Diagnosis-based emergency department alcohol harm surveillance: what can it tell us about acute alcohol harms?

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Acknowledgments: Centre for Epidemiology and Evidence

Disclosure Statement: No financial support was received to conduct this research.

October 2016

NSW GOVERNMENT Health

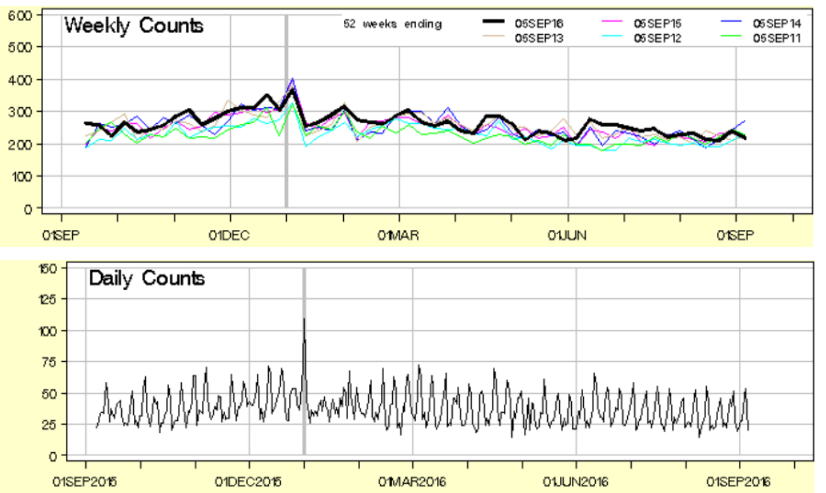
Background: Syndromic surveillance in NSW

- Public Health Rapid Emergency, Disease and Syndromic Surveillance (PHREDSS) system
- Receives data from:
  - **Emergency Departments**
  - Ambulance Triple Zero (000) dispatch calls
- Rapid Emergency Department Data for Surveillance
  - real-time data feeds from participating EDs (85% NSW ED activity)
  - ≈ 6,400 visits/day and ≈ 45,000 visits/week
- Groups provisional ED diagnosis codes into 9 broad syndromes

Syndromic surveillance: Alcohol

- Alcohol syndrome = intoxication, mental and behavioural disorders, gastritis, poisoning, dependence, withdrawal, rehab & counselling, and evidence of alcohol in the blood.
- Used for:
  - Public health surveillance
  - To describe alcohol harms occurring during major events e.g. NYE
  - Monitoring and evaluation of policy & prevention strategies e.g. alcopops tax (Gale et al 2015)
- Limitations of administrative ED data
  - NOT a good indicator of total burden (Indig et al 2009)

Alcohol syndrome output



Aims

1. Evaluate the precision (positive predictive value; PPV) of the alcohol syndrome to identify **acute alcohol harm** presentations

2. To identify predictors of acute alcohol harm ED presentations that may guide or improve the application and interpretation of the syndrome

Method

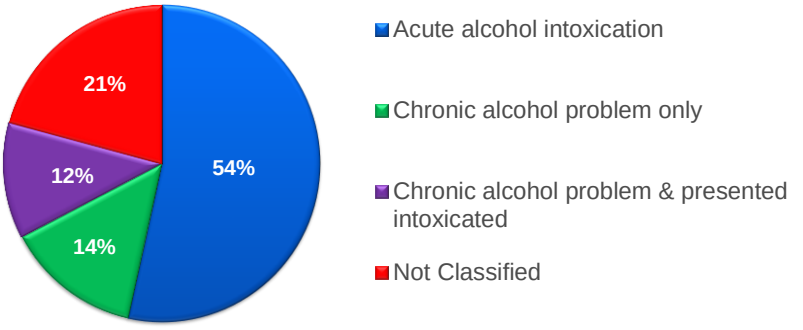
- Random sample (n=1,000) of coded alcohol problem ED presentations from 2014
- Manual review of triage notes to:

1. Confirm alcohol involvement
2. Classify each record into alcohol harm type (dependent variable)
   - Acute alcohol intoxication = outcome of interest
   - Chronic alcohol problem
   - Acute alcohol intoxication + chronic alcohol problem
   - Undetermined

   } comparison group

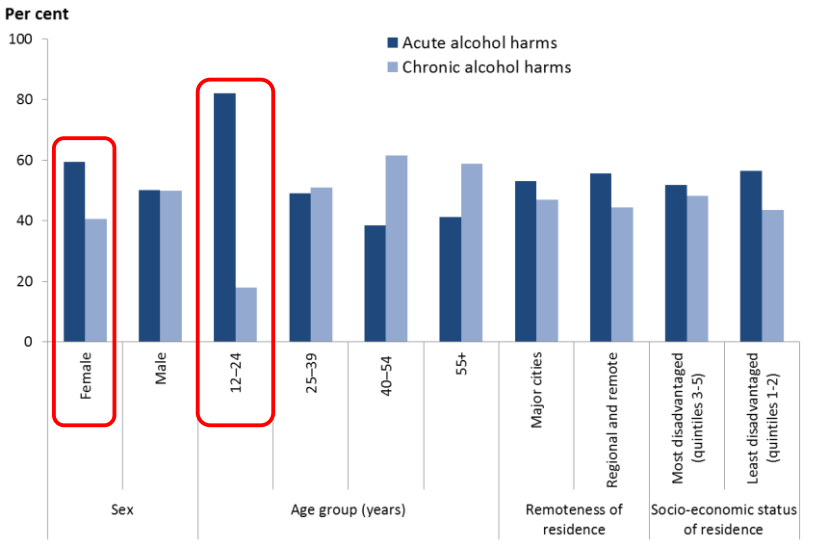
- Flagged mention of co-morbid problems – mental health problems, suicide or self-harm, injury, poly-substance use
- Statistical analysis:
  - Descriptive stats, univariate and multivariate logistic regression

Results: positive predictive value

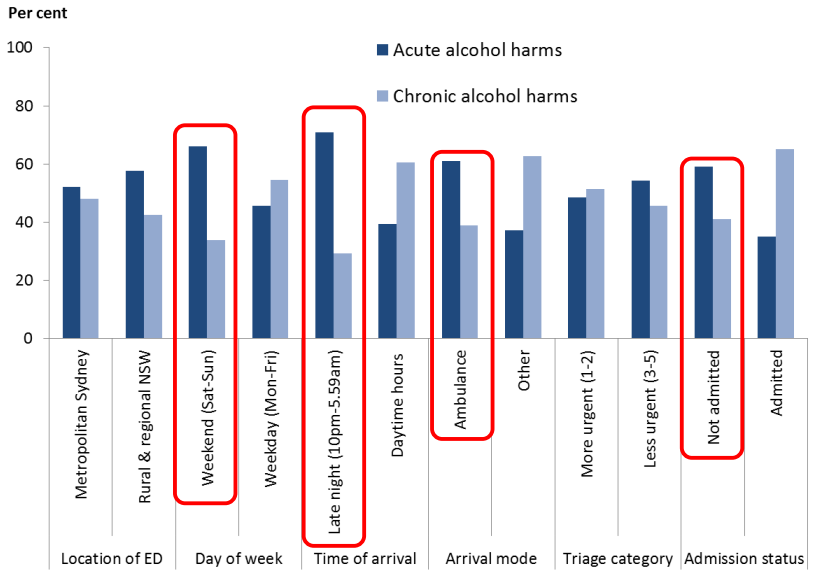


* 21% of records could not be classified because they either did not mention the term alcohol in the triage notes or the patient denied consumption of alcohol.

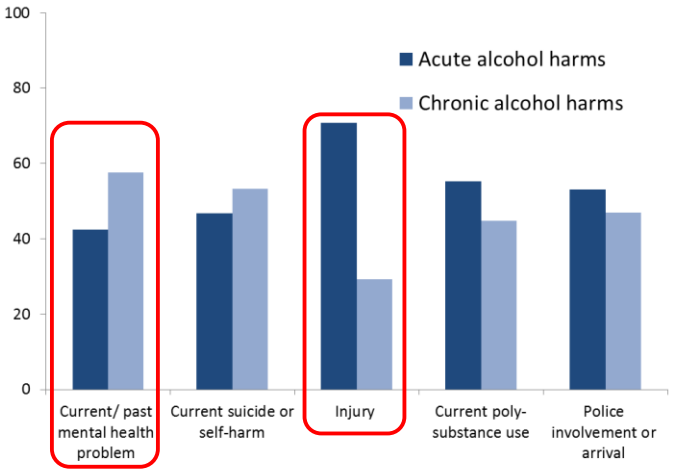
Results: Alcohol harm, by patient characteristics (n=1,000)



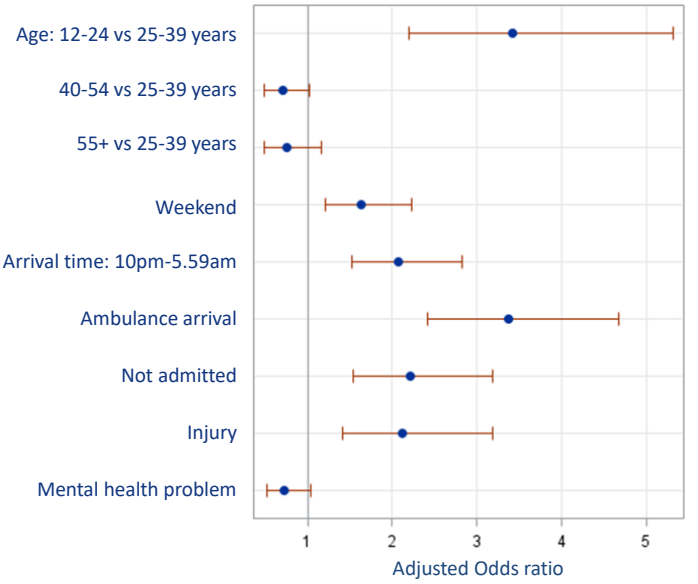
Results: Alcohol harm, by service characteristics



Results: other presenting problems



Results: Predictors of acute harm ED visits



Limitations

- 1/5 of coded alcohol presentations could not be classified
- Not a measure of burden of alcohol on EDs
- Known limitations of ED data:
  - Poorer coverage in rural and remote EDs
  - Variations between hospitals in:
    (a) Text-based discharge diagnoses options for clinicians
    (b) Mapping of discharge diagnoses to coded diagnoses
    (c) Different coded classifications systems
  - Lack of standard questions on alcohol consumption in the ED
  - Variation in content and quality of triage notes

Discussion

- Syndromic surveillance is FAST but has limitations
- Alcohol syndrome provides moderate precision as an indicator of acute alcohol harms
- Precision to identify acute harms can be improved by:

  1. Filtering data by the strongest independent predictors (e.g. applying younger age group or late night hours)

  2. Sub-setting the current syndrome by acute harm codes → requires testing and refinement

- Provides support to the proxy method commonly used to identify alcohol-related injuries by applying late-night hours to injury presentations

Implications for policy

- Increasing interest in using administrative data for public health research and policy evaluation
- Focus of recent policy has been to introduce strategies aimed at reducing binge drinking and related harms
- Remains difficult to identify alcohol-related ED presentations
- Alcohol syndrome provides timely trend data to evaluate policy and legislative changes and situational awareness
- But it currently contains background noise and requires refining to more accurately represent acute alcohol harms

Acknowledgments

Therese Ryan, Dr David Muscatello, Dr Michael Dinh, Dr Craig Rodgers, Rhydwyn McGuire & Associate Professor Sarah Thackway