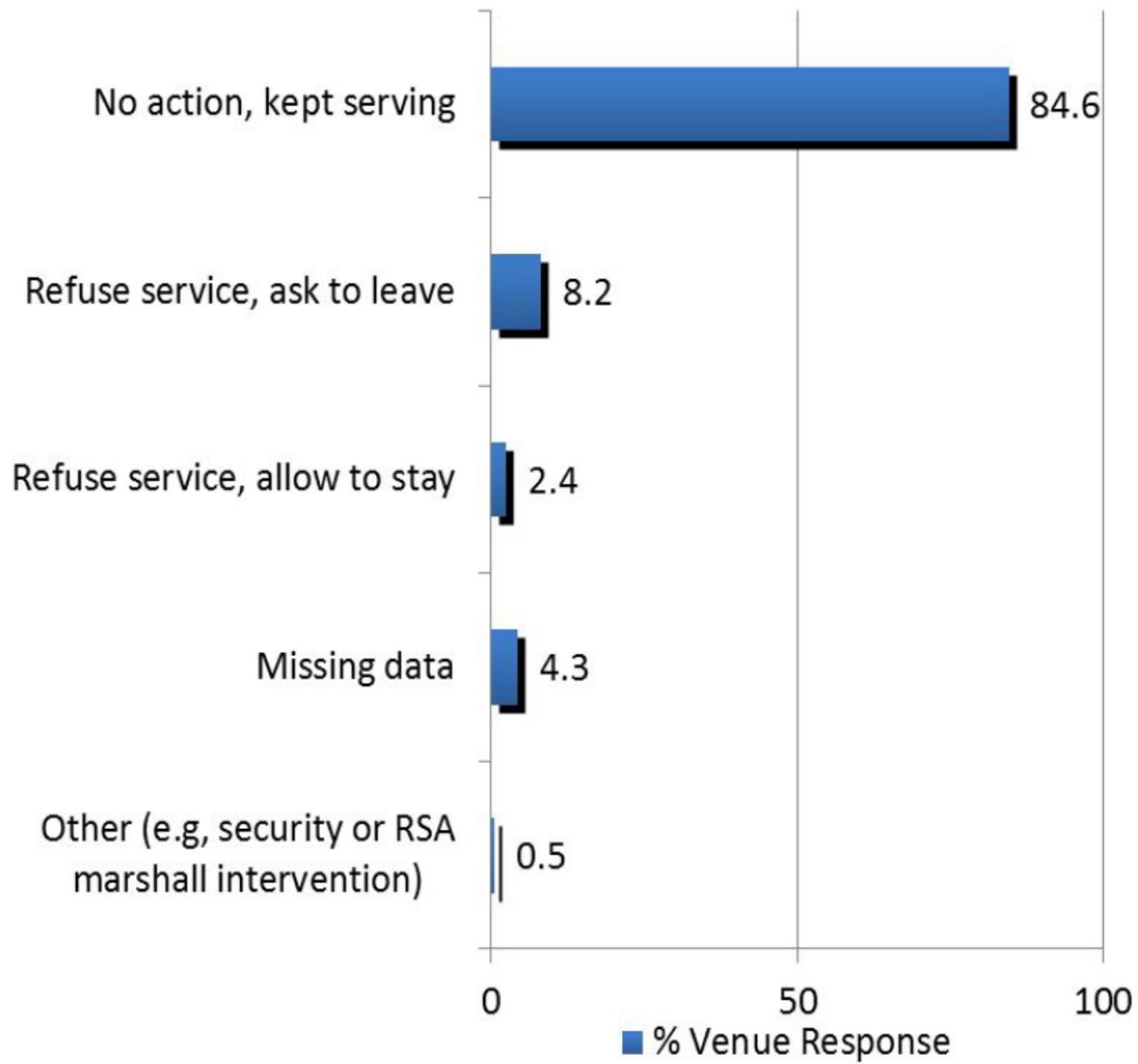




# A word on outlet density

- Evidence is very strong that increased outlet density matters:
  - On-licence for street violence
  - Packaged liquor for domestic violence
- Our findings also showed that cities which had concentrated nightlife districts experienced more harm
  - Greater competition
  - Creating risk environments attractive to trouble

**Figure 30** Distribution of venue responses to intoxicated patron's ordering drinks





# POINTED conclusions

- Pre-drinking is a major – and growing – problem with very few viable approaches
- Illicit drug use predicts much greater harm
- People who use energy drinks are typically higher risk nightlife patrons
- Responsible Service of Alcohol laws are failing demonstrably and need far greater enforcement





# DANTE Conclusions

- Newcastle started and ended the previous ten years with rates of alcohol-related harm **up to 3 times higher**
- Geelong has had 7am closing venues the whole time, but levels of violence increased substantially since 2005; **continues at high levels**
- But Newcastle intervention had **an immediate effect** which has continued to push trends downwards, 5 years later
  - **AT NO COST**
- The Geelong interventions studied had **no positive effect**, and even possibly a negative effect
  - **AT SUBSTANTIAL COST**
- Geelong rates finally show non-significant decline (Fines)
- Ideally, **a mandatory combination of measures** will prevent, detect and solve crime.



# Key Recommendations

1. An integrated strategy with a clearly-defined enforcement pyramid
  - a) Introduce mandatory liquor license conditions
2. Restrict trading hours to reduce alcohol-related harm
3. Increase the price of alcohol through taxation or levies on packaged liquor outlets (preferably based on volume and increasing according to beverage strength).
4. Bans on bulk-buys, two-for-one offers and other promotions based on price
5. Improve data collection and access
  - Collect systematic targeted information on sources of alcohol-related harm & Timely and universal access to relevant data sources
6. 7% government-produced public health advertisement on all alcohol marketing material and product labels



# Collaborators



- DANTE:

- Inspector Bill Mathers
- A/Prof Darren Palmer
- Jennifer Tindall
- Anders Sønderlund
- Daniel Groombridge
- Christophe Lecathelinais
- Karen Gillham
- Emma McFarlane
- Florentine de Groot
- Nicolas Droste
- Amy Sawyer
- Dr Ian Warren
- Prof John Wiggers

- POINTED:

- Dr Amy Pennay
- Inspector Carl Peers
- Inspector Bill Mathers
- Nicolas Droste
- Dr Rebecca Jenkinson
- Prof Tanya Chikritzhs
- Prof Stephen Tomsen
- Phillip Wadds
- Prof Sandra C. Jones
- A/Prof Darren Palmer
- Lance Barrie
- Dr Tina Lam
- William Gilmore
- Prof Dan I. Lubman

