

Using Ambulance attendance data to quantify harms arising from alcohol intoxication

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Background

Harmful patterns of alcohol consumption have been identified as one of the major avoidable risk factors for disease, illness, and injury, contributing significantly to the burden of disease within Australia (accounting for 5,554 deaths and 157,132 hospitalisations in 2010 alone) [1].

There are positive signs at a population level, that alcohol consumption levels in Australia are decreasing [2].

- from 2004 to 2016, all Australian age groups showed a decline in daily drinking [3] as did all types of drinkers (other than abstainers) [4].
- fewer people reported consumption that exceeds the NH&MRC guidelines on lifetime risk for alcohol-related harm, as well as undertaking risky activities (such as driving) [3].
- This trend towards decreased alcohol consumption has been particularly evident in young people [5], with two major population-level surveys showing a reduction in both alcohol consumption and risky (single 'binge' occasion) drinking in young Australians [3, 6].

Despite evidence of declining consumption patterns, alcohol-related harm is increasing [7, 8], suggesting that the use of average alcohol consumption as the only indicator for alcohol-related harm is problematic. One potential explanation of this paradox is the 'polarisation' of Australian drinking patterns, with a concomitant increase in both those who abstain from alcohol and those who drink to excess; the latter group being those experiencing alcohol-related harm [7].

Aim

The aim of this study was to examine trends and patterns of alcohol intoxication in Victoria between 2012-2018, using ambulance attendance data, to determine whether or not acute alcohol intoxication mirrors trends in population-level alcohol consumption data and to determine if particular population sub-groups have an elevated likelihood of experiencing alcohol intoxication than others.

Method

Data has been derived from the Ambo Project: Alcohol and Drug Related Ambulance Attendances; a collaborative project between Turning Point and Ambulance Victoria, and is funded by Victorian Department of Health and Human Services.

Data presented relates to all relevant ambulance attendances occurring in metropolitan and regional areas of Victoria. Data from January 2012 to June 2018 are used. Presentations where alcohol intoxication was identified are examined.

Three definitions of alcohol intoxication are presented:

- Alcohol intoxication - the immediate or recent over or inappropriate ingestion of alcohol, either with or without the involvement of other drugs.
- Alcohol intoxication only - the immediate or recent over or inappropriate ingestion of alcohol only with no other substances involved as far as could be ascertained.
- Alcohol intoxication with other substances - the immediate or recent over or inappropriate ingestion of alcohol AND the involvement of other drugs.

Results are presented as rates (per 100,000 population), proportions or numbers of ambulance attendances related to acute alcohol use, by age group, gender, location, police co-attendance and transfer to hospital.

Results

- Between January 2012-June 2018 significant contributing factors to ambulance attendances
 - alcohol intoxication - 130,080 ambulance attendances
 - Illicit drug use - 56,331
 - pharmaceutical misuse - 62,638
- Alcohol Intoxication-related attendances approximately double those for illicit and pharmaceutical drugs.
- Rates of ambulance attendances increasing for alcohol intoxication and illicit drugs (Figure 1)
- Ambulance attendances for any alcohol intoxication have increased in most age groups (except under 18y 4% decrease) (Figure 2)
- The greatest increase has been for the older age groups
 - 111% increase among the 50-59y
 - 108% increase among those 60y plus

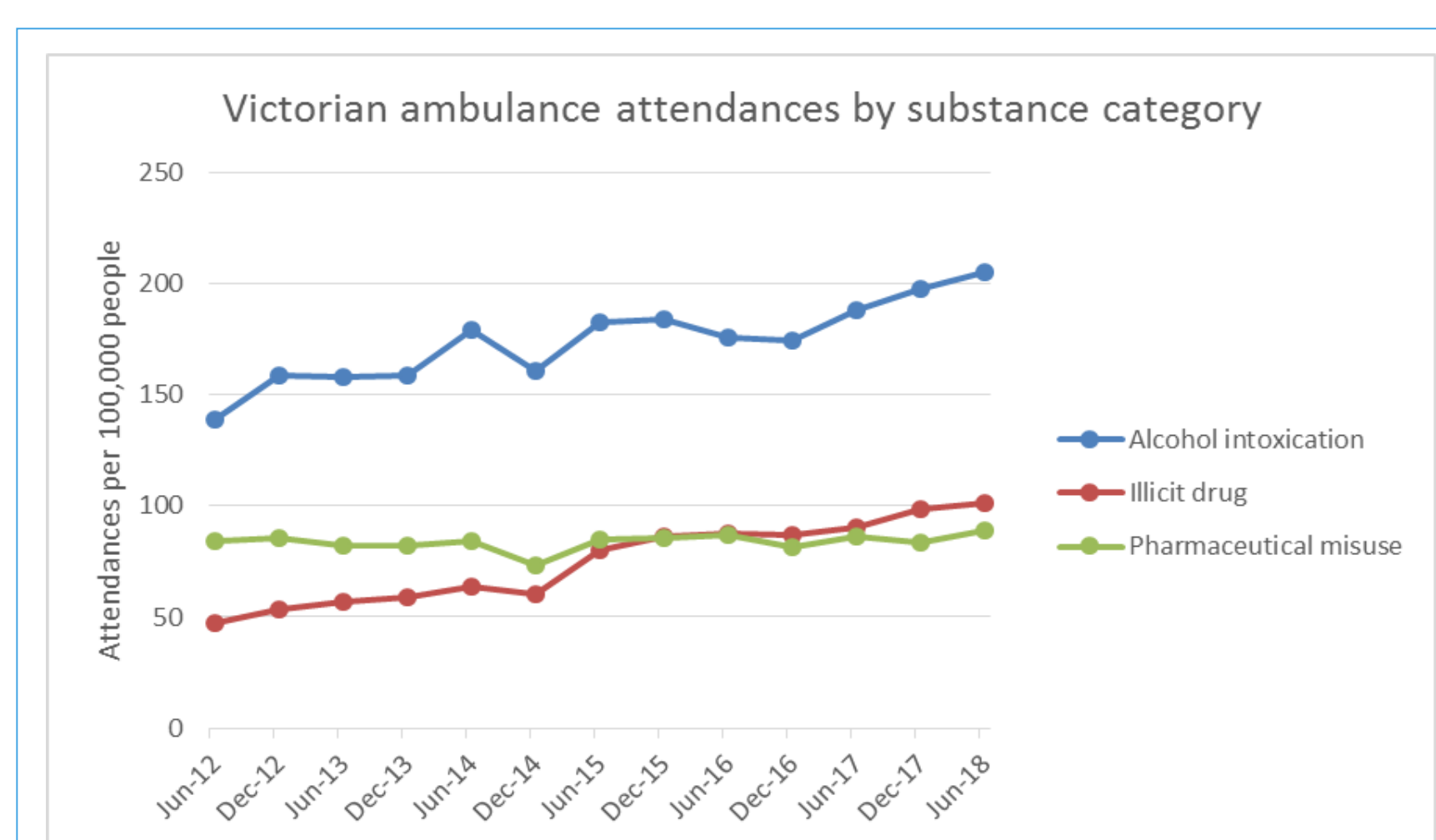


Figure 1 Ambulance attendances for alcohol intoxication, illicit drug and pharmaceutical misuse 2012-18

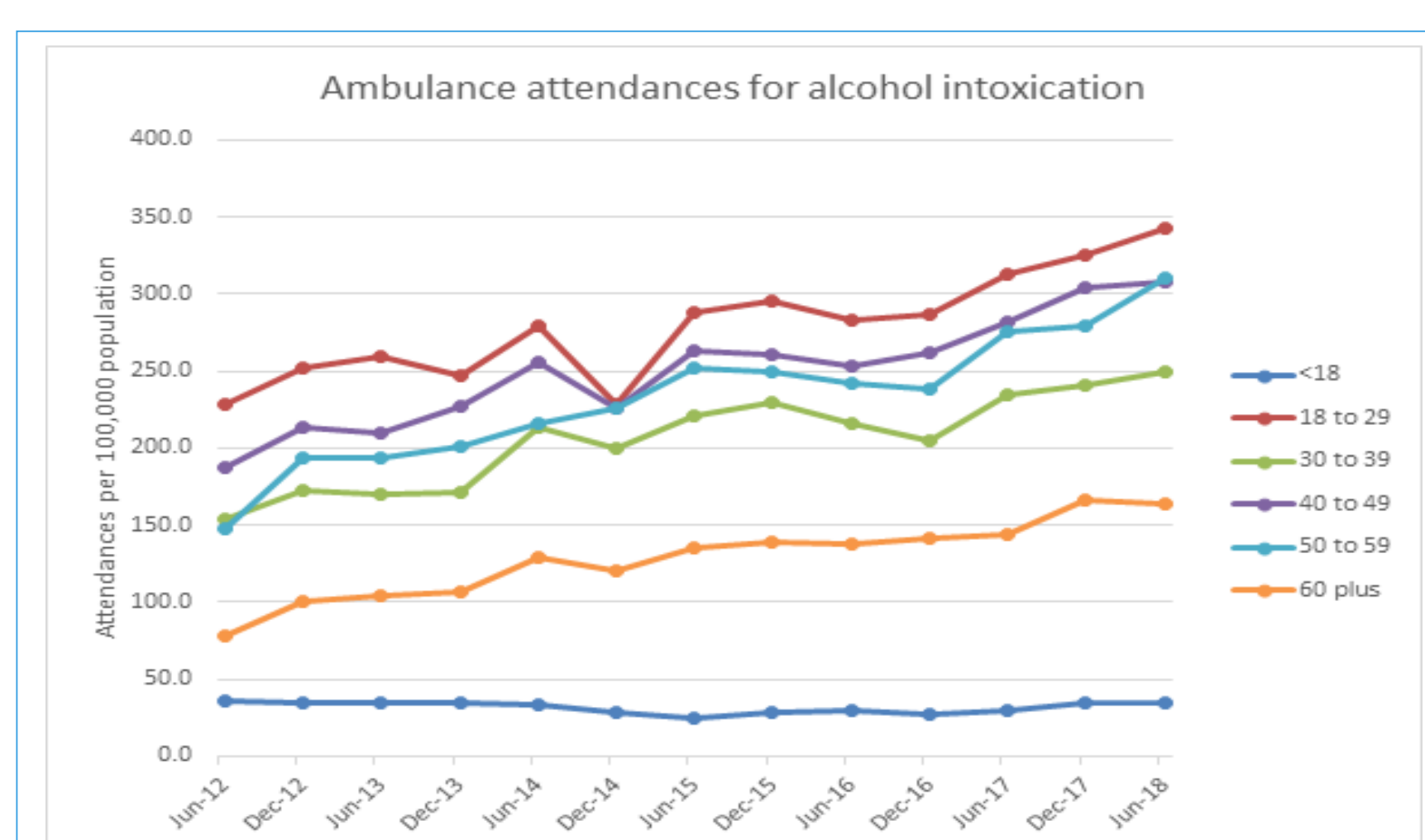


Figure 2 Ambulance attendances for alcohol intoxication by age group 2012-18

Table 1 Characteristics of ambulance attendances where alcohol is the only intoxicant compared to those involving intoxication with both alcohol and other substances

		Alcohol only		Alcohol and other substance(s)		X ² (p value)
		n	%	n	%	
Total		107,359		22,721		
Sex	Male	69,197	64.5	12,302	54.1	852.97 (<0.001)
	Female	37,990	35.4	10,378	45.7	
Area	Metro	80,562	75.0	16,884	74.3	7.44 (0.024)
	Regional	26,325	24.5	5,756	25.3	
Transport to hospital	Not transported	32,090	29.9	3,101	13.6	2.10E+03 (<0.001)
	Transported to hospital	75,269	70.1	19,620	86.4	
Police co-attendance	Not stated	78,713	73.3	16,428	72.3	9.82 (0.002)
	Yes	28,646	26.7	6,293	27.7	
Scene type	Private	50,509	47.0	13,773	60.6	1.60E+03 (<0.001)
	Public	42,917	40.0	6,025	26.5	
	Unknown	13,837	12.9	2,910	12.8	
	Indoors	34,969	32.6	9,507	41.8	1.30E+03 (<0.001)
	Outdoors	41,641	38.8	5,981	26.3	
	Unknown	30,653	28.6	7,220	31.8	
Age group	<18	4,607	4.3	994	4.4	2.70E+03 (<0.001)
	18 to 29	27,531	25.6	7,411	32.6	
	30 to 39	17,653	16.4	5,018	22.1	
	40 to 49	20,487	19.1	5,059	22.3	
	50 to 59	18,566	17.3	2,985	13.1	
	60 plus	18,515	17.2	1,254	5.5	

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- Of all ambulance attendances involving alcohol intoxication 83% involve only alcohol intoxication and no other substance.
- Significant differences in the demographics and characteristics of attendances between those where only alcohol is the intoxicant and those involving both alcohol and other substance intoxication (table 1):
 - Females more likely to have attendances with alcohol and other substances, as are younger age groups.
 - When other substances are involved with alcohol, transport to hospital and police co-attendance rates are higher.
 - Higher proportions of attendances occur at private and indoor locations where alcohol intoxication is combined with other substances compared with alcohol only.

Conclusions

- a significant increase in alcohol intoxication-related ambulance attendances across most age groups.
- trends in alcohol intoxication do not mirror those in population-level alcohol consumption data, where consumption has reduced across all age groups.
- Results are consistent with research that has found alcohol related harms increasing over time
- Suggests there are specific population sub groups that may be at increased risk
 - the patterns of intoxication by older adults are of concern particularly the 50 plus especially in the context of an ageing population
- while ambulance attendances did not increase as rapidly in younger groups, 18-29 year-olds nonetheless reported the highest rates of ambulance attendances related to alcohol intoxication out of all subgroups.

Implications

- public health messaging to be re-targeted to address the harms associated with alcohol intoxication
- growing evidence that harms are increasing despite widespread decreases in alcohol consumption.
- may need to move from population level interventions targeted to high risk sub groups
 - consider interventions targeting younger drinkers
 - could highlight the risk of using substances while alcohol intoxicated.
 - consider interventions that target older age groups
 - could focus on the risks of consuming alcohol alone or with prescription medications.
- our results indicate there is a need to monitor patterns of consumption in different settings for a comprehensive policy response for e.g. in private homes versus public places.

References

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