

NATIONAL CORONERS' INFORMATION SYSTEM (NCIS)

ISSUES OF INTEREST SERIES (Edition 1)

DEATHS OF PERSONS AGED 13 to 25 YEARS IN AUSTRALIA (EXCLUDING QLD & SA) WHICH INVOLVED ALCOHOL (Reported to a coroner between 2003 and 2006)

The National Coroners' Information System (NCIS) was used to identify deaths reported to a coroner of those aged 13 to 25 years of age where alcohol was involved in the death. For the purposes of this report, alcohol was considered to have been involved in a death where the deceased's alcohol level was detected at equal to or greater than 0.05g/100ml.

Data reported to a coroner between 2003 and 2006 inclusive were examined.

Due to the lack of information about alcohol levels in reported deaths in Queensland and South Australia¹, data from these states were excluded from the analysis. Open cases were also excluded.

There were 402 deaths (or an average of 100 per annum) reported to a coroner between 2003 and 2006 for the specified jurisdictions, where a deceased was aged between 13 to 25 years and showed an alcohol level of greater than or equal to 0.05g/100ml.

This comprised 13% of the 3,080 deaths of 13 to 25 year olds reported to a coroner across this time period.

Table 1

Deaths of persons aged 13 - 25 years with alcohol involvement by year of reporting

Year	Frequency	% of all reported deaths aged 13 – 25 years
2003	75	9
2004	115	16
2005	118	15
2006	94	13
Total	402	13

¹ Toxicology reports concerning deceased persons reported to a coroner in Queensland and South Australia are not yet available on the NCIS.

Table 2

Deaths of persons aged 13 - 25 years with alcohol involvement by jurisdiction of reporting

Jurisdiction	Frequency	% of all reported Deaths of 13-25 year olds
NT	63	35
TAS	32	21
WA	108	18
VIC	150	15
ACT	6	8
NSW*	43	4
Total	402	13

*The frequency of such cases for NSW as a proportion of all deaths of 13-25 year olds reported to a coroner was unexpectedly low, so the search mechanisms used may not have captured all such deaths in this jurisdiction. Further analysis may be required, and as such caution should be taken when comparing jurisdictional proportions.

The jurisdiction with the highest proportion of 13-25 year old fatalities reported to a coroner with an alcohol level at 0.05g/100ml or above was found to occur in the Northern Territory.

In 118 cases (or 29%) the BAC detected in the deceased was 0.20g/100ml or more.

The majority of deaths of deceased aged between 13 and 25 years, where alcohol was detected at greater than or equal to 0.05g/100ml, were found to be a result of external cause injuries (98.5%), with only 6 instances involving a death from natural causes.²

The remaining analysis relates only to the 396 deaths which were determined to be a result of non-natural causes.

² Note: Natural cause deaths may be under-represented in this data due to one of the search mechanisms used, which is normally only coded in non-natural deaths. Of the 6 natural cause deaths identified to have had a blood alcohol level of over 0.05g/100ml the causes of death were: 1) Acute Bronchopneumonia Complicating Opiate, Benzodiazepine, Alcohol and Mirtazapine Toxicity; 2) Ischaemic Heart Disease; 3) Multifocal Pulmonary Infarction; 4) Tetralogy of Fallot (surgically treated); 5) Cardio Respiratory Arrest; 6) Hypertrophic Cardiomyopathy with Congenital Hyperventilation Syndrome (Ondine's Curse) & Alcohol Ingestion.

Deaths from injury

Of all non-natural (or injury deaths) of persons aged between 13 - 25 years which involved alcohol, the majority involved males (85.6%), and the highest number of such deaths occurred in deceased aged over 20 years (Figure 1).

Figure 1

Injury deaths of persons aged 13 - 25 years involving alcohol by age of the deceased

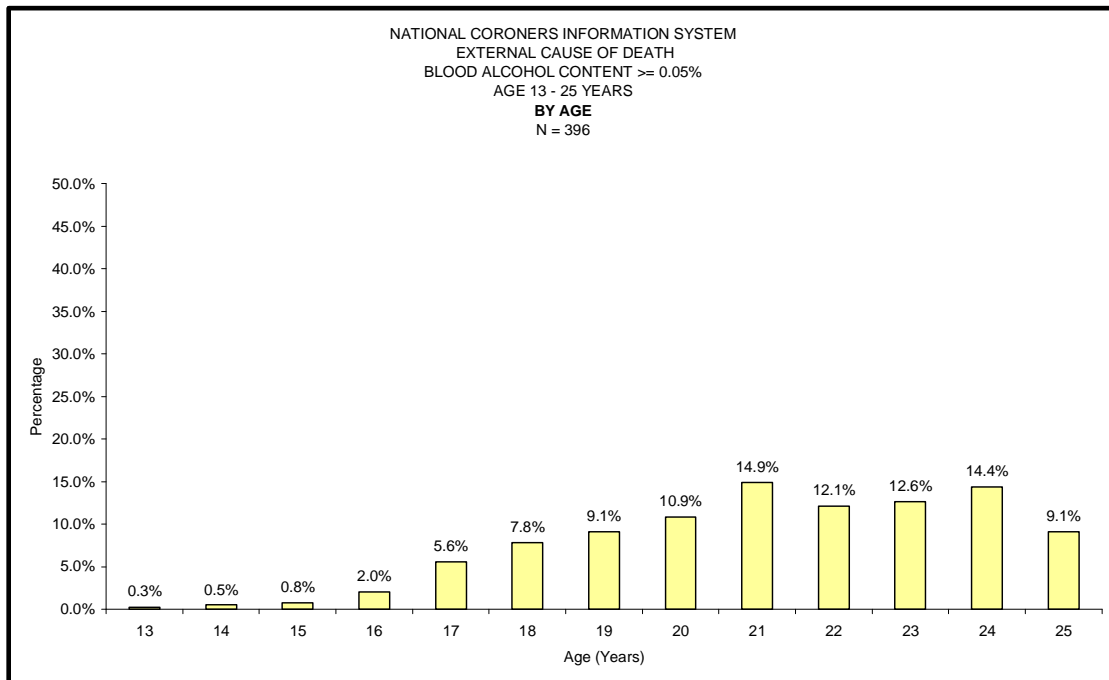


Table 3

Injury deaths of persons aged 13 - 25 years involving alcohol by intent surrounding the death

Intent Completion	Frequency	% of all reported alcohol involvement deaths
Unintentional	242	61%
Intentional Self-Harm	124	31%
Assault	22	6%
Unlikely To Be Known	6	2%
Legal Intervention	1	0%
Other Specified Intent	1	0%
Total	396	100%

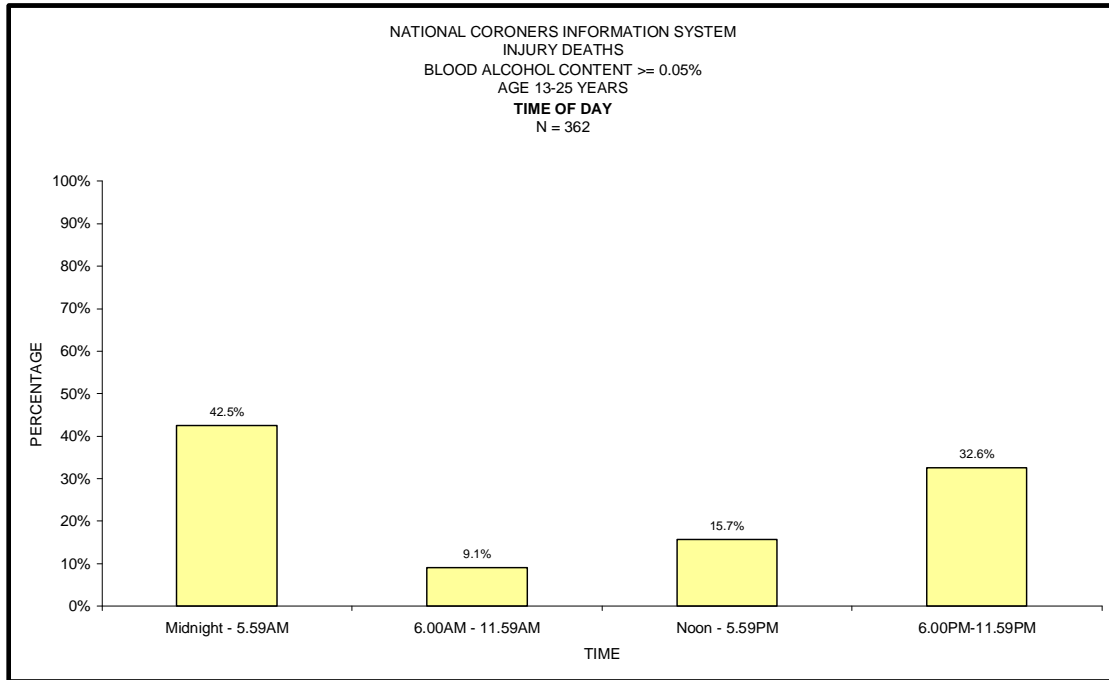
The majority of external cause deaths involving alcohol were unintentional in nature (61%), while almost a third (31%) involved deaths from intentional self harm (see Table 3).

There were 22 fatalities over the 4 year period 2003 to 2006 where the deceased was killed as a result of an assault, and had an alcohol level greater than or equal to 0.05g/100ml.³

³ These assault numbers **do not** include deceased killed in an assault where the perpetrator had alcohol over 0.05 in their system, yet the deceased did not. The assault deaths include 6 incidents from Western Australia where the mechanism of the "assault" involved a motor vehicle incident. Due to legislation in WA, motor vehicle incidents where the driver was convicted of dangerous driving are coded on the NCIS as "assaults" by WA Coroners Staff.

Figure 2

Injury deaths of persons aged 13-25 years with alcohol involvement by time of incident



Of the 396 injury deaths, there were 362 where the specific time of the fatal incident was known.

Of those 362 injury deaths, the majority occurred between midnight and 6am (43%).

Of all injury deaths involving alcohol and young people, most occurred on a Friday, Saturday or Sunday (64%). (Figure 2 and Table A, Appendix 1).

The most prevalent day and time was Sunday morning between midnight and 6am (14%) (Table B, Appendix 1).

Unintentional Injury Deaths

As noted in Table 3, there were 242 injury deaths of young people where the deceased was affected by alcohol, and the death was unintentional.

The most common mechanism of death surrounding such unintentional fatalities involved motor vehicles (79%), alcohol or drug toxicity (9%) and drowning (4%). Most drowning deaths in these circumstances occurred in a river, stream or creek (n= 5).

Table 4

Unintentional injury deaths of deceased aged 13-25 where alcohol involved, by mechanism of death

External Cause of Death	Frequency	% of all unintentional deaths with BAC \geq 0.05
Motor Vehicle Incident (including motorcycles)	191	79
Acute Drug, Chemical or Alcohol Toxicity	22	9
Other or undetermined	10	4
Drowning	9	4
Fall from height	5	2
Train incident	3	1
Effects of Fire	2	1
Total	242	100

Motor Vehicle Incidents (n=191)

The majority of young people affected by alcohol who died in a motor vehicle incident were the driver of the vehicle (75% of motor vehicle cases). In 22 cases (or 12%) the deceased was a pedestrian hit by a vehicle, with the highest BAC level identified for a pedestrian 0.34g/100ml (Table 5).

Table 5

Unintentional injury deaths of persons aged 13-25 involving alcohol by role of deceased in motor vehicle incident

Role of Deceased in Motor Vehicle Incident	Frequency	% of all unintentional MVA deaths with BAC \geq 0.05
Driver	144	75
Passenger	23	12
Pedestrian	22	12
Not determined	2	1
Total	191	100

Table 6

Unintentional injury deaths of persons aged 13-25 involving alcohol by type of motor vehicle incident

Motor Vehicle Incident Type	Frequency	% of all unintentional MVA deaths with BAC \geq 0.05
Hit static object	97	50
Loss of control or single vehicle rollover with no object collision	42	22
Pedestrian hit by vehicle	20	10
Hit moving vehicle	15	8
Unknown	14	7
Thrown from back of utility vehicle	2	1
Other	1	1
Total	191	100

The most frequent type of vehicle incident in such deaths involved only the deceased's vehicle, with 72% of incidents involving the deceased's vehicle either losing control or hitting a static object (Table 6).

Appendix 1

Table A

Day Of Incident	Frequency	%
Monday	35	8.8
Tuesday	33	8.3
Wednesday	38	9.6
Thursday	37	9.3
Friday	68	17.2
Saturday	94	23.7
Sunday	91	23.0
Total	396	100

Table B

Day	Time	Frequency	%
Monday	Midnight - 5:59am	6	1.52
	6am - 11:59am	3	0.76
	Noon - 5:59pm	8	2.02
	6pm - 11:59pm	15	3.79
	Range	3	0.76
Tuesday	Midnight - 5:59am	11	2.78
	6am - 11:59am	1	0.25
	Noon - 5:59pm	4	1.01
	6pm - 11:59pm	11	2.78
	Range	6	1.52
Wednesday	Midnight -5:59am	11	2.78
	6am - 11:59am	4	1.01
	Noon - 5:59pm	7	1.77
	6pm - 11:59pm	15	3.79
	Range	1	0.25
Thursday	Midnight -5:59am	10	2.53
	6am - 11:59am	1	0.25
	Noon - 5:59pm	4	1.01
	6pm - 11:59pm	18	4.55
	Range	3	0.76
Friday	Midnight - 5:59am	22	5.56
	6am - 11:59am	5	1.26
	Noon - 5:59pm	8	2.02
	6pm - 11:59pm	26	6.57
	Range	7	1.77
Saturday	Midnight - 5:59am	38	9.60
	6am - 11:59am	11	2.78
	Noon - 5:59pm	15	3.79
	6pm - 11:59pm	24	6.06
	Range	6	1.52
Sunday	Midnight - 5:59am	56	14.14
	6am - 11:59am	7	1.77
	Noon - 5:59pm	9	2.27
	6pm - 11:59pm	12	3.03
	Range	8	2.02
Total		396	100

Data Source, Method of Case Identification & Limitations

About the NCIS

The National Coroners Information System (NCIS) is a national data storage and retrieval system for Australian coronial cases. Information about every death reported to an Australian coroner since July 2000 (January 2001 for Queensland) is stored within the system. The data is coded onto the system by coronial clerks within each jurisdiction and is checked for quality and accuracy by the NCIS Unit. The data stored on the system includes demographics about the deceased, details about the incident that led to the death, the medical cause of death and (if the death is due to a non-natural cause) the intent of the deceased and the object and mechanisms involved in the death.

Method Used

The following definitions are important to note when interpreting this report.

Blood alcohol content - Blood Alcohol Concentration (BAC) is a measurement of the amount of alcohol in the body. BAC is measured in grams of alcohol per 100 millilitres of blood. The legal blood alcohol concentration (BAC) limit is 0.05. This means that a driver's body must contain less than 50 milligrams of alcohol per 100 millilitres of blood." 4

Jurisdiction in the context of this report refers to the State/Territory in which the death was reported (not necessarily the jurisdiction in which the deceased resided).

Case Identification

The following criteria were used to identify deaths on the NCIS of relevance for this report:

All deaths reported to a coroner within Australia

- Where the date of notification was between 1 January 2003 and 31 December 2006,
- where the case was closed
- where the deceased age was between 13 and 25 years (inclusive)
- where the "Object Type 2" field was coded as "Alcohol" or "Ethanol" OR any of the Cause of Death fields contained "Alcohol" or "Ethanol"
- Where the Case State = VIC or NSW or WA or TAS or NT or ACT

All found cases were combined and any duplicates removed.

A total of 489 cases was found

Data Analysis

The 489 cases were reviewed to determine if the blood alcohol content was greater than or equal to 0.05g/100ml.

The toxicology report provided this information for the majority of cases. If this was not available the autopsy report was reviewed.

The default site of the sample used was the leg. If this was not reported, any other result from a blood sample taken from a different site was used. If multiple sites were sampled, the leg result was utilized.

⁴ TAC website <http://www.tacsafety.com.au> Accessed 19th June 2008

Those cases that were less than 0.05% or did not have the required information available were excluded from the analysis. Table 7 indicates the analysis of the 489 cases identified.

Table 7

Number of alcohol involved, external cause deaths of persons aged 13-25 years by relevance to report

Data Analysis	Frequency
BAC ≥ 0.05	402
No information available on NCIS	22
< 0.05 (or no alcohol in deceased)	58
No test performed /results available	7
Total	489

Limitations

This data does not purport to be representative of every relevant death within the time period specified. Due to occasional processing and coding errors, missing data, and cases not being closed, it is possible that this data set may be incomplete or inaccurate. Queensland and South Australian data was also not available from the NCIS.

While every effort has been made to accurately identify as many cases involving persons aged 13-25 years with blood alcohol content greater than or equal to 0.05g/100ml as possible, there are factors which may have impacted upon the data.

These are listed below:

Case Closure

Only cases reported to a coroner in 2003 – 2006 inclusive which were closed on the NCIS at the time of data extraction were included in the scope of this report. There may therefore be some deaths reported during 2003 – 2006, which are still open on the NCIS. This may therefore have affected the total number of cases which could be considered for inclusion in this report.

Search terms used

As the search was dependent upon whether the search terms were contained within the medical cause of death field, or whether the Object field was completed, the figures provided may be an under-representation of relevant deaths.

Toxicology information and alcohol readings










Not all cases identified as possibly relevant had information available as to the BAC level of the deceased, usually due to toxicology reports not being available.

In terms of the cases where the results were available, it should be noted some cases of decomposition, post mortem alcohol readings may be influenced by the state of the body. Toxicology screens are sometimes only available to be taken from post-mortem samples, by which time the alcohol level of the deceased may have reduced from ante-mortem levels.

DATA SOURCES

Data on the NCIS has been provided by each State and Territory Coroner's Office around Australia.

Additional codes are also provided by the Australian Bureau of Statistics (ABS)

 	 <p>ACT Magistrates Court and Tribunals</p>
	 <p>Coroner's Court of Western Australia</p>
	
	

Note: In some States/Territories the Coroners Office is part of the Magistrates Court

FUNDING AGENCIES

Operational funding for the NCIS is provided by the following agencies:

- Each State and Territory Justice/Attorney-General's Department
- Australian Department of Health and Ageing
- Australian Institute of Criminology
- Australian Safety and Compensation Council
- Australian Competition and Consumer Commission
- Australian Transport Safety Bureau