# Alcohol data reporting standards

Ann Roche · Ken Pidd · Corey Taylor





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National Centre for Education and Training on Addiction (NCETA)

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### NCETA

The National Centre for Education and Training on Addiction (NCETA) is an internationally recognised research centre that works as a catalyst for change in the alcohol and drugs (AOD) field. The Centre works to influence systems that affect workers through policy change, legislation, recruitment and best practice guidelines. The Centre was established in 1992 and is a collaborative venture between Flinders University, the South Australian Department of Health and the Australian Government Department of Health and Ageing.

This report is a companion document to a report that provides an overview of Australia's key alcohol-related data sets:

Roche, AM., Pidd, K., Taylor, C., & Freegard, S. (2011). Australia's key alcohol-related datasets. The National Centre for Education and Training on Addiction (NCETA), Flinders University, Adelaide.

<sup>1.</sup> This larger project involved the development of a comprehensive National Alcohol Data Knowledgebase (NADK) that provides a public reference point and dissemination vehicle for alcohol-related information.

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### Executive Summary

### Aims and purpose

Alcohol data reporting standards were recently developed in Australia for the first time.

The standards and processes involved in their development are set out in this document. The standards described here were developed as part of a broader project - the National Alcohol Data Knowledgebase (NADK) project. The NADK project was commissioned by the Australian Government Department of Health and Ageing and was undertaken by the National Centre for Education and Training on Addiction (NCETA).

The purpose of the NADK and the accompanying data reporting standards was to present alcohol-related information obtained from select datasets in a manner that was:

- consistent
- comparable
- user friendly.

### Method

Development of the data reporting standards involved several stages. First, a comprehensive examination of relevant alcohol-related data sets was undertaken which involved the identification of common reporting conventions and establishing issues relevant to data reporting standards.

The development of the data reporting standards were then informed by existing guidelines (AIHW, 2007; WHO, 2000) and input from expert working groups that provided advice concerning relevant datasets and additional technical advice relevant to data reporting standards. Members of these groups are listed in Appendix A. A draft copy of the standards was circulated to expert working group members for comment and feedback.

### The standards

The initial data reporting standards developed address four key issues;

- 1. age
- 2. abstainers
- 3. quantity and frequency of consumption
- 4. risky consumption.

These four core data standards are as follows:



### 1: Age

The following age categories are recommended when reporting alcohol-related data:

12-17 years 18-24 years 25-29 years 30-39 years 40-49 years 50-59 years 60-69 years 70+ years.

### 2: Abstainers

It is recommended that alcohol-related data are reported using the whole population sample including abstainers and drinkers. Abstainers are defined as those who have never consumed alcohol and those who no longer drink.

### 3: Quantity and frequency consumption

When reporting alcohol consumption frequency data the following categories are recommended:

Every day 5-6 days a week 3-4 days a week 1-2 days a week 2-3 days a month About 1 day a month Abstainers.

When reporting alcohol consumption quantity data the following categories are recommended:

13 or more standard drinks
11-12 standard drinks
7-10 standard drinks
5-6 standard drinks
3-4 standard drinks
1-2 standard drinks
Abstainers.



### 4: Risky consumption

When reporting alcohol consumption quantity data the following categories are recommended:

### Single drinking occasion (short-term) risk levels

Abstainers Low risk - 4 or less standard drinks Risky - 5 or more standard drinks High risk - 11 or more standard drinks.

### Lifetime (long-term) risk levels

Abstainers Low risk - 2 or less standard drinks Risky - 3-4 standard drinks High risk - 5 or more standard drinks.

It is envisaged that these standards may be expanded in the future to incorporate other issues.

### Summary

Adoption of these standards will go a considerable way towards ensuring greater consistency between the large and diverse number of alcohol-related datasets. It will optimise the utility of these datasets and minimise potential confusion that can stem from the varied reporting methods that currently exist.

These standards also provide an agreed mechanism for reporting alcohol data that is consistent with both current and previous iterations of the National Health and Medical Research Council (NHMRC) alcohol guidelines. Applying the standards set out here will allow all Australian alcohol data to reflect the current NHMRC guidelines and provide a mechanism by which to present data in a consistent and comparable manner.



# 1. Background

Alcohol-related harms constitute a significant burden on Australian society. In the financial year 2004-2005 the cost of alcohol use was estimated at \$15.3 billion (Collins, & Lapsley, 2008) in terms of health system burden, lost workplace productivity, road accidents and crime. In 2005 alone, alcohol contributed to 3,143 deaths and 101,276 hospitalisations (Pascal, Chikritzhs, & Jones, 2009).

In recognition of this burden, Australia has placed increasing emphasis on evidence based practice in relation to the identification and management of alcohol (and other drug) related issues. This approach is heavily reliant upon ready access to sound and reliable epidemiological and empirical data.

Correspondingly, considerable resources have been directed to the establishment and maintenance of high quality alcohol-related data and Australia is widely regarded as possessing an impressive array of alcohol-related datasets (AIHW, 2004). However, in spite of the investment in high quality, long term datasets, there exists a significant limitation to the potential utilisation and application of these data. That limitation is the lack of agreed upon standards or guidelines to analyse and report alcohol-related data.

To-date no standards or consistent reporting conventions have existed in Australia to guide the way in which alcohol-related data is analysed and reported. As a consequence, findings from the wide range of existing datasets about alcohol use in Australia are reported in diverse and varied ways. This results in ambiguity, confusion and an inability to compare findings from different datasets. To overcome this and to provide a mechanism by which existing alcohol-related data can become more consistent and comparable, a set of agreed upon data reporting standards was required.

This document describes the process undertaken to develop Australia's first alcohol-related data reporting standards and the resultant standards that were agreed upon.

The alcohol data reporting standards described here were developed as part of the National Alcohol Data Knowledgebase (NADK) project. The NADK project was commissioned by the Australian Government Department of Health and Ageing and undertaken by the National Centre for Education and Training on Addiction (NCETA). The purpose of the NADK and the accompanying data reporting standards was to present alcohol-related information, obtained from various select datasets, in a consistent, comparable and 'user friendly' manner. A key element in the development of a standardised approach to alcohol data management was the establishment of a set of data reporting standards. This was undertaken as a core component of the NADK project.

### The National Alcohol Data Knowledgebase (NADK)

The purpose of the NADK is to provide a public reference point and dissemination vehicle for alcohol-related information. To-date, Australia has produced a large number of important alcohol-related datasets. Each of these datasets has the potential to contribute to our understanding of the role that alcohol plays in the health and wellbeing of Australians. Despite the importance of these datasets, currently there is no single repository of alcohol-related datasets can be a cumbersome and time consuming exercise. Moreover, no coordinated electronic database or directory of alcohol-related datasets was available prior to the development of the NADK.

Researchers, practitioners and policy-makers alike expect, and are expected, to use up-to-date information about alcohol to guide research efforts, treatment and policy recommendations. However, specific alcohol-related data can often be difficult to locate, access, and utilise. Alcohol-related datasets are extremely diverse and scattered across a variety of fields, including health, social welfare, roads and transport, education, criminal justice and social research.

Relevant alcohol-related data is often also contained in other larger and more detailed datasets, for example the Australian Bureau of Statistics (ABS) National Health Survey and the Bettering the Evaluation and Care of Health (BEACH) general practitioner survey. Some organisations also undertake their own periodic surveys and data collection systems.

These datasets can vary substantially in the frequency of collection, size and nature of the sample population, methods of data collection and their focus or purpose. Moreover, there has been little coordination of these datasets, few attempts to reconcile anomalies in different datasets, and a high degree of under-utilisation of available alcohol-related data.

The aim of the NADK was to reconcile some of these limitations by providing a comprehensive nationally consistent alcohol data knowledgebase. The development of the NADK represents a major contribution to achieving an improved knowledge base in relation to alcohol. It also serves as an important resource to assist the development of an alcohol research agenda, which was highlighted as a priority action area in the National Alcohol Strategy 2006-11, and the National Preventative Health Taskforce report: Taking preventative action - Response to Australia: The healthiest country by 2020.

One of the challenges that faced the development of the NADK was ensuring that data accessed from different alcohol-related data sources were comparable. As outlined above, alcohol-related datasets that are currently available are extremely diverse and cover a range of areas including health, social welfare, law enforcement, and others. The comparability of such data can be restricted by differences in methods of collection, measures used, and data element definitions. One method of overcoming this challenge was to develop data standards that allowed for data collected from different sources to be reported in a comparable manner.

Adoption of these standards will go a considerable way towards ensuring greater consistency between the large and diverse number of alcohol-related datasets. It will optimise the utility of these datasets and minimise potential confusion that can stem from the varied reporting methods that currently exist.

These standards also provide an agreed mechanism for reporting alcohol data that is consistent with both current and previous iterations of the National Health and Medical Research Council (NHMRC) alcohol guidelines. Applying the standards set out here will allow all Australian alcohol data to reflect the current NHMRC guidelines and provide a mechanism by which to present data in a consistent and comparable manner.

Before presenting the data standards, a brief history of Australia's alcohol-related guidelines is presented in the next section to provide further background and context to the development of the standards.

# 2. A brief history of Australian alcohol guidelines

In the Australian context, defined patterns of alcohol consumption associated with risk of harm have varied over time. In 1987, NHMRC recommendations defined alcohol risk levels as 'safe', 'hazardous' or 'harmful'. In this case, two to four standard drinks per day (or an average of 14 per week) was considered hazardous and more than four standard drinks per day (or an average of 28 per week) was considered harmful for women. For men, four to six standard drinks per day (or an average of 28-42 per week) was considered hazardous and more than six standard drinks per day (or an average of more than 42 per week) was considered harmful.

In recognition of the growing body of evidence that patterns of consumption were at least equally important as average daily intake, when determining risk of alcohol-related harm, these early guidelines were revised to include the concept of long and short-term risk (NHMRC, 2001). Long-term (chronic) risk was defined as risk associated with regular daily drinking, while short-term (acute) risk was defined as risk associated with drinking on a single day. Previous (1987) recommendations were adopted for long–term risk levels (with the terms risky and high risk use substituted for hazardous and harmful use). Short-term risk was defined for men as drinking seven to 10 (risky) and 11 or more (high risk) standard drinks and for women, as drinking five to six (risky) and seven or more (high risk) standard drinks.

Australian alcohol drinking guidelines were again revised more recently (NHMRC, 2009). The main differences between these new guidelines and previous versions are that differentiation for risk levels between men and women is not immediately evident, and that different concepts and models of risk are used. In particular, the guidelines introduce the concept of progressively increasing risk, and no longer specify 'risky' or 'high risk' levels.

In the 2009 guidelines, the concept of short-term (acute) risk remains however it is now termed 'single drinking occasion risk of injury'. Based on the substantial body of evidence that indicates risk of injury increases as more alcohol is consumed on a single occasion, the 2009 guidelines recommend that both men and women drink no more than four standard drinks on any single drinking occasion. The concept of long-term (chronic) harm has changed in the 2009 guidelines, from a focus on the cumulative risk of chronic disease to an assessment of overall risk of harm (injury and illness) over a lifetime. Evidence concerning alcohol-related injury, illness and death, indicates that drinking an average of two or more drinks per day doubles lifetime risk from 1/100 to 2/100 for both genders. Based on this evidence, the 2009 guidelines recommend drinking no more than an average of two standard drinks per day. However, it is noted that above four drinks, the lifetime risk for women increases at a greater rate than for men.

The current (2009) guidelines also specifically refer to children and young people under the age of 18 years and drinking during pregnancy or while breastfeeding. The 2009 guidelines recommend that for those under the age of 15 years, not drinking is the best option, and for those aged 15-17 years, the safest option is to delay the initiation of alcohol for as long as possible. Not drinking is also recommended for women who are pregnant or breastfeeding.

# 3. The data reporting standards

The aim of the data reporting standards is to assist in the reporting and presentation of alcohol information in a consistent and user friendly manner.

The standards are not designed to change the way in which alcohol data is currently collected and measured. Rather the purpose of the standards is to create a set of guidelines so that alcohol-related data obtained from different datasets can be presented in a consistent and readily comparable way. However, the data reporting standards may also, in time, guide future data collections.

A considerable amount of alcohol-related data is currently available from a variety of sources<sup>2</sup>. Potential exists to share these data in order to provide a more comprehensive understanding of the relationship between alcohol use and the health and wellbeing of Australians.

However, this potential is limited by variations in data collection methods, data sources, data collection purposes, data measures, and data element definitions. A previous review of Australian alcohol-related data highlighted methodological inconsistencies across data sources (AIHW, 2004).

Limitations and inconsistencies in data can be overcome, to some extent, by the development and application of agreed data reporting standards. Data reporting standards allow for consistency and comparability of data content and definitions. The development of reporting standards allows for alcohol-related data to be compared across data collections and over time, thus maximising consistency, reliability and comprehensiveness of available alcohol-related information.

Recent changes to the NHMRC alcohol guidelines create a further imperative to establish data reporting standards to inform and guide consistency in analyses conducted on Australian alcohol datasets. For example, it is important to identify ways to report data from the previous NHMRC 'risky' drinking levels that are comparable with the new concept and levels of risk introduced in the 2009 NHMRC guidelines.

The data standards presented here will assist the reconciliation of these different approaches.

2. Roche, AM., Pidd, K., Taylor, C., & Freegard, S (2011). Australia's key alcohol-related datasets. The National Centre for Education and Training on Addiction (NCETA), Flinders University, Adelaide.

### Method

In undertaking the development of the standards, a number of processes were employed.

- 1. First, a comprehensive examination was undertaken of all relevant Australian alcohol-related datasets. Their content, methods and approaches were examined and issues relevant to data reporting standards were identified.
- Reporting standards outlined here were informed by existing Australian Institute of Health and Welfare guidelines for the development of data standards (AIHW, 2007) and international guidelines for the development of indicators of alcohol consumption and related harm (WHO, 2000).
- 3. An expert working group, consisting of policy-makers, alcohol data custodians and alcohol researchers, was established to consider relevant data reporting issues and reach consensus on relevant data reporting standards. This group was further assisted by an expert working sub-group that provided additional technical advice relevant to the data reporting standards. Members of these groups are listed in Appendix A.
- 4. Information and guidance gleaned from each of the above sources was synthesised to produce a draft set of data standards.
- 5. The draft standards were then circulated to members of the Expert Working group for further comment and refinement.
- 6. The final data reporting standards were modified accordingly and consolidated into their present form.

Outlined below are the four key standards that were identified and supported by the above process. These standards do not address how data is collected, rather they relate to how data is analysed and reported.

### The standards

The data reporting standards address four key issues: age, abstainers, quantity and frequency of consumption, and consumption risk levels. It is envisaged that these standards may be expanded in the future to incorporate other issues.

### 1: Age

Three main issues were identified as relevant to age when reporting alcohol-related data:

- 1. Underage drinkers
- 2. Age cut points
- 3. Older age groups.

These issues are discussed below.

Age is generally collected as a continuous variable by most surveys but the age ranges that are reported differ considerably, making comparisons between datasets difficult if not impossible. Currently there is no clear guide on which age standards should be used for alcohol-related data. The Australian Institute of Health and Welfare's National Health Data Dictionary (AIHW, 2010) suggests the standard for reporting age should be 0-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, and 75 years or older.

The AIHW age range categories are problematic for reporting alcohol-related data. In particular, these categories are inconsistent with the most recent National Health and Medical Research Council (NHMRC) guidelines and current legislation regarding the legal drinking age.

Current Australian alcohol legislation prohibits a person under the age of 18 years from buying, drinking or possessing alcohol on licensed premises<sup>3</sup>. Thus, when reporting alcohol-related data, it is useful to aggregate age into underage (i.e., less than 18 years old) and drinking age (i.e., 18 years of age or older) categories.

Similarly, the most recent Australian Alcohol Guidelines (NHMRC, 2009) recommend that the safest option for those under the age of 18 years is not to drink alcohol. This recommendation is based on research evidence that indicates:

- drinking below the age of 18 years increases the risk of alcohol-related problems later in life
- drinkers under the age of 18 years (and in particular those under the age of 15 years) are more likely than older drinkers to engage in alcohol-related behaviours associated with risk of harm.

Hence, a convention where alcohol-related data is reported for those below 18 years of age is a basic element of an Australian data reporting standard.

<sup>3.</sup> Some jurisdictions now extend this legislation to the consumption of alcohol in other locations by those under 18 years of age.

In addition to those aged below 18 years, Australian Alcohol Guidelines (NHMRC, 2009) also identify that young adults are at particular risk of harm from alcohol consumption. This is especially the case for those aged 18-24 years who have a higher risk of accidents and injuries, a lower alcohol tolerance compared to older adults, and an increased risk of cognitive impairment and alcohol dependence in later life.

Those aged 25-29 years are also a high risk group, due to the high prevalence of risky drinking among this age group. The ability to compare patterns and correlates of use among high risk groups, across different data sources is important.

For older age groups there are important changes occurring in levels and patterns of consumption. It is important that available data can be interrogated to examine these emerging and changing patterns of use among older Australians. Alcohol consumption can also increase the risk of injuries and some chronic conditions in those aged 60 or more years. This risk is likely to increase with age and it is important to monitor this risk, given the growing numbers of Australians aged over 60 years.

In light of the range of considerations identified in relation to age, the following data reporting standard is recommended.

Data reporting standard No. 1			
The following age categories are recommended when presenting alcohol-related data.			
12-17 years			
18-24 years			
25-29 years			
30-39 years			
40-49 years			
50-59 years			
60-69 years			
70+ years			

### 2: Abstainers<sup>4</sup>

When reporting alcohol-related consumption data it is important to distinguish between abstainers and drinkers. However, inconsistency in the inclusion or exclusion of abstainers when reporting alcohol-related data can lead to substantial differences in datasets and confusion in the interpretation of such data.

For example, abstainers are often included in drinking status data categories and 'at risk' consumption data categories, but then excluded from quantity or frequency data. This can lead to misinterpretation of alcohol-related data when proportions of Australian drinkers are compared with proportions of the total Australian population. The exclusion of abstainers can also lead to an overestimation of the proportions of Australians who drink at particular levels.

The inclusion of abstainers, when identifying population sample proportions according to alcohol risk levels, provides a more reliable and accurate indication of the proportions of all Australians who drink at particular levels. It also provides a more reliable indication of the proportions exposed, or not exposed, to alcohol-related risk of harm. Consistency in the inclusion of abstainers in alcohol-related data categories is also likely to minimise the risk of misinterpretation of alcohol-related data.

#### Data reporting standard No. 2

It is recommended that alcohol-related data be reported using the whole population sample including both abstainers and drinkers.

### 3: Quantity and frequency of consumption

A wide and incompatible range of methods are currently used to collect data on the patterns of use in terms of quantity and frequency of consumption. The World Health Organization (WHO, 2000) recommends that graduated quantity frequency (GQF) measures should be used in national surveys that aim to determine general patterns of drinking over the previous 12 months. The GQF method asks for the frequency of consuming various quantities of alcohol, usually grouped into categories. Generally, respondents to a GQF measure are asked to report on specified amounts of alcohol in different time periods.

The specified amount of alcohol asked about usually starts with large amounts of alcohol consumed in a session (e.g., 20 or more standard drinks) and graduates (e.g., 11-19, standard drinks, 7-10 standard drinks) down to much smaller amounts (e.g., 1-2 standard drinks, none). This is repeated for specified time periods starting with very frequently (e.g., every day) and graduated down (e.g., 5-6 days a week, 3-4 days a week) to very infrequently (e.g., less often, never).

<sup>4.</sup> An abstainer is defined as someone who has never consumed alcohol or who no longer drinks.

The simple quantity frequency (QF) measure involves two separate measures - the quantity usually consumed and the frequency of consumption. Respondents are normally asked to select only one item from a range of options for each measure. In the case of quantity, these options normally range from very high levels (e.g., 20 or more standard drinks) to very low (e.g., 1-2 standard drinks). In the case of frequency, the options normally range from very frequent (e.g., every day) to less often (e.g., less than once a month). The World Health Organization (WHO, 2000) recommends the GQF over the QF measure as the GQF allows for an assessment of patterns of consumption that not only measures average drinking levels, but also allows for the measurement of occasional heavy drinking.

The usefulness of either QF or GQF measures is restricted by the categories of drinking quantity and frequency utilised in the measure. In general, categories of drinking frequency and drinking quantity need to be set at levels that are relevant to accepted levels of harm.

For example, it is generally accepted that drinking more than five standard drinks on a single drinking occasion or a daily basis represents quantity and frequency associated with alcohol-related harm. Less aggregated drinking quantity and frequency categories allow for more precise risk categories to be determined. Alcohol consumption quantity and frequency data should be reported using the least aggregated categories possible (i.e., using the original survey QF or GQF categories).

### Data reporting standard No. 3

It is recommended that when reporting alcohol consumption frequency data, the following categories are used:

Every day 5-6 days a week 3-4 days a week 1-2 days a week 2-3 days a month About 1 day a month Less often Abstainers

It is recommended that when reporting alcohol consumption quantity data, the following categories be used:

- 13 or more standard drinks
- 11-12 standard drinks
- 7-10 standard drinks
- 5-6 standard drinks
- 3-4 standard drinks
- 1-2 standard drink

### 4: Risky consumption

It is widely accepted that drinking at certain levels on single drinking occasions and over longer periods of time are associated with increased risk of alcohol-related harm (NHMRC, 2009; WHO, 2000). These risk levels differ according to how much and how often people drink.

For example, drinking an average of three or more standard drinks per day increases a person's risk of injury, chronic illness, or death over the course of their lifetime (NHMRC, 2009), while drinking five or more standard drinks on a single drinking occasion increases the risk of injury or death in the short term (NHMRC, 2009). In Australia, a standard drink is defined as any drink containing 10 grams of alcohol (ethanol).

Measures of a standard drink and defined levels of alcohol consumption associated with risk of harm vary internationally (WHO, 2000). In the Australian context, defined patterns of alcohol consumption associated with risk of harm risk levels have also varied over time.

Current Australian alcohol guidelines recommend drinking no more than four standard drinks on any occasion to reduce risk of alcohol-related injury arising from that occasion, and drinking no more than two standard drinks on any day to reduce the lifetime risk of alcohol-related disease or injury.

Given the existence of alcohol guidelines that define risk levels of consumption, it is preferable to report alcohol-related data concerning risky consumption in a manner that is compatible with these guidelines. However, reporting alcohol consumption data in this way is not necessarily straightforward.

For example, reporting data in a manner that is consistent with the 2009 guidelines restricts the degree to which such information can be compared with past or future guidelines. Moreover, given that the 2009 guidelines no longer distinguish between risky and high-risk levels, reporting risky consumption data in line with these guidelines does not allow for the identification of proportions of Australians who drink at levels associated with very high risk.

To move toward addressing these issues, it is recommended that the following risk categories be used when reporting risky alcohol consumption data:

### Data reporting standard No. 4

Single drinking occasion (short-term) risk levels Abstainers Low risk 4 or less standard drinks Risky 5-10 standard drinks High risk 11 or more standard drinks Lifetime (long-term) risk levels Abstainers

AD31011013	
Low risk	2 or less standard drinks
Risky	3-4 standard drinks
High risk	5 or more standard drinks

# 4. Summary

The alcohol data reporting standards described here were developed as part of the National Alcohol Data Knowledgebase (NADK) project. The purpose of the NADK and the accompanying data reporting standards is to present alcoholrelated information, obtained from various and select datasets, in a consistent, comparable and 'user friendly' manner. Four data reporting standards are addressed:

- 1) age,
- 2) abstainers,
- 3) consumption quantity and frequency, and
- 4) risky consumption.

These data reporting standards represent the starting point in the development of a nationally consistent set of standards that will grow as additional alcohol-related datasets and information are added to the NADK.

Adopting these standards will go a considerable way towards ensuring that greater consistency exists between the large and diverse number of available alcohol-related datasets. It will optimise the utility of these datasets and minimise confusion stemming from the varied reporting methods that currently exist.

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# Appendix A

### National Alcohol Data Knowledgebase Expert Working Group

Members:

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