Part 2

The Drugs

Alcohol

ALCOHOL is a licit drug. Its consumption is sanctioned by cultural norms and social practices, and its production contributes significantly to Australia's gross national product (GNP).

Alcohol is a central nervous system (CNS) depressant. Its psychoactive properties contribute to changes in mood, cognition and behaviour. The main psychoactive ingredient in beverage alcohol is ethyl alcohol (ethanol, or C_2H_5OH).

PHARMACOLOGY

Absorption

Alcohol is rapidly absorbed from the small bowel via portal circulation (around 80%), and stomach (around 20%). Alcohol is water soluble, and little or no alcohol enters fatty tissue. It reaches the brain within five minutes of ingestion, with blood concentrations peaking between 30 to 90 (typically 45) minutes. Absorption rate varies with:

- the drug (e.g. beverage type, presence of food in the stomach)
- individual factors (e.g. age, gender, size, drinking rate and experience)

Distribution

Alcohol is rapidly distributed throughout the body water accumulating in tissues with high water content. Alcohol readily crosses blood–brain and placental barriers (Lopatko et al., 2002).

Metabolism

Ninety-five per cent of alcohol is metabolised by the liver into carbon dioxide and water, and 1–5% is excreted unchanged in saliva, urine, faeces and sweat. The enzyme alcohol dehydrogenase (ADH) (and to a smaller extent, cytochrome P450 2E1 (or CYP2E1)) is the catalytic agent for transforming ethyl alcohol into acetaldehyde. The second metabolic process involves aldehyde dehydrogenase (ADLH) as the catalytic agent responsible for oxidising acetaldehyde into acetic acid. Long-term high-risk consumption results in increased production and activity of CYP2E1, thought to be responsible for increasing elimination of alcohol amongst high-risk/dependent users (Victoria Police, 2001; Lopatko et al., 2002).

PATTERNS OF DRINKING

Results from the 2001 National Household Survey (AIHW, 2002) of adults 14 years and over found:

- 8.3% (M: 11%; F: 5.6%) reported drinking alcohol on a daily basis
- almost 40% (M: 46%; F: 33%) consumed alcohol at least once a week
- 35% (M: 29%; F: 40%) consumed alcohol less often than once a week
- 8% (M: 7%; F: 9%) were ex-drinkers
- almost 10% (M: 7%; F: 12%) had never drunk a full glass of alcohol
- 90% of 20–29 year olds were current drinkers

Contrary to common perceptions, Aboriginal and Torres Strait Islanders:

- are more likely to be non-drinkers or ex-drinkers
- are less likely to drink on a weekly (33% compared with 49% of the general population) or occasional (29% versus 32%) basis; and
- are more likely to drink at high or very high risk levels on the occasions they do drink alcohol (82% versus 28%), compared to the general population (CDHAC, 2001; CDHSH, 1994; NHMRC, 2001)

BENEFITS AND HARMS

Benefits

There is good evidence that < 1 standard drink a day for women, and 1–2 a day for men helps prevent heart disease from middle age onwards. The benefit is attributable to alcohol per se, rather than the beverage type consumed. Heavier drinking not only confers no additional benefit, but substantially increases risk of harm. Cardiac protection needs to be assessed against the physiological changes of ageing (e.g. reduced tolerance to alcohol's effects, interaction with prescribed medications). Any benefits can be equally achieved through a healthy lifestyle. There is no evidence that low risk drinking in younger adulthood helps prevent the onset of cardiovascular disease in later life (NHRMC, 2001).

Harms

Most drinkers (73%) generally consume alcohol in ways considered a low health risk (AIHW, 2002). However, harmful/hazardous alcohol use and dependence is estimated to cost the Australian community $7.6 billion in direct and indirect costs (Collins & Lapsley, 2002). Single episodes of alcohol intoxication contribute to 67% of potential years of life lost (PYLL) due to premature alcohol-related mortality (CDHAC, 2001).

Alcohol contributes to over 3,000 deaths per year, and is implicated in:

- 7% of all male and 2% of all female deaths
- 50,000 hospitalisations
- 20–40% of acute general and psychiatric hospital presentations
- 18% of all injuries presenting to emergency departments
- 50% of assaults
- 44% of fire injuries
- 34% of falls and drownings
- 30% of car accidents
- 16% of child abuse
- 12% of suicides; and
- 10% of industrial accidents

(CDHAC, 2001; CDHA, 2002; NHMRC, 2001; APF, 2001)

Studies suggest that 15–32% of patients presenting to general practice drink at at-risk levels (Sayer et al., 2000). However, fewer than half of all patients routinely undergo screening for alcohol use (Lopatko et al., 2002).

The Australian Alcohol Guidelines: Health Risks and Benefits (NHMRC, 2001, www.nhmrc.gov.au) provide an evidence base for promoting individual and population health in relation to alcohol consumption. The guidelines emphasise the link between 'how much' and 'how often' alcohol is consumed, where the risks are described according to three levels (low, risky and high risk), and two timeframes (short-term and long-term).

See Appendix A

The NHMRC Australian Alcohol Guidelines recommend that to minimise harm:

- *males*: consume 6 drinks or less on any one occasion, or no more than 4 standard drinks per day, with at least 2 alcohol free days per week
- *females*: consume 4 drinks or less on any one occasion, or no more than two standard drinks per day, with at least 2 alcohol free days per week

Abstinence is recommended as appropriate for:

- people with an existing medical or mental health condition that may be exacerbated through drinking
- people taking medications that interact with alcohol (e.g. benzodiazepines, opioids)
- women who are pregnant, planning a pregnancy, or breastfeeding
- people undertaking activities involving skill or risk (e.g. operating machinery, driving, flying, water sports etc.)

N.B. Levels of risk related to the use of alcohol are based on an average or larger body size and a weight of 50 kg or more (NHMRC, 2001).

EFFECTS OF ALCOHOL CONSUMPTION

Blood Alcohol Concentration (BAC) is a reasonable guide to level of intoxication (see Table 3–1). BAC indicates the amount of alcohol in the bloodstream in grams of alcohol per 100 ml blood. A BAC of 0.05 means a person has 0.05 g of alcohol per 100 ml of blood (or a BAC of 0.05% = 11 mmol / L) (Victoria Police, 2001). A person of average build will metabolise alcohol at a constant rate of around one standard drink per hour. One standard drink (see Table 3–2) per hour will cause a rise in BAC of 0.01% to 0.02% in an hour; however:

- small females will have higher blood peak levels than large males for the same volume consumed
- high tolerance to alcohol may result in faster metabolism (hence more rapid reduction in BAC)

Table 3–1
Correlation between BAC* and behavioural/motor impairment

BAC*	Likely effects of intoxication
0.02–0.05 g / 100 ml	• cheerful, relaxed, pleasant feelings of happiness and wellbeing • decreasing inhibitions • judgment increasingly impaired • increased chance of accidents • impaired coordination • BAC* 0.05 g / 100 ml = legal limit for driving (if fully licensed) in all Australian States and Territories
0.1–0.2 g / 100 ml	• ataxia • decreased ability to appropriately interpret and react to surroundings • poor judgment • loss of 'self-control' • slurred speech • increasingly unpredictable behaviour • labile mood • potential for aggression
0.2–0.3 g / 100 ml	• marked ataxia and slurred speech • poor judgment • labile mood • nausea and vomiting • double vision • memory loss
0.3–0.4 g / 100 ml	• stage 1 anaesthesia (sleepiness, poor response to external stimuli, oblivion) • memory lapse • labile mood
> 0.40 g / 100 ml	• respiratory failure • coma • possible death

*Blood Alcohol Concentration
Source: adapted from Victoria Police (2001, p. 1.8) and Ryder et al. (2001, p. 162).

MEASURING CONSUMPTION: THE 'STANDARD DRINK'

The 'standard drink' concept was designed to assist consumers to monitor their alcohol consumption. One Australian 'standard drink' contains about 10 grams (12.5 millilitres) of alcohol. See Table 3–2 for common standard drink equivalents. Whilst legislation requires alcohol producers to label the number of standard drinks in a container, variation in size and type of glass in different environments (e.g. homes, licensed environments) may make it difficult to estimate the actual number of drinks consumed.

Identifying 'At-risk' Drinking Levels

Most people tend to be low-risk drinkers, and experience few problems related to their use of alcohol, most of the time (see Figure 3–1).

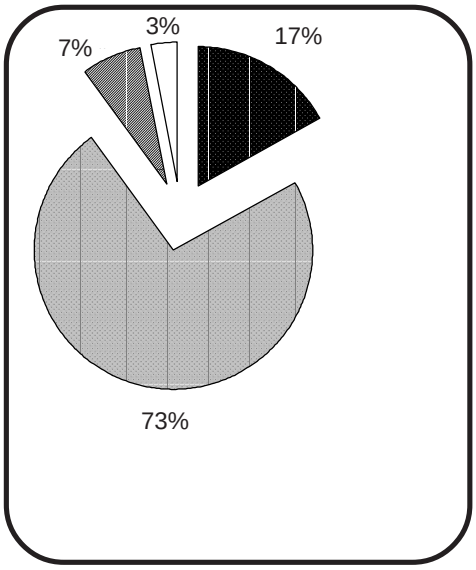

Figure 3–1
Proportion of population at risk of alcohol-related harm
Source: AIHW (2002)

Groups at High Risk for Alcohol-related Harm

The NHMRC (2001) identified groups who are particularly susceptible to alcohol-related harm, including:

Young people (up to 18 years) and young adults (19–25 years)

Young people's patterns and levels of drinking place them at significant risk of harm compared with the community in general. Whilst alcohol-related deaths amongst older people can be attributed to *long-term* hazardous or harmful patters of use (Chikritzhs et al., 1999), approximately 25–33% of 14–24 year olds drink in a high-risk manner (Chikritzhs et al., 2000), increasing the likelihood of serious harm, injury or death due to *acute* conditions resulting from alcohol intoxication. Between 1990 and 1997, 52% of all serious alcohol-related road injuries were sustained by people aged 15–24, with a further 23% of injuries sustained by 25–34 year olds.

Risk of harm amongst young people is increased due to their:

- smaller physical size
- fewer social controls
- peer values and norms that condone intoxicated behaviour
- risk of overdose due to lack of tolerance

Use of alcohol or other drugs at risky and harmful levels may:

- interfere with normal physiological, social and emotional development
- increase risk of suicide
- increase risky sexual behaviour/unwanted sex
- cause blackouts
- contribute to poor academic performance
- contribute to, or cause mental health problems

Table 3–2
Standard drink (SD) equivalents

Beverage	Container	% alc/vol	Standard Drink equivalent
BEER			
Light	375 ml can or bottle	2.7%	0.8
Mid strength	375 ml can or bottle	3.5%	1.0
Full strength	375 ml can or bottle	4.5%	1.5
Light	285 ml glass (middy/pot/schooner)	2.7%	0.5
Mid strength	285 ml glass (middy/pot/schooner)	3.5%	0.7
Full strength	285 ml glass (middy/pot/schooner)	4.5%	1.0
WINE			
White/red	100 ml glass	12%	1.0
	180 ml average restaurant serve	12%	1.8
	750 ml bottle	12%	7.0
	2 litre cask	12%	20.0
	4 litre cask	12%	40.0
Cider	375 ml bottle/stubbie	4.7–7.5%	1.4–2.0
	750 ml bottle		2.8–4.0
FORTIFIED WINES E.g. port, sherry	60 ml glass	21%	1.0
	750 ml bottle	18%	11.0
	2 litre (cask/flagon)	18%	28.0
PREMIX COOLERS AND SODAS	340 ml bottle		
	375 ml can	5–8%	1.5–2.4
	250 ml–350 ml bottles	3.5–5.5%	0.7–1.4
SPIRITS	30 ml (nip)	42%	1.0
	700 ml bottle	40%	22.1

Source: adapted from ATODS (1997) and NHMRC (2001).
Note: a 285 ml glass is a 'middy' in NSW, WA and ACT; a 'pot' in TAS; a 'handle' in NT; and a 'schooner' in SA.

- cause behavioural problems, such as fighting, resulting from feelings of aggression (NHMRC, 2001)

People with mental health problems

The psychoactive effects of alcohol can result in exacerbation of existing mental health problems. Alcohol may also interact with prescribed medications. Always give specific advice to avoid alcohol where it is contraindicated.

Unborn children

The foetus is most vulnerable to damage from high-risk drinking during the first few weeks after conception. Drinking above the low-risk guidelines can contribute to adverse outcomes for the baby (e.g. foetal death, growth retardation, behavioural deficits, congenital malformations). However, there is 'no discernible evidence' that one standard drink a day causes harm to an unborn child (NHMRC, 2001).

Women

Women are more susceptible to alcohol-related harms due to:

- their reduced ability to metabolise alcohol relative to males
- physical makeup (smaller body frame, liver, higher proportion of body fat, different biochemical processes relative to males (Litt et al., 1993)). Women are likely to develop complications earlier, and are more vulnerable to liver damage and cirrhosis at lower consumption levels. High consumption is related to breast cancer
- environmental influences which place women at greater risk of intoxication-related harms (e.g. assault and injury)

Risk factors for hazardous and harmful drinking patterns in women include:

- a positive family history
- childhood problem behaviours related to impulse control
- poor coping responses in the face of stressful life events
- depression, divorce or separation
- having a drinking partner and working in a male dominated environment

Although women enter treatment at about half the rate of men, treatment outcomes are similar. Attitudes towards women drinkers, depression, concerns about children, or fear of removal of children are potent barriers to seeking treatment (NHMRC, 2001).

Occupational groups

Workers in some occupational groups engage in risky or harmful drinking patterns more often than others due to a range of social and environmental factors.

These groups may include:

- trades (e.g. building, mining, construction, forestry, transport, fishing)
- hospitality industry
- women employed as specialist managers (finance, personnel, public policy, sales)
- transport, publishing, wholesale and service industries (e.g. entertainment) (NHMRC, 2001)

IDENTIFYING HARMS

As with other drugs, alcohol-related harms are not specific to the effects of the drug. Alcohol-related harms result from the interaction between:

The drug

- patterns of use (how much, when used, how often)
- and other drugs used

The individual

- age, weight, gender and general health
- tolerance and previous experience of alcohol use, intoxication, after effects and withdrawal
- expectations of use and effects
- current mood and psychological health

The environment

Factors that influence the drug's effects and patterns of use such as:

- social settings and company
- context of use
- patterns of drug use according to ritual or culture

Table 3–3
Classification of alcohol-related harms

	Intoxication	Regular Excessive Use	Dependence
Examples of problems	• hangovers • insomnia • reduced work performance • road and industrial accidents • unintended unsafe sexual practices • violence	• irritability • depression • anxiety • altered sleep patterns • hypertension • weight gain • gastritis • impotence • fatty liver • memory loss • financial issues	• cirrhosis • pancreatitis • oesophageal varices • peripheral neuritis • tolerance • withdrawal symptoms • anxiety • depression
Consumption patterns	In a single session: • > 6 standard drinks (male) • > 4 or more standard drinks (female)	Standard drinks / day • see NHMRC guidelines for short- and long-term harms (Appendix A)	Standard drinks / day • male > 10 • female > 8
Prevalence	Common • 10–15%, especially in adolescence and early 20s	Risky / harmful • 10–20% population	Relatively uncommon • < 5% males • < 2% females

Source: Thorley (1980) adapted by Litt et al. (1993, p. 5)

Thorley's model (see Table 3–3) is a useful guide to identifying specific harms related to 'Intoxication', 'Regular Excessive Use' and 'Dependence'. This model enables practitioners to:

- assess the type of problem
- assess severity of problems
- facilitate individually tailored responses

General points:

- intoxication-related problems have substantially greater impact on the community than dependence, however, dependence results in more severe problems for individuals
- regular use is not generally considered a problem unless it exceeds the 'at-risk' thresholds described by the NHMRC (2001)
- primary care practitioners are likely to have most success in their interventions with people experiencing problems related to intoxication and regular use
- patients experiencing problems related to dependence are best referred to specialist agencies

ALCOHOL ASSESSMENT

Early Recognition of Alcohol-related Problems

Alcohol-related problems are more likely to be identified early when the health professional:

- is aware that psychosocial problems occur before most physical problems
- is willing to follow up with detailed enquiry and appropriate investigations

www.health.gov.au/pubhlth/publicat/document/alcproblems.pdf

Four Key Assessment Steps

1. Establish patterns of use

Techniques for incorporating use of alcohol into history taking include:

- incorporating questions about general lifestyle issues, such as smoking, diet, exercise, recreational activities
- asking specific questions (type of drug/s, dose, frequency of use, duration of use, recency of use, how used)
- focusing on the current week's patterns
- use of a visual Standard Drinks Chart (e.g. www.dasc.sa.gov.au), (see Table 3–2)
- asking about concurrent use of other drugs, e.g. tobacco, amphetamines, benzodiazepines, heroin

These strategies help prevent patients from giving general responses such as 'I only drink socially'. Conversation starters might include:

> *'Now that we have dealt with…(presenting complaint)…let's have a look at other areas that may contribute to your health. Are you allergic to anything? Do you smoke? When did you last have a drink?'*

> *'We often find that eating, smoking and drinking habits affect our health. I'd like to ask you a few questions about these things.'*

Assume the patient consumes alcohol to some degree, so introduce drinking as a normal practice, for example:

> *'Most of us like to have a drink. How often would you have a drink during the week and at the weekends?'*

> *'Did you have a drink yesterday? What did you have, where were you, and how long were you drinking?'*

(Adapted from the APF, 2001 and Litt et al., 1993)

Additional aspects of a drinking history should include:

- pattern of consumption over past 7 days, commencing with today, and working backwards
- establishing pattern over a 'typical week', including alcohol use during special events (e.g. anniversaries, celebrations)
- determining whether alcohol consumption is related to cultural/religious practices/ beliefs

2. *Establish risk*

Indicators of risk for alcohol-related harm include:

- health or social problems related to alcohol use
- concerns (self or family) about levels of consumption
- concerns about consequences related to intoxication or high risk use, such as accidents, assaults, injuries, driving offences, embarrassment related to behaviour whilst intoxicated
- use of other drugs (alcohol may interact with or enhance the effects of other drugs)
- physical trauma, possibly attributable to alcohol use
- signs of intoxication or hangover
- consumption regularly exceeding NHMRC guidelines for short-term high-risk use
- anxiety, depression, sleeping difficulties not otherwise explained

Signs and symptoms suggestive of alcohol dependence may include:

- current intoxication (positive BAC, smell of alcohol on the breath, slurred speech, ataxia)
- withdrawal symptoms (tremor, sweating, agitation, anxiety, increased blood pressure, pulse)
- signs of liver disease (hepatomegaly, spider naevi)
- signs indicative of poor functioning, e.g. poor general appearance, poor hygiene
- repeated admissions for possible alcohol-related conditions
- peripheral neuropathy
- cerebellar ataxia (broad based gait)
- cognitive dysfunction (impaired mini-mental examination)
- past history (withdrawal and treatment history, periods of abstinence)
- indicators from relevant pathology tests (NSW Health, 2000)

See Appendix B

Use Figure 3–2 with patients as a tool for opening discussion about indicators of high risk drinking patterns, and how alcohol use may be related to interpersonal, social, psychological and general health problems.

3. *Identify problems associated with use*

- medical
- financial
- legal
- employment
- relationships (social, work, family)
- violence
- psychological and psychiatric
- sexual

4. *Match presentation to intervention*

For appropriate matching of patient and intervention, consider:

- the patient's wants and needs
- 'stage of change'

See Chapter 13
Psychosocial Interventions

- type and severity of problems (physical, social, emotional), and links with problems related to intoxication, regular excessive use or dependence
- patient safety (including other health or social risks) (Alliance of NSW Divisions, 2000)

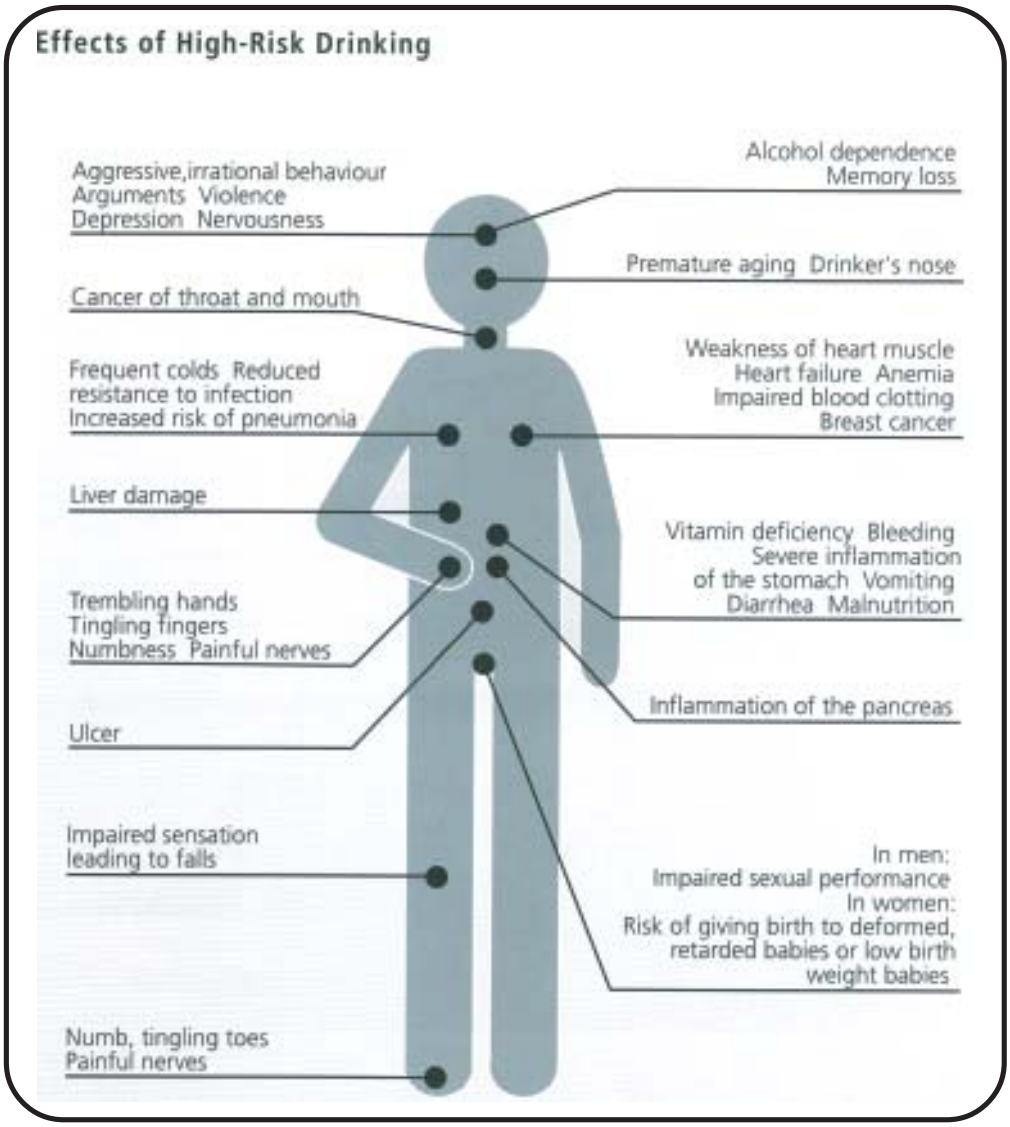

Figure 3–2
Common effects of high-risk drinking
Source: Babor, T., Higgins-Biddle, J.C. Saunders, J. & Monteiro, M.G. (2001)

SCREENING FOR ALCOHOL USE

Invasive Measures

Estimating BAC (Blood Alcohol Concentration)

A breathalyser is a reliable way to determine BAC. Breath analysis offers a good correlation between body burden of alcohol and concentration of alcohol in pulmonary blood circulation through measuring end-expiratory breath. Breath analysis:

- indicates recent consumption however, cannot identify patterns of high-risk or harmful patterns of use
- is accurate, but expensive (a breathalyser unit needs to be purchased and regularly calibrated)
- results are available immediately

Note: The term Blood Alcohol Concentration (BAC) may be used interchangeably with Blood Alcohol Level (BAL).

See www.dasc.sa.gov.au for the 'DRINKMETER Program', an interactive guide for determining BAC after a 'typical' drinking session (taking into consideration age, height, weight etc.).

Laboratory investigations

Use of laboratory tests may assist the practitioner to relate drinking consequences with physical sequelae, and encourage the patient to think about their drinking. Whilst elevated biochemical markers may be indicative of liver disease, most tests are neither sensitive or specific to both long-term or hazardous alcohol use. Liver function tests (LFTs) provide general information about the impact of alcohol on the body. Carbohydrate deficient transferrin (CDT) tests are more sensitive and specific indicators of long-term high-risk use.

Most laboratory measures are less sensitive than good clinical judgment and self-report measures, such as AUDIT and CAGE, in detecting alcohol dependence and related health care problems (Dawe et al., 2002).

See Appendix B

Non-invasive Measures

Detecting alcohol-related problems is more effective with the use of specific purpose screening tools. The screening tools most frequently used in Australia include:

- AUDIT
- CAGE
- T-ACE
- TWEAK

(For information on T-ACE and TWEAK refer to Dawe et al., 2002.)

CAGE

The CAGE is a four item screening questionnaire designed to identify problem or 'at-risk' drinking.

It can be administered as part of an interview, or as a self-report measure, and has been successfully used across health settings, and across cultures with minor modifications (Dawe et al., 2002). The items are:

1. Have you ever felt you ought to **C**ut down on your drinking?
2. Have people **A**nnoyed you by criticising your drinking?
3. Have you ever felt bad or **G**uilty about your drinking?
4. Have you ever had a drink first thing in the morning (**E**ye-opener) to steady your nerves or get rid of a hangover?

Scoring 'yes' to two or more questions is predictive of current hazardous or harmful drinking patterns, and indicates a need for further assessment. The CAGE has a sensitivity and specificity of 84% and 95% respectively, and a positive predictive value of 45% using a cut off of > 2 positive responses. But because CAGE is considered insensitive to detection of low levels of problematic drinking the AUDIT is considered the screening instrument of choice, given that little additional time is required to complete, score and interpret the AUDIT (Dawe et al., 2002).

The AUDIT

The AUDIT is a 10 item screening instrument designed to identify hazardous and harmful alcohol consumption as well as dependence. It is easy to use, short, and enables valuable patient feedback. The AUDIT is consistent with ICD-10 definitions of harmful alcohol use and dependence and focuses on recent use of alcohol. It has been validated across countries, cultures and languages (Babor & Higgins-Biddle, 2001; Dawe et al., 2002).

Administration of AUDIT

The AUDIT can be administered as an interview or as a self-report measure (see Babor et al., 2001).

See Appendices C & D

Interpreting the AUDIT

The 10 questions are each given a score of between 0 and 4, with a maximum overall score of 40. Whilst a single global score is considered representative of overall drinking behaviour, examination of individual responses to each question are important, as this will help:

- identify pattern of use (quantity and frequency of use, level of risk)
- assist in informing the type of intervention that would be appropriate (e.g. strategies for a young person drinking infrequently but at high-risk levels will be different to an intervention offered to an older person drinking less, but more frequently)
- indicate areas requiring further assessment (e.g. where the patient is showing signs of dependence) (refer to Dawe et al., 2002; Babor et al., 2001).

BRIEF INTERVENTIONS

Health professionals are well placed to:

- identify alcohol-related harms, and problems related to consumption or after effects of use
- assist patients to link patterns of consumption with current lifestyle, social or health-related problems
- provide specific, tailored interventions, that have demonstrated efficacy within a single, or short series of consultations.

A brief intervention consisting of a short five minute session may incorporate:

- identification of current patterns of use, linking consumption patterns with identified problems
- identification of 'stage of change'

See Chapter 13
Psychosocial Interventions

- assistance to assess pros and cons of current patterns of use
- motivational interviewing techniques
- advice on safe drinking guidelines and ways to cut down

See Appendix E

- provision and explanation of self-help materials e.g. drinking diaries
- relapse prevention strategies (if relevant)

Brief interventions conducted over a short series of 2–3 sessions tend to have an educational focus, and may include:

- comprehensive assessment
- specific advice
- counselling
- teaching goal setting strategies to assist moderating drinking patterns or reducing harms (Lopatko et al., 2002)

See Chapter 13
Psychosocial Interventions

Table 3–4 shows the FLAGS approach to alcohol intervention using the AUDIT.

ALCOHOL INTOXICATION

Acute Alcohol Intoxication

Intoxication may be recognised by:

- ataxia and slurred speech
- emotional lability and disinhibition
- smell of alcohol on the breath
- mood variations

Assessment of Alcohol Intoxication

- obtain alcohol and other drug use history (especially recency of use)
- observe vital signs
- physical examination
- mental health examination to establish:
  - level of consciousness
  - orientation
  - memory
  - judgment
  - comprehension
  - mood
  - speech
  - perception (hallucinations)

Complications of acute alcohol intoxication or overdose

Possibly:

- respiratory paralysis, particularly if vomit is inhaled
- obstructive sleep apnoea
- fatal cardiac arrhythmia when blood alcohol is greater than 0.4 mg / ml

Alcohol intoxication will only resolve with time. Management of intoxication depends on the location of the affected person, type of service available, and skills of the worker to monitor and observe for complications. Management includes:

- managing behaviours of affected person (e.g. don't engage in discussion of emotive topics, diffuse aggressive behaviour)
- provide a non-threatening and non-stimulating environment
- encourage sleep
- observe for signs of other medical conditions that mimic intoxication (e.g. head injury, diabetes, infection, epilepsy, drug toxicity). Refer to NSW Health (2000) for further detail.

www.health.nsw.gov.au

Clinical signs of alcohol-related overdose may include:

- decreased consciousness, coma or stupor
- changing mental status
- cold and clammy skin, lowered body temperature

Table 3–4
Using the AUDIT score with the FLAGS approach for treatment interventions

AUDIT score + history + observations			
Low risk (M: < 8; F: 7)	**Risky or harmful (M: 8–15; F: 7–15)**	**Problematic (16–19)**	**Alcohol Dependent (> 20)**
Feedback results	**F**eedback results	**F**eedback results	**F**eedback results
Listen to patient's concerns	**L**isten to patient's concerns	**L**isten to patient's concerns	**L**isten to patient's concerns
Provide **A**lcohol education and information	Simple **A**dvice and information Creates awareness of low risk range Informs patient about consequences of continued drinking, brief counselling, ongoing monitoring	**A**dvise patient about consequences of continued drinking, brief counselling, ongoing monitoring Assess and tailor advice to Stage of Change	**A**dvise patient re. need for further assessment/referral to specialist
Goals of treatment General awareness Reinforces/maintains low risk drinking Assists patients problems, patients who have cut down, or whose circumstances may change	**Goals of treatment** Assists those drinking at risky levels Encourage reduction of consumption to recommended limits e.g. 2 alcohol free days per week	**Goals of treatment** To manage or encourage moderation of hazardous and harmful patterns of drinking Manage risk Failure to respond, or indications that further diagnostic evaluation is required suggests dependence	**Goals of treatment** Likely dependent Discuss importance/ relevance of abstinence Provide information Establish treatment goals
	Strategies discussed and implemented Gain greater understanding of 'trigger' situations Offer self-help booklet Offer follow up appointment to discuss progress, and use of booklet	**Strategies discussed and implemented** Possible: • Withdrawal management (detoxification) • Pharmacotherapies PLUS supportive therapy Weigh pros and cons of treatment. Negotiate goals. Encourage supportive therapies Monitor and follow up or refer to AOD worker or specialist if necessary	**Strategies discussed and implemented** Consider: • Withdrawal management (detoxification) • Pharmacotherapies PLUS supportive therapy Specialist help or primary care and community-based support Monitor and follow up

Source: adapted from APF (2001, p. 14), Babor et al. (2001) and O'Connor & Simmons (2002)

- lowered blood pressure, tachycardia/ bradycardia
- breathing difficulties, slow and noisy respirations

Managing overdose:

- maintain airway, breathing and circulation
- refer to hospital for further assessment

As polydrug use complicates any clinical picture, obtain drug use history where possible, in particular use of other central nervous system depressants such as methadone and heroin.

ALCOHOL DEPENDENCE

Alcohol dependence is a complex syndrome, with both physiological and psychological signs and symptoms.

See Chapter 1
Overview and Introduction

Key features of alcohol dependence include:

- tolerance or narrowing of drinking repertoire
- a perceived 'loss of control' over one's drinking behaviour/salience of alcohol over other issues
- withdrawal (physical and psychological) symptoms on cessation of use
- relief or avoidance of withdrawal symptoms by drinking
- rapid recommencement of pre-established, or high-risk drinking patterns after a period of abstinence

ALCOHOL WITHDRAWAL

General Guidelines for Alcohol Withdrawal Management

Withdrawal management is just one aspect of managing alcohol dependence and should never be considered 'the cure'. Changing established behaviours takes time; relapse is common. Well planned interventions and engagement in activities supporting behaviour change will assist long-term recovery.

See Chapter 13
Psychosocial Interventions

www.answd.com.au
Tip Sheets

Depending on drinking history, medical risk and level of social support, alcohol withdrawal can be effectively managed in a home or inpatient setting. To establish a withdrawal management plan:

1. Assess current consumption levels

- undertake AOD, medical, social history and mental health assessment

2. Predict likelihood and severity of withdrawal

Withdrawal is likely where:

- there is an alcohol-related reason for admission/assessment
- there is regular alcohol use of > 80 grams per day (males), > 60 grams per day (females)
- patient > 30 years (significant alcohol withdrawal is unlikely under the age of 30)
- < 10 days after last drink (withdrawal usually commences within 6–24 hours of last drink, and may last 2–12 days)
- there is a history of alcohol dependence/ significant previous withdrawal history
- AUDIT Score > 12

- other depressant/sedative medications are currently used
- pathology results are unusual e.g. raised serum GGT or MCV
- there is presence of alcohol-related disease (e.g. alcohol-related liver or cardiac disease, pancreatitis, hepatomegaly)
- physical appearance is suggestive of harmful alcohol use (parotid swelling, abnormal skin vascularisation, conjunctival injection)
- there is serious intercurrent illness e.g. head injury, diabetes, epilepsy, psychosis, infection, poor nutrition, head injury, significant liver disease, pancreatitis, cardiac or respiratory disorders (NSW Health, 2000)

The severity of alcohol withdrawal can be predicted by:

- previous withdrawal history (past history of seizures, hallucinations, delirium)
- duration and amount of alcohol used (quantity > 150g per day predictive of severe withdrawal)
- presence of other illness or injury increases severity and likelihood of complications
- use of other psychotropic drugs may result in additive or synergistic effects

(Adapted from NSW Health, 2000; Hulse et al., 2002)

The progress of the alcohol withdrawal syndrome can be seen in Figure 3–3.

Home withdrawal management

Home withdrawal may be suitable where:

- GP is able and willing to provide home monitoring
- carer support is available at home
- the patient has organised responsibilities and commitments (e.g. work)
- the patient's physical and emotional condition is appropriate for home withdrawal

Ensure the patient and carer are actively involved in developing the treatment plan and are aware of:

- withdrawal commencement date
- possible symptoms and has discussed expectations of withdrawal process
- medication regimes
- support and emergency systems

See Chapter 2
General Principles

Psychosocial and Physical Support During Alcohol Withdrawal

- reorientate and provide reassurance
- use simple commands, brief explanations, repetition (if required), use calm but firm voice
- treat symptoms e.g. headache, diarrhoea, generalised aches and pains, nausea and vomiting etc. and monitor and observe for seizures or other medical complications
- encourage fluids and light meals e.g. vegemite on toast
- ensure calm, uncluttered and comfortable environment with dim lighting, comfortable clothing and clean bedclothes

Delirium Tremens (the 'DTs')

Delirium tremens is a medical emergency associated with untreated alcohol withdrawal, occurring 3–14 days after stopping drinking. It occurs in < 5% of patients (Lopatko et al., 2002) and may be fatal (Ryder et al., 2001).

Main features of the DTs include agitation, restlessness, gross tremor, disorientation, fluid and electrolyte imbalance, sweating and high fevers, visual hallucinations and paranoia (Lopatko et al., 2002; NSW Health, 2000).

Observation and ongoing assessment — alcohol withdrawal observation charts

Withdrawal charts provide a guide to the severity of withdrawal symptoms and use of pharmacotherapy, but are not diagnostic instruments in themselves. A chart and guidelines for clinical management incorporating the validated Clinical Institute Withdrawal Assessment for Alcohol — Revised Version (CIWA–AR), the most commonly used instrument in Australia, is provided at Appendix F.

See Appendix F

Pharmacological Management of Alcohol Withdrawal

Medications (see Table 3–5) (including benzodiazepines), combined with supportive care can assist in reducing severity of withdrawal symptoms in the home and inpatient environment.

Diazepam

Benzodiazepines (most commonly diazepam, or oxazepam in the case of impaired liver function) are the drugs of choice in managing alcohol withdrawal, as they:

- alleviate many withdrawal symptoms
- are effective in preventing development of complex withdrawal features when given early
- have a wide margin of safety, provided supervision is adequate
- have low likelihood of cross-dependence, when established regimes for withdrawal management are used

If essential prerequisites for home withdrawal management have been met, home withdrawal using benzodiazepines may be appropriate (see Table 3–6) (See also Saunders et al., 1996).

See Chapter 2
General Principles

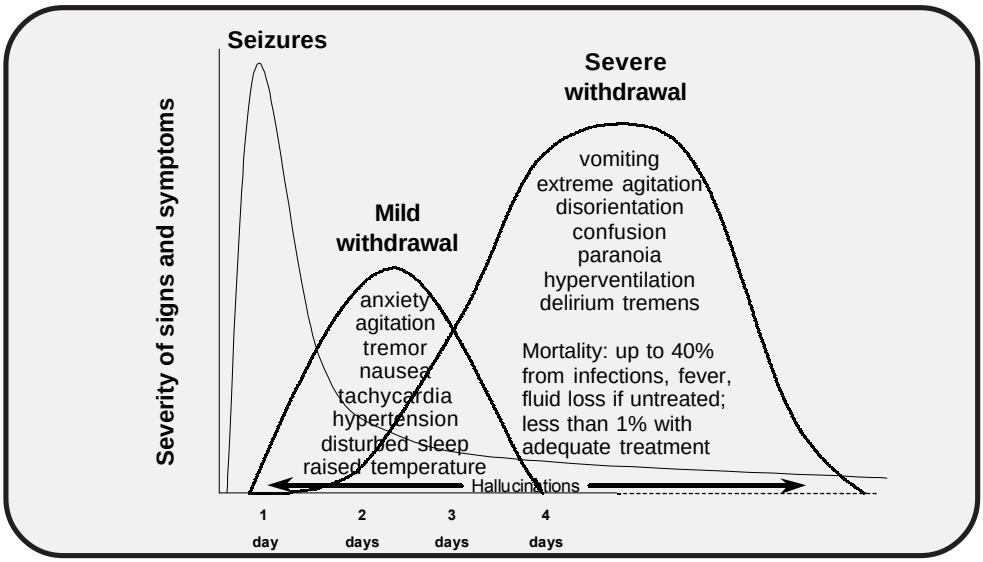

Figure 3–3
Progress of alcohol withdrawal syndrome
Source: NSW Health (2000, p. 41)

www.health.nsw.gov.au

Benzodiazepines for withdrawal management in inpatient/hospital setting

An inpatient setting is more appropriate if severe withdrawal or seizures are likely, or for those who are older, polydrug users, or physically or psychologically unwell. The Alcohol Withdrawal Observation Chart provides a diazepam regime for inpatient settings. Also see Palmer (2001) and NSW Health (2000).

See Appendix G

Withdrawal may complicate any hospital presentation. Withdrawal management should occur several weeks prior to surgery, where possible.

There is NO place for the prescription of alcoholic beverages in the management of alcohol withdrawal.

Table 3–5
Medications commonly used for withdrawal management

Drug	Main Indications
Thiamine 100 mg	IMI/O for at least 5 days (oral dose for two weeks, or until eating well). Treats or prevents Wernicke's, cerebellar ataxia and peripheral neuropathy, and assists cognitive recovery
Paracetamol	p.r.n. for management of headache and mild muscular pain (exclude prior liver disease)
Multivitamins	e.g. folic acid, Multi B forte for poor nutrition or poor initial appetite
Antiemetics	e.g. metoclopramide; for control of nausea and vomiting, p.r.n. Sedative effects assist sleeping
Antipsychotics	e.g. haloperidol may be indicated in small doses (2–5 mg if hallucinating, or if agitation is of concern and uncontrolled by diazepam). Avoid phenothiazines as they lower seizure threshold
Antidiarrhoeal agents p.r.n.	e.g. loperamide (as indicated)

Source: Lopatko et al. (2002); Palmer (2001); Wood & Pead (1995)

AFTER-CARE

Self-help Resources

Self-help resources can be useful tools to assist patients to reduce or cease use of alcohol. These resources work best when used in conjunction with a health check-up, follow-up or counselling session.

See p. 54, Resources

Self-help Groups

Alcoholics Anonymous, or AA, is a worldwide mutual help organisation with over 2 million members. It accepts no outside contributions and is run by and for 'recovering alcoholics'. The recovery program is based on universal spiritual principles. AA is a fellowship of support that encourages altruistic behaviour but makes no demands of its members apart from a desire to remain sober. The longevity of sobriety and positive attitude of many members can be exemplars for many patients. AA meets in most towns in Australia, many of which also offer support groups for partners (Al-Anon) and children (Al-Ateen) of drinkers. Locate your local AA program in the telephone directory or the regional service via the Internet.

Pharmacotherapies to Reduce Relapse/Promote Abstinence

Controlled trials have shown that some medications effectively reduce relapse amongst dependent drinkers. These medications are best used as part of a comprehensive psychosocial treatment plan, such as counselling, motivational interviewing, relapse prevention, goal setting, risk and cue identification (APF, 2001). The most common medications used for promoting abstinence are described in Table 3–7.

ALCOHOL-RELATED BRAIN INJURY (ARBI)

Prolonged high risk use of alcohol may result in specific psychological and biochemical changes that may be described as alcohol-

Table 3–6
Diazepam regime for home/outpatient withdrawal

	8 a.m.	12 midday	5 p.m.	10 p.m.
Day 1	10 mg	10 mg	10 mg	10 mg
Day 2	10 mg	5 mg	10 mg	10 mg
Day 3	10 mg	5 mg	5 mg	10 mg
Day 4	5 mg	5 mg	5 mg	5 mg
Day 5	5 mg	–	5 mg	5 mg
Day 6	5 mg	–	–	5 mg
Day 7	–	–	–	5 mg
Day 8	–	–	–	–

Source: Palmer (2001, p. 12)

related brain injury (ARBI). This condition is often confused with dementia, or pre-morbid deficits associated with learning disorders, and manifests in various ways, including:

- disturbance in executive functions
  - poor attention, planning, organising, problem solving abilities, have difficulty in new environments or with new routines
  - 'concrete' thinking, difficulties with self-awareness and insight, appear poorly motivated
  - rigid repetitive behaviour patterns and inability to recognise consequences of behaviour
  - problems responding to changes in routine
- memory disturbances
  - poor short-term memory, may confuse dates/events
  - problems learning new information
- non-verbal disturbance
  - problems with hand-eye coordination and perception related tasks

With abstinence, proper nutrition, and psychological intervention, significant improvement is possible. Physical examination, CT scan, and blood tests (LFT, MCV etc.) will assist diagnosis.

Wernicke–Korsakoff's Syndrome

This 'syndrome' is the result of thiamine deficiency, essential for effective CNS function.

The acute phase, Wernicke's encephalopathy, is a life-threatening condition, manifesting in:

- global confusional state
- ocular disturbances: horizontal nystagmus, ophthalmoplegia or 6th nerve palsy, resulting in diplopia
- ataxia: wide-based and reeling steps, although may be obscured by polyneuropathies

One symptom is required for a diagnosis (DASC, 2000). When severe, main features include difficulty walking unaided, disinterest and lassitude. Following administration of parenteral thiamine, rapid recovery is possible.

Korsakoff's psychosis (the chronic form of the syndrome) manifests in short-term memory loss, confusion, confabulation, and Wernicke's-type symptoms. Total recovery is rare, 25% of cases are irreversible and constant supervision and care may be required (Luckman & Sorenson, 1982).

Table 3–7
Pharmacotherapies indicated for alcohol dependence

Acamprosate [Campral®]	Demonstrated efficacy in increasing abstinence, reducing relapse, and reducing amount and frequency of drinking
What it does	Does not prevent withdrawal symptoms but effective in dealing with post-withdrawal cravings. Restores activity levels of GABA (inhibitory transmitter) and glutamate (excitatory transmitter) to normal. Does not interact with alcohol, is not known to have dependence inducing potential, and cessation does not produce withdrawal syndrome
Commence	Post-withdrawal (2–7 days after the last drink). Does not treat withdrawal
Treatment time	Estimated at 12 months PLUS supportive therapy. Treatment goal is abstinence. Available on PBS (Authority required)
Side effects	> 1% patients complain of nausea, diarrhoea, skin rash, which may last the first 1–2 weeks only
Contra-indications	Advanced hepatic failure, renal insufficiency (serum creatinine > 120 micromol / L, pregnancy, lactation (refer to prescribing information)
Disulfiram [Antabuse®]	Trials demonstrate modest and inconsistent efficacy in promoting abstinence
What it does	Produces an aversive response to the ingestion of alcohol. Inhibits production of acetaldehyde dehydrogenase, so when alcohol is consumed acetaldehyde accumulates resulting in an unpleasant flushing reaction, nausea and dizziness, vomiting, chest pain, palpitations. Large doses of alcohol may produce hypotension, arrhythmia, seizures, death
Commence	> 24 hours after last drink. Does not treat withdrawal
Treatment time	Long-term. Most effective under daily supervision
Side effects	Drowsiness, psychosis, peripheral neuropathy, hepatotoxicity, metallic taste, headache, visual disturbance
Contra-indications	Severe hepatic impairment, severe renal impairment, severe myocardial disease, hypersensitivity, thiuram derivatives, pregnancy
Precautions	Diabetes, hypothyroidism, epilepsy, impaired hepatic +/-renal function, cardiovascular system disease, asthma, contact eczema, contact dermatitis, lactation, prolonged used. Plan relapse (at least 7 days) to prevent adverse reactions (refer to prescribing information)

Table 3–7 (continued)
Pharmacotherapies indicated for alcohol dependence

Naltrexone [Revia®]	Demonstrated efficacy in increasing abstinence, reducing relapse, and reducing amount and frequency of drinking
What it does	Anti-craving agent, competitive opioid antagonist. Blocks euphoric effects of alcohol. Non-aversive i.e. does not interact with alcohol. Not known to have dependence inducing potential
Commence	Post withdrawal, usually 3–4 days alcohol free. Does not treat withdrawal
Treatment time	Controlled trials suggest 3 months (in practice may need to consider extending). Patients should carry a warning card in case of need for opiate analgesia. Available on PBS (Authority required)
Side effects	About 1% patients complain of nausea, headache, dizziness, fatigue, nervousness, vomiting, insomnia, depression, anxiety lasting first 2–3 weeks
Contra-indications	Opioid dependency (will precipitate withdrawal) or concurrent opioid use, acute hepatitis, hepatic failure
Precautions	Pregnancy, lactation, hepatic or renal impairment. Opioid analgesics will not work (refer to prescribing information)

Source: adapted from APF (2001); Palmer (2001)

RESOURCES

Drinking Guidelines

NHMRC (National Health and Medical Research Council) 2001, *Australian Alcohol Guidelines: The Costs and Benefits of Alcohol Consumption*, Commonwealth of Australia, Canberra.

www.nhmrc.gov.au

AUDIT

Dawe, S., Loxton, N.J., Hides, L., Kavanagh, D.J. & Mattick, R.P. 2002, *Review of diagnostic screening instruments for alcohol and other drug use and other psychiatric disorders*, 2nd edn., Commonwealth Department of Health and Ageing, Canberra.

Babor, T. & Higgins-Biddle, J.C. 2001, *Brief Intervention for Hazardous and Harmful Drinking: A Manual for Use in Primary Care*, WHO, Department of Mental Health and Substance Dependence, Connecticut, USA.

Indigenous and Public Health Media Unit 1999, *National Recommendations for the Clinical Management of Alcohol-related Problems in Indigenous Primary Care Settings*, Department of Health and Aged Care, Canberra, www.health.gov.au/oatsih/pubs/pdf/rec.pdf

www.dasc.sa.gov.au
(pamphlets & posters)

Standard Drink Measures

ATODS (Alcohol Tobacco and Other Drugs Services) 1997, *The Standard Drink Guide*, ATODS, QLD, www.health.qld.gov.au/atods/resources/STDDRINK.pdf

Self-help Resources

Obtain resources from your state ADIS, such as:

DASC 1995, *The drinker's guide to cutting down or cutting out*, Drug and Alcohol Services Council, Adelaide.

DASC 2001, *The Women's Drinking Guide*, Drug and Alcohol Services Council, Adelaide.

NCETA/DASC 2000, *Partners of drinkers: A resource book*, Drug and Alcohol Services Council, Adelaide.

Turning Point 1996, *Getting through Alcohol Withdrawal*, Turning Point Alcohol and Drug Centre Inc., Fitzroy, Victoria.

IEMDGP 1996, *Simple strategies to help your patients balance the use of alcohol in their lives*, Inner East Melbourne Department of General Practice, Melbourne.

Other Resources and Websites

DASC 2000, *Alcohol Related Brain Injury*, available at the DASC website or ADIS.

www.dasc.sa.gov.au

MIMS Website:

www.mims.hcn.net.au

CDHA 2001, *Public Health for Educating Clinicians: Alcohol and Other Drugs,* Module.

www.cme.net.au/phec

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www.answd.com.au

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CDHAC (Commonwealth Department of Health and Aged Care) 2001, *Alcohol in Australia: Issues and Strategies. A Background Paper to the National Alcohol Strategy: A Plan for Action 2001 to 2003/2004*, CDHAC, Canberra.

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