Clinical Protocols for Detoxification

in Hospitals and Detoxification Facilities

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with contributions from staff of Alcohol, Tobacco and Other Drug Services of Queensland Health

AUTHORSHIP AND ACKNOWLEDGEMENTS

This manual, "Clinical Protocols for Detoxification in Hospitals and Detoxification Facilities" has been prepared by John B. Saunders and Junie Yang and staff of the Alcohol and Drug Services of the Royal Brisbane Hospital and The Prince Charles Hospital Health Service Districts, and the Alcohol, Tobacco and Other Drug Service of Cairns Health Service District. The development of this manual has been funded by Queensland Health.

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1. INTRODUCTION

1.1 BACKGROUND AND RATIONALE

This manual provides guidelines and clinical protocols for the management of patients undergoing detoxification from alcohol and/or other drugs. They are specifically designed for medical, nursing and allied health staff who are working in hospitals or specialist residential detoxification facilities. A companion volume "*Clinical Protocols for Detoxification in General Practice and Community Settings*" provides guidelines and protocols that are designed for General Practitioners and other primary health care practitioners in the community settings.

The protocols contained here have been developed on the basis of current literature, the knowledge of experts on alcohol and drug related disorders, and on protocols used by alcohol and drug service staff. They are intended to cover detoxification needs (including management of established withdrawal states) in a variety of settings including hospital wards, detoxification units and residential settings.

People who are alcohol or drug dependent have become neuroadapted to continuous or repeated exposure to a psychoactive substance. A manifestation of neuroadaptation is that a withdrawal syndrome may develop when substance use ceases. The primary objective of detoxification is completion of the withdrawal process with safety and comfort. This ensures that the person can cease alcohol or drug use without experiencing an uncomfortable and potentially hazardous withdrawal syndrome. Secondary objectives include screening for illness, particularly of communicable diseases, and treatment of intercurrent conditions. In the later stages of detoxification opportunity is taken to provide instruction on harm reduction procedures and to initiate referral for ongoing treatment, relapse prevention and rehabilitation.

This manual will give an overview of alcohol and other drug use in Australia; describes the Alcohol and Drugs policy framework; and outlines the concepts of Thorley's model and the Stages of Change model. It will then move on to deal with detoxification and withdrawal management for each individual drug class. The drug classes covered in this manual are alcohol, benzodiazepines, opioids and psychostimulants. They were chosen because of the relatively high associated harm, prevalence of hazardous use and dependence, and potential severity of withdrawal. A laminated ready reckoner or 'decision tree' has been included for each drug class to ensure important information can be accessed at a glance in the clinical setting. A brief overview of comorbid substance use and mental health disorders is also included due to the frequency with which health care practitioners have to care for these patients (see Appendix 1). The final section contains information on the alcohol and drug services available that health care practitioners can access for further information and support.

2. CONCEPTS AND DEFINITIONS

2.1 THE SPECTRUM OF SUBSTANCE USE

There are innumerable substances that cause intoxication, induce dependence and can result in withdrawal states on cessation of use. These protocols deal with four major classes: (1) alcohol, (2) benzodiazepines (the principal sedative-hypnotic used in Australia), (3) opioids and (4) psychostimulants. The overall impact of these substances will be reviewed briefly.

(1) Alcohol

The Australian Institute of Health and Welfare (1999) states that in Australia there is a lifetime use of alcohol of 86.9%, recent use (last 12 months) of 80.7% and a mean age of initiation of 17.1 years. The National Survey of Mental Health and Wellbeing (Hall et al., 1998) found that 83.1% of males and 63.5% of females reported that they had consumed at least 12 drinks of alcohol in the preceding year. The overall prevalence of alcohol use disorders (including harmful use and dependence) was higher among males (9.4%) than among females (3.7%). Alcohol use disorders were highest among 18-34 year olds (10.6%), lowest amongst those over age 55 (4.4%) and intermediate amongst those aged 35-54 (6.1%).

Indigenous Australians are more likely than non-indigenous to abstain from alcohol. However, of those indigenous Australians who do consume alcohol, they are more likely than non-indigenous to consume at hazardous or harmful levels. In 1994, nearly two thirds (62%) of indigenous males and almost half (45%) of indigenous females who consumed alcohol at high levels did so weekly or more often (Commonwealth Department of Health and Family Services, 1997).

The Australian Institute of Health and Welfare (1999:16) estimates that in 1997 there were almost 4,000 alcohol-related deaths and just under 100,000 hospital episodes. Principal among alcohol-related causes of deaths and hospital episodes were cirrhosis of the liver, strokes and motor vehicle accidents. Psychosocial ill effects are also considerable: 40% of divorces are associated with alcohol misuse, as is much domestic and other violence. Longitudinal studies conducted in North America and Europe demonstrate a mortality rate among persons with alcohol misuse that is 1.6 – 4.7 times that of the general population.

(2) Benzodiazepines

A large number of proprietary and traditional drugs have sedative, anti-anxiety and hypnotic properties. Barbiturates, responsible for widespread morbidity due to their high dependence potential and mortality from overdose, have been supplanted by

benzodiazepines, which are safer in overdose, and have little intrinsic tissue toxicity. However, there is considerable dependence risk even at therapeutic doses (Saunders, Sitharthan et al., 2001; Saunders, Dore et al., 2001). In 1998 there is a lifetime use of benzodiazepines of 6.2%, recent use (last 12 months) of 3.0% and a mean age of initiation of 23.4 years (Australian Institute of Health and Welfare, 1999). The National Survey of Mental Health and Wellbeing (Hall et al., 1998) found that 1.9% of males and 2.3% of females reported having used benzodiazepines in the past year with 0.4% of males and females using them at a dependent level. The Progress of the National Drug Strategy: Key National Indicators (Commonwealth Department of Health and Family Services, 1997) show that 82.6% males and 85.7% females who had been prescribed benzodiazepines in 1995 used them for six months or longer. In the 65 years or older age group the figure was 92% males and 91.2% females.

(3) Opioids

In 1998 there was a lifetime use of heroin of 2.2%, recent use (last 12 months) of 0.7% and a mean age of initiation of 21.5 years. Males (1%) were twice as likely as females (0.5%) to be recent users. The age group with the highest proportion of persons using heroin was the 20–39 years whilst the highest proportion of recent heroin users were in the 20–29 age group. The proportion of teenagers aged 14 – 19 years ever using heroin increased from 0.6% in 1995 to 1.7% in 1998 and those recently using heroin increased from 0.6% to 1% (Australian Institute of Health and Welfare, 1999:24-25). The Institute also estimates that in 1998 there were 74,000 male and 34,000 female heroin users. Males (1.3%) and females (1.0%) had used opioids in the past year with 0.2% males and females using them at a dependent level (Hall et al., 1998).

The majority of deaths (through overdose, suicide, homicide, infectious diseases, or toxic reactions to drug or adulterants) due to illicits are opioid related. Darke and Zador (1996) point out that the average number of lifetime overdoses was three, and that 68% of the sample of 329 heroin users they surveyed were likely to have overdosed. Males and females are equally likely to have overdosed. In 1999 there were 958 opioid overdose deaths in people aged 15–44 years throughout Australia. This number represented a 30% increase on the number of opioid overdose deaths in 1998 (737). Darke and Zador also identified three independent factors associated with having overdosed: longer heroin using careers; greater heroin dependence; and higher levels of alcohol consumption.

While heroin use is relatively rare in the general population, it is associated with disproportionate costs in terms of drug-related problems and deaths. Most of the deaths occurred within 10–20 years of active use. In New Zealand heroin use is less common, with most opioid dependent patients using “homebake” preparations made from prescription opioids.

(4) Psychostimulants

Three groups of psychostimulants are commonly abused – amphetamine and its derivatives, cocaine, and prescribed stimulants. Amphetamines were marketed at the beginning of the 20th Century as anti-depressants and appetite suppressants. They have been used by troops in wartime, by long distance drivers, and students, but increasingly are used recreationally by youth. Although death from amphetamines abuse is rare, it may occur among intravenous users as a result of cerebral thrombosis or haemorrhage, heart failure or dehydration.

In 1998 there was a lifetime use of amphetamines (8.7%), cocaine (4.3%), and ecstasy (4.7%); recent use (last 12 months) of amphetamines (3.6%), cocaine (1.4%) and ecstasy (2.4%): and a mean age of initiation of amphetamines (19.9 years), cocaine (22.3 years) and ecstasy (22.7 years) (Australian Institute of Health and Welfare, 1999). Among males, 1.4% had used amphetamines in the past year; 0.6% of females had used them, with 0.2% males and 0.1% females using them at a dependent level. 0.1% of males use amphetamines at a harmful level. As in Queensland, the drug with the highest proportion of recent injectors in the rest of Australia was amphetamines (68.2%), then heroin (53.5%) and cocaine (13.4%) (Australian Institute of Health and Welfare, 2000).

Ecstasy (methylenedioxy methyl-amphetamine or MDMA) is one of several amphetamine derivatives popularised in the "rave" scene. It has reinforcing properties due to the relatively pleasant hallucinatory experience as well as the stimulant effect obtained.

The indigenous peoples of South America have used cocaine for centuries. In Europe it was widely used in the early 20th Century in proprietary tonics and medicines. In the 1960s there was a wave of intravenous cocaine use, and in the late 1970s free-base, smokable forms such as "crack" became available. Its use spread in the USA especially from the elite to economically deprived and ethnic minority populations in inner city areas, due to its low cost and ready availability. The number of people in the USA who ever used cocaine increased from 5 to 25 million between 1975 and 1985, by which time 3 million were considered cocaine dependent.

Prescription stimulants are misused predominantly by young women often in a quest to maintain low body weight. These include diethylpropion (Tenuate) and methylphenidate (Ritalin) and stimulants such as caffeine or related compounds are contained in many brands of compound analgesic. Chronically abusive use of Ritalin can lead to marked tolerance and dependence with varying degrees of abnormal behaviour. Frank psychotic episodes can occur, especially with intravenous use.

2.2 INTOXICATION

Acute intoxication is the result of the pharmacological effects of alcohol or another drug when taken in a large amount. In this situation the amount taken exceeds the individual's tolerance and produces behavioural and physiological abnormalities (Commonwealth Department of Human Services and Health, 1994).

Intoxication is seen in naive alcohol and drug users, in regular users, and in those who have become dependent. The amount needed to produce a state of intoxication differs considerably in these three groups because of their differing levels of tolerance.

Severe intoxication can pose a threat to life through (Novak, 1989:11) alteration of physical functions, eg. depression of respiration, hypothermia, and/or alteration in mental functions, eg. panic or paranoia, resulting in accidental injuries or self-destructive behaviour.

Recovery from acute intoxication usually follows clearance of the substance from the body. However, recovery may be delayed if the episode of intoxication has induced a delirium or psychosis. If it has been accompanied by a complication such as hypoxia, there may be permanent damage. **It is important to note that intoxication can mimic or mask serious illness and injury, and that intoxicated persons may respond or react to their perceptions, which they may view as hostile, threatening or inappropriately safe.** This is especially relevant for indigenous populations where comorbidity is common.

There is an inherent risk with combining psychoactive drugs due to their potentiating effect, and this can produce mixed symptomatology.

Departments of Emergency Medicine (DEM) are often the first contact patients have with the hospital. Intoxicated persons usually arrive at the hospital either by their own means or are brought in by the Police or the ambulance. A range of problems can and do arise when an intoxicated person presents for treatment with behaviours that can alienate the hospital staff and can even lead to the patient being covertly encouraged to leave (Pennycook, McNaughton & Hogg, 1992, cited in Watts & Young, 1996).

It is important for all patients who present to the hospital intoxicated requesting a detoxification to be assessed and have their breath alcohol concentration level and other physical observations checked. As part of a harm reduction approach patients who are intoxicated and appear malnourished and/or dehydrated need to be treated with vitamin supplements, especially thiamine (**before any food or dextrose solution is given**), and if required, fluid replacements for electrolyte abnormalities before their discharge from the hospital. Pneumococcal vaccine is recommended for young indigenous people with a history of recurrent intoxication from alcohol.

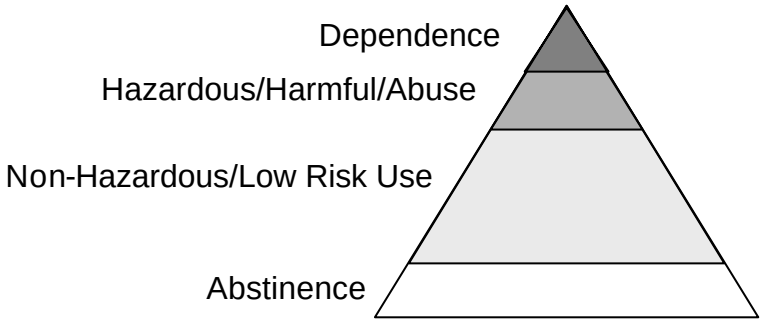
The hospital also offers considerable potential as a site for early detection and intervention for patients who have hazardous and harmful alcohol use and related disorders (Conigrave et al., 1991:801). Novak (Novak et al.,1997:7) points out that if the level of intoxication poses a threat to health, safety or life the patient must be kept for observation and appropriate intervention until his/her mental and physical condition is stabilised. If there is no predicted reduction of intoxication with falling serum drug/blood alcohol concentration levels, the patient should be assessed for existence of another cause of his/her condition. Stabilised patients should be assessed for the possibility of withdrawal. If the severity of withdrawal warrants it, institute the procedure for management of withdrawal.

All intoxicated patients must be assessed for possible poisoning. Cases of poisoning (overdoses) should be treated according to the hospital policies which cover overdoses and their complications (Novak, 1991:11).

2.3 DEPENDENCE

Dependence is the most severe end of the spectrum of substance misuse (Figure 1).

FIGURE 1: Dependence Pyramid



Alcohol and drug dependence is a syndrome which develops after repeated use (over months or years) of a psychoactive substance. It is manifested by a behaviour change in which the use of a given psychoactive drug is allocated a much higher priority than other behaviours that once had higher value. Life becomes more and more focussed on alcohol and drug use. Tolerance typically develops as a neuroadaptive response, and many patients experience withdrawal symptoms when alcohol or drug use is reduced or stopped. Dependence involves a cluster of cognitive, behavioural and physiological changes. It exists in various degrees of severity, and is not an "all-or-nothing" phenomenon. In general, a diagnosis of dependence can be made if **three or more** of the following criteria are evident in a period of 12 months (WHO ICD-10, 1993:75-76):

- a strong sense of compulsion to take the substance
- difficulties in controlling intake once started

- presence of withdrawal symptoms and use of substance to control symptoms
- evidence of tolerance, increasing dose to achieve the original effect
- increasing importance of the substance use in priorities of life
- persistent or continued use of substance in spite of evidence of harmful consequences.

In many cases alcohol or drug use is relatively stereotyped. Persons who have become dependent on a psychoactive substance typically start rapid reinstatement of the syndrome if they resume use after a period of abstinence.

It is useful to have a checklist of features of dependence when taking a history. Table 1 lists the criteria, according to WHO's ICD10 system and also the corresponding criteria in the Diagnostic and Statistical manual of the American Psychiatric Association, Fourth Edition (DSM-IV). See Appendix 2 for the Guide to the Use of the WHO Criteria of Dependence Checklist.

TABLE 1
ICD10 and DSM-IV Criteria for Dependence

ICD10 CRITERIA	DSM-IV CRITERIA
Compulsion to use	
	Persistent desire to reduce substance use
Impaired control over substance use	Impaired control over substance use
Withdrawal symptoms (or substance use to relieve or prevent withdrawal)	Withdrawal symptoms (or substance use to relieve or prevent withdrawal)
Increased tolerance	Increased tolerance
Priority of substance use over other activities	Priority of substance use over other activities
	Much time spent engaged in substance use
Continued use despite harmful effects	Continued use despite harmful effects

2.4 WITHDRAWAL STATE

Alcohol and drug withdrawal occurs following the cessation or reduction in use of alcohol or a drug that has been used consistently and heavily, and to which typically the person has become dependent. The course of withdrawal depends on:

- the severity of dependence, which dictates the extent to which neuroadaptation needs to be reversed
- illness such as physical or psychiatric disorders
- psychosocial factors such as physical environment, fears and expectations.

This multi-dimensional view of drug withdrawal is based on the World Health Organization model of dependence. Treatment of withdrawal requires supportive

care, and often pharmacotherapy and other medical treatment for neuroadaptation reversal, depending on the severity of withdrawal.

The clinical features of the withdrawal syndrome from alcohol and each of the major drug classes covered in this manual are shown in Section **2.5** and described in Sections **4** to **7.**

2.5 RELATIONSHIP BETWEEN INTOXICATION AND WITHDRAWAL

Persons presenting intoxicated from alcohol or other drugs may subsequently develop a withdrawal state. This is to be expected if they have a history of dependence, but it is not invariable. Persons with no such history are likely to recover uneventfully, not develop withdrawal, and therefore not require a formal detoxification.

Snapshots of the clinical features of htoxication versus Withdrawals for each of the major drug classes are shown in Tables 2 to 5. This provides health care practitioners easy identification of the presenting problems. In some instances withdrawal and high blood alcohol concentration can co-exist, especially for someone with a high alcohol tolerance. The person may experience withdrawal even when his/her blood alcohol concentration level remains well above zero. Persons who present with high blood alcohol concentrations should be assessed appropriately for their risk of withdrawal and monitored regularly.

TABLE 2

ALCOHOL
INTOXICATION versus WITHDRAWAL

Alcohol Intoxication

- poor motor coordination
- slurred/incoherent speech
- poor concentration
- mood instability
- impulsivity
- impaired judgement
- sedation
- blackouts
- stupor and coma may occur with very high doses

Alcohol Withdrawal

Simple Withdrawal

- tremor
- perspiration
- anxiety
- agitation
- tachycardia
- hypertension
- depressed mood
- irritability
- insomnia
- increased temperature
- malaise
- nausea/ vomiting

Complicated Withdrawal

- ***** Grand mal tonic-clonic fits
- * Delirium tremens
  - severe hyperactivity
  - severe tremor and agitation
  - clouding of consciousness
  - disorientation
  - hallucinations
  - paranoid ideations/delusions

TABLE 3

BENZODIAZEPINE
INTOXICATION versus WITHDRAWAL

Benzodiazepine Intoxication

- impaired coordination
- slurred/incoherent speech
- impaired thinking
- lability of mood
- aggressive behaviour
- sluggish pupils
- stupor
- anterograde amnesia
- coma may occur with very high doses

Benzodiazepine Withdrawal

Simple Withdrawal

**** Somatic symptoms***

- tremor, muscle twitching, fasciculation
- aches and pains, muscle stiffness
- dizziness
- dilated and brisk pupils
- headaches, visual disturbance
- nausea/vomiting/diarrhoea

**** Psychological symptoms***

- agitation
- anxiety, panic attacks
- depression
- irritability
- insomnia
- perceptual disturbances ('cotton wool' feelings, tinnitus, metallic taste, etc)
- paranoid ideations
- suicidal thoughts

Complicated Withdrawal

* Grand mal tonic-clonic fits

* Delirium

- clouding of consciousness
- paranoid ideations/delusions
- visual and auditory hallucinations

TABLE 4

OPIOID
INTOXICATION versus WITHDRAWAL

Opioid Intoxication

- drowsiness/sedation ('nodding off')
- impaired thinking
- impaired behaviour
- dulled responses
- pin-point and non-reactive pupils
- hypotension, bradycardia, hypothermia
- nausea/vomiting
- shallow/slow breathing
- check for fresh needle marks
- coma and respiratory depression may occur and death may ensue with very high doses

Opioid Withdrawal

Early Features *(6–12 hours after last use)*
- dilated pupils
- lacrimation
- yawning
- hot and cold flushes
- perspiration

The Intermediate Phase *(12-24 hrs after last use)*
- rhinorrhoea
- piloerection

The Fully Developed Syndrome
- increasing restlessness
- anxiety
- irritability
- nausea/vomiting
- abdominal and muscle cramps, backache
- diarrhoea
- insomnia
- drug seeking behaviour (the principal manifestation after 72 hours)

***** Methadone withdrawal is similar but develops more slowly and is more protracted.

TABLE 5

PSYCHOSTIMULANT
INTOXICATION versus WITHDRAWAL

Amphetamine Intoxication

- increased sympathetic activity
- increased confidence
- increased energy
- insomnia
- elevated blood pressure, increased heart rate
- dilated pupils
- restlessness
- pressure of speech
- perspiration, hyperthermia
- jaw clenching
- reduced appetite

Severe Intoxication

- hallucinations
- extreme hyperactivity
- apprehensiveness, paranoid ideation, panic
- convulsions, delirium, coma
- psychosis

Amphetamine Withdrawal

Features of Withdrawal Day 1-3 (the 'crash')

- exhaustion
- decreased appetite
- irritability
- hallucinations
- depression (may lead to suicide)
- hypersomnia
- restlessness
- anxiety
- paranoia

***Following Day 3, typical symptoms include*:**

- lethargy
- erratic sleep
- poor concentration
- increased appetite
- extreme mood swings
- strong cravings to use the drug
- anxiety
- irritability
- aches and pains

Cocaine Intoxication

- hyperactivity
- excitability
- tremor
- perspiration
- tachycardia
- arrhythmia
- hypertension
- facial ticks
- convulsive jerks
- convulsions and coma may occur with very high doses
- psychosis

Cocaine Withdrawal

Phase 1 : "Crash" (9 hours - 4 days)

- agitation
- anorexia
- depression
- fatigue
- hypersomnia
- no cravings for the drug

Phase 2 : Withdrawal (1 - 10 weeks)

- depression
- lethargy
- anxiety
- sudden angry outburst (wall)
- strong cravings to use the drug

Phase 3 : Extinction (indefinite duration)

- episodic cravings often in response to conditioned cues

2.6 HARM REDUCTION AS THE CENTREPIECE OF ALCOHOL AND DRUGS POLICY

Australia adopts a harm reduction approach as the cornerstone of its alcohol and drugs policy. The aim is to reduce the adverse health, social and economic consequences of alcohol and other drugs by limiting the harms and hazards of drug use for both the community and the individual without necessarily eliminating use.

The principle of harm reduction recognises that there is a broad spectrum of levels of use, acute and chronic, and of associated risks of physical and social harm. It includes preventing anticipated harm and reducing actual harm. Harm reduction demands realistic strategies focused on preventing and reducing harm to individual drug users, their families, workplaces and the wider community. It accepts that interventions that reduce risks of harm connected with drug use, without necessarily eliminating use, can also have important benefits for both the individual user and the wider community (National Drug Strategic Plan, 1993-1997:4).

Examples of harm reduction strategies include:

- Increased use of low-alcohol beverages
- Responsible serving practices
- Methadone and buprenorphine maintenance programs
- Needle and syringe availability programs (NSP)
- Injecting drug user education such as safer injecting and disposal practices, vein care, vaccinations and safer sexual practices
- Education on the risks of alcohol and drug use in pregnancy
- Education on the hazards of concomitant use
- Relapse prevention programs
- Providing a variety of treatment options, eg. rapid opioid detoxification, detoxification using buprenorphine and induction into naltrexone; acamprosate and naltrexone for alcohol relapse prevention.

The provision of NSP services provides the opportunity for opportunistic brief interventions or referral to treatment services.

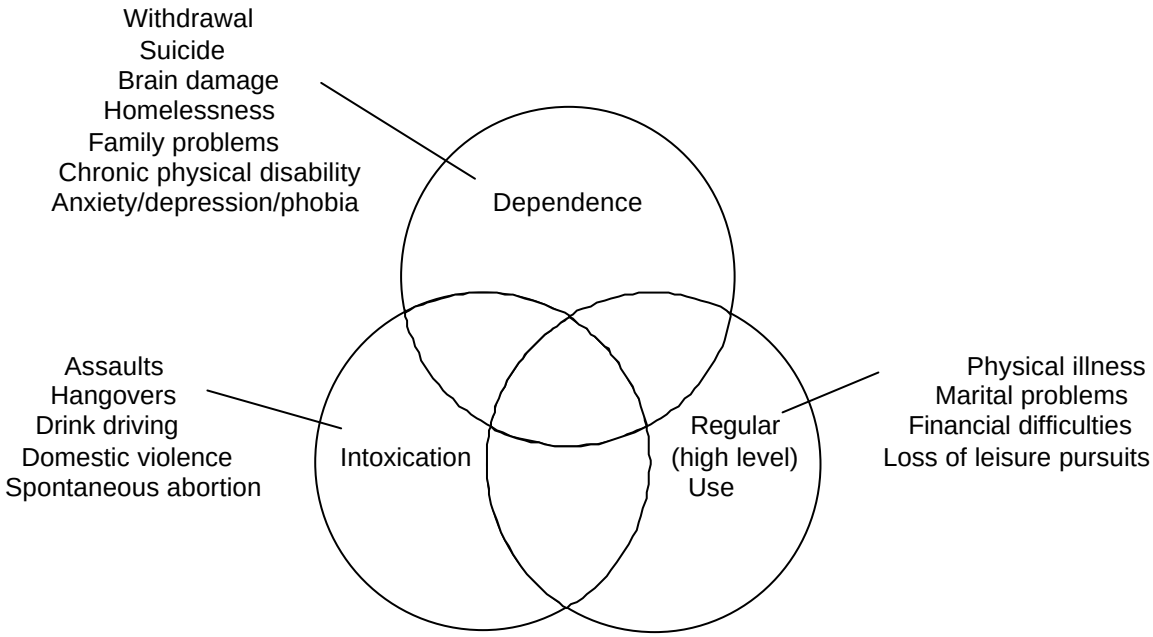
2.7 MODELS OF SUBSTANCE USE DISORDERS

The World Health Organisation and many drug and alcohol professionals conceptualise alcohol and drug misuse as a multifaceted group of behaviours and conditions that have a complex aetiology and exist as a spectrum of severity. Some 20 years ago Thorley (1980) suggested a model in which problems related to alcohol and other drug misuse (medical, psychological and social) could be

related to three elements of substance use behaviour: **intoxication**, **regular use** and **dependence** as portrayed in Figure 2. In other words, Thorley suggests that it is important not just to look at the amount people use, but also their *style* of substance use. This concept can easily be applied to *any* substance use.

Substance use disorders may be triggered or exacerbated by antecedent factors (eg. illness, social factors) and in its turn may worsen these problems or create new ones. Thus, abstinence alone will not necessarily 'cure' the patient. The purpose of assessment is thus to examine all the factors involved. Thorley points out that the essence of any consultation when dealing with the substance user is to accept the patient as a person with problems, as any suggestion of disapproval may hinder the development of a patient's trust and motivation.

FIGURE 2: Thorley's Model (1980)



The circles are drawn so they overlap, indicating that people can have problems in one or more areas. The three elements of substance use behaviour which may generate alcohol and other drug problems are discussed with reference to alcohol in Table 6.

TABLE 6

ELEMENTS OF DRINKING BEHAVIOUR

Intoxication

Problems associated with intoxication include motor vehicle accidents, violence, unwanted sexual activity, criminal acts and drink driving. These problems can occur on any occasion where people are intoxicated. This style of drinking is often seen in young people.

Regular (high level) Use

High level use refers to that style of use where people have a bit more than they ought, ie. drinking and drug use at hazardous levels. People who use at this level will often not appear to be intoxicated because they have high tolerance to the drug. They are likely to exhibit early signs of health or memory problems or, financial problems.

Dependence

Dependence is characterised by two main areas: a preoccupation with the drug, where people will continue with the drug related behaviour in spite of evidence that it is causing harm; and, with some drugs, neuroadaptation. Increased tolerance to the drug (higher dose is needed to get the subjective effect once achieved by a lower dose) and withdrawal on cessation of the drug are the hallmarks of neuroadaptation. An estimated 3.5% of the Australian population drink at a dependent level (Hall et al., 1998).

Problems associated with dependence can include brain damage, cirrhosis of the liver, pancreatitis, depression, suicide, phobia, and severe social dysfunction.

2.8 STAGES OF CHANGE MODEL

The Stages of Change model has been adopted by many drug and alcohol practitioners to guide their therapeutic approach in responding to people with substance use problems.

The process of change was first described by Prochaska and DiClemente in 1982 and was called the Stages of Change Model. Although the model was developed for the addictive behaviours, it is applicable in a wide range of therapeutic areas. As people attempt to change behaviours they move through a number of states and stages. This model is sometimes portrayed as a cycle as in Figure 3 or as a linear version in Figure 4 or as in the latest spiral version in Figure 5.

FIGURE 3: The Stages of Change

Prochaska & DiClemente (1986)

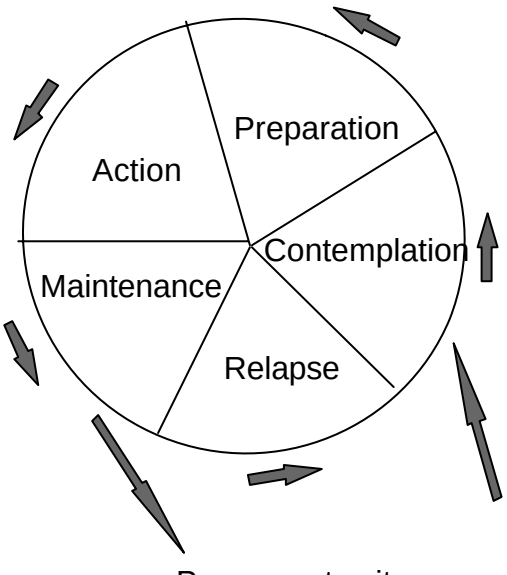


FIGURE 4: The Stages of Change
Prochaska & DiClemente (1986)

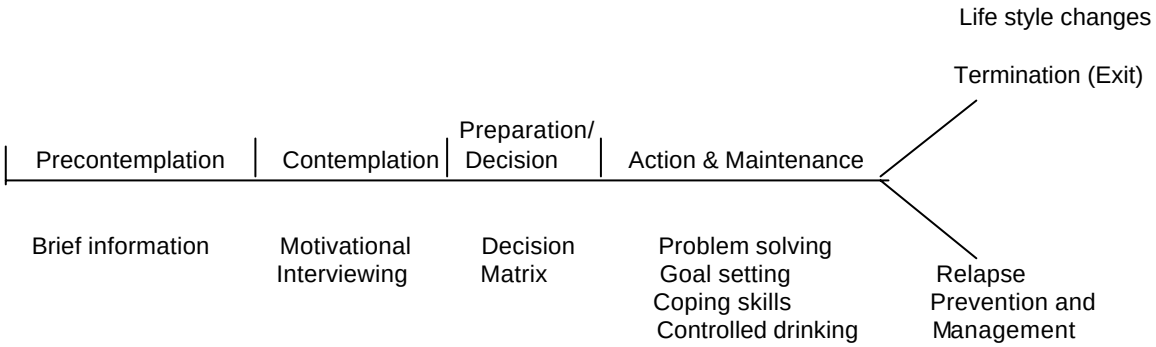
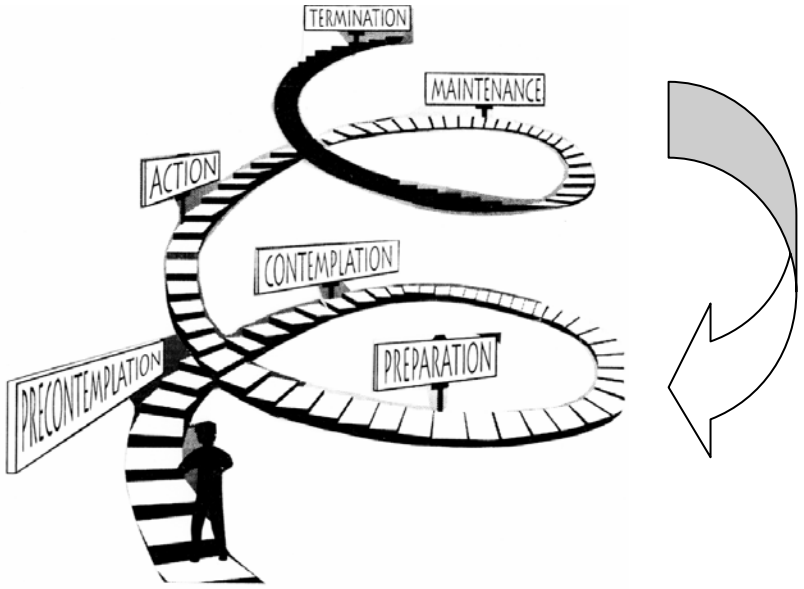


FIGURE 5: The Spiral of Change
Prochaska, Norcross & DiClemente (1994)



The model proposes that people move through the stages of Precontemplation, Contemplation, Decision/Preparation, Action, Maintenance, and frequently Relapse before they reach Termination or life style change. Most patients are probably in the Contemplation stage when they present for help, and many will be precontemplators. It is easy for health care practitioners (and families) to lose sight of this and expect the patient to be ready for Action.

Practitioners who apply this model elucidate their patient's attitude to their drinking or drug use and tailor their advice to match the patient's readiness to change. This approach results in choice from the full range of available

interventions, from a brief motivational interview by a primary health care practitioner, to referral to specialist alcohol and drug treatment.

Critical to change is optimism about change. It is important to communicate a sense of hope and legitimate self-efficacy to the patient, and help to set and revise realistic goals as they attempt to cease or change their drinking or drug use. Patients who abandon their goals and return to harmful drinking or drug use can be reminded that relapse is common, and that those who succeed often try several times before their goal is realised (Commonwealth Department of Health and Aged Care, 2000:10). Some patients never get free of their addictive behaviours and get stuck in particular stages of change (Prochaska and DiClemente, 1986). For example, if a person was detoxified three months ago it should not be used as grounds to refuse admission. If the person meets the admission criteria then he/she should be offered admission for treatment. Refer to Section 3.3 for the Criteria and Settings for Detoxification.

3. DETOXIFICATION

3.1 OVERVIEW OF DETOXIFICATION

Detoxification is the process by which an alcohol or drug dependent person ceases the use of a psychoactive substance in a supervised manner such that withdrawal symptoms and the attendant risks are minimised. Detoxification does not just mean recovery from an episode of intoxication, for which the terms "recovery" or "sobering-up" are appropriate. Detoxification implies that the person has become neuroadapted by repeated exposure to alcohol or a drug and needs treatment to prevent or minimise withdrawal symptoms while the neuroadaptive changes gradually reverse. Many patients present for detoxification without signs or a recent history of intoxication. The tolerance that is consequent on neuroadaptation means that the intoxicating effects of alcohol or the drug are, typically, blunted. Some patients may present when already in a withdrawal state, others without signs of intoxication or withdrawal.

Detoxification takes from 24-48 hours to 2-3 weeks, depending on the predominant substance used and the severity of dependence. It may be undertaken at home, on an ambulatory care (outpatient) basis, in a community residential detoxification unit, in a hospital ward or in a specialist detoxification unit. The severity of dependence and the patient's medical condition determine the appropriate setting. Detoxification can sometimes be undertaken without any medication to assist the process ("non-medicated detoxification"), but it is often necessary to prescribe sedative or substitute drugs. Typically these have similar actions to the substance(s) on which dependence has developed. This form of detoxification is called "medicated detoxification".

As a stand alone treatment, detoxification is considered by some to be of little long-term value and relapse rates after detoxification alone are high. However, detoxification improves the overall health and well-being of many substance dependent individuals. It is also invaluable as a gateway to more extensive services and interventions (National Campaign Against Drug Abuse, 1992). Thus, the role of a detoxification facility (or general hospital) is to provide persons with alcohol or drug dependence assistance with detoxification and then link them into other services such as community follow-up or a residential rehabilitation program. Detoxification may be followed by pharmacotherapy such as acamprosate or naltrexone to reduce the risk of relapse. The admission also provides an opportunity for patients to be introduced to a self-help group such as Alcoholics Anonymous (AA) or Narcotics Anonymous (NA).

Although detoxification represents the first step in an abstinence-oriented management plan, non-abstinence goals may have a place. For example, patients with opioid dependence may explore alternatives such as methadone or

buprenorphine maintenance and for many this is an appropriate and satisfactory outcome. Some patients may seek only short-term cessation of substance use and for them harm reduction strategies will be relevant (examples include long-term prescription of multivitamins for alcohol dependent patients and advice on avoiding risky injecting practices for heroin users).

Any person whose alcohol or drug dependence is complicated by a psychiatric disorder should be reviewed by or referred to a mental health service and appropriate follow-up made prior to discharge.

3.2 ASSESSMENT FOR DETOXIFICATION

Assessment is the first step to managing alcohol and drug detoxification. The key elements in assessment comprise taking the patient's alcohol and drug history, assessing the severity of dependence, undertaking a physical and mental state assessment, and making a psychosocial assessment. The aim of detoxification assessment is to:

- establish a diagnosis of alcohol or drug dependence
- detect those at significant risk of developing a withdrawal syndrome
- determine if a patient can be managed in a particular setting (in terms of their safety, medical needs and the likelihood of completion of detoxification).

Patients will be less defensive and more receptive to inquiries about their alcohol and drug use if they are made to feel at ease with the environment and the interviewer. The right atmosphere can be created by:

- ✓ maintaining a non-judgmental, non-confrontational approach
- ✓ presenting yourself in a friendly and courteous manner
- ✓ maintaining a commitment and integrity during the interview
- ✓ ensuring patient privacy and confidentiality.

The assessment process provides the opportunity for the health care practitioner to build rapport with the patient and establish a therapeutic relationship for further interventions and treatment. The practitioner needs to explain each element of the assessment process to the patient and to seek the active involvement of the patient in planning treatment.

During the assessment the patient's history will reveal factors predictive of the likely course of withdrawal:

- level of use of alcohol and other drugs
- severity of dependence on the primary substance
- past experience of withdrawal
- seizures, delirium or psychosis resulting from withdrawal
- concomitant use of other substances

- fears and expectations about withdrawal and its treatment.

Current and past physical health

Key issues in physical assessment and examination include:

- ✓ Signs of intoxication or physical withdrawal (see Tables 2 to 5 for details of intoxication versus withdrawal for each of the individual drug classes).

- ✓ Intravenous drug use may be identified by fresh needle marks, needle tracks, fresh bruising at injection sites or evidence of cellulitis, phlebitis or abscesses.

- ✓ Ask patients if they know their current Hepatitis B or C and HIV status (if they don't, testing to determine their status should be offered particularly if they have a history of sharing needles; if pathology testing is to be done, pre- and post-test counselling should be undertaken). See Appendix 3.

- ✓ Determine current medication the patient is taking for concurrent illness.

- ✓ Assessment in a medical setting should include a full physical examination, while in a non-medical setting should record and evaluate the following observations: temperature, pulse, respiration and blood pressure, and level of consciousness.

Current and past mental health

It is important to include a brief mental state examination (MSE) as part of the overall assessment as many psychoactive drugs affect mood, cognition, perception and orientation. The assessment interview also provides a good opportunity for observation of the patient's mental state and to determine the patient's capacity for informed consent and active participation in treatment planning, and to identify concomitant conditions that require treatment. The domains explored by a MSE include (MacKinnon & Yudofsky, 1991:38):

- Consciousness (alertness and wakefulness)

- Orientation – to time, place and person

- Appearance, attitude, and behaviour during the interview

- Thought processes and content (eg. delusions, obsessions, ideas of reference)

- Suicidal ideation and risk of harm to self and others

- Perceptions (eg. hallucinations, feelings of depersonalisation)

- Mood, affect, and emotional regulation (is the mood stable or is the patient anxious, depressed, elated or the mood labile?)
- Memory – ability to recall remote and recent experiences
- Impulse control and frustration tolerance
- Intelligence and knowledgability
- Judgment (are the patient's responses rational, and do his/her ideas make sense?)
- Insight (does the patient understand his/her own condition, situation, and reason for being in hospital?)

Any of these features that raise concern for the patient and the interviewer may require further assessment and referral to a mental health service. This is particularly important if the patient presents with suicidal ideation or psychosis in the context of their alcohol or drug dependence.

Suicidal behaviour

All suicidal behaviour, from threats to attempts, must be taken seriously and assessed immediately to determine the type of intervention needed. Special attention must be given to:

- previous attempts and their seriousness
- previous intervention strategies
- whether the failure of the attempt was intended or accidental
- the relation of previous suicidal behaviour to psychiatric symptoms
- current psychiatric symptoms.

All suicidal behaviour should provoke the following questions (Assessment and treatment of patients with co-existing mental illness and alcohol and other drug abuse, 2000):

- How specific is the plan?
- What method will be used?
- When will it happen?
- How available are materials (drugs, weapons)?

A mental health professional or general practitioner should be contacted promptly in cases of suicidal behaviour.

Psychosocial Assessment

Psychosocial assessment is intended to identify the patient's preferences and capacity for treatment, and the likely success of treatment. The patient's choice and views will help in developing an agreed treatment plan. Active patient participation in decision-making improves compliance with treatment and increases the chances of successful detoxification (NSW Health Department, 1999).

Information from the assessment is used to make decisions about the appropriate setting for detoxification and the most effective treatment plan to support a person through detoxification. The criteria and settings for detoxification are discussed in Section **3.3**.

3.3 THE SETTINGS FOR DETOXIFICATION

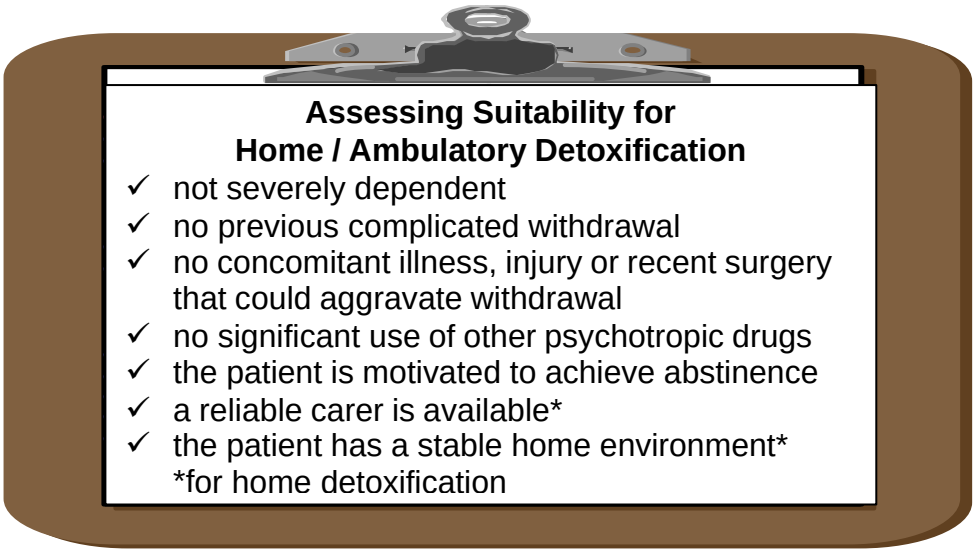
The protocols presented in this manual are principally concerned with procedures for detoxification and the management of withdrawal states in hospitals and detoxification facilities. As mentioned above, detoxification can be provided in a variety of settings, which range from low supervision to intensive supervision and vary in their capacity to provide sedation regimes, medical treatment and supportive care. Thus, the choice of setting is influenced by the assessment of the severity of the patient's alcohol or drug dependence and the likely course of the patient's withdrawal syndrome, as well as patient's needs and likely outcomes. Detoxification settings are classified as (1) home, (2) ambulatory, (3) community residential and (4) hospital or specialist detoxification facility.

Home

Home detoxification is undertaken in the patient's home under the supervision of a health professional and with the support of a carer. Where medication is to be prescribed, the patient's general practitioner is usually involved, sometimes medical staff from the local Alcohol, Tobacco and Other Drug (ATOD) Service provide the medical supervision. It is preferable for a daily visit to be made by a registered nurse to monitor the process. This setting is suitable when an uncomplicated detoxification is anticipated, and where no more than moderate levels of sedation are planned. Home detoxification can offer a limited amount of medical care, pharmacotherapy and some supportive care. Where sedative drugs are used, these are dispensed on a daily basis. If there is no reduction in the withdrawal symptoms, arrangements need to be made for the patient to be admitted to a hospital or a specialist detoxification facility for an inpatient detoxification.

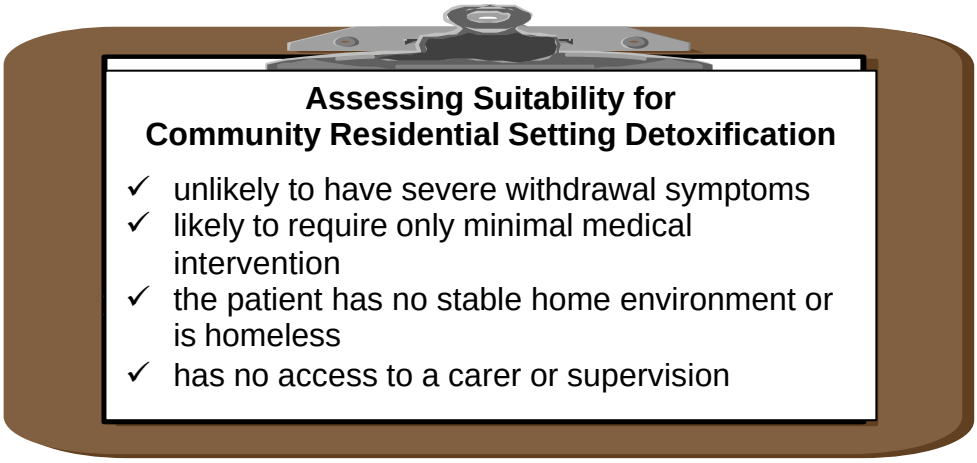
Ambulatory

Ambulatory detoxification is undertaken on an outpatient basis, typically through the local ATOD Service or through a local hospital in some areas. The main difference from home detoxification is that the patient needs to be sufficiently mobile and self-caring to be able to attend the clinic or hospital on a daily (sometimes alternate day) basis. An ambulatory detoxification setting can offer a limited amount of sedative medication, medical care and some supportive care. If there is no reduction in the withdrawal symptoms, arrangements need to be made for the patient to be admitted to the hospital or a specialist detoxification facility for an inpatient detoxification.



Community Residential Setting

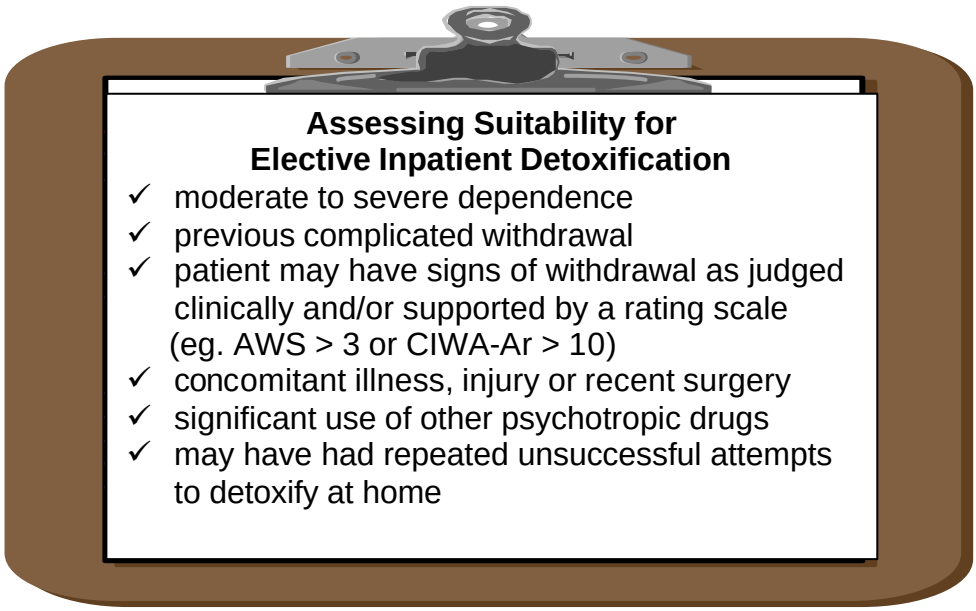
Here, detoxification is undertaken in a residential facility, which is not part of a hospital. Staffing in these facilities varies and may include health or personal care workers (who do not have a tertiary qualification in a health discipline) or nursing staff, or a combination of these. Typically there are no resident medical staff, but a general practitioner may be on call for the unit. This setting is suitable for patients who are likely to have only moderate withdrawal symptoms and to require minimal medical intervention during treatment. This setting can offer a high level of supportive care.



General and Psychiatric Hospitals

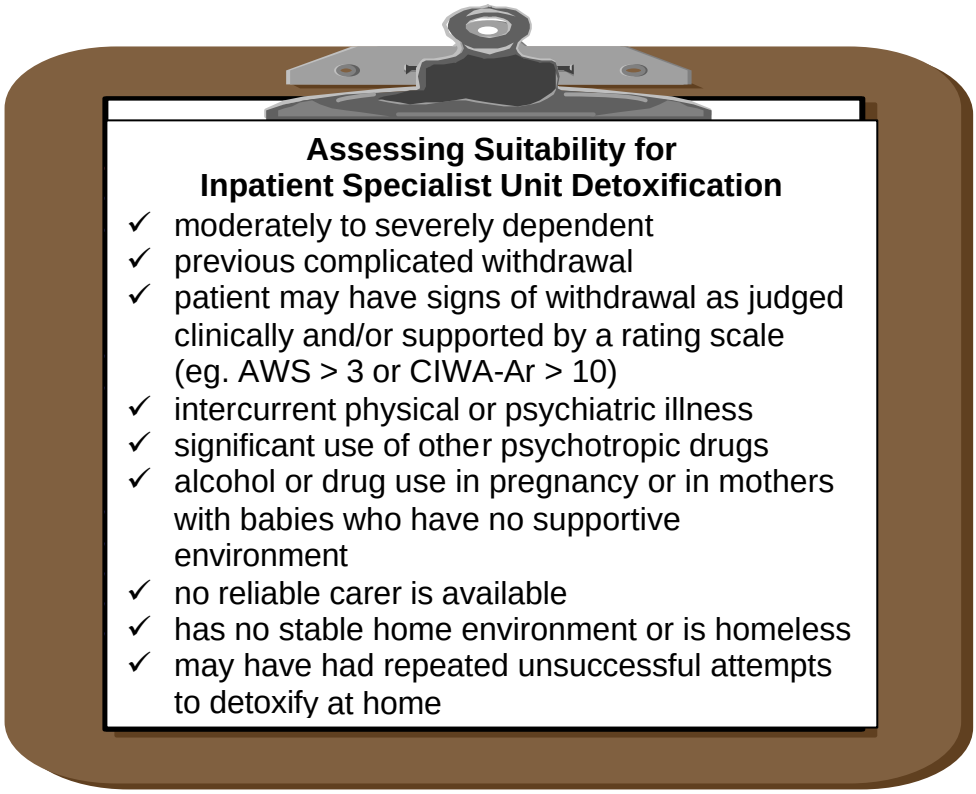
Detoxification (be it elective or when withdrawal symptoms arise) is often undertaken for patients in a general or psychiatric hospital. Typically, patients have been admitted for treatment of a surgical, medical or psychiatric condition and are known or are discovered to have concurrent alcohol or other drug dependence. Advice on the management of these patients may be available from the hospital's alcohol and drug service. If not, the general ward staff would need to manage the withdrawal process. Early detection of withdrawal syndromes and prevention of the risks associated with withdrawal are very important as withdrawals may retard recovery from the presenting disorder and increase the expected length of stay in hospital.

Inpatient admission specifically for detoxification is indicated for those individuals who request detoxification and whose dependence or current symptomatology are so severe or social circumstances so unfavourable that alternative settings for detoxification are unsuitable. Explicit criteria for inpatient admission are provided for the four main drug classes in this manual. Patients in this category should preferably be admitted to a specialist detoxification unit. However, where one is not available, detoxification can be carried out safely in a medical ward unless there are psychiatric complications necessitating admission to the psychiatric unit. This setting can provide a high level of medical care, a range of medicated detoxification schedules and a varying degree of supportive care.



Specialist Detoxification Unit

Withdrawal is undertaken in a specialised alcohol and drug detoxification unit and is supervised by trained alcohol and drug medical and nursing staff. This setting is suitable for patients who are likely to experience moderate to severe withdrawal symptoms or whose withdrawals may be complicated by intercurrent physical or psychiatric problems. This setting can provide a high level of medical and supportive care, a range of medicated detoxification schedules and pharmaco-therapy.



Patients Who are not Suitable for Detoxification

Pregnant opiate-using women should not usually be offered detoxification because of the foetal distress that detoxification produces and the likelihood of spontaneous abortion. Instead, admission for stabilisation on methadone is the preferred management.

Other patients presenting for detoxification are sometimes best advised to accept alternative treatments. For example, many opiate dependent persons may not complete the withdrawal or find it difficult to achieve abstinence after detoxification. Relapse is very common. These patients often achieve greater stability on a methadone maintenance or buprenorphine program.

3.4 PRINCIPLES OF CLINICAL MANAGEMENT OF WITHDRAWAL

There are four important aspects of the clinical management of patients undergoing detoxification. They are summarised as the **four S's:**

1. Sedation (or substitution)
2. Symptomatic relief
3. Supplements
4. Supportive environment

Whether the patient presents for elective detoxification or is already in a withdrawal state, the principle of pharmacological management is the same. It is to combat acute withdrawal symptoms without oversedating the patient. The essential principle is that the dose of sedative or substitute drug is titrated against the severity of the patient's withdrawal syndrome. **Drugs should not be given to patients who are still intoxicated, and there are few indications for prophylactic sedation**. Only in exceptional circumstances should sedatives be continued after two weeks because of the high risk of dependence developing (Saunders, 1995).

(1) Sedation (or substitution)

Sedation is prescribed to treat the central nervous system (CNS) hyperactivity of withdrawal, which is consequent on neuroadaptation to alcohol and an array of CNS depressant drugs. Substances that are CNS depressants have a withdrawal syndrome characterised by tremor, anxiety, and autonomic hyperactivity, including hypertension and gut symptoms such as nausea and diarrhoea.

Diazepam is the usual drug prescribed for sedation. It shows cross-tolerance with alcohol, other benzodiazepines, and to some extent other sedative-hypnotics and the opiates. Thus, controlled sedation (in effect, a controlled intoxication) with diazepam can substitute effectively for an uncontrolled intoxication with alcohol and/or benzodiazepines, and is helpful in other types of withdrawal syndromes. Appropriate sedation can prevent, abort or alleviate withdrawal to a large extent.

Clonidine is prescribed for hospitalised patients undergoing opioid withdrawal. It too shows some degree of cross-tolerance with opioids, and although not a classical sedative, relieves many of the features of the withdrawal syndrome. Great care should be used when prescribing clonidine to patients in an outpatient setting however, due to the possibility of postural hypotension.

Substitute drugs are now prescribed in many cases of opioid withdrawal. These drugs are opioids themselves; examples are buprenorphine and methadone.

(2) Symptomatic Relief

In addition to sedation, symptomatic relief is necessary for many withdrawal syndromes, particularly when gut symptoms are prominent. The symptoms often reflect CNS hyperactivity, but as they are many and varied, no single form of treatment will cover all eventualities. They should be treated on an as required basis, according to the particular symptom complex.

- ✓ Metoclopramide is prescribed orally or IM at a dose of 10mg every 8 hours as required for nausea and/or vomiting
- ✓ An antacid (eg. Mylanta or Gastrogel) 15-20ml orally is given every 6 hours as required for heartburn or indigestion
- ✓ Propantheline 15mg is given every 8 hours as required for abdominal cramps (common in the middle phase of opioid withdrawal)
- ✓ Kaolin mixture 15-20ml orally is given every 6 hours as required for diarrhoea (opiate derivatives such as Lomotil are not recommended for patients detoxifying from opioids)
- ✓ Quinine sulphate 300mg orally is given twice daily as required for muscle cramps (common in opioid withdrawal). **CAUTION** - excess quinine sulphate is toxic to the heart
- ✓ Paracetamol 1g orally is given every 4-6 hours as required for headaches and other minor pains. More severe aches and pains can be treated with non-steroidal anti-inflammatory drugs (NSAIDS) such as ibuprofen 400mg orally every 8 hours as required provided there is no history of ulcers, gastritis or asthma. A cox-2 inhibitor such as celecoxib is an appropriate alternative where there is a contra-indication for non-specific NSAIDS.

(3) Supplements

Supplements are necessary in a high proportion of patients undergoing alcohol detoxification, and in a somewhat lower proportion of those undergoing detoxification from other substances. By supplements we mean nutrients, vitamins, and electrolytes. People with alcohol and drug problems are frequently malnourished, especially those with severe dependencies. They also commonly have vitamin deficiencies, and sub-normal electrolyte levels.

Certain vitamin deficiencies are so common and the effects of the deficiency syndrome so severe that supplementation is provided as a routine, ie. before results of laboratory tests are available. An example is vitamin B_1 (thiamine). This should be given in particular before any carbohydrate (eg. as food or as dextrose solution) is given, to avoid potentiating a Wernicke's encephalopathy. A multivitamin preparation is given to cover possible deficiencies in other B group vitamins and vitamin C. In people with severe alcohol dependence, potassium supplements are given pending receipt of plasma electrolyte results from the laboratory.

Otherwise, supplements are prescribed on an as required basis. Patients who are dehydrated (salt and water depleted) will require oral fluids, and possibly IV fluids. Other deficiency states regularly seen are magnesium deficiency, folate deficiency, and less commonly zinc deficiency, and deficiency of the fat-soluble vitamins A, D and E.

(4) Supportive Care and Environment

Noisy, uncomfortable, over-stimulating and/or threatening environments aggravate withdrawal states. Correspondingly, withdrawal can be alleviated by a calm, well lit, predictable, non-threatening environment, and by staff employing behavioural management techniques designed to soothe and allay fear.

When detoxification is undertaken on a home or outpatient basis, there is equal benefit in establishing a suitably supportive environment. Ideally there would be at least one non substance-using friend or relative available at all times to provide reassurance, monitor medications or any signs of withdrawal and who would facilitate medical review if required.

Patients will benefit from a coordinated team approach. Care planning and ward rounds by medical and nursing staff will ensure that patients are suitably supported during detoxification and all health care practitioners involved in the patient's care are informed of the plan for detoxification and how they can best assist the patient during this time. Involving psychologists and/or social workers from the first day of detoxification assists many patients to successfully complete the detoxification process. In some settings families are also involved with supporting the patient through detoxification.

In adopting a coordinated team approach, trusting relationships can be fostered and early warning signs regarding problems with detoxification may be detected, and early intervention procedures implemented.

It is also important to consider a patient's support network including family, friends, other professionals and even their work environment. Strengthening supportive ties will not only aid the patient during the detoxification, but will assist them into the post-detoxification phase during which continued motivation for abstinence can be fostered.

Issues regarding after-care have been included throughout this manual, but it is important to consider detoxification as the first step to assisting a patient to maintain a drug free lifestyle.

3.5 ISSUES IN WITHDRAWAL MANAGEMENT

Routine Prescription of Anti-convulsants

Anti-convulsants such as phenytoin are sometimes prescribed routinely in detoxification; however there is no evidence that the frequency of seizures during detoxification is reduced when they are used prophylactically or after the first episode of convulsions. The use of a benzodiazepine with anti-convulsant properties (eg. diazepam) usually suffices.

Use of Major Tranquillisers (anti-psychotics)

These drugs may be required in severe alcohol and/or sedative withdrawal states to control hallucinosis, severe paranoid states, and agitation not responding to benzodiazepines, but should not be prescribed routinely. They may be prescribed as a supplement to diazepam (or other benzodiazepine). The expanded sedative protocols described in this manual incorporate anti-psychotic medication. It is important to take care with anti-psychotic medication due to their potential to lower the seizure threshold, and to cause extra-pyramidal side-effects such as dystonia. The anti-psychotic thioridizine is now not recommended for the management of hallucinations or psychoses associated with withdrawal due to its potential to inhibit drug metabolising capacity, and prolong the cardiac QTc interval.

Alternative Drugs for Sedation

Although diazepam or another benzodiazepine is the preferred sedative for detoxification, other sedative drugs may be used as indicated. For example, chlormethiazole is acceptable, and is indicated when patients report allergy or intolerance to benzodiazepines, or when patients have to demonstrate abstinence from benzodiazepines through urine testing as a precondition for entering a rehabilitation program. However, the greater potency of chlormethiazole in

suppressing the gag and cough reflexes compared with benzodiazepines argues against its routine use.

Adjuncts to Sedation

Various medications have been found to alleviate withdrawal syndromes and have been used as alternatives to diazepam and the other sedatives described above. They include beta-adrenergic blocking drugs, calcium channel blockers and anti-convulsants. Although they may to some extent substitute for sedative drugs or serve as adjuncts, in general they are not as effective in treating withdrawal syndromes, particularly symptoms of anxiety and craving. Their routine use is not recommended.

Continuation of Treatment for Co-existing Conditions

Medical treatment of existing conditions should generally be continued. In addition, treatment may need to be instituted for an intercurrent illness diagnosed during detoxification. The principle is that detoxification should not interrupt the patient's usual or intended care. Sometimes it will be apparent that the patient's usual medication is inappropriate for the condition or because the patient has an alcohol or drug problem (which may not have been recognised by the prescribing doctor). In this case a general practitioner, ATOD medical officer or hospital medical staff should be asked to review the medication, make any necessary adjustments, and liaise with the patient's usual medical practitioner, as necessary. Such medication could include anti-convulsants, anti-depressants, anti-psychotic drugs, anti-hypertensives, cardiac drugs, peptic ulcer treatment, antibiotics, benzodiazepines, opioids and other medication for pain relief.

3.6 SCHEME FOR IDENTIFYING DETOXIFICATION PROTOCOLS

Various sedation protocols are presented in this manual. They are grouped and labelled according to the substance for which the patient is undergoing detoxification (eg. ALCOHOL 1; BENZO 1; OPIOID 1). The number signifies the intensity of sedation, and by proxy the severity of the withdrawal syndrome. In general, number 1 represents a light sedative regime, 2 a more intense one, 3 a heavy sedation regime, typically requiring high dependency nursing care, and 4 an intravenous sedation regime, requiring an intensive care level of treatment. The symbol + after the number signifies an *expanded* sedative regime, including anti-psychotic medication.

4. ALCOHOL PROTOCOLS

4.1 OVERVIEW OF ALCOHOL DETOXIFICATION

Detoxification is the first step towards the treatment and rehabilitation of alcohol dependent persons. It is also desired by many alcohol dependent persons, even if they do not wish to proceed to further treatment. The objectives of treatment are prevention or relief of an alcohol withdrawal syndrome, prevention of complications and, as far as possible, a smooth transition into a long-term rehabilitation program or community follow-up (Ozdemir et al., 1993).

Progress has been made over recent years in the clinical management of the alcohol withdrawal syndrome through standardisation of assessment and monitoring using the Alcohol Withdrawal Scale (AWS) or the Clinical Institute Withdrawal Scale for Alcohol (CIWA) or its derivatives. Early detection of the alcohol withdrawal state contributes importantly to reducing morbidity (Foy, 1997). In addition, better sedative regimes, improved techniques for supportive care and pharmacotherapy interventions have contributed greatly to better treatment practices.

Benzodiazepines, because of their cross-tolerance with alcohol, and wide margin of safety are very effective and are the drugs of choice for the treatment of the alcohol withdrawal syndrome (Ozdemir et al., 1993; Mayo-Smith, 1997). Although there is a potential for physical dependence, the rate is low if they are used in the short term, as is recommended in these protocols.

A decision tree for the management of alcohol detoxification is provided in Section **4.8** (page 4-20)

4.2 MANAGING ALCOHOL WITHDRAWAL

Determining the appropriate management of patients with an alcohol problem involves:

(1) diagnosis of alcohol dependence (including severity of dependence)
(2) detecting those at risk of developing a withdrawal syndrome
(3) determining if a dependent patient at risk of withdrawal can be safely managed in a particular setting.

(1) Diagnosis of Alcohol Dependence

Alcohol dependence develops over several years and comprises a range of behaviours and physiological changes associated with the consumption of alcohol. Central to dependence are the phenomena of preoccupation with drinking, impaired control over drinking, tolerance and withdrawal states (due to neuroadaptation), and continued use despite harmful effects. Alcohol dependence represents the more severe end of a spectrum of alcohol use disorders, which may range from hazardous or risky drinking, high risk or harmful drinking, to dependence. Alcohol dependence itself is not an all-or-nothing condition: it exists in various grades of severity from just perceptible to extremely severe.

The criteria for dependence were presented in detail on pages 2-5 to 2-6. In summary, a diagnosis of alcohol dependence can be made according to ICD-10 criteria if **three or more** of the following criteria are evident in a period of 12 months (WHO ICD-10, 1993):

CRITERIA FOR DEPENDENCE	**COMMENTS (**mild+, moderate++, severe+++**)**
Compulsion to use	
Impaired control over alcohol use	
Withdrawal symptoms	
Increased tolerance	
Priority of drinking	
Continued use despite harmful effects	

(2) Detecting the Person at Risk of Withdrawal

The main risk factors for alcohol withdrawal are:

1) *the severity of dependence on alcohol*
2) *history of previous withdrawal*
3) *the amount of alcohol consumed recently* (see guide below)
4) *concurrent medical disorders.*

The levels of alcohol consumption associated with withdrawal are as follows:

Males
- ✓ >8 standard drinks (ie. 80g alcohol daily) for 10 – 20 years OR recent excessive intake of 16 standard drinks (160g alcohol)

Females
- ✓ >6 standard drinks (ie. 60g alcohol daily) for 5-10 years, or recent intake of 12 standard drinks (120g alcohol)

Adolescents
- ✓ lower levels of alcohol consumption than adults may result in alcohol withdrawal in youth, though a withdrawal state is uncommon in this age group

Elderly
- ✓ as little as two standard drinks daily. Elderly people have less lean body mass and body water than younger people do. They are also more susceptible to alcohol withdrawal and to confusion and disorientation that may result from withdrawal.

The greater the amount of alcohol consumed and the longer the duration, the greater the likelihood of a complicated withdrawal.

The NHMRC Australian Drinking Guidelines (NHMRC, 2001) for classifying risk levels of alcohol use according to standard drinks consumed are detailed below. Note that these consumption levels denote the risk of acute and chronic physical and other complications, not the risk of dependence or withdrawal.

Scale of risk		Low	Moderate risk	High risk
Daily	Male	< 4	5 - 6	> 6
	Female	< 2	3 - 4	> 4
Weekly	Male	< 28	29 - 42	> 42
	Female	< 14	15 - 28	> 28

Note: Other individual, drug and environmental factors may increase a person's alcohol-related risk.

(3) Assessment to Determine the Setting for Detoxification

Once a patient has been found to be dependent on alcohol and at risk of withdrawal, then suitability for detoxification must be determined. The first task is to determine the potential severity of the anticipated withdrawal. In some cases a patient will be exhibiting signs of withdrawal at the time of presentation. In others the patient may be too intoxicated for an appraisal to be made. In these situations, and also when there is significant confusion, cognitive impairment or psychosis, the detailed assessment must be deferred, and the initial appraisal confined to clinical signs of intoxication, withdrawal, confusion or pshcyosis, and concurrent medical disease. Otherwise, relevant and appropriate patient instruction, assessment, evaluation and documentation must be completed prior to commencing detoxification. The main areas to concentrate upon are:

- average daily intake (using the "top high" technique by prompting with a higher figure may encourage a more accurate response)
- frequency of alcohol intake
- duration of use or recent binge
- behavioural features of dependence (compulsion to drink, impaired control, priority of drinking in person's life, continued use despite harmful effects)
- physiological features of dependence (increased tolerance, morning drinking)

} Severity of dependence

- history of withdrawals
- history of seizures
- history of delirium tremens (DTs)
- type and frequency of other drug use

} Severity of anticipated withdrawal

- time and amount of last drink

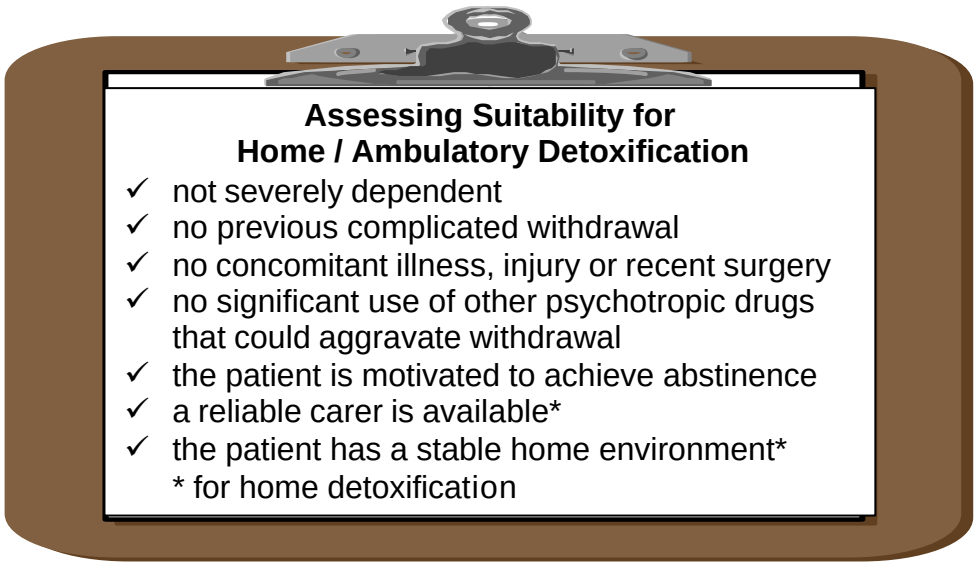
} Expected onset of withdrawal

- concomitant use of other substances
- comorbid physical illness
- comorbid psychiatric illness
- suicidal ideation
- home environment / carer

} Suitability for which detoxification setting

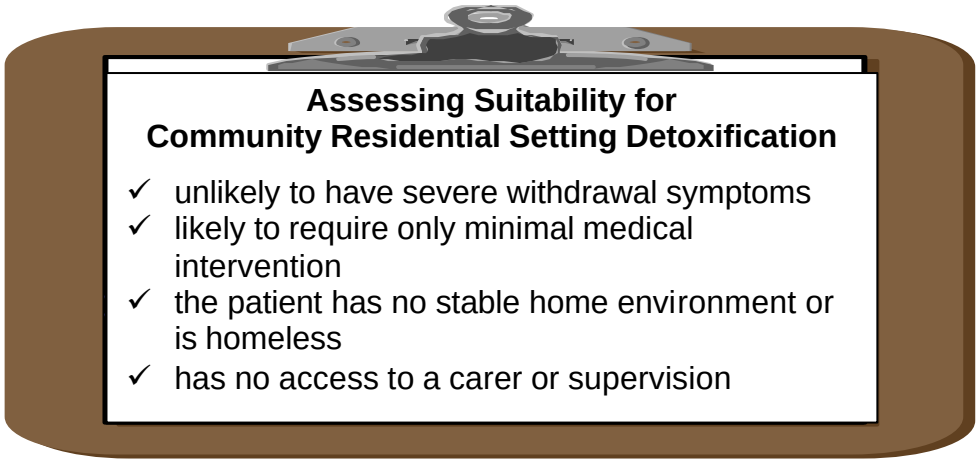
Home/Ambulatory

A patient may be suitable for home or ambulatory detoxification if he/she meets the criteria shown in the clipboard below (also see decision tree).



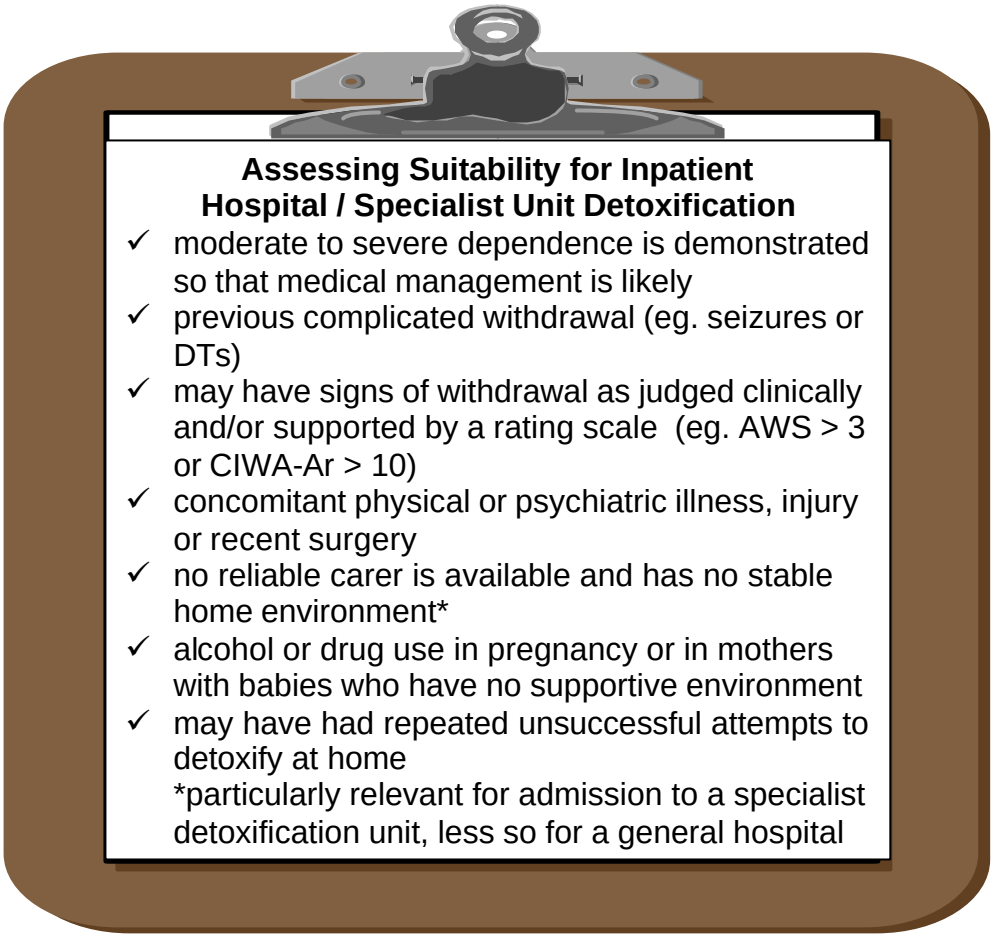
Community Residential Setting

Patients without a stable home environment may be suitable for a community detoxification facility.



Hospital/Specialist Detoxification Unit

On the other hand, a patient is likely to need admission to a hospital or specialist detoxification facility if he/she meets the criteria below (also see decision tree).



Assessing Suitability for Inpatient Hospital / Specialist Unit Detoxification

- ✓ moderate to severe dependence is demonstrated so that medical management is likely
- ✓ previous complicated withdrawal (eg. seizures or DTs)
- ✓ may have signs of withdrawal as judged clinically and/or supported by a rating scale (eg. AWS > 3 or CIWA-Ar > 10)
- ✓ concomitant physical or psychiatric illness, injury or recent surgery
- ✓ no reliable carer is available and has no stable home environment*
- ✓ alcohol or drug use in pregnancy or in mothers with babies who have no supportive environment
- ✓ may have had repeated unsuccessful attempts to detoxify at home

*particularly relevant for admission to a specialist detoxification unit, less so for a general hospital

4.3 FEATURES OF THE ALCOHOL WITHDRAWAL SYNDROME

4.3.1 Features of Simple Alcohol Withdrawal

The alcohol withdrawal syndrome can be divided into simple and complex withdrawal. Tremulousness, anxiety, agitation and sometimes transient hallucinations, are present in the simple withdrawal state, whilst seizures and delirium tremens (profound disorientation, confusion and hallucinations) occur in complex withdrawal states. Seizures associated with an alcohol withdrawal syndrome usually but not invariably occur in the context of other withdrawal symptoms. Other conditions should be considered particularly if seizures occur in isolation from other withdrawal symptoms. **Early recognition and correct management of the initial milder stages of withdrawal is crucial in prevention of its progression into severe and life-threatening stages** (Novak, 1989; Foy, 1997).

In summary, the features of simple alcohol withdrawal include:

- ✓ tremulousness
- ✓ perspiration
- ✓ increased pulse
- ✓ increased blood pressure
- ✓ increased temperature
- ✓ altered respiratory rate
- ✓ transient hallucinations
- ✓ nausea, vomiting and diarrhoea
- ✓ restlessness, agitation
- ✓ anxiety
- ✓ insomnia, sleep disturbance
- ✓ nightmares
- ✓ fear
- ✓ depression
- ✓ headaches
- ✓ facial flushing

4.3.2 Features of Complex Alcohol Withdrawal

Seizures

Approximately 3% of episodes of alcohol withdrawal are complicated by seizures (convulsions, fits). These are usually single tonic-clonic (grand mal) in type, with no focal features. In 95% of cases they occur within 48 hours of ceasing drinking.

Delirium Tremens ("DTs")**,** the most severe and complex alcohol withdrawal syndrome, is an acute delirium which in the days before effective sedation and intravenous fluid replacement, had a mortality rate exceeding 30% (Saunders & Janca, 2000). It is characterised by the following:

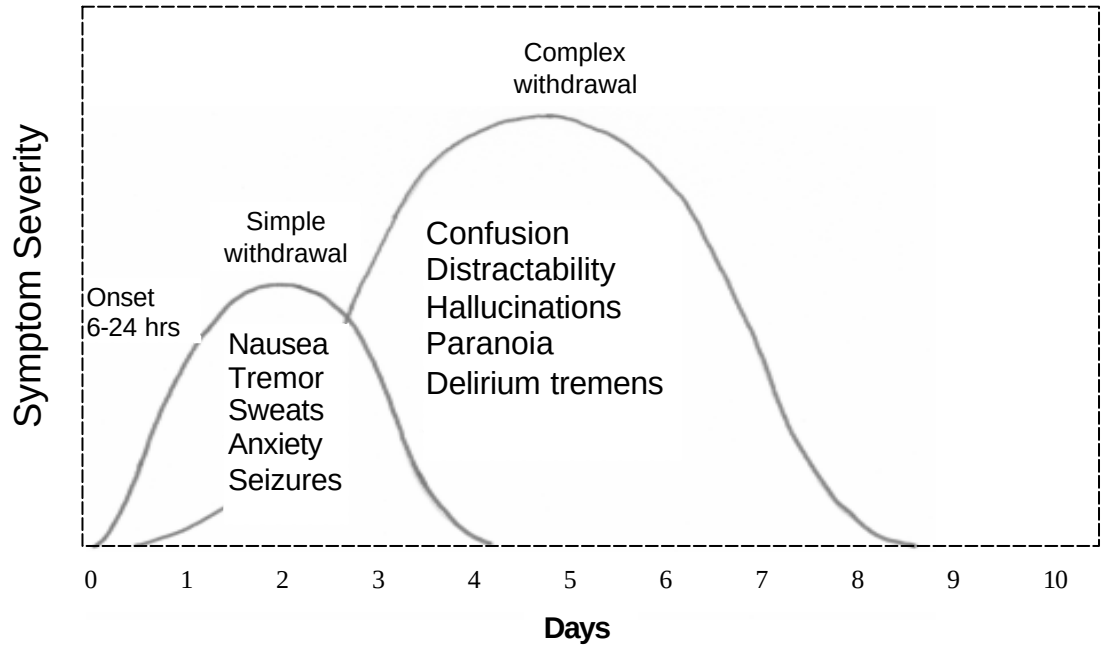
- ✓ hyperactivity
- ✓ severe tremor
- ✓ severe agitation
- ✓ moving constantly
- ✓ confusion and disorientation
- ✓ distractability
- ✓ visual, tactile or auditory hallucinations
- ✓ paranoid ideation/delusions

Patients with DTs are typically very difficult to manage, refusing (as it would seem) to be still, frequently requiring restraint, and needing constant observation and attention. The hyperactive state leads to dehydration, cardiac arrhythmia, and a variety of other complications. Because of this, prompt control of DTs by effective sedation is essential. DTs is especially likely to occur if there are concomitant medical illnesses (such as a chest or urinary tract infection), electrolyte or acid-base disturbance, or if the patient had recently suffered major trauma (eg. fracture of a long bone) or undergone recent surgery. DTs occur at a higher rate among indigenous people and at a younger age (Unwin and Swensen, 1994).

4.3.3 Onset and Duration

The time-course, major features, onset and duration of alcohol withdrawal is illustrated in Figure 6 and described below.

FIGURE 6: Time-course and features of simple and complex alcohol withdrawal (adapted from Frank & Pead, 1995)



The onset of alcohol withdrawal usually occurs between **6 to 24 hours** after the last drink. In some patients the withdrawal syndrome is short-lived and inconsequential, in others it increases in severity over the first **48-72** hours of abstinence and some patients progress to DTs. Relatively uncomplicated withdrawal usually lasts between **one to four days** and more severe cases will last from five to seven days. If DTs arises, the course of recovery is often stormy and continues for three to four more days. Withdrawal may be delayed if other sedatives have been ingested.

4.4 DETECTING AND MONITORING ALCOHOL WITHDRAWAL

If the patient requests detoxification from alcohol, or his/her history or presentation suggests a possibility of alcohol withdrawal, the patient should be commenced on the Alcohol Withdrawal Scale (AWS) or the Clinical Institute Withdrawal Scale for Alcohol - Revised Version (CIWA-Ar) as shown in Sections **4.9.1** and **4.10.1**. This needs to be commenced by the registered nurse as soon as possible after the assessment is obtained and continues until a decision is made either to hold the patient in the acute area of the hospital for further observation or transfer the patient to the ward or detoxification facility. Once transferred, the monitoring is continued by the ward/unit nursing staff.

Procedure

- ✓ After the assessment, take and record the vital signs on the AWS or CIWA-Ar to act as baseline data. Continue to monitor the patient second hourly until the patient is mildly sedated then monitor fourth hourly until the patient is transferred to the ward.

- ✓ Diazepam may be needed dependent on the rating score. It can be given on an "as required" (p.r.n.) basis or regularly according to the protocols provided below.

- ✓ As an inpatient, monitor the patient fourth hourly for at least three days if the patient is showing signs and symptoms of the alcohol withdrawal syndrome.

- ✓ If the total AWS score reaches 5 or the total CIWA-Ar score reaches 10, monitor second hourly. The patient may require further diazepam to prevent an increase in the severity of the withdrawal.

- ✓ If the total AWS score reaches 10 or the total CIWA-Ar score reaches 15, monitor hourly and the registered nurse should notify the supervising medical officer.

- ✓ Medicating a patient with a blood alcohol concentration level > 0.15g% is risky and needs to be approved by the supervising medical officer.

- ✓ Patients with a high alcohol tolerance may experience withdrawal when their blood alcohol concentration (BAC) remains well above zero – withdrawal and a high BAC can co-exist.

A suggested interpretation of the score for each scale is as follows (adapted from Saunders, 1985 and Frank & Pead, 1995)

Severity	AWS Score	CIWA-Ar Score
Mild	1-4	< 10
Moderate/Severe	5-14	10-20
Very Severe	15+	20+

Note: Withdrawal scales may be misleading in the treatment of complicated withdrawal. The clinician should not rely on withdrawal scale scores alone to monitor withdrawal, but must also use clinical judgement and other observations. Some signs may actually be caused by concomitant illness. Withdrawal scales are not diagnostic instruments, and the withdrawal score on its own may not be enough to indicate progression to a more serious form of withdrawal.

4.5 ALCOHOL DETOXIFICATION PROTOCOLS

There are four important aspects of the clinical management of patients undergoing alcohol detoxification. They are summarised as the four S's:

1. Sedation

2. Symptomatic relief
3. Supplements
4. Supportive environment

(1) Sedation

Alcohol 1 (A1) Protocol

This is an "as required" diazepam regime. The scores on the Alcohol Withdrawal Scale taken second or fourth hourly determine whether diazepam is required, and at what dosage. This regime is designed for use in a **specialist detoxification unit**, where the environment is quiet and non-stimulating, and where staff employ counselling and interactional techniques to alleviate withdrawal symptoms. It assumes regular monitoring of the withdrawal syndrome using an approved rating scale such as the Alcohol Withdrawal Scale (AWS) or Clinical Institute Withdrawal Scale for Alcohol (CIWA-Ar). It also assumes that staff have appropriate experience in the monitoring and management of alcohol withdrawal syndromes. The regime is set out in Table 7.

TABLE 7
ALCOHOL 1 (A1) PROTOCOL – DIAZEPAM "AS REQUIRED"

Sedation		
AWS SCORE	**CIWA-Ar SCORE**	**DIAZEPAM DOSE**
0	0	Nil
1-4	1-9	Nil
5-9	10-14	5-10mg
10-14	15-20	10mg or switch to A3
15+	20+	Switch to A3

Symptomatic Relief: Metoclopramide 10mg 8/24 PRN; an antacid (eg. Gastrogel 15-20ml 6/24 PRN); Kaolin mixture 15-20ml 6/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN

Supplements: Thiamine, Magnesium, Phosphate, Folate, Zinc, Vitamins A, D, E, C & B group

Supportive Environment: Supportive counselling & reassurances by the ward nurse; education about alcohol withdrawal and sleep hygiene; behavioural management techniques; relaxation therapy

***Note*:** *see pages 4-14 to 4-16 for details of the four S's*

It is up to the clinical staff's discretion to modify the dosage according to the patient's body size, previous history of withdrawals and initial response to therapy. If the **AWS score reaches 10** or if it has increased by **4 or more** in the previous two times, the patient should be switched to the Alcohol 3 (A3) protocol to gain more rapid control of the withdrawal state. Typically sedation is given using the Alcohol 1 protocol for 2-5 days.

Alcohol 2 (A2) Protocol

This is a regular diazepam regime which is designed for **hospital wards** (general or psychiatric), and other inpatient settings where there are no specialised alcohol and drug service nursing staff. It may also be employed for home and ambulatory detoxification provided the necessary conditions (described in Section 3 are not met). It is appropriate for elective detoxification where patients are being monitored for withdrawal and for the management of existing alcohol withdrawal syndromes of moderate severity, or where prophylactic sedation is considered necessary. It does not assume there will be regular monitoring with a withdrawal syndrome rating scale, although this is to be preferred. It does not assume special experience of the treating medical or nursing staff, but does assume that they can contact a specialist service for advice as necessary. The regime is set out in Table 8.

Typically the Alcohol 2 protocol starts when the decision is made that the withdrawal state needs medication. This is usually when the AWS score reaches 5, or (where rating scales are not being used) when the patient has persistent tremor, sweating, and anxiety. Regular dosing with diazepam is then commenced. This protocol may be used for prophylactic sedation in someone at high risk of withdrawal where this is considered necessary.

TABLE 8
ALCOHOL 2 (A2) PROTOCOL – REGULAR DIAZEPAM

Sedation

	6 am	12 md	6 pm	12 mn
Day 1	10mg*	10mg	10mg	10mg
Day 2	10mg	10mg	10mg	10mg
Day 3	5mg	5mg	5mg	10mg
Day 4	5mg	5mg	5mg	10mg
Day 5	Nil	5mg	Nil	5mg

Symptomatic Relief: Metoclopramide 10mg 8/24 PRN; an antacid (eg. Gastrogel 15-20ml 6/24 PRN); Kaolin mixture 15-20ml 6/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN

Supplements: Thiamine, Magnesium, Phosphate, Folate, Zinc, Vitamins A, D, E, C & B group

Supportive Environment: Supportive counselling & reassurances by the ward nurse; education about alcohol withdrawal and sleep hygiene; behavioural management techniques; relaxation therapy

Note: *see pages 4-14 to 4-16 for details of the four S's*

* An additional dose of 10mg diazepam can be given if needed mid-way between the first two regular doses.

Alcohol 3 (A3) Protocol

This is the diazepam loading regime. It is designed for patients with moderate to severe, or very severe alcohol withdrawal. It involves giving high doses of diazepam, typically 20mg orally every 2 hours, until the withdrawal syndrome is controlled. This may take 20 to 120mg over the first twelve hours, occasionally more. It can be given in a specialist detoxification unit or in general wards, but requires **24 hours per day nursing care** and medical staff immediately available. Typically, patients on this regime will be in the emergency department, a fully staffed acute detoxification, medical, surgical or psychiatric ward, or a high dependency unit. After the withdrawal syndrome is controlled, regular diazepam continues every 6 hours. The medical officer treating the patient will specify the dose from this point. The loading dose regime is set out in Table 9.

TABLE 9
ALCOHOL 3 (A3) PROTOCOL – LOADING DOSE DIAZEPAM REGIME

Sedation
1. Give 20mg* diazepam orally every 2 hours until sedation achieved. At this point the patient will be in a state resembling light sleep, from which he/she can be easily roused. 2. During the loading regime, ensure review by medical officer after 4 hours. 3. No more than 120mg diazepam should be given by the loading regime in the first 12 hours. If the patient is still not sedated consult the specialist on call. 4. After sedation is achieved, switch to the Alcohol 2 protocol (commencing at the Day 1 point). * *The dosage may need to be modified depending on severity of withdrawal, weight and presence of any physical disease.*
Symptomatic Relief: Metoclopramide 10mg 8/24 PRN; an antacid (eg. Gastrogel 15-20ml 6/24 PRN); Kaolin mixture 15-20ml 6/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN **Supplements:** Thiamine, Magnesium, Phosphate, Folate, Zinc, Vitamins A, D, E, C B group **Supportive Environment:** Supportive counselling and reassurances by ward nurse; education about alcohol withdrawal and sleep hygiene; behavioural management techniques; relaxation therapy ***Note:*** *see pages 4-14 to 4-16 for details of the four S's*

For patients with severe alcohol withdrawal, especially when hallucinations are evident, it is advisable to supplement the diazepam regime with a major tranquilliser, such as haloperidol. Give 2.5-5mg intramuscularly initially, repeat up to three times over the next hour, then every six hours as required, and then commence a regular dose of 2.5-5mg every six hours. Review the need for continued haloperidol after 48 hours. For extra-pyramidal side-effects from the haloperidol, benztropine 0.5-2mg is given IM or orally twice daily as required. As an alternative to oral haloperidol, the atypical anti-psychotic risperidone 2mg twice daily or olanzapine 5-10mg daily may be used which has fewer extra-pyramidal side-effects. This is the **Alcohol 3+ Protocol**.

Alcohol 4 (A4) Protocol

This is an intravenous sedative regime which is prescribed for patients with the most severe alcohol withdrawal syndromes (ie. delirium tremens). In this situation rapid control of the withdrawal state is paramount. Patients receiving this regime must be managed in an **intensive care unit or high dependency unit** where facilities for resuscitation and ventilatory support are immediately to hand. This regime is set out in Table 10.

TABLE 10
ALCOHOL 4 (A4) PROTOCOL – INTRAVENOUS DIAZEPAM REGIME

Sedation
1. Give intravenous injection of 10mg diazepam over 5 minutes, repeated up to three times if necessary in the first 30 minutes. **Note there is a danger of apnoea in the first 2-3 minutes after administration.** 2. Continue with 10mg diazepam intravenously every 2 hours, until sedation is achieved or switch to the Alcohol 3 protocol if the patient is able to take oral medication. 3. After sedation is achieved, switch to the Alcohol 2 protocol (commencing at the Day 1 point).
Symptomatic Relief when the patient can take oral medication**:** Metoclopramide 10mg 8/24 PRN; an antacid (Gastrogel 15-20ml 6/24 PRN); Kaolin mixture 15-20ml 6/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN **Supplements:** Thiamine, Magnesium, Phosphate, Folate, Zinc, Vitamins A, D, E, C & B group **Supportive Environment:** Nurse in a well-lit single room or in a quiet area of the ward; reassurances and explanations of procedures by the focal nurse; restrict visitors to a minimum ***Note:*** *see pages 4-14 to 4-16 for details of the four S's*

For patients with severe alcohol withdrawal, especially when hallucinations are evident, it is advisable to supplement the diazepam regime with a major tranquilliser, such as haloperidol. Give 2.5-5mg intramuscularly initially, then repeat up to three times over the next hour, then every six hours as required. For extra-pyramidal side-effects from the haloperidol, benztropine 0.5-2mg is given IM or orally twice daily as required. As an alternative to oral haloperidol, the atypical anti-psychotic risperidone 2mg twice daily or olanzapine 5-10mg daily may be used which has fewer extra-pyramidal side-effects. This is the **Alcohol 4+ Protocol.**

(2) Symptomatic Relief

Additional symptomatic relief is necessary for many patients in alcohol withdrawal, as well as sedation. Gut symptoms are prominent. They should be treated on an as required basis, according to the particular symptom complex.

- ✓ Metoclopramide is prescribed orally or IM at a dose of 10mg every 8 hours as required for nausea and/or vomiting
- ✓ An antacid (eg. Mylanta or Gastrogel) 15-20ml orally is given every 6 hours as required for heartburn or indigestion
- ✓ Kaolin mixture 15-20ml orally is given every 6 hours as required for diarrhoea
- ✓ Quinine sulphate 300mg orally is given twice daily as required for muscle cramps (usually transient). **CAUTION** - excess quinine sulphate is cardio-toxic
- ✓ Paracetamol 1g orally is given every 4-6 hours as required for headaches and other minor pains.

(3) Supplements

Supplements are necessary in a high proportion of patients undergoing alcohol detoxification.

- ✓ **Thiamine** (Vitamin B_1) deficiency is especially common, and may lead to acute Wernicke's encephalopathy if not corrected. Thiamine is given routinely to all patients undergoing alcohol detoxification, indeed all alcohol dependent inpatients. The dose is 100mg IM daily for at least three days. Thiamine is best given parenterally, rather than by mouth, because it is poorly absorbed in a high proportion of persons undergoing detoxification. If it cannot be given IM, a dose of 100mg three times a day orally is appropriate (although sub-optimal). **It is particularly important for thiamine to be given before any dextrose solutions commence or food is given.**
- ✓ A **multivitamin preparation** is given three times daily to cover possible deficiencies in other B group vitamins and vitamin C.
- ✓ In people with severe alcohol dependence, **potassium** supplements are given pending receipt of plasma electrolyte results from the laboratory. An appropriate initial dose is 40mmol per day. If the initial plasma [K+] is 3.5-4.0 mmol/l, this should be increased to 80mmol per day. Where the plasma [K+] is 3.0-3.5mmol/l this should be 120mmol/day; and when it is 2.5-3.0mmol/l, the dose should be 180-240mmol per day. The exact dosage will depend on body weight and the presence of delirium (when a higher dose may need to be given). For inpatients with hypokalaemia, daily (sometimes twice daily) monitoring of the plasma [K+] is required. Low plasma (Mg++) levels are corrected by 50-100mmol **magnesium** per day and low phosphate levels are treated with 500mg **phosphate** twice daily.

- ✓ Otherwise, supplementation is prescribed on an as required basis. Patients who are dehydrated (salt and water depleted) will require oral fluids, and possibly IV fluids. Other deficiency states regularly seen are folate deficiency and less commonly zinc deficiency, and deficiency of the fat-soluble vitamins A, D and E.

(4) Supportive Care and Environment

Noisy, uncomfortable, over-stimulating and/or threatening environments aggravate withdrawal states. Correspondingly, withdrawal can be alleviated by a calm, well lit, predictable, non-threatening environment, and by staff employing behavioural management techniques designed to soothe and allay fear. Use primary or focal nursing in order to restrict interpersonal contact to as few people as possible if the patient is confused or disorientated.

Patients will benefit from a coordinated team approach. Care planning and ward rounds by medical and nursing staff will ensure that patients are suitably supported during detoxification and all health care practitioners involved in the patient's care are informed of the plan for detoxification and how they can best assist the patient during this time. In some settings families are also involved with supporting the patient through detoxification.

Ongoing supportive withdrawal counselling is provided by the ward nurse. It may be necessary (or appropriate) for the patient to be discharged before detoxification is complete. In this case it is vital for the patient's general practitioner to be contacted to continue the process or for a home detoxification program to be engaged in the patient's further management.

The Unsettling Effect of Admission

Patients admitted for detoxification usually experience some degree of anxiety. As their blood alcohol level decreases, their anxiety level tends to increase. Patients undergoing their first admission for detoxification may be very anxious about the process. Others who have been through detoxification may also experience high levels of fear and anxiety if they have had bad experiences in the past, such as seizures, hallucinations or delirium tremens.

Behavioural Management by Nursing Staff

- ✓ Use slow, steady non-threatening approach to reduce anxiety
- ✓ Distinct, clear speech with continual eye to eye contact (if culturally acceptable)
- ✓ Avoid confrontation and arguments
- ✓ Reassure and attempt to allay the patient's distress and anxiety
- ✓ Explain all interventions
- ✓ Reassure the patient that the symptoms will pass, and provide information about the withdrawal state and sleep hygiene (see Appendix 4)
- ✓ Frequent reality orientation or distraction to help decrease perceptual errors
- ✓ Ensure patient's safety.

Continuation of Treatment for Co-existing Conditions

Medical treatment of existing conditions should generally be continued. In addition, treatment may need to be instituted for an intercurrent illness diagnosed during detoxification. The principle is that detoxification should not interrupt the patient's usual or intended care. Sometimes it will be apparent that the patient's usual medication is inappropriate for the condition or because the patient has an alcohol or drug problem (which may not have been recognised by the prescribing doctor). In this case a medical officer in the unit should be asked to review the medication, make any necessary adjustments, and liaise with the patient's usual medical practitioner, as necessary. Such medication could include anti-convulsants, anti-depressants, anti-psychotic drugs, anti-hypertensives, cardiac drugs, peptic ulcer treatment and antibiotics. In specific patients it could also include benzodiazapines (eg. clonazepam (rivotril) for epilepsy), opioids (eg. methadone in someone having a selective detoxification) and medication for pain relief.

4.6 PRECAUTIONS

Special precautions need to be taken before sedating patients who have any of the problems listed below:

Chronic Liver Disease

- ✓ Major diagnostic and management problems can arise in patients with chronic liver disease, especially if they have cirrhosis and/or signs of hepatic decompensation.
- ✓ It is essential to determine that the patient has alcohol withdrawal and not hepatic encephalopathy. The two may easily be confused. Consult specialist physician if there is doubt.
- ✓ If the patient with known or suspected chronic liver disease is confirmed as having a withdrawal state, give 50% of the usual dose of sedative.
- ✓ Oxazepam is preferable to diazepam because its metabolism is less affected by the presence of liver disease.
- ✓ A suitable starting dose in most cases for a moderate withdrawal syndrome is oxazepam 30mg three times daily.
- ✓ If the patient is in withdrawal and has cirrhosis, commence sedation at 25-50% of the usual dose, again using oxazepam.
- ✓ If the patient has signs of hepatic decompensation (such as marked jaundice, ascites, hepatic encephalopathy) or has experienced a recent variceal haemorrhage, **do not sedate** without a specialist assessment.

Chronic Airflow Limitation:

- ✓ Patients with chronic airways disease may become profoundly sedated if standard doses of sedatives are used for withdrawal.
- ✓ For patients with chronic airways disease, but who do not have respiratory failure, the dose of diazepam should be halved.
- ✓ If the patient has respiratory failure (pO_2 < 60mm Hg), especially if they have CO_2 retention (pCO_2 > 44mm Hg), **do not sedate**. Consult specialist physician urgently. If sedation is essential the patient will need to be transferred to the Intensive Care Unit.

Cardiac Disease

- ✓ Patients with cardiac failure are sensitive to the effects of sedatives because of diminished hepatic clearance consequent on a sluggish circulation.
- ✓ In patients with cardiac failure who are in alcohol withdrawal, give 50% of the usual dose of diazepam.
- ✓ Avoid major tranquillisers whenever possible.

Head Trauma

- ✓ There needs to be a balance struck between providing effective treatment of the withdrawal syndrome and obscuring neurological observations by sedation.
- ✓ The effect of cerebral injury and sedation is often additive in suppressing consciousness and vital signs.
- ✓ In patients with significant head trauma (eg. having had a period of loss of consciousness) ensure that the diagnosis of alcohol withdrawal is accurate before instituting sedation.
- ✓ Withhold sedation unless there is evidence of progression of the withdrawal syndrome.
- ✓ Give a short-acting benzodiazepine (eg. midazolam) in preference to diazepam in the initial stages of withdrawal.

No Oral Intake ('Nil by Mouth')

- ✓ An initial dose of diazepam (10-20mg) is given to control the withdrawal syndrome, the dose depending on the severity of withdrawal.
- ✓ To maintain effective sedation, give boluses of 2-5mg per hour for six hours, and then 5-10mg every six hours thereafter.
- ✓ Midazolam is an alternative benzodiazepine for intravenous use.

4.7 AFTER-CARE

Plans for after-care need to be considered even during the early stages of detoxification so that a treatment plan is in place to reduce the likelihood of relapse. Such plans could include referral to the local ATOD Service (ATODS) for a relapse prevention program, cognitive behaviour therapy, supportive counselling, pharmacotherapy, residential rehabilitation programs, or Alcoholics Anonymous. Where possible, the patient's general practitioner (GP) should be involved. Case conferencing with the GP and/or community ATODS staff are beneficial to ensure a supportive after-care network is in place for patients.

Naltrexone

Naltrexone (Revia) is one of two anti-craving drugs that have been shown to increase the likelihood of maintaining abstinence and reducing relapse following detoxification. Naltrexone has been reported to (Naltrexone and Alcoholism Treatment, 1998):

- reduce craving for alcohol
- increase time to first drink or 'lapse'
- reduce volume and frequency of alcohol consumed
- improve abstinence rates as compared to controls.

Naltrexone is an opioid antagonist and therefore is not suitable if the patient is being prescribed opioids (eg. for chronic pain) or is a recreational user of opiates. If a patient has an impaired liver function (eg. LFT's higher than three times normal range), care must be taken when prescribing naltrexone. It is advisable to repeat LFT's at seven days then as indicated. It should be avoided during pregnancy.

At least two days of abstinence from alcohol is recommended before initiating naltrexone. Usually, 25mg is administered as an initial dose, with 50mg administered on subsequent days as a single daily dose. Compliance with naltrexone is improved with education and supervision and a carer is encouraged to become involved with the naltrexone regime and after-care arrangements. The optimum duration of treatment is unclear, however most studies recommend a minimum of three months. For many patients treatment for 12 months is appropriate.

Acamprosate

Acamprosate (Campral) is an anti-craving drug that has similar beneficial effects to naltrexone, but acts in a very different way to this drug. Acamprosate suppresses activity of the glutamate excitatory neurotransmitter system by inhibiting NMDA receptors.

Acamprosate has been shown in several controlled trials to:

- increase abstinence rates when compared to controls at 12 months
- reduce relapse into heavy drinking
- reduce overall alcohol intake.

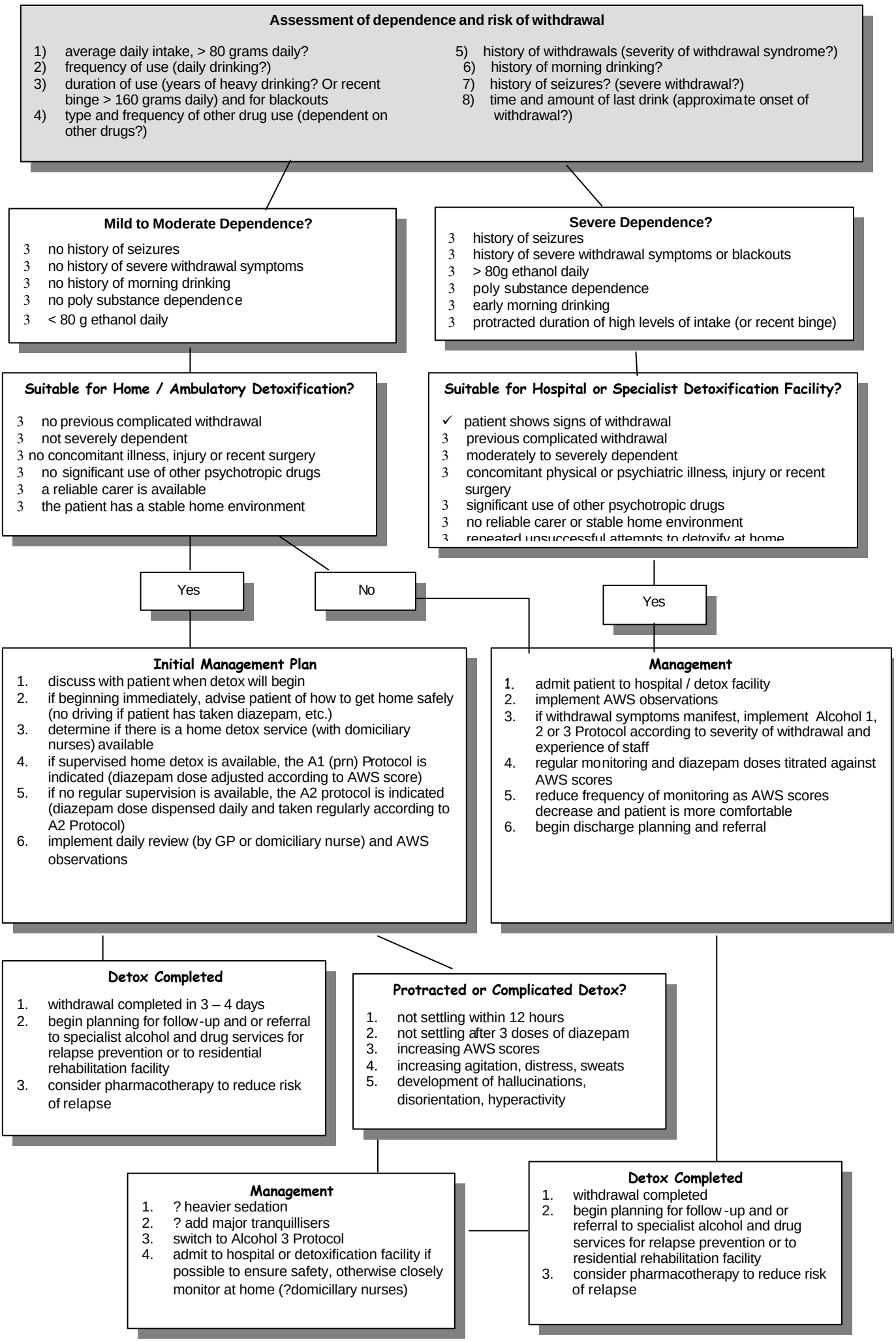
Acamprosate is reported to have no sedative properties and unlike naltrexone, has no interaction with opiates. Its most common side effect is diarrhoea, vomiting and pruritis. As the liver does not detoxify acamprosate, liver disease is not considered a contra-indication for treatment with acamprosate.

The recommended dose of acamprosate is two tablets three times daily (tds) for persons weighing in excess of 60kgs. For patients who weigh less than 60kgs, four tablets divided into three daily doses is recommended. The recommended duration of treatment is one year, and as is the case with naltrexone, acamprosate may be best administered in conjunction with CBT or other supportive counselling.

Cognitive Behavioural Therapy

Cognitive Behavioural Therapy (CBT) is a relatively short term focused psychological therapy that concentrates on managing thoughts and perceptions that lead to emotional disturbance (such as craving, anxiety, depression, etc). It is often described as a 'doing' therapy, rather than a 'talking' therapy, and aims to teach long-term skills for managing thoughts, behaviour and emotions. Psychologists are the professional group most often associated with the delivery of CBT, but other professionals are also engaged in CBT practice. CBT complements the alcohol pharmacotherapies described above. The Australian Association for Cognitive Behaviour Therapy (AACBT) has a list of private practitioners in CBT (aacbt@psychiatry.uq.edu.au) or contact your local community or mental health centre if you wish to refer one of your patients for CBT. The reader is referred to *"A Manual of Mental Health Care in General Practice"* for more information on CBT (Davies, 2000).

4.8 Decision Tree for the Management of Alcohol Detoxification



4.9 GUIDE TO THE USE OF THE ALCOHOL WITHDRAWAL SCALE - REVISED (AWS)

ITEM 1 : PERSPIRATION

0 No sweating
1 Palms moist only
2 Moist palms and localised beads of sweat, eg. on face, chest, etc.
3 Whole body moist from perspiration
4 Profuse maximal sweating, clothes, linen, etc. are wet

ITEM 2 : TREMOR

0 No tremor
1 Positional hand tremor only, eg. when reaching for something or holding something
2 Constant slight tremor of hands
3 Constant marked tremor of hands

ITEM 3 : ANXIETY

0 Calm, no anxiety
1 Uneasy
2 Apprehensive and easily startled
3 Anxious and fearful, difficult to calm
4 Uncontrollable anxiety including panic attacks

ITEM 4 : AGITATION

0 Normal activity, no agitation
1 Unsettled, fidgety
2 Restless, tossing and turning, difficult to maintain bed rest
3 Excitable, brisk and frequent movements, purposeless activity. Can be persuaded to sit or lie down for brief periods
4 Very excitable, unable to settle. Constant rapid movements

ITEM 5 : AXILLA TEMPERATURE

0 Temp of 37.0°C or less
1 Temp of 37.1°C to 37.5°C
2 Temp of 37.6°C to 38.0°C
3 Temp of 38.1°C to 38.5°C
4 Temp of above 38.5°C

ITEM 6 : HALLUCINATIONS

0 No hallucinations, lucid
1 Episodes of distortion of the existing objects in the surroundings. Aware that these are not real
2 Frank hallucinations occur though they are limited to only some objects or events and of a brief duration. Can be easily persuaded that these perceptions are imaginary. Retains a reasonable contact with reality
3 Limited, frank hallucinations as in the above point, but is resistant to reorientation to reality, difficult to persuade the perceptions are imaginary. Distressed by the hallucinations and able to maintain only a tenuous contact with reality
4 Hallucinations are generalised, there is no meaningful contact with reality. Patient exists in an illusory world

ITEM 7 : ORIENTATION

0 Fully orientated
1 Orientated in person and place, but has problem with recollecting time
2 Orientated in person, patchy orientation in place and time
3 Patchy orientation in person, disoriented in place and time
4 Disoriented in person, place and time. Does not understand where he/she is, who the persons are around him/her are and what time it is

AWS TOTAL

1 – 4 = Mild withdrawal
5 – 9 = Moderate withdrawal
10 –14 = Severe withdrawal
15 + = Very Severe withdrawal

Medical review required if AWS is >10

4.9.1

Royal Brisbane & Royal Women's Hospitals Health Service Districts

ALCOHOL AND DRUG SERVICE

ALCOHOL WITHDRAWAL SCALE

UR:……

NAME:……

ADDRESS:……

……

DOB:……/……/…….. M F

ALCOHOL WITHDRAWAL SCALE

Date & Time of last Alcohol Use: ……/……./…… ……AM/PM		DATE										
		TIME										
		BAL										
Perspiration	0 No sweating 1 Moist palms only 2 Beads on face, chest 3 Whole body moist 4 Profuse, clothes wet											
Tremor	0 No tremor 1 Positional hand tremor 2 Constant slight tremor 3 Constant marked tremor											
Anxiety	0 Calm 1 Uneasy 2 Apprehensive 3 Fearful, slow to calm 4 Unable to calm / panic											
Agitation	0 Able to rest 1 Unsettled, fidgety 2 Restless, tossing, turning 3 Excitable, pacing 4 Constant movement											
Temperature	0 < 37.0c 1 37.1c-- 37.5c 2 37.6c – 38.0c 3 38.1c – 38.5c 4 > 38.5c											
Hallucinations Specify if:- V = Visual T = Tactile A = Auditory	0 No hallucinations 1 Infrequent, aware 2 Brief, persuadable 3 Frequent, distressed 4 No meaningful reality											
Orientation	0 Fully orientated 1 Unsure of time 2 Unsure time, place 3 Unsure time, place, person 4 Disorientated											
AWS Total												
Blood Pressure												
Pulse												
Temperature												
Respirations												
Conscious Level	1 Alert, obeys, oriented **2** Confused, responds to speech **3** Stuporous, responds to pain **4** Semi-comatose **5** Comatose											
Pupils + reacts -- no reaction B brisk S Sluggish	Size in mm											
	Reaction											
Medication Given												
Nurse Initials												

Scale (mm)

1 •
2 ●
3 ●
4 ●
5 ●
6 ●
7 ●
8 ●

10/09/2002

4.9.2 ADDITIONAL NURSING OBSERVATIONS

Blood Alcohol Level (BAL)

1. Record the BAL, measured in grams of ethanol per 100 millilitres blood
2. Tolerance: BAL of 0.05 to 0.08 plus apparently normal behaviour = probably mild to moderate level of tolerance; BAL of 0.08 to 0.15 and apparently normal behaviour = probably moderate level of tolerance; BAL of 0.15 or above and apparently normal behaviour is diagnostic of a high level of tolerance.

Estimate of Neuroadaptation

By using the BAL and other relevant subjective and objective data the nurse can infer the degree of neuroadaptation of the patient and thus estimate what stage of the withdrawal continuum the patient is likely to reach. As the patients degree of neuroadaptation increases so too does both their level of tolerance to alcohol and their risk of experiencing the alcohol withdrawal syndrome. The estimate of neuroadaptation is not charted on the AWS record but highlighted in the nurse's recorded report.

Respiration

1. Record the rate
2. People who are intoxicated or in moderate to severe withdrawal may display compromised respiration (eg. dyspnoea, hypernoea, shallow breathing or reduced rate)
3. If respiration becomes compromised:
   - ✓ administer oxygen at 40%, ie. 6 L/minute or if C.O.P.D. present 2L/minute
   - ✓ position in cardiac position
   - ✓ notify the medical officer
   - ✓ record respiratory rate ¼ hourly.

Consciousness

1 Alert, responds when spoken to, orientated and co-operative
2 Confused as to day, date and place, but responds when spoken to and obeys simple commands
3 Stuporose, no response to auditory stimuli, but responds to painful stimuli
4 Semi-comatose, no response to usual painful stimuli, responds to peripheral reflexes, ie. corneal, plantar, but gag reflex absent; incontinence of urine and faeces and some restlessness
5 Comatose, no response to external stimuli, no reflexes present, may progress to depressed respiration

Note: If consciousness level falls below 2, use Glasgow Coma Scale and notify the medical officer.

Pupils

1. Observe the size and reaction to light of the pupils
2. Record if the pupils are slow to react to light
3. Record whether or not the pupils are equal in size or not.

Blood Pressure

1. Take and record the measurement of the blood pressure in significant units, eg. 120/85 (not 118/82)
2. In most cases a rising blood pressure will broadly correlate with a rise in the rating scale
3. In some cases patients may suffer from hypertension unrelated to their withdrawal. This patient group will not respond to routine withdrawal management interventions and will require further assessment and appropriate treatment.

4.10 GUIDE TO THE USE OF THE CLINICAL INSTITUTE WITHDRAWAL ASSESSMENT FOR ALCOHOL SCALE – REVISED VERSION (CIWA-Ar)

ITEM 1 : NAUSEA AND VOMITING

Ask "Do you feel sick? Have you vomited?" and observe.

0 No nausea and no vomiting
1 Mild nausea with no vomiting
2
3
4 Intermittent nausea and dry heaves
5
6
7 Constant nausea, frequent dry heaves and vomiting

ITEM 2 : TREMOR

Observe patient's arms extended and fingers spread apart.

0 No tremor
1 Not visible, but can be felt fingertip to fingertip
2
3
4 Moderate, with patient's arms extended
5
6
7 Severe, even with arms not extended

ITEM 3 : PAROXYSMAL SWEATS

0 No sweat visible
1 Barely perceptible sweating, palms moist
2
3
4 Beads of sweat obvious on forehead
5
6
7 Drenching sweats

ITEM 4 : ANXIETY

Observe and ask "Do you feel nervous?"

0 No anxiety, at ease
1 Mildly anxious
2
3
4 Moderately anxious, or guarded, so anxiety is inferred
5
6
7 Equivalent to acute panic states as seen in severe delirium or acute schizophrenic reactions

ITEM 5 : AGITATION

0 No activity
1 Somewhat more than normal activity
2
3
4 Moderately fidgety and restless
5
6
7 Paces back and forth during most of the interview, or constantly thrashes about

ITEM 6 : TACTILE DISTURBANCES

Ask "Have you any itching, pins and needles sensations, any burning, any numbness or do you feel bugs crawling on or under your skin?

0 None
1 Very mild itching, pins and needles, burning or numbness
2 Mild itching, pins and needles, burning or numbness
3 Moderate itching, pins and needles, burning or numbness
4 Moderately severe hallucinations
5 Severe hallucinations
6 Extremely severe hallucinations
7 Continuous hallucinations

ITEM 7 : AUDITORY DISTURBANCES

Ask "Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things you know are not there?", and observe.

0 Not present
1 Very mild harshness or ability to frighten
2 Mild harshness or ability to frighten
3 Moderate harshness or ability to frighten
4 Moderately severe hallucinations
5 Severe hallucinations
6 Extremely severe hallucinations
7 Continuous hallucinations

ITEM 8 : VISUAL DISTURBANCES

Ask "Does the light appear to be too bright? Is its colour different? Does it hurt your eyes? Are you seeing things you know are not there?", and observe.

0 Not present
1 Very mild sensitivity
2 Mild sensitivity
3 Moderate sensitivity
4 Moderate to severe hallucinations
5 Severe hallucinations
6 Extremely severe hallucinations
7 Continuous hallucinations

ITEM 9 : HEADACHES, FULLNESS IN HEAD

Ask "Does your head feel different? Does it feel like there is a band around your head?" Do not rate for dizziness or lightheadedness. Otherwise, rate severity.

0 Not present
1 Very mild
2 Mild
3 Moderate
4 Moderately severe
5 Severe
6 Very severe
7 Extremely severe

ITEM 10 : ORIENTATION AND CLOUDING OF SENSORIUM

Ask "What day is this? Where are you? Who am I?"

0 Orientated and can do serial additions
1 Cannot do serial additions or is uncertain about date
2 Disorientated for date by no more than 2 calendar days
3 Disorientated for date by more than 2 calendar days
4 Disorientated for place and/or person

CIWA – Ar

< 10 = Mild withdrawal
10 – 20 = Moderate or Severe withdrawal
20 + = Very Severe withdrawal

Medical review required if CIWA-Ar > 15

Adapted from Sullivan J., Sykora, K., Schneiderman, J., Naranjo, C. and Sellers, E. , 1989. Assessment of alcohol withdrawal: The Revised Clinical Institute Withdrawal Assessment for Alcohol Scale (CIWA-Ar). *British Journal of Addiction,* 84, 1353 – 1357.

4.10.1 Royal Brisbane & Royal Women's Hospitals Health Service Districts

ALCOHOL AND DRUG SERVICE

ALCOHOL WITHDRAWAL SCALE (CIWA-Ar)

UR:……

NAME:……

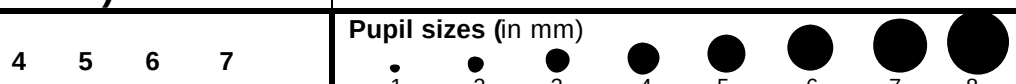
ADDRESS:……

……

DOB:……/……/…… M F

RATINGS:
0 Nil **1 mild** **2 3 moderate** **4 5 severe** **6 7 very severe**

Pupil sizes (in mm)



Date & Time of Last Alcohol Use: ……/……/…… ……AM / PM	**DATE**										
	TIME										
	BAL										
NAUSEA / VOMITING											
TREMOR											
PAROXYSMAL SWEATS											
ANXIETY											
AGITATION											
TACTILE DISTURBANCE											
AUDITORY DISTURBANCE											
VISUAL DISTURBANCE											
HEADACHES, FULLNESS IN HEAD											
ORIENTATION AND CLOUDING OF SENSORIUM											
TOTAL											
BLOOD PRESSURE											
PULSE											
TEMPERATURE											
RESPIRATIONS											
Conscious Level 1 Alert, obeys, oriented; 2 Confused, responds to speech; 3 Stuporous, responds to pain; 4 Semi-comatose; 5 Comatose											
PUPILS + reacts – no reaction B Brisk S Sluggish	**SIZE** in mm										
	REACTION										
MEDICATION GIVEN											
NURSE INITIALS											

ALCOHOL WITHDRAWAL SCALE -- REVISED (CIWA-Ar)

5. BENZODIAZEPINE PROTOCOLS

5.1 OVERVIEW OF BENZODIAZEPINE DETOXIFICATION

There are two main scenarios for benzodiazepine detoxification. The first is when a patient on therapeutic or moderately supra-therapeutic doses expresses the wish to cease taking them, or during therapy commits to do so. In this situation, elective detoxification (sometimes known as "benzodiazepine weaning") can be undertaken on an ambulatory basis. Sometimes inpatient admission is needed when markedly supra-therapeutic doses have been taken, when it proves difficult for the patient to cease the "final dose", or when a withdrawal syndrome supervenes.

The second scenario is when a patient presents who is taking high doses, often in a chaotic way, typically obtained from the illicit market or by "doctor shopping", often mixed with other substances. In this situation inpatient admission is typically needed, and control of the withdrawal syndrome can be difficult. A consistent feature of benzodiazepine withdrawal is that its course can vary among individuals, and from day to day in the same person.

It is important to be aware at the outset however, that many patients may be too embarrassed to accurately report their current dose of benzodiazepines. It is essential that a non-judgemental, therapeutic relationship with the patient be fostered from the outset as the process of benzodiazepine weaning is often lengthy and doses often need to be continually negotiated.

A decision tree for the management of benzodiazepine detoxification is provided in Section **5.9** (page 5-20)

5.2 MANAGING BENZODIAZEPINE WITHDRAWAL

Determining the appropriate management of patients with benzodiazepine problems involves:

(1) diagnosis of benzodiazepine dependence (including severity of dependence)
(2) detecting those at risk of developing a withdrawal syndrome
(3) identifying whether a therapeutic alternative is needed
(4) determining if a dependent patient at risk of withdrawal can be safely managed in a particular setting.

(1) Diagnosis of Benzodiazepine Dependence

Benzodiazepine dependence can occur in people who have been taking therapeutic or higher doses of benzodiazepines on a regular, daily basis for a period of a few weeks or more (Busto et al., 1986). Frank and Pead (1995) point out there are generally two major categories of people who present for treatment of benzodiazepine dependence: *people who use only benzodiazepines and usually in therapeutic doses; and people who use benzodiazepines non-therapeutically, in high doses, often erratically, and usually with other drugs.* Like alcohol dependence, benzodiazepine dependence exists in various degrees of severity, from a condition that just fulfills the diagnostic criteria to an extremely severe dependence that dominates the person's life and renders them unable to a potentially life-threatening withdrawal syndrome.

The criteria for dependence were presented in detail on pages 2-5 to 2-6. In summary, a diagnosis of benzodiazepine dependence can be made if **three or more** of the following criteria are evident in a period of 12 months (WHO ICD-10, 1993):

CRITERIA FOR DEPENDENCE	**COMMENTS (**mild+, moderate++, severe+++**)**
Compulsion to use	
Impaired control over drug use	
Withdrawal symptoms	
Increased tolerance	
Priority of drug use	
Continued use despite harmful effects	

Some people taking long-term regular benzodiazepines do not realise that they are dependent until they stop a dose or try to cut down and experience withdrawal symptoms, such as feeling agitated, anxious, or unable to sleep. Some people with benzodiazepine dependence experience recurrent withdrawal, they lose their self-confidence and interpersonal skills. Often, they leave their job because they cannot manage, stop socialising and dread speaking on the telephone. Simple activities like doing the grocery shopping or making minor decisions become almost insurmountable tasks. Those affected often do not make the connection between the deterioration in their abilities and relationships with their long-term benzodiazepine use. They rely more than ever on their drugs to help them to cope and they will often take an extra tablet for a particularly stressful event (Ree, 1997).

Individuals who use benzodiazepines non-therapeutically and in high doses often exhibit drug seeking behaviour. They may escalate the dose, obtain prescriptions from several doctors, ie. "doctor shop", use several types of benzodiazepine, use these drugs intravenously (eg. temazepam) or use other classes of drugs (eg. methadone, heroin). These patients are younger, use higher daily doses and have higher lifetime exposure than the former group. About 70% of people taking over

60mg diazepam or equivalent per day are polydrug users. Their preferred benzodiazepine is one with rapid absorption and penetration through the blood-brain barrier, such as diazepam or flunitrazepam. In assessment, consider the possibility that on withdrawal of benzodiazepines the patient will substitute other drugs, or that withdrawal may be complicated by concurrent withdrawal from other drugs. Assess the patient's life-style, psychosocial problems and current stability, and be prepared to postpone detoxification if these factors are unfavourable.

(2) Detecting the Person at Risk of Withdrawal

A person who is dependent on benzodiazepines is at risk of withdrawal when benzodiazepine use is reduced or ceases. Abrupt cessation after benzodiazepine treatment for only a few days may result in two or three days of "rebound" anxiety and insomnia. The onset time is related to the half-life of the drug.

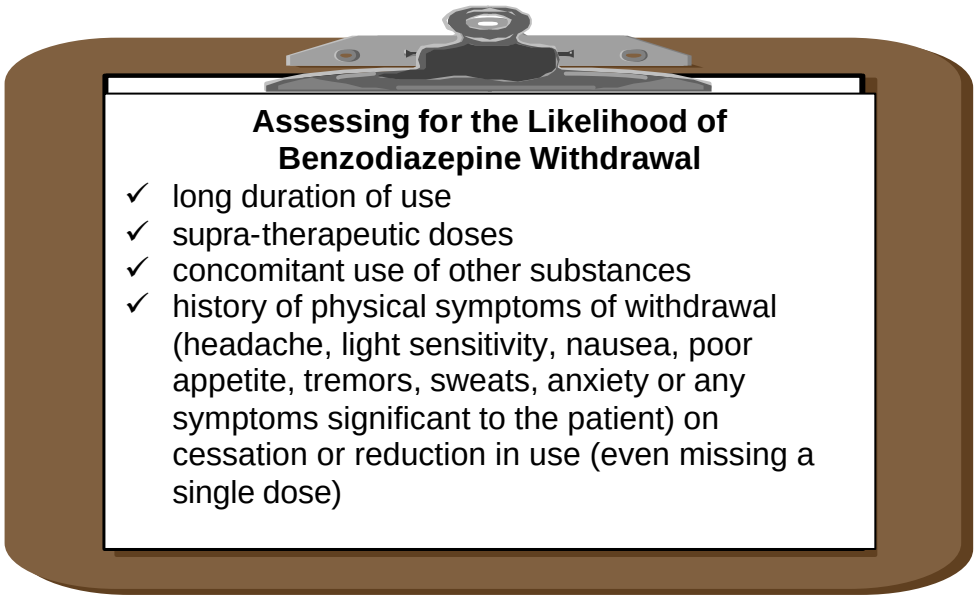
Among those taking therapeutic doses of benzodiazepines withdrawal may have been experienced when a dose has been missed. Feeling agitated, anxious, sweaty or unable to sleep are characteristic features of benzodiazepine withdrawal. A history of such experiences clearly places a person at risk of withdrawal when benzodiazepine use is discontinued on a subsequent occasion.

In those taking supra-therapeutic doses, or when benzodiazepines have been obtained illicitly, a history of previous withdrawal symptoms and/or seizures when reducing or stopping, and the concomitant use of other substances are good predictors whether or not a person will be at risk of experiencing a benzodiazepine withdrawal syndrome. The areas to concentrate upon when assessing a person for the likelihood of benzodiazepine withdrawal are outlined in the clipboard overleaf.

(3) Identifying whether a Therapeutic Alternative is Needed

Many long-term benzodiazepine users take their medication at therapeutic doses, having been prescribed the drug for an anxiety disorder, insomnia, and agitation in the context of another psychiatric disorder or a medical disorder such as epilepsy. Thus, in assessment, consider the original therapeutic purpose for prescribing benzodiazepines: has the patient been adequately treated for this condition, or will withdrawal of benzodiazepines precipitate a medical or psychological crisis? Patients with a continuing psychiatric disorder will require a therapeutic alternative to benzodiazepines (often a psychotherapy, not a drug). The elderly and women predominate among those individuals prescribed benzodiazepines on an ongoing basis.

Assessing for the Likelihood of Benzodiazepine Withdrawal



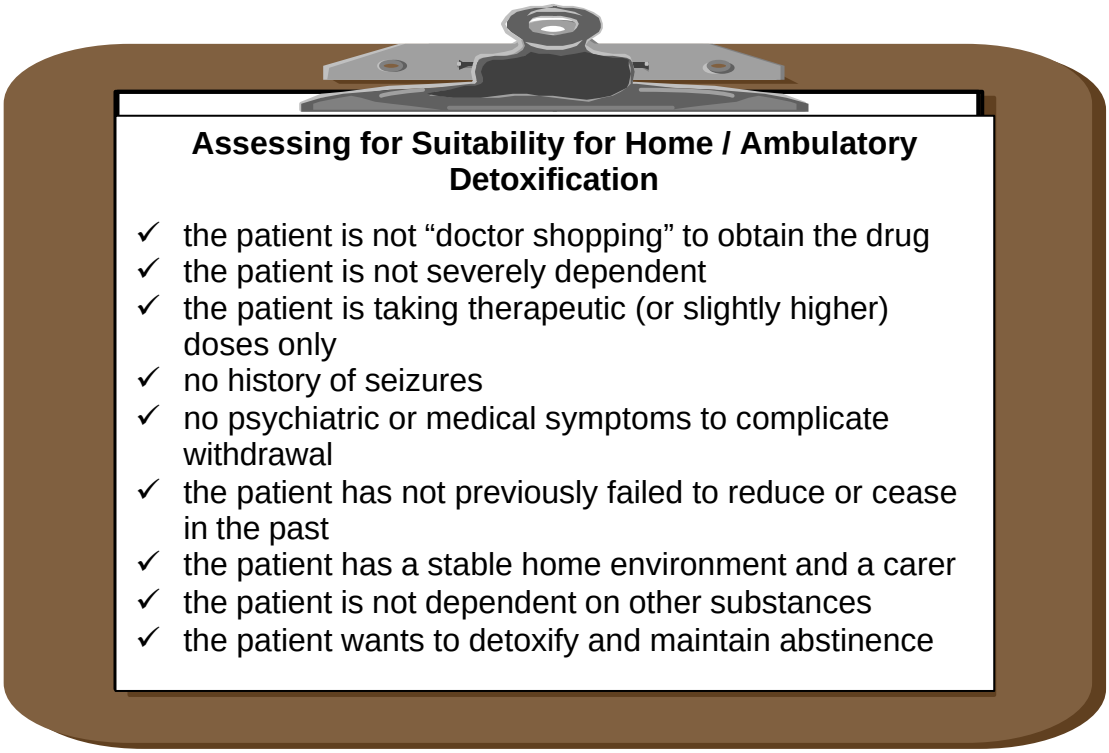
(4) Assessment to Determine the Setting for Detoxification

A great array of presenting features can be expected from patients requesting for benzodiazepine detoxification. As previously mentioned, many patients are initially embarrassed about the amount of benzodiazepines that they are taking and it is common for them to underestimate their dose or frequency of use. A non-judgemental approach is essential to enable a trusting, honest, therapeutic relationship to develop between the medical officer and the patient.

However, once a patient has been found to be dependent on benzodiazepine and at risk of withdrawal, then his/her suitability for a particular detoxification setting must be determined. The areas outlined in the clipboards will assist health care practitioners decide which particular detoxification setting is most appropriate for the patient at hand after his/her assessment. The decision tree for the management of benzodiazepine detoxification (see Section **5.9**) also provides explicit guidelines as to where the patient can be safely detoxified.

Home/Ambulatory

Home or ambulatory detoxification is the predominant approach to assisting a patient on therapeutic doses or somewhat supra-therapeutic doses to cease use. This is done on a gradual basis over a period of weeks, sometimes months. Indeed the term “weaning” from benzodiazepines is preferred by many to “detoxification” to reflect more accurately the lengthy nature of the process. A patient who meets the criteria outlined in the clipboard that follows can be offered this form of detoxification.

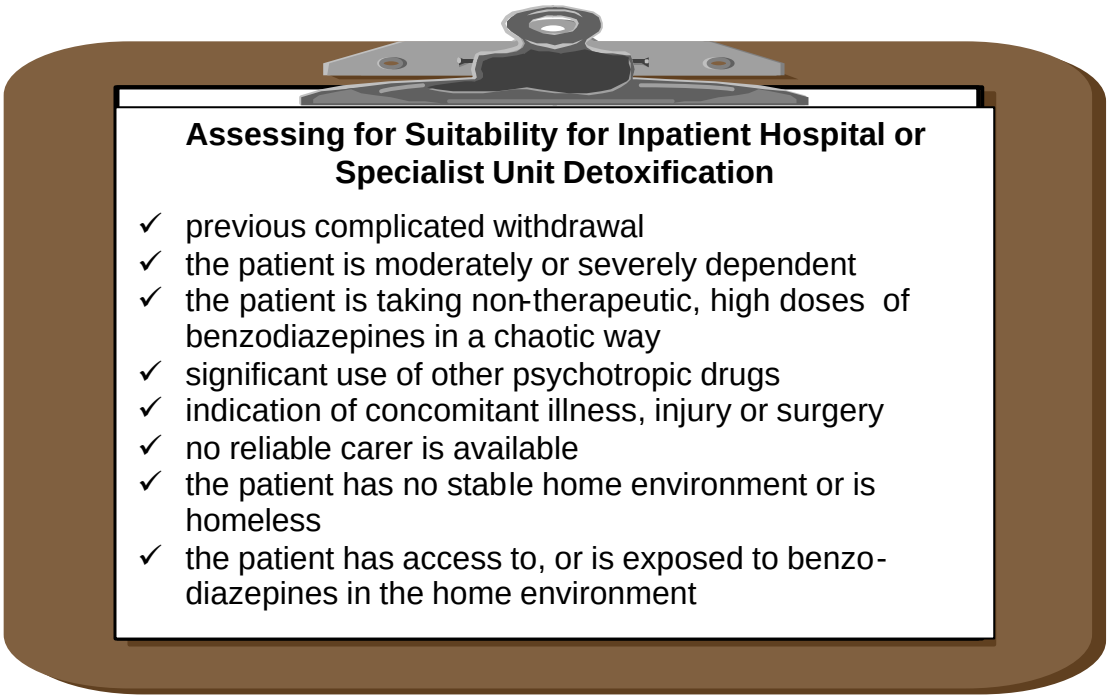


Assessing for Suitability for Home / Ambulatory Detoxification

- ✓ the patient is not "doctor shopping" to obtain the drug
- ✓ the patient is not severely dependent
- ✓ the patient is taking therapeutic (or slightly higher) doses only
- ✓ no history of seizures
- ✓ no psychiatric or medical symptoms to complicate withdrawal
- ✓ the patient has not previously failed to reduce or cease in the past
- ✓ the patient has a stable home environment and a carer
- ✓ the patient is not dependent on other substances
- ✓ the patient wants to detoxify and maintain abstinence

Hospital/Specialist Detoxification Unit

A patient who is likely to experience moderate to severe benzodiazepine withdrawal symptoms or whose withdrawals may be complicated by intercurrent medical or psychiatric problems will require an inpatient admission for detoxification. The patient can be admitted to a hospital if there is no specialist detoxification unit available, or to a specialist detoxification unit, if he/she meets the criteria below.



Assessing for Suitability for Inpatient Hospital or Specialist Unit Detoxification

- ✓ previous complicated withdrawal
- ✓ the patient is moderately or severely dependent
- ✓ the patient is taking non-therapeutic, high doses of benzodiazepines in a chaotic way
- ✓ significant use of other psychotropic drugs
- ✓ indication of concomitant illness, injury or surgery
- ✓ no reliable carer is available
- ✓ the patient has no stable home environment or is homeless
- ✓ the patient has access to, or is exposed to benzo-diazepines in the home environment

5.3 FEATURES OF THE BENZODIAZEPINE WITHDRAWAL SYNDROME

5.3.1 Common Features of Benzodiazepine Withdrawal

There is a wide range of symptoms that can occur in people experiencing benzodiazepine withdrawal, and symptoms vary from one individual to another. The most common of these are anxiety and insomnia. Other common symptoms are as listed below. Seizures, when they occur, are usually associated with high dose use and abrupt withdrawal (Frank & Pead, 1995).

Common symptoms include:

- ✓ anxiety and insomnia (most common)
- ✓ hypersensitivity to noise/light/touch
- ✓ perceptual disturbances
- ✓ hallucinations (visual or auditory)
- ✓ aches, pains, palpitations, numbness
- ✓ headache, diarrhoea, dizziness, constipation
- ✓ depression, suicidal thoughts
- ✓ agoraphobia, panic attacks
- ✓ feelings of unreality
- ✓ memory impairment

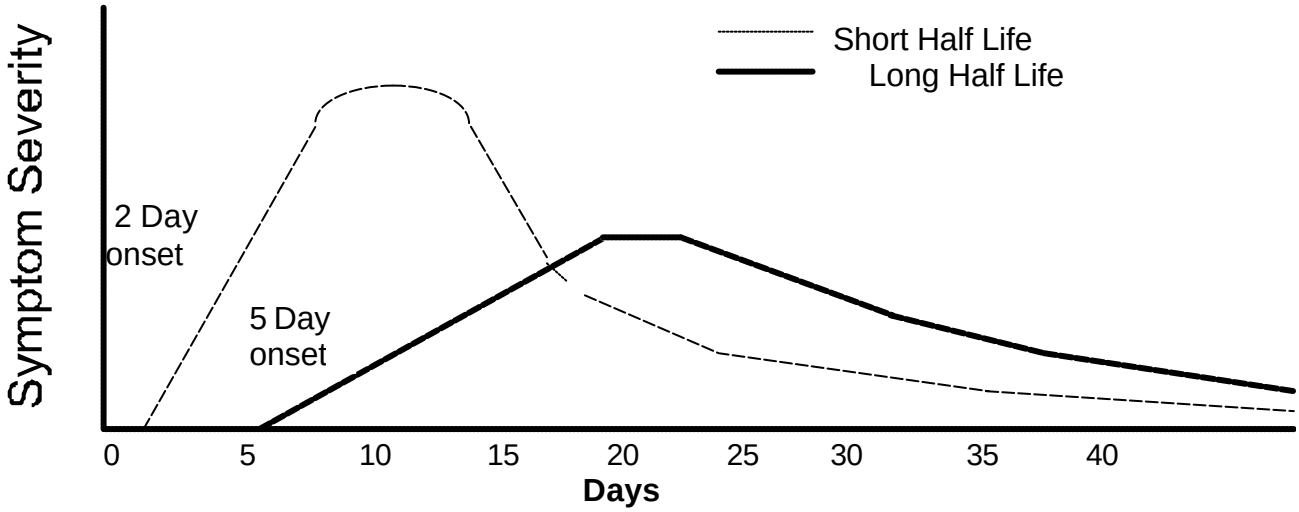
Other less common symptoms include:

- ✓ stiffness in the neck muscles
- ✓ metallic taste sensation in the mouth

5.3.2 Onset and Duration

A description of the time-course and features of both short-acting and long-acting benzodiazepine withdrawal is described in Figure 7.

FIGURE 7: Time-course for short-acting and long-acting benzodiazepine withdrawal (adapted from Frank & Pead, 1995)



Withdrawal typically occurs within two days after ceasing short-acting benzodiazepines, and usually between two and ten days after ceasing long-acting benzodiazepines. However, the onset of benzodiazepine withdrawal may be as late as three weeks after cessation of long-acting drugs. Seizures and hallucinations at this stage are well described.

Withdrawal from short-acting benzodiazepine (eg. oxazepam, temazepam, alprazolam, lorazepam) typically produces a faster and more severe onset of symptoms than withdrawal from long-acting benzodiazepines (eg. diazepam, nitrazepam) and may be more difficult to complete. The half lives of different benzodiazepines are set out in Table 11. The severity of withdrawal is highly variable and is generally dependent on the elimination rate (half-life), the dose of the drug, duration of use, and the rapidity of cessation or reduction in use. Other important factors include physical illness, pre-existing anxiety or mood disorders and dependence on other psychoactive substances. A person's environment and support network will also influence perceptions of withdrawal severity.

Complicated withdrawal is characterised by an emergence of features such as seizures, delirium, psychosis, or panic, social phobia and generalised anxiety disorder (Barlow, 1988).

Protracted withdrawal is the term given to a syndrome in which persistent symptoms of benzodiazepine withdrawal at moderate severity (Higgitt et. al., 1990) occur over weeks or months. They include sleep disturbance, anxiety and irritability, which persist in spite of recognition, reassurance, education, and additional support. In such cases the benzodiazepine regime should be maintained at a fixed dose until the person feels able to continue reduction.

TABLE 11

ABSORPTION RATES, HALF-LIFE, and EQUIVALENT DAILY DOSES of COMMON BENZODIAZEPINES*

GENERIC NAME	® TRADE NAME	TIME TO PEAK CONCENTRATION	ELIMINATION HALF-LIFE**	EQUIVALENT DOSE***
Diazepam	Antenex Diazemuls Ducene Valium	30-90 min	Biphasic: rapid phase half-life 3 hours, elimination half-life 20-48 hours	5mg
Alprazolam	Kalma Ralozam Xanax	1 hour	6-25 hours	0.5 - 1mg
Clonazepam	Paxam Rivotril	2-3 hours	22-54 hours	0.5mg
Flunitrazepam	Hypnodorm Rohypnol	1-2 hours	After IV admin, 20-30 hours	1 - 2mg
Lorazepam	Ativan	2 hours	12-16 hours	1mg
Nitrazepam	Alodorm Mogadon	2 hours	16-48 hours	2.5 - 5mg
Oxazepam	Alepam Murelax Serepax	2-3 hours	4-15 hours	15 - 30mg
Temazepam	Euhypnos Nocturne Nomapam Normison Temaze Temtabs	30-60 min after tablets, 2 hours after capsules	5-15 hours	10 - 20mg

* Based on manufacturer's product information
** Elimination half-life: time for the plasma drug concentration to decrease by 50%
*** Equivalent dose: dose equivalent to diazepam 5mg.

(adapted from the NSW Detoxification Clinical Practice Guidelines, NSW Health Department, 1999)

5.4 DETECTING AND MONITORING BENZODIAZEPINE WITHDRAWAL

For patients who are in hospital or in a detoxification unit, it is advisable to commence a Benzodiazepine Withdrawal Rating Scale (see Section **5.10.1**) if the history suggests a possibility that the patient will experience benzodiazepine withdrawal. The rating scale monitors the patient's vital signs and the presence of specific withdrawal symptoms. It should be commenced as soon as possible after the assessment and continues until the patient is considered to be no longer at risk of withdrawal.

It must be acknowledged, however, that the value of using a rating scale for benzodiazepine withdrawal is unproven. The syndrome is highly variable from person to person, and from day to day in the same individual. Furthermore, unlike alcohol withdrawal rating scales, the scores on benzodiazepine withdrawal scales do not predict accurately the subsequent severity of the syndrome. Nonetheless, using a rating scale ensures regular observation of the patient, and assessment of symptoms. As Benzodiazepine Withdrawal Rating Scales are subjective instruments, clinical judgement will be required during monitoring of withdrawal. The rating scale alone may not be enough to indicate progression of the syndrome or the presence of complications.

Procedure

- ✓ After the assessment, take and record the vital signs on the Clinical Withdrawal Assessment for Benzodiazepines (CIWA-B) Scale as baseline data. Continue to monitor the patient fourth hourly until the patient is transferred to the ward.

- ✓ As an inpatient, monitor the patient fourth hourly if symptoms are present until symptoms abate, then twice daily until discharged.

- ✓ Monitor second hourly if withdrawal symptoms exacerbate and continue this monitoring until the syndrome has been controlled.

It may be necessary to monitor withdrawal for a longer period than would be done for someone in alcohol withdrawal. Benzodiazepine withdrawal has the potential to progress over several days for short-acting drugs and up to six weeks for longer acting drugs. Frequent recording of vital signs and withdrawal scale ratings is needed if the assessment reveals long-term, high dose benzodiazepine use. Monitoring may become less frequent and then discontinued if drug use is at a lower dose and/or short duration.

It is also important to establish if the complaints (such as anxiety, depression, insomnia or panic attacks) reported by the patient are related to withdrawal from benzodiazepines or due to re-emergence of his/her pre-exisiting condition. In general, the complaints will disappear if treated with standard withdrawal

management regimes and it is best to treat them as symptoms. Even if there is an underlying psychiatric disorder and the symptoms are not of withdrawal, the skills the patient has learnt during withdrawal will usually help to alleviate them (Ree, 1997). In some cases the patient may need to be reviewed by the psychiatrist whilst still an inpatient and may require additional pharmacological and psychological treatment for the underlying disorder.

5.5 BENZODIAZEPINE DETOXIFICATION PROTOCOLS

(1) Sedation

The sedation regimes that follow are primarily designed for inpatient and other supervised residential settings. Persons requiring inpatient detoxification include some patients taking prescribed therapeutic (or moderately supra-therapeutic) doses, including those who have not succeeded using the weaning regime recommended for ambulatory use. An additional group comprises those taking clearly supra-therapeutic doses from illicit sources and often in a chaotic way. These protocols are quite different from those employed in elective weaning from benzodiazepines. The reader is referred to the companion volume "*Clinical Protocols for Detoxification in General Practice and Community Settings".*

In the case where a patient is taking therapeutic or moderately supra-therapeutic doses, with the drug being prescribed legitimately by a medical practitioner, the **Benzo 1** (**B1**) protocol is appropriate. For patients taking supra-therapeutic doses, often in an irregular way and mixed with other drugs, the **Benzo 2** (**B2**) protocol is indicated. For patients who present in overt benzodiazepine withdrawal, prompt control of the withdrawal syndrome is necessary, and a loading regime, **Benzo 3** (**B3**), similar to that used for severe alcohol withdrawal, is indicated. **Benzo 4** (**B4**) protocol is an intravenous sedative regime that is identical to the **Alcohol 4** (**A4**) protocol in Table 10, page 4-13.

Benzo 1 (B1) Protocol

This regime is designed for **inpatients** undergoing elective detoxification from therapeutic or moderately supra-therapeutic doses of benzodiazepines. Patients undergoing benzodiazepine withdrawal management need to be placed in an environment that is quiet and calm and the staff need to assure the patients that the symptoms they are experiencing are withdrawal symptoms and will abate over a period of time.

Note that most patients in this category can be weaned from benzodiazepines by a home or ambulatory detoxification program.

- Convert the current dosage of the patient's benzodiazepines to an equivalent dosage of diazepam (see Table 11). This is usually between 15 and 40mg daily.
- The daily dose of diazepam is then administered in four divided doses, along the lines of Table 12. Note that the starting dose will be determined by the diazepam equivalent dosage.

TABLE 12
BENZO 1 (B1) PROTOCOL- REGULAR DIAZEPAM
FOR THERAPEUTIC DEPENDENCE

Sedation				
	6 am	**12 md**	**6 pm**	**12 mn**
Day 1	5-10mg	5-10mg	5-10mg	10mg
Day 2	5-10mg	5-10mg	5-10mg	10mg
Day 3	5mg	5mg	5mg	10mg
Day 4	5mg	5mg	5mg	10mg
Day 5	Nil	5mg	Nil	5mg
Day 6	Nil	5mg	Nil	5mg
Day 7	Nil	Nil	Nil	5mg

Symptomatic Relief: Metoclopramide 10mg 8/24 PRN; an antacid (eg. Gastrogel 15-20ml 6/24 PRN); Kaolin mixture 15-20ml 6/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN
Supplements: Thiamine, Magnesium, Phosphate, Folate, Zinc, Vitamins A, D, E, C & B group
Supportive Environment: Supportive counselling and reassurances by the ward nurse; education about benzodiazepine withdrawal and sleep hygiene; behavioural management techniques; relaxation therapy

Note: *see pages 5-15 to 5-16 for details of these four S's*

After day 7 the patient can usually be discharged. Adjustment of the reducing regime may be required if the patient's withdrawal symptoms exacerbate.

Benzo 2 (B2) Protocol

This regime is intended for patients who present for detoxification from clearly supra-therapeutic doses of benzodiazepines. Typically they have obtained them from illicit sources or through doctor shopping.

- Convert the current dosage of the patient's benzodiazepines to an equivalent dose of diazepam (see Table 11).
- Halve the calculated dose, and administer the reduced daily dose in four divided doses according to Table 13.
- Do not give more than 80mg diazepam per day, without consulting a specialist physician or psychiatrist.
- Be prepared to reduce the dose substantially (or cease) if the patient becomes over-sedated.

TABLE 13
BENZO 2 (B2) PROTOCOL - REGULAR DIAZEPAM
FOR HIGH-DOSE BENZODIAZEPINE DEPENDENCE

Sedation				
	6 am	**12 md**	**6 pm**	**12 mn**
Day 1	10-20mg	10-20mg	10-20mg	10-20mg
Day 2	10-20mg	10-20mg	10-20mg	10-20mg
Day 3	10mg	10mg	10mg	10-20mg
Day 4	10mg	10mg	10mg	10-20mg
Day 5	Nil	10mg	Nil	10mg
Day 6	Nil	10mg	Nil	10mg
Day 7	Nil	5mg	Nil	5mg
Day 8	Nil	5mg	Nil	5mg

Symptomatic Relief: Metoclopramide 10mg 8/24 PRN; an antacid (eg. Gastrogel 15-20ml 6/24 PRN); Kaolin mixture 15-20ml 6/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN

Supplements: Thiamine, Magnesium, Phosphate, Folate, Zinc, Vitamins A, D, E, C & B group

Supportive Environment: Supportive counselling and reassurances by the ward nurse; education about benzodiazepine withdrawal and sleep hygiene; behavioural management techniques; relaxation therapy

Note: *see pages 5-15 to 5-16 for details of these four S's*

This regime is given as an example. Because of the variability of benzodiazepine withdrawal, it is not possible to be prescriptive in the management of patients taking these drugs from illicit sources. Frequently the patient will threaten self-discharge to obtain a higher dose, when there is no evidence of symptomatic withdrawal.

Benzo 3 (B3) Protocol

This regime is intended for patients who present with an overt benzodiazepine withdrawal syndrome. Prompt control of the withdrawal syndrome is needed.

TABLE 14
BENZO 3 (B3) PROTOCOL - LOADING DOSE DIAZEPAM REGIME

Sedation
1. Give 20mg* diazepam orally every 2 hours until sedation achieved. At this point the patient will be in a state resembling light sleep, from which he/she can be easily roused. 2. During the loading regime, ensure review by medical officer after 4 hours. 3. No more than 120mg diazepam should be given by the loading regime in the first 12 hours. If the patient is still not sedated consult the specialist on call. 4. After sedation is achieved, switch to the Alcohol 2 protocol (commencing at the Day 1 point). * *The dosage may need to be modified depending on severity of withdrawal, weight and presence of any physical disease.*
Symptomatic Relief: Metoclopramide 10mg 8/24 PRN; an antacid (eg. Gastrogel 15-20ml 6/24 PRN); Kaolin mixture 15-20ml 6/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN **Supplements:** Thiamine, Magnesium, Phosphate, Folate, Zinc, Vitamins A, D, E, C & B group **Supportive Environment:** Supportive counselling and reassurances by ward nurse; education about benzodiazepine withdrawal and sleep hygiene; behavioural management techniques; relaxation therapy ***Note:*** *see pages 5-15 to 5-16 for details of these four S's*

For patients with severe or very severe benzodiazepine withdrawal, especially when hallucinations are evident, it is advisable to supplement the diazepam regime with a major tranquilliser, such as haloperidol. Give 2.5-5mg intramuscularly initially, repeat up to three times over the next hour, then every six hours as required, and then commence a regular dose of 2.5-5mg every six hours. Review the need for continued haloperidol after 48 hours. For extra-pyramidal side-effects from the haloperidol, benztropine 0.5-2mg is given IM or orally twice daily as required. As an alternative to oral haloperidol, the atypical anti-psychotic risperidone 2mg twice daily or olanzapine 5-10mg daily may be used which has fewer extra-pyramidal side-effects. This is the **Benzo 3+ Protocol**.

Benzo 4 (B4) Protocol

This is an intravenous sedative regime that is identical to the Alcohol 4 (A4) protocol in Table 10, page 4-13. It is prescribed for patients with the most severe benzodiazepine withdrawal syndromes (ie. delirium tremens). In this situation rapid control of the withdrawal state is paramount. Patients receiving this regime must be managed in an **intensive care unit or high dependency unit** where facilities for resuscitation and ventilatory support are immediately to hand. The regime is set out in Table 15.

TABLE 15
BENZO 4 (B4) PROTOCOL – INTRAVENOUS DIAZEPAM REGIME

Sedation
1. Give intravenous injection of 10mg diazepam, repeated up to three times if necessary in the first 30 minutes. **Note there is a danger of apnoea in the first 2-3 minutes after administration.** 2. Continue with 10 mg diazepam intravenously every 2 hours, until sedation is achieved or switch to the Alcohol 3 protocol if the patient is able to take oral medication. 3. After sedation is achieved, switch to the Alcohol 2 protocol (commencing at the Day 1 point).
Symptomatic Relief: Metoclopramide 10mg 8/24 PRN; an antacid (eg. Gastrogel 15-20ml 6/24 PRN); Kaolin mixture 15-20ml 6/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN **Supplements:** Thiamine, Magnesium, Phosphate, Folate, Zinc, Vitamins A, D, E, C & B group **Supportive Environment:** Nurse in a well-lit single room or in a quiet area of the ward; reassurances and explanations of procedures by the focal nurse; restrict visitors to a minimum ***Note:*** *see pages 5-15 to 5-16 for details of these four S's*

For patients with severe or very severe benzodiazepine withdrawal, especially when hallucinations are evident, it is advisable to supplement the diazepam regime with a major tranquilliser, such as haloperidol. Give 2.5-5mg intramuscularly initially, then repeat up to three times over the next hour, then every six hours as required. For extra-pyramidal side-effects from the haloperidol, benztropine 0.5-2mg is given IM or orally twice daily as required. As an alternative to oral haloperidol, the atypical anti-psychotic risperidone 2mg twice daily or olanzapine 5-10mg daily may be used which has fewer extra-pyramidal side-effects. This is the **Benzo 4+ Protocol.**

(2) Symptomatic Relief

Symptomatic relief is necessary for many patients in benzodiazepine withdrawal in addition to sedation, particularly when muscle cramps or gut symptoms are prominent. Symptoms should be treated on an as required basis, according to the particular symptom complex.

- ✓ Metoclopramide is prescribed orally or IM at a dose of 10mg every 8 hours as required for nausea and/or vomiting
- ✓ An antacid (eg. Mylanta or Gastrogel) 15-20ml orally is given every 6 hours as required for heartburn or indigestion
- ✓ Propantheline 15mg orally is given every 8 hours as required for abdominal cramps
- ✓ Kaolin mixture 15-20ml orally is given every 6 hours as required for diarrhoea
- ✓ Quinine sulphate 300mg orally is given twice daily as required for muscle cramps. **CAUTION** - excess quinine sulphate is toxic to the heart
- ✓ Paracetamol 1g orally is given every 4-6 hours as required for headaches and other minor pains. More severe aches and pains can be treated with non-steroidal anti-inflammatory drugs (**NSAIDS**) such as Ibuprofen 400mg orally every 8 hours as required provided there is no history of ulcers, gastritis or asthma. A cox-2 inhibitor such as Celecoxib is an appropriate alternative where there is a contra-indication for non-specific NSAIDS.

(3) Supplements

Patients with benzodiazepine dependence have a much lower prevalence of nutritional, vitamin and electrolyte deficiency than those with alcohol dependence. However, it is sensible to prescribe a multivitamin preparation. Fluid and electrolyte abnormalities should be corrected as indicated by clinical parameters and laboratory results.

(4) Supportive Care and Environment

Noisy, uncomfortable, over-stimulating and/or threatening environments aggravate withdrawal states. Correspondingly they can be alleviated by a calm, well lit, predictable, non-threatening environment, and by staff employing behavioural management techniques designed to soothe and allay fear.

The general principles outlined earlier for managing patients detoxifying from alcohol are appropriate. In addition there is a need to pay particular attention to:

- ✓ Immediate management of panic attacks, eg. using deep breathing exercises.

- ✓ Management of anxiety, eg. assisting the patient to recognise anxiety and utilising relaxation techniques.

- ✓ Educating the patient about what to expect and how to cope with the withdrawal symptoms, especially insomnia, eg. talking to the patient about the withdrawals, what might happen, and what can be done, and providing information on sleep hygiene (see Appendix 4). Repeated explanations, encouragement and reassurances during treatment are important.

Continuation of Treatment for Co-existing Conditions

Medical treatment of existing conditions should generally be continued. In addition, treatment may need to be instituted for an intercurrent illness diagnosed during detoxification. The principle is that detoxification should not interrupt the patient's usual or intended care. Sometimes it will be apparent that the patient's usual medication is inappropriate for the condition or because the patient has an alcohol or drug problem (which may not have been recognised by the prescribing doctor). In this case a medical officer in the unit should be asked to review the medication, make any necessary adjustments, and liaise with the patient's usual medical practitioner, as necessary. Such medication could include anti-convulsants, anti-depressants, anti-psychotic drugs, anti-hypertensives, cardiac drugs, peptic ulcer treatment and antibiotics. In specific patients it could also include benzodiazepines (eg. clonazepam (rivotril) for epilepsy), opioids (eg. methadone in someone having a selective detoxification) and medication for pain relief.

5.6 AMBULATORY DETOXIFICATION

Ambulatory detoxification (weaning) from benzodiazepines is described briefly here in order to appraise hospital and detoxification unit staff of its possibilities.

A proportion of people taking prescribed, therapeutic doses of benzodiazepines develop physical dependence to the extent where they experience a withdrawal syndrome if the medication is ceased abruptly. Most of these patients do not exhibit chaotic behaviour, but they may "doctor shop" or develop other drug seeking activities if the doctor or carer attempts to limit the intake of benzodiazepines. These patients may clearly perceive the need to reduce or cease their medication, but fear a return of the original symptoms for which it was prescribed. In some cases it may be necessary to explore other options for treating any recurring symptoms.

People who do not have a severe dependence can be detoxified at home or on an ambulatory basis if they are motivated to withdraw from the drug, a general practitioner is available to prescribe and monitor a reducing regime and there is supervision in the home. Withdrawal from therapeutic doses of benzodiazepines on a home or ambulatory basis may take from two to sixteen weeks, with an average of six weeks.

Step-Wise Benzodiazepine Detoxification

Benzodiazepine weaning is the preferred option for a home or ambulatory benzodiazepine detoxification. The patient's general practitioner is usually in the best position to prescribe and oversee the weaning process. Where possible, staff from the local ATODS should provide support to the patient. This regime comprises the following (Rickels et al., 1999; Saunders, 1995):

- Establish a good therapeutic relationship between the general practitioner and the patient - the process of benzodiazepine weaning is often lengthy and benzodiazepine doses may need to be continually negotiated.

- Treat vigorously any clinically significant anxiety and depression with appropriate pharmacological or non-pharmacological methods. This is in order to decrease the levels of anxiety and depression while the patient continues to receive his/her usual benzodiazepine dose. There will be limits to what can be achieved in some cases because the anxiety and depression symptoms may be a manifestation of benzodiazepine dependence.

- Prescribe a dose of diazepam equivalent to their usual regime and maintain this dose for one week.

- The dose of diazepam can then be reduced by approximately **10-15% at weekly intervals** until withdrawal symptoms develop.

- If withdrawal symptoms develop smaller decrements and longer intervals between dose reductions may be necessary. Some patients may feel very uncomfortable with the reduction and often require an increase of their benzodiazepine dose until they feel 'comfortable' and reduction can be reinstated. Other patients may be unable to tolerate weekly reductions and may prefer to reduce fortnightly.

- It may be very difficult for patients to discontinue the final few milligrams. Although complete cessation is preferable, a single daily dose of 2mg diazepam is sometimes acceptable.

Some patients may become increasingly agitated in the context of step-wise reduction and it may become apparent that they have under estimated their dose. It is essential that the trusting relationship is maintained and doses renegotiated according to severity of withdrawal.

Adjunctive Therapies and Medications

During the withdrawal phase, adjunctive therapies such as cognitive behavioural therapy (CBT), relaxation therapy and training in stress management have proved to be only moderately effective.

If depression emerges during the withdrawal phase, the patient should be closely monitored for suicidal ideation. Anti-depressant therapy may need to be considered. Psychological interventions such as CBT may be implemented to address the cognitive symptoms of depression.

Carbamazepine 200-800mg per day during withdrawal may be successful in preventing return to use, although it has no reported effect on the severity of withdrawal symptoms. Propranolol may help when somatic symptoms such as tremor are disabling (NSW Health Department, 1999).

Cyproheptadine 4mg nightly as required for sleep disturbance or insomnia which are a common feature during detoxification.

Symptomatic Relief

Symptomatic relief is necessary for many patients in benzodiazepine withdrawal in addition to sedation, particularly when muscle cramps or gut symptoms are prominent. Symptoms should be treated on an as required basis, according to the particular symptom complex. For details see page 5-15.

Supportive Care and Environment

Ideally there should be at least one non-using friend or relative available at all times to provide reassurance, monitor medications or any signs of severe withdrawal and take the patient for review if there are any concerns.

For more details of the supportive care and environment see pages 5-15 to 5-16.

Monitoring

The general practitioner should closely supervise the patient during withdrawal and it is advisable for patients to be seen at least weekly, at which time a one-week supply of benzodiazepine is dispensed. Symptoms in this phase are common and not all are due to the emergence of the withdrawal syndrome. Most symptoms can be dealt with by reassurance, but it may become necessary to slow the rate of withdrawal. Patients should keep a record or diary to self monitor the dose of sedative. They can also record symptoms of benzodiazepine withdrawal, using items taken from the CIWA-B, and identify what psychosocial stresses they have experienced.

If the patient reports increasing severity or frequency of withdrawal symptoms, frequent recording of vital signs and withdrawal scale rating would be required. The patient would benefit from admission to hospital for closer observation. The onset of seizures in the context of benzodiazepine withdrawal can lead to status epilepticus and immediate hospitalisation is indicated.

5.7 COMBINED HOSPITAL AND HOME DETOXIFICATION

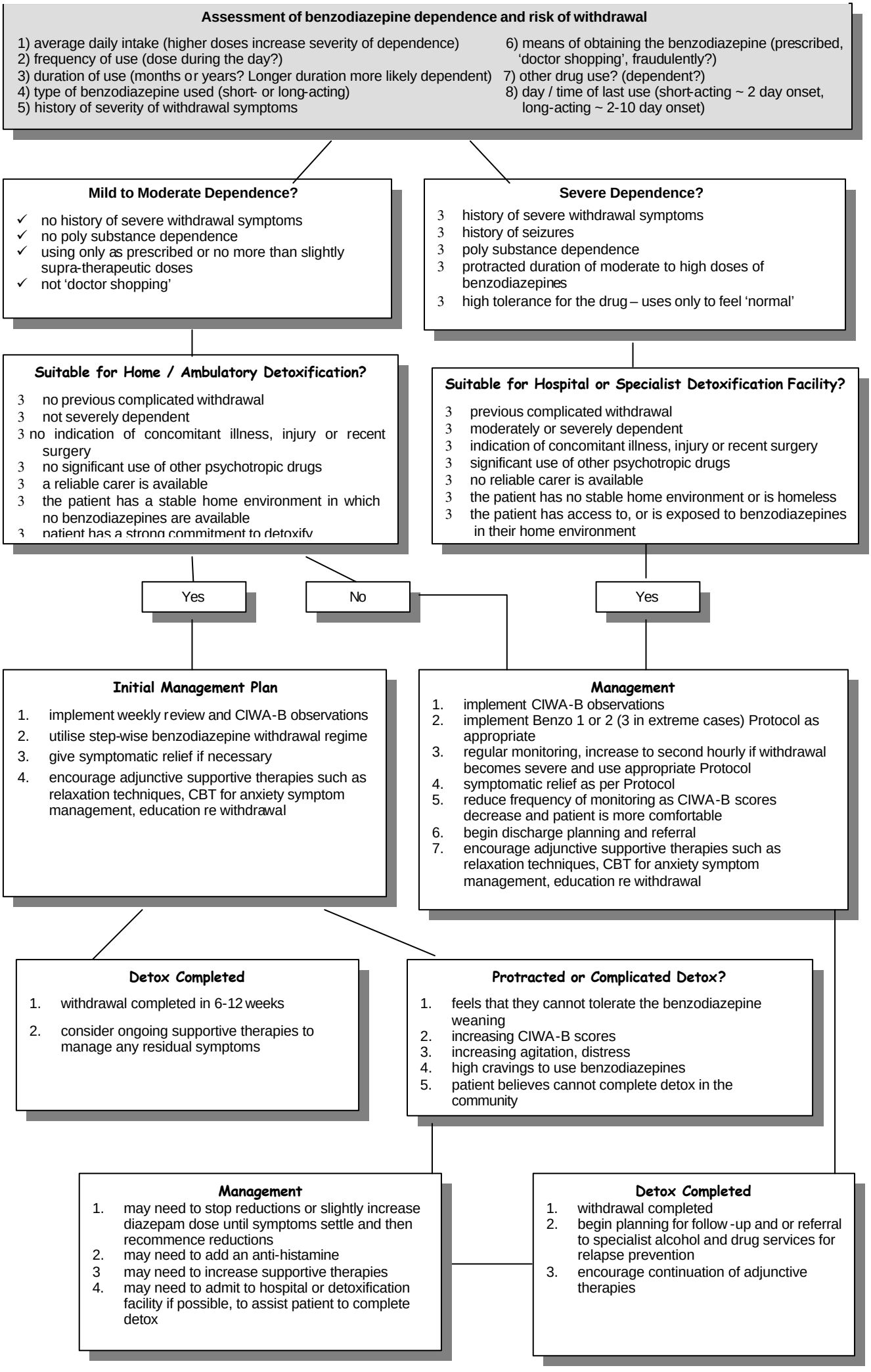
Patients who present in a withdrawal state or who have been consuming non-therapeutic, high doses of benzodiazepines in a chaotic way, often mixed with other substances, require inpatient admission. Control of the withdrawal syndrome can be difficult. Once stabilised, it may be possible to discharge the patient to supported outpatient follow-up with a reduction regime in place, if there is a suitable home environment.

Withdrawal is accomplished more successfully by using a long-acting benzodiazepine and inpatient stabilisation is achieved initially by reducing the daily dose to 40mg of diazepam. The patient may then be discharged, to continue weaning from benzodiazepines on an outpatient basis. Sometimes significant withdrawal symptoms can occur for the first time when attempts are made to wean off the last 5-10mg of diazepam. It may be necessary to readmit the patient to hospital to detoxify from the remaining amount of the drug. Patients withdrawing in this manner from high doses of benzodiazepines need consistent follow-up support when discharged from hospital.

5.8 AFTER-CARE

After completion of the detoxification, some patients may proceed on to a long-term residential rehabilitation program or some patients may find value in continuing the adjunctive therapies or obtaining support for relapse prevention from their District ATODS.

5.9 Decision Tree for the Management of Benzodiazepine Detoxification



5.10 GUIDE TO THE USE OF THE CLINICAL WITHDRAWAL ASSESSMENT SCALE FOR BENZODIAZEPINES (CIWA-B)

Patient Report :

For each of the following items, circle the number that best describes how you feel.

1. Do you feel irritable?	0 Not at all	1	2	3	4 Very much so
2. Do you feel fatigued?	0 Not at all	1	2	3	4 Unable to function
3. Do you feel tense?	0 Not at all	1	2	3	4 Very much so
4. Do you have difficulties concentrating?	0 Not at all	1	2	3	4 Unable to concentrate
5. Do you have any loss of appetite?	0 Not at all	1	2	3	4 No appetite, unable to eat
6. Have you any numbness or burning on your face, hands or feet?	0 No numbness	1	2	3	4 Intense burning/numbness
7. Do you feel your heart racing? (palpitations)	0 No disturbance	1	2	3	4 Constant racing
8. Does your head feel full or achy?	0 Not at all	1	2	3	4 Severe headache
9. Do you feel muscle aches or stiffness?	0 Not at all	1	2	3	4 Severe stiffness or pain
10. Do you feel anxious, nervous or jittery?	0 Not at all	1	2	3	4 Very much so
11. Do you feel upset?	0 Not at all	1	2	3	4 Very much so
12. How restful was your sleep last night?	0 Very restful	1	2	3	4 Not at all
13. Do you feel weak?	0 Not at all	1	2	3	4 Very much so
14. Do you think you didn't have enough sleep last night?	0 Very much so	1	2	3	4 Not at all
15. Do you have any visual disturbances? (sensitivity to light, blurred vision)	0 Not at all	1	2	3	4 Very sensitive to light, blurred vision
16. Are you fearful?	0 Not at all	1	2	3	4 Very much so
17. Have you been worrying about possible misfortunes lately?	0 Not at all	1	2	3	4 Very much so

Clinician Observations

18. Observe behaviour for restlessness and agitation	**19. Observe tremor**	**20. Observe for sweating, feel palms**
0 None, normal activity	0 No tremor	0 No sweating visible
1	1 Not visible, can be felt in fingers	1 Barely perceptible sweating, palms moist
2 Restless	2 Visible but mild	2 Palms and forehead moist, reports armpit sweating
3	3 Moderate with arms extended	3 Beads of sweat on forehead
4 Paces back and forth, unable to sit still	4 Severe, with arms not extended	4 Severe drenching sweats

Total Score Items 1 – 20

1 – 20 = mild withdrawal
21 – 40 = moderate withdrawal
41 – 60 = severe withdrawal
61 – 80 = very severe withdrawal

Adapted from Busto, U.E., Sykora, K. & Sellers, E.M. (1989). A clinical scale to assess benzodiazepine withdrawal. *J. of Clinical Psychopharmacology*, 9 (6), 412-416.

5.10.1 Royal Brisbane & Royal Women's Hospitals Health Service Districts

ALCOHOL AND DRUG SERVICE

BENZODIAZEPINE WITHDRAWAL SCALE (CIWA-B)

UR:……

NAME:……

ADDRESS:……

……

DOB:……/……/…… M F

RATINGS: 0 NONE 1 MILD 2 MODERATE 3 SEVERE 4 VERY SEVERE — **RECORD YOUR SCORE FOR HOW YOU FEEL NOW**

	DATE										
	TIME										
	BAL										
Do you feel irritable?											
Do you feel fatigued (tired)?											
Do you feel tense?											
Are you having difficulties concentrating?											
Do you have loss of appetite?											
Is there numbness in your face & / or hands?											
Is your heart racing?											
Does your head feel full / achy?											
Are your muscles aching / cramping / stiff?											
Do you feel anxious?											
Do you feel upset?											
Do you feel that your sleep was not restful last night?											
Do you feel weak?											
Do you feel you did not have enough sleep last night?											
Are your eyes blurred / light sensitive?											
Are you fearful?											
Are you worrying about possible misfortunes?											

NURSE TO RECORD THIS SECTION (see reverse for physical observations)

PERSPIRA -TION	**0** No sweating **1** Palms moist **2** Palms & forehead moist **3** Beads of sweat on face **4** Severe drenching sweats									
TREMOR	**0** No tremor **1** Tremor can be felt in fingers **2** Visible tremor but mild **3** Moderate tremor, arms out **4** Severe, arms not extended									
RESTLESS NESS & AGITATION	**0** None, Normal activity **1** Uneasy **2** Restless **3** Excitable-Purposeless action **4** Pacing, unable to sit still									
TOTAL SCORE										

BENZODIAZEPINE WITHDRAWAL SCALE (CIWA-B)

Royal Brisbane & Royal Women's Hospitals Health Service Districts

ALCOHOL AND DRUG SERVICE

BENZODIAZEPINE WITHDRAWAL SCALE (CIWA-B)

UR:……

NAME:……

ADDRESS:……

……

DOB:……/……/…… M F

Last Benzodiazepine use: Date:……/……/……Time:……AM / PM

Amount last 24 hours: Name……Dose:……

DATE											
TIME											
BLOOD PRESSURE											
PULSE											
TEMPERATURE per axilla											
RESPIRATIONS											
LEVEL OF CONSCIOUS-NESS	1 Alert,obeys,oriented 2 Confused, responds to speech 3 Stuporous, responds to pain 4 Semi-comatose 5 Comatose										
PUPILS **+** reacts -- no reaction B brisk S sluggish	SIZE (in mm)										
	REACTION										
MEDICATION GIVEN?											
NURSE INITIALS											

1 2 3 4 5 6 7 8 Scale in mm

BENZODIAZEPINE WITHDRAWAL SCALE

10 / 09 / 2002

6. OPIOID PROTOCOLS

6.1 OVERVIEW OF OPIOIDS

The most common opioids* used by patients are heroin, codeine and methadone. Heroin is a short-acting illicit opiate#, the effects of which lasts approximately three hours. Common names for heroin include 'hammer', 'H', 'junk', 'scag', and 'smack'. It comes in a powder that can be white to brown in colour. It can be smoked/inhaled or snorted, but is most commonly injected. Except in the case of overdose, the drug itself is not physically harmful in a pure and sterile form, but tolerance and dependence can occur rapidly and street heroin is often mixed with other dangerous substances.

The lifetime prevalence rate for heroin use is about 1%, with about 0.4% of the population current users. Although the public perception is of a highly addictive drug in which any use inevitability leads to regular use, surveys have shown that a large proportion of current users are occasional, non-dependent, recreational users (Australian Institute of Health and Welfare, 1999).

Positive effects of heroin include an initial intense feeling of euphoria followed by extreme relaxation. Heroin also relieves pain, induces sleepiness and causes the pupils to constrict, hence the term 'pinned' which is used to describe intoxication. The negative effects of higher doses or prolonged intravenous use include vomiting, nausea, respiratory depression, dulled responses and poor concentration, loss of sex drive and impotence, miscarriage, constipation, anxiety attacks, depression and overdose.

Codeine is a naturally occurring opiate obtained by refining opium. It is longer acting than heroin. It can be obtained by prescription or over-the-counter in the form of codeine-based analgesics. Other prescribed opioid analgesics are morphine and pethidine. Morphine has a half-life of two hours whilst pethidine has a half-life of 3-4 hours. Methadone, on the other hand, is a long-acting synthetic opioid with a half-life of about 20 hours and is usually prescribed in methadone clinics or by registered private prescribers as a maintenance treatment for opiate dependence.

6.2 OVERVIEW OF OPIOID DETOXIFICATION

Detoxification is appropriate for those individuals who have been heroin users for a shorter period of time. It is also appropriate for those individuals who have been

* This is a generic term applied to alkaloids from the opium poppy and their synthetic analogues.

This term refers to opioids that are derived from the opium poppy such as heroin and morphine, and excludes synthetic drugs such as pethidine.

using codeine, morphine or pethidine for pain relief which is not of a long duration and for which there are now no indicators for continued use. It is also an option for some individuals to cease methadone or buprenorphine after spending some time on an agonist maintenance program.

Some individuals request detoxification as a means of reducing their levels of heroin use, and the severity of their dependence and some of its associated harms. It is therefore important that other options are discussed with the person as detoxification from opiates is not itself a therapy. The evidence suggests that patients who undertake detoxification from heroin with no after-care do poorly and relapse is extremely common. Alternative options to detoxification include maintenance with buprenorphine or methadone (the most effective contemporary treatment). Methadone maintenance is also the preferred option for long-term users of codeine, morphine or pethidine for chronic pain. Detoxification may be followed by treatment with naltrexone, an opioid antagonist, combined with supportive counselling.

The location in which detoxification takes place will depend on a number of factors including:

- supportive home environment
- whether there have been any problems associated with previous withdrawal attempts
- current medical status
- current level of use.

If the patient's home environment is supportive and there is a guarantee that opioids are not available, it is possible to undertake detoxification on a home or ambulatory basis. Where inpatient detoxification is the only option, then there needs to be a strict contract in regards to the patient's behaviour and visitors. The detoxification should be able to be done in a medical ward with minimal disruption to the rest of the ward. Detoxification may proceed without the assistance of any medications. However, the process is smoother and the patient is more likely to complete the detoxification if medication is given to alleviate the withdrawal symptoms.

The preferred regime for opioid detoxification is to use buprenorphine, a partial opioid agonist. This was approved for use as a detoxification agent (and also for maintenance) in 2001. Buprenorphine is a more effective detoxification agent than the previous standard regime of clonidine and diazepam. Completion of detoxification is achieved in a higher proportion of patients (Kelly, 2002). Buprenorphine detoxification also provides the patient with an opportunity to consider continuation of treatment in a maintenance program.

Methadone is rarely needed as a detoxification agent. It has a limited place when buprenorphine is not available, when a patient has been using high dose or long-acting forms of morphine or other synthetic opioids, in some medically ill patients

where an opioid is inadvisable, or for cases where a clonidine-diazepam regime has been instituted but has been unsuccessful and buprenorphine is unavailable or not preferred. Methadone is also indicated in pregnant opioid using women but as a maintenance drug rather than for detoxification.

Although the opiate withdrawal syndrome is rarely life threatening or associated with significant aberrations of mental state, completion of withdrawal is difficult for many people. Significant sources of difficulty for people withdrawing from opioids are fearful expectations of withdrawal, powerful cravings, poor impulse control and low frustration tolerance. The effectiveness of buprenorphine as a detoxification agent should be exphasised to reassure the patient. The provision of information about the likely course of withdrawal can help to reduce the severity of the withdrawal syndrome (Frank & Pead, 1995).

One contra-indication for opiate detoxification is **pregnancy**. Opiate withdrawal is extremely stressful for the developing foetus, and it is strongly recommended that pregnant women dependent on **opiates do not undergo detoxification**. Instead, they should be stabilised on methadone, and continued on methadone maintenance for at least the duration of their pregnancy, and preferably beyond. If they are adamant about detoxification, then they should be admitted immediately to a hospital or a specialist detoxification facility.

Illicit and injecting drug use is associated with several major medical problems, such as hepatitis B and C, human immuno deficiency virus (HIV) and systemic infections (Frank & Pead, 1995:81). Thus, screening for such conditions is advisable. The withdrawal period also provides a good opportunity to alert injecting drug users of the above infections and to provide them with information about safe sexual or injecting behaviour. Appropriate information may include: the use of condoms; warning about the risks of needle sharing; needle and syringe cleaning techniques; and the availability of needle and syringe program (NSP) in their area. They should also be given information about the problems associated with reduced tolerance and the increased risk of overdose if they resume opiate use following withdrawal. Appropriate information and guidelines may include: test dosing; not using by themselves; and not drinking alcohol or using other drugs at the same time.

A decision tree for the management of opioid detoxification is provided in Section **6.9** (page 6-27)

6.3 MANAGING OPIOID WITHDRAWAL

Determining the appropriate management of patients with opioid problems involves:

(1) diagnosis of opioid dependence (including severity of dependence)
(2) detecting those at risk of developing a withdrawal syndrome
(3) determining if a dependent patient at risk of withdrawal can be safely managed in a particular setting

(1) Diagnosis of Opioid Dependence

Dependence on opioid drugs can develop rapidly. Furthermore, the proportion of people who start injecting heroin who become dependent is (at 25-50%) much higher than the proportion of people who use alcohol, sedative-hypnotics or psychostimulants who progress to dependence. The features of opioid dependence induce very strong cravings for use (often using shared injecting equipment), rapid development of tolerance, and progressive orientation of the person's life around using, committing crime to support their dependence, and unpleasant (although rarely life threatening) withdrawal symptoms.

The criteria for dependence were presented in detail on pages 2-5 to 2-6. In summary, a diagnosis of opioid dependence can be made if **three or more** of the following criteria are evident (WHO ICD-10, 1993):

CRITERIA FOR DEPENDENCE	**COMMENTS (**mild+, moderate++, severe+++**)**
Compulsion to use	
Impaired control over drug use	
Withdrawal symptoms	
Increased tolerance	
Priority of drug use	
Continued use despite harmful effects	

(2) Detecting the Person at Risk of Withdrawal

A person who is dependent on opioid is at risk of withdrawal when he/she ceases his/her drug use although the withdrawal symptoms is rarely life threatening or associated with significant aberrations of mental state. However, opioid withdrawal is unpleasant and commonly leads to resumption of drug use. Thus, on presentation it is important to fully assess the person for his/her level of opioid dependence and the likelihood of opioid withdrawal. The areas to concentrate upon are outlined in the clipboard overleaf.

Assessing for the Likelihood of Opioid Withdrawal

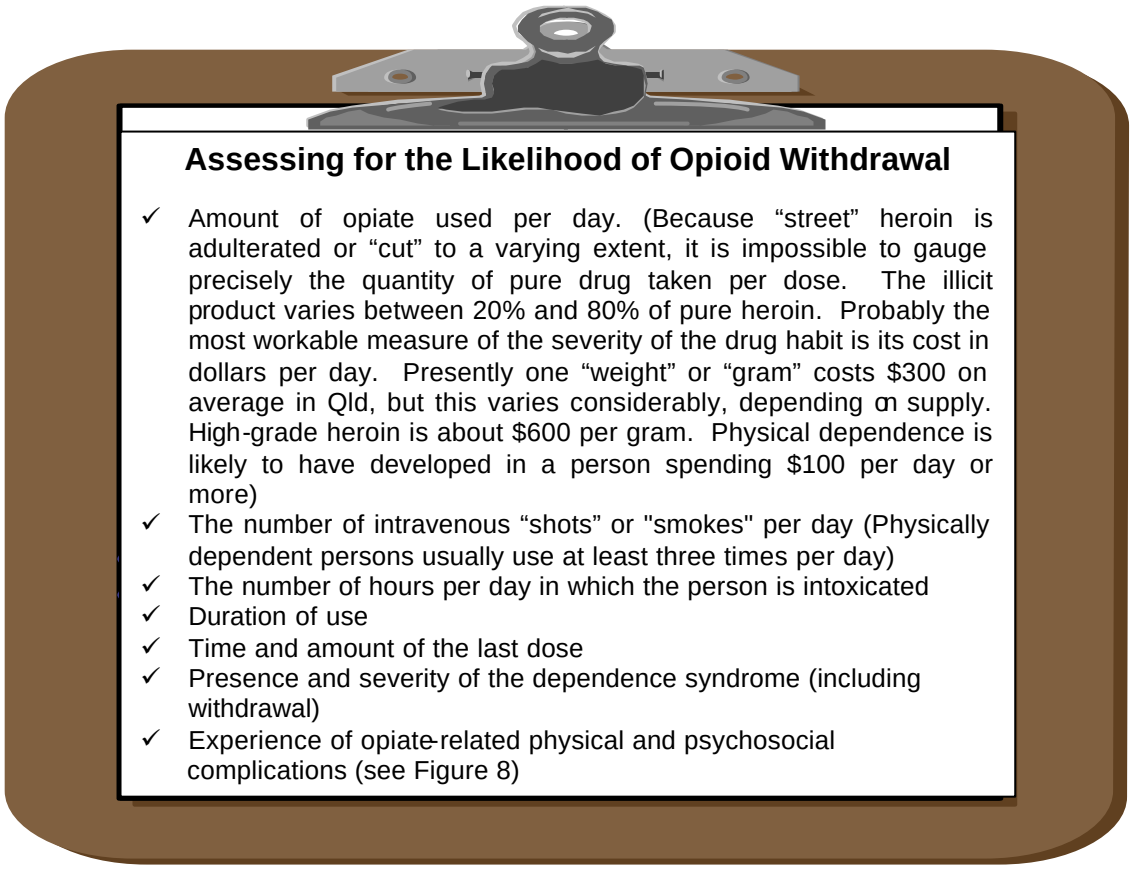


FIGURE 8: Complications of Opioid Use

Overdose

- ✓ Overdose is the most common cause of death among heroin users

Physical (These complications are mainly related to injecting drug use)

- ✓ Bacterial endocarditis
- ✓ Pneumonia
- ✓ Pulmonary abscesses
- ✓ Septicaemia
- ✓ Metastatic cutaneous or deep abscesses
- ✓ Fungal infections
- ✓ Hepatitis B
- ✓ Vasculitis
- ✓ Hepatitis C
- ✓ HIV/AIDS

Psychosocial

- ✓ Crime (especially burglary, larceny, extortion, fraud)
- ✓ Heroin and other drug dealing
- ✓ Prostitution
- ✓ Poor work performance
- ✓ Absenteeism
- ✓ Estrangement from family
- ✓ Unemployment

(3) Assessment to Determine the Setting for Detoxification

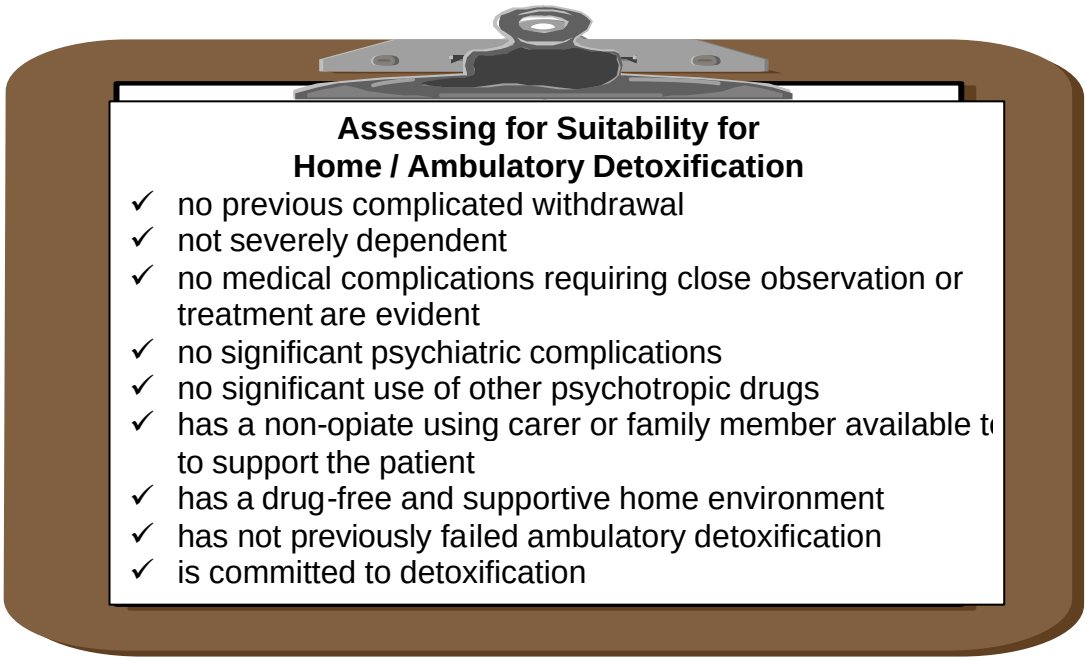
Presentations of opioid users vary considerably. Some present for elective detoxification. Some injecting drug users present with physical complications such as pneumonia or endocarditis. Others present because of social complications such as detention by the police, criminal charges, homelessness or other crisis situations. There are also those who present in marked withdrawal following abrupt cessation of their heroin or methadone use.

Similar to other drug classes, once a patient has been found to be dependent on opioids and at risk of withdrawal, then his/her suitability for a particular detoxification setting must be determined. The areas outlined in the clipboards that follow will assist health care practitioners decide which particular detoxification setting is most appropriate for the patient at hand after his/her assessment. The decision tree for the management of opioid detoxification (see Section **6.9**) also provides explicit guidelines as to where the patient can be safely detoxified.

If the patient warrants an inpatient detoxification he/she is usually given a date for admission unless he/she is experiencing marked opioid withdrawal or is in a crisis situation which warrants an immediate admission.

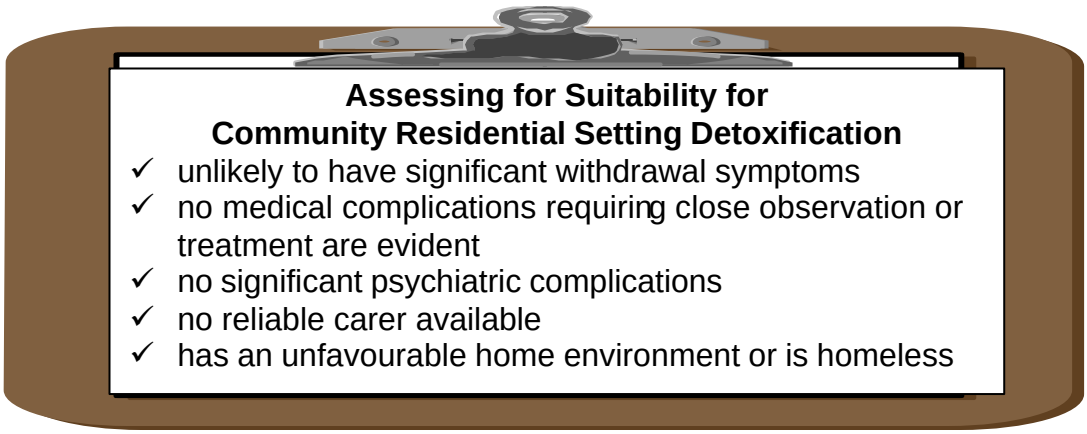
Home/Ambulatory

A patient may be suitable for home or ambulatory detoxification if he/she meets the criteria below. In this instance, the patient can be referred to his/her General Practitioner or to his/her District Alcohol, Tobacco and Other Drugs Services for detoxification.



Community Residential Setting

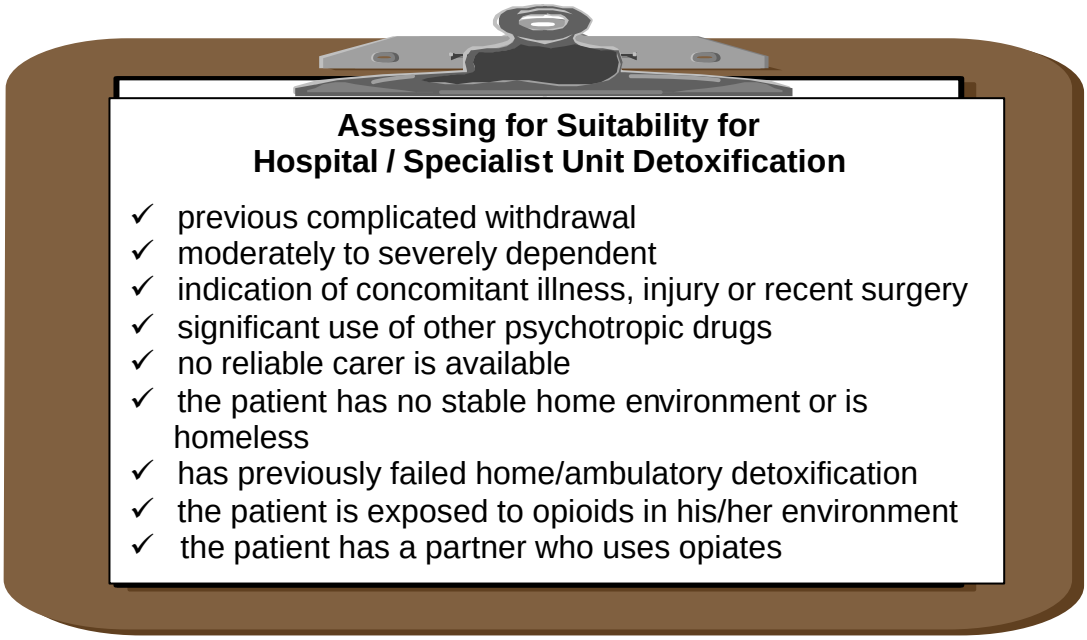
A patient can be referred for detoxification in a community residential setting if he/she meets the criteria below.



Hospital/Specialist Detoxification Unit

On the other hand, a patient is likely to need admission to a hospital or a specialist detoxification facility if he/she meets the criteria outlined in the clipboard below. Another reason for admission to a specialist detoxification unit is if the patient is to undergo rapid or accelerated opiate detoxification. These procedures are not covered in these protocols.

A patient requesting methadone detoxification has to be referred by his/her case manager from the methadone clinic or by his/her private prescriber. Usually the patient has to reduce his/her methadone dose down to 30mg before admission to a specialist detoxification unit can be considered.



6.4 FEATURES OF THE OPIOID WITHDRAWAL SYNDROME

6.4.1 Common Features of Opioid Withdrawal

The pattern of symptoms is much the same for withdrawal from different types of opioids (eg. heroin, morphine, codeine, methadone) although the severity and duration of symptoms vary according to the type of opioids being used and the mode of reduction. Longer acting opioids (eg. codeine, methadone) are associated with more protracted withdrawal symptoms than short-acting opiates (eg. heroin). A sudden cessation of heroin use produces withdrawal symptoms of greater severity, but shorter duration than withdrawal symptoms associated with a cessation of methadone.

The common signs and symptoms of opioid withdrawal are:

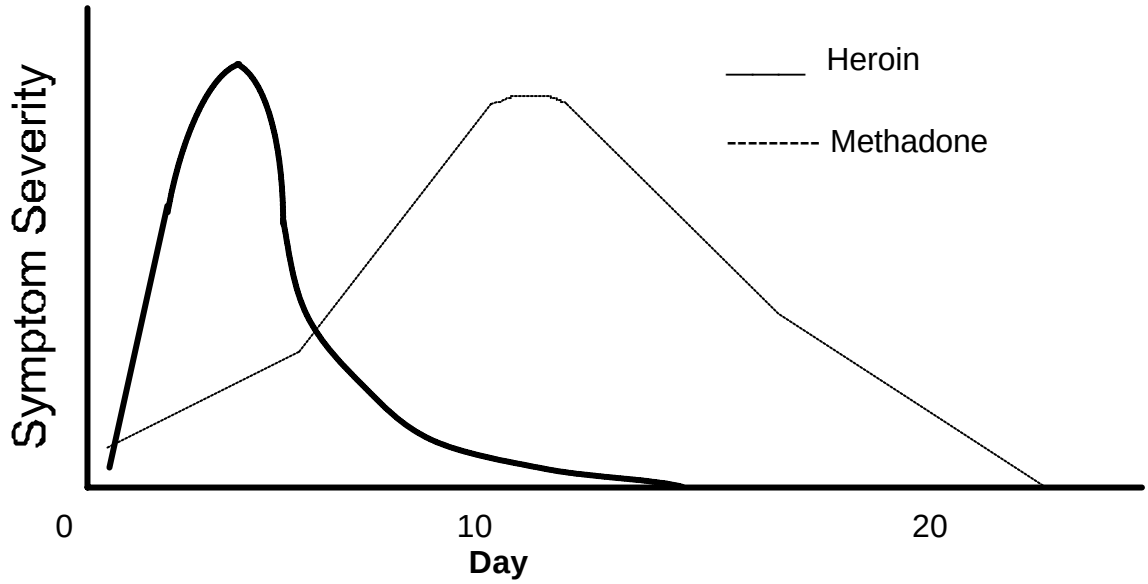
- ✓ lacrimation (running eyes)
- ✓ rhinorrhoea (running nose)
- ✓ perspiration
- ✓ mydriasis (dilated pupils)
- ✓ piloerection (gooseflesh)
- ✓ hot and cold flushes
- ✓ fatigue
- ✓ yawning
- ✓ restlessness
- ✓ insomnia
- ✓ muscle aches, leg cramps
- ✓ joint pain, particularly backache
- ✓ abdominal cramps, diarrhoea,
- ✓ nausea, vomiting, anorexia

Drug seeking behaviour becomes prominent, through requests for medication or attempts to self-medicate. The physical syndrome of opioid withdrawal resembles a severe bout of influenza.

6.4.2 Onset and Duration

The time-course is illustrated in Figure 9 for withdrawal comparing heroin and methadone (Frank & Pead, 1995:83).

FIGURE 9: Time-course for opioid withdrawal



The onset of heroin withdrawal is between **8 and 12 hours** after the last dose with an expected duration of **5 to 7 days**.

The onset of methadone withdrawal (following methadone maintenance) is usually **24 to 48 hours** after the last dose, but it may not begin until the 3rd or 4th day. The duration of methadone withdrawal is longer, typically between **5 to 21 days,** but it may continue for up to two months.

6.5 DETECTING AND MONITORING OPIOID WITHDRAWAL

If the patient's history or presentation suggests a possibility of opioid withdrawal, the patient should be commenced on the Subjective Opioid Withdrawal Scale (SOWS) chart as shown in Section **6.10**. It is a 10 item checklist of symptoms with a four point scale (0 - 3) to rate the severity of the symptom. The patient is asked to rate each symptom according to the severity of his/her withdrawal. For most patients the 10 item SOWS will take less than one minute to complete. This needs to be commenced as soon as possible after the assessment is obtained and continues until a decision is made either to hold the patient in the acute area of the hospital for further observation or transfer the patient to the ward. Once transferred, the monitoring is continued by the ward/unit nursing staff.

Procedure

- ✓ After the assessment, take the BAL and the vital signs and record them on the SOWS chart to act as baseline data. Continue to monitor the patient fourth hourly until the patient is transferred to the ward.

- ✓ As an inpatient, monitor the patient fourth hourly if the patient is showing signs of the opioid withdrawal syndrome. Observe informally for any signs of change.

- ✓ Once on clonidine observations as per Medical Officer's instructions, eg. 0600 hours, 12 midday, 1800 hours and 2200 hours.

6.6 OPIOID DETOXIFICATION PROTOCOLS USING BUPRENORPHINE

(1) Sedation/Substitution

Buprenorphine

The standard regime for opioid detoxification is based on the use of buprenorphine, which as stated earlier is a partial opioid agonist. However, in many cases pharmacotherapy such as this may not be necessary and there is still a place for non-drug assisted detoxification. The severity of opioid withdrawal is very variable. As indicated in Section **6.3**, detoxification may be undertaken successfully in a home, ambulatory or community residential setting if the patient is not expected to experience major withdrawal symptoms or have concomitant

physical or psychiatric illness. It is also assumed that the patient has a reliable carer or supportive home environment if a home or ambulatory detoxification is undertaken. On the other hand if withdrawal syndrome is expected to be severe or if the patient has concomitant physical or psychiatric illness, admission for a medicated detoxification is indicated.

The efficacy of buprenorphine in the management of heroin withdrawal has been compared to other withdrawal approaches in several randomised controlled trials conducted in inpatient and outpatient settings (Nigam et al., 1993; Cheskin et al; 1994; O'Connor et al., 1997).

In general, these studies have demonstrated buprenorphine to be:

- more effective than symptomatic medications in reducing withdrawal symptoms;
- more effective in retaining patients through the withdrawal episode and in post-withdrawal treatment.

Controlled trials comparing buprenorphine with other withdrawal medications for the management of heroin withdrawal **in medically-ill patients** have not been conducted. Uncontrolled studies have reported favourably on the use of buprenorphine in these circumstances. Furthermore, the sublingual preparation is well suited to individuals who cannot tolerate oral medications. Caution should be used in using buprenorphine or other opioids in individuals with certain medical conditions. The clonidine-diazepam regime may be preferred for such patients.

The aim of using buprenorphine in withdrawal is the reduction of withdrawal symptoms and cravings; it is *not* the complete removal of all symptoms or the intoxication of the patient. The clinician should discuss patients' expectations of the medication with them, and address any misconceptions. In general, buprenorphine is well suited to use in inpatient withdrawal settings, given its ability to alleviate the discomfort of withdrawal symptoms without significantly prolonging their duration.

The following principles regarding doses should be understood by the patient:

- Buprenorphine doses that are too high can result in increased rebound withdrawal, prolonged duration of symptoms, increased side-effects, and increased cost of the medication.
- Alternatively, use of doses that are too low can result in unnecessary withdrawal discomfort, continued heroin use and treatment drop-out.
- Continued heroin use or cravings may not be due to inadequate doses of medication. For example, patients who continue to associate with other heroin users, and are present when others are acquiring or using heroin, can expect to have cravings regardless of their dose of buprenorphine.

Buprenorphine is a partial opioid agonist. It can precipitate opioid withdrawal in someone who has recently used heroin (within the past 6 hours) or methadone. Buprenorphine-precipitated withdrawal typically commences 1-4 hours after the first buprenorphine dose, is generally mild to

moderate in severity, and lasts for up to 12 hours. Patients experiencing severe discomfort may benefit from symptomatic withdrawal medication (eg. clonidine 100mcg 3-4 hourly as required), and should be reviewed by the supervising medical practitioner.

Patients should not receive the first dose of buprenorphine if they are experiencing heroin effects. In practice, it is recommended that patients wait at least 6 hours after their last use of heroin prior to receiving their first buprenorphine dose. It is preferable to withhold the first dose until the patient is beginning to experience the early features of withdrawal. If there are doubts or concerns, the patient should be asked to come back for dosing later in the day, or alternatively, a lower initial dose can be dispensed (eg. 2 or 4mg) as it is less likely to precipitate withdrawal than a high initial dose.

Preventing precipitated withdrawal on commencing buprenorphine

No heroin for at least 6 hours: severe discomfort may need palliation.
No methadone for at least 24 hours.
No buprenorphine if there are obvious heroin effects : wait for withdrawal signs, or send away to return next day.

It is recommended that an interval of at least 2-3 days be available from the time of the last buprenorphine dose to the time of planned discharge.

Duration of dosing will be determined by the length of admission available, eg. in a 7-day admission, treatment will be limited to the first 4-5 days.

Opioid 1 (O1) Protocol

The Opioid 1 Protocol is used for **inpatient heroin** detoxification.

TABLE 16
OPIOID 1 (O1) PROTOCOL FOR INPATIENT HEROIN DETOXIFICATION – BUPRENORPHINE DOSAGE

Bupronorphine can precipitate opioid withdrawal in someone who has recently used heroin, methadone or other opiates. In order to prevent precipitated withdrawal on commencing buprenorphine special precautions must be taken. These include:

- no **heroin** for at least **6 hours** (severe discomfort may need palliation)
- no **methadone** or other opioids (eg. morphine, pethidine) for at least **24 hours**
- no buprenorphine if there are obvious heroin effects; wait for withdrawal signs, or ask the patient to return the next day

Day	Buprenorphine S/L tablet regime	Total daily dose
Day 1	4mg at onset of withdrawal, & additional 2 to 4 mg evening dose prn	4 to 8mg
Day 2	4mg mane, with additional 2 to 4mg evening dose prn	4 to 8mg
Day 3	4mg mane, with additional 2mg evening dose prn	4 to 6mg
Day 4	2mg mane prn; 2mg evening prn	0 to 4mg
Day 5	2mg prn	0 to 2mg
Day 6	no dose	
Day 7	no dose	
	Total proposed dose =	12 to 28mg

This regime serves as a guide only, and considerable individual variation in withdrawal severity and medication requirements should be expected.

Titration regimes require nursing staff who can administer withdrawal scales and S8 medications. Detoxification units with limited access to nursing staff may be better suited to fixed regimes with the option of additional 'rescue' doses as required.

The additional rescue doses should *only* be administered:

- at least 4 hours after the earlier dose; and
- if the patient is experiencing moderate or severe withdrawal discomfort.

An evening dose (between 5 PM and 10 PM) is recommended, to allow relief of withdrawal symptoms until the morning. *However, buprenorphine should not be administered if there are any features of intoxication or sedation.*

Opioid 2 (O2) Protocol

The Opioid 2 (O2) protocol is used for home or ambulatory heroin detoxification using buprenorphine as a substitution pharmacotherapy. Buprenorphine is long-acting, and so is well suited for home or ambulatory detoxification settings, allowing for once-a-day supervision dosing. The Opioid 2 protocol is included in this publication for reference and for use in settings where once daily dosing is necessary.

Bupronorphine can precipitate opioid withdrawal in someone who has recently used heroin, methadone or other opioids. In order to prevent precipitated withdrawal on commencing buprenorphine special precautions must be taken. These include:

- no **heroin** for at least **6 hours** (sever discomfort may need palliation)
- no **methadone** or other opioids (eg. morphine, pethidine) for at least **24 hours**
- no buprenorphine if there are obvious heroin effects; wait for withdrawal signs, or ask the patient to return the next day

The recommended duration of treatment with buprenorphine for the management of heroin withdrawal is 4 – 8 days. This short regime ensures the treatment covers the time when heroin withdrawal symptoms are most severe (typically up to 4 or 5 days), and then is promptly discontinued, thereby minimising rebound withdrawal phenomena and limiting the duration of withdrawal discomfort.

TABLE 17

OPIOID 2 (O2) PROTOCOL FOR SHORT HOME / AMBULATORY HEROIN DETOXIFICATION USING BUPRENORPHINE

Buprenorphine S/L	Proposed regime	Recommended lower and upper limits
Day 1	6mg	4 to 8mg
Day 2	8mg	4 to 12mg
Day 3	10mg	4 to 16mg
Day 4	8mg	2 to 12mg
Day 5	4mg	0 to 8mg
Day 6		0 to 4mg
Day 7		0 to 2mg
Day 8		0 to 0.8mg
Total dose	36mg	

Some flexibility is allowable in doses to accommodate a range of factors, such as amount of heroin use and psychological condition, impacting on the patient's individual dosing requirements and withdrawal severity.

Review by a trained health care professional is recommended on a daily basis during the first few days of the withdrawal regime. This is important so

that doses can be adjusted, if necessary, and any difficulties being experienced on the medication can be addressed. It is also needed to ensure provision of appropriate support care and monitoring.

Flexible dosages. Doctors may choose to prescribe a fixed daily dose (eg. Day 1: 6mg, Day 2: 8mg, Day 3: 10mg, etc) or, alternatively, prescribe a flexible regime with upper or lower limits on any particular day and instructions for the pharmacist regarding dose titration (eg. Day 1: 6mg, Day 2: 6-10mg, Day 3: 8-12mg, etc).

Take-away doses are not recommended during the initial treatment period, and are subject to jurisdictional regulations.

(2) Symptomatic Relief

Buprenorphine provides general relief of withdrawal symptoms, so that other symptomatic medications for opioid withdrawal are not routinely required. An exception to this rule is when patients experience difficulty sleeping during withdrawal, and may benefit from the limited use of benzodiazepines as a hypnotic. However, benzodiazepines should not be used routinely from the outset of the withdrawal episode, but rather should be added, as required, following clinical review of the patient. Low doses of a hypnotic (eg. temazepam 10-20mg nocté, oxazepam 15-30mg nocté or nitrazepam 5-10mg nocté) are recommended, with daily dispensing from the pharmacy (or supervised by a responsible adult). Under normal circumstances, benzodiazepines should not be continued beyond several days, with non-pharmacological approaches being encouraged (sleep hygiene strategies).

When specific withdrawal symptoms arise reflecting a state of CNS hyperactivity, they should be treated on an as required basis, according to the particular symptom complex. In 5-10% of patients undergoing opioid withdrawal, one or more symptoms associated with withdrawal are particularly prominent.

- ✓ Temazepam 10-20mg, oxazepam 15-30mg or nitrazepam 10mg at night for insomnia
- ✓ Metoclopramide is prescribed orally or IM at a dose of 10mg every 8 hours as required for nausea and/or vomiting
- ✓ An antacid (eg Mylanta or Gastrogel) 15-20ml orally is given every 6 hours as required for heartburn or indigestion
- ✓ Propantheline 15mg orally is given every 8 hours as required for abdominal cramps (common in the middle phase of opioid withdrawal)
- ✓ Kaolin mixture 15-20ml orally is given every 6 hours as required for diarrhoea (opiate derivatives such as Lomotil are not recommended for patients detoxifying from opioids)
- ✓ Quinine sulphate 300mg orally is given twice daily as required for muscle cramps (common in opioid withdrawal). **CAUTION** - excess quinine sulphate is toxic to the heart
- ✓ Paracetamol 1g orally is given every 4-6 hours as required for headaches and other minor pains. More severe aches and pains can be treated with non-steroidal anti-inflammatory drugs (**NSAIDS**) such as Ibuprofen 400mg orally

every 8 hours as required provided there is no history of ulcers, gastritis or asthma. A cox-2 inhibitor such as Celecoxib is an appropriate alternative where there is a contra-indication for non-specific NSAIDS.

(3) Supplements

Supplements are necessary in a proportion of persons undergoing opioid detoxification. People with opioid problems are frequently malnourished, but overt vitamin deficiencies, and sub-normal electrolyte levels are less common than in the alcohol dependent population.

A multivitamin preparation is appropriate to cover possible deficiencies in B group vitamins and vitamin C.

Otherwise, supplementation is prescribed on an as required basis. Patients who are dehydrated (salt and water depleted) will require oral fluids, and possibly IV fluids.

(4) Supportive Care and Environment

Noisy, uncomfortable, over-stimulating and/or threatening environments aggravate withdrawal states. Correspondingly they can be alleviated by a calm, well lit, predictable, non-threatening environment, and by staff employing behavioural management techniques designed to soothe and allay fear.

In managing the opioid user's behaviour, adopt principles similar to the management of alcohol withdrawal syndrome. In addition:

- ✓ If the patient is angry or aggressive, use space to protect yourself.
- ✓ Let the patient ventilate his/her feelings. Acknowledge them.
- ✓ Be aware of the patient's drug seeking and staff splitting behaviour. Encourage the patient to re-focus his/her attention away from drugs and to channel his/her energies into more constructive activities.
- ✓ Setting limits on patients' behaviour is important. Empty threats are counter-productive and must be avoided. If the patient's behaviour is such that there is no benefit from continuing admission (and they are not confused or psychiatrically ill), they should be discharged, with alternative arrangements for ongoing care, where this is possible.

Continuation of Treatment for Co-existing Conditions

The patient's usual medical treatment of existing conditions should be continued. In addition, treatment may need to be instituted for an intercurrent illness diagnosed during detoxification. The principle is that detoxification should not interrupt the patient's usual or intended care. Sometimes it will be apparent that the patient's usual medication is inappropriate for the condition or because the patient has an alcohol or drug problem (which may not have been recognised by the prescribing doctor). In this case a medical officer in the unit should be asked

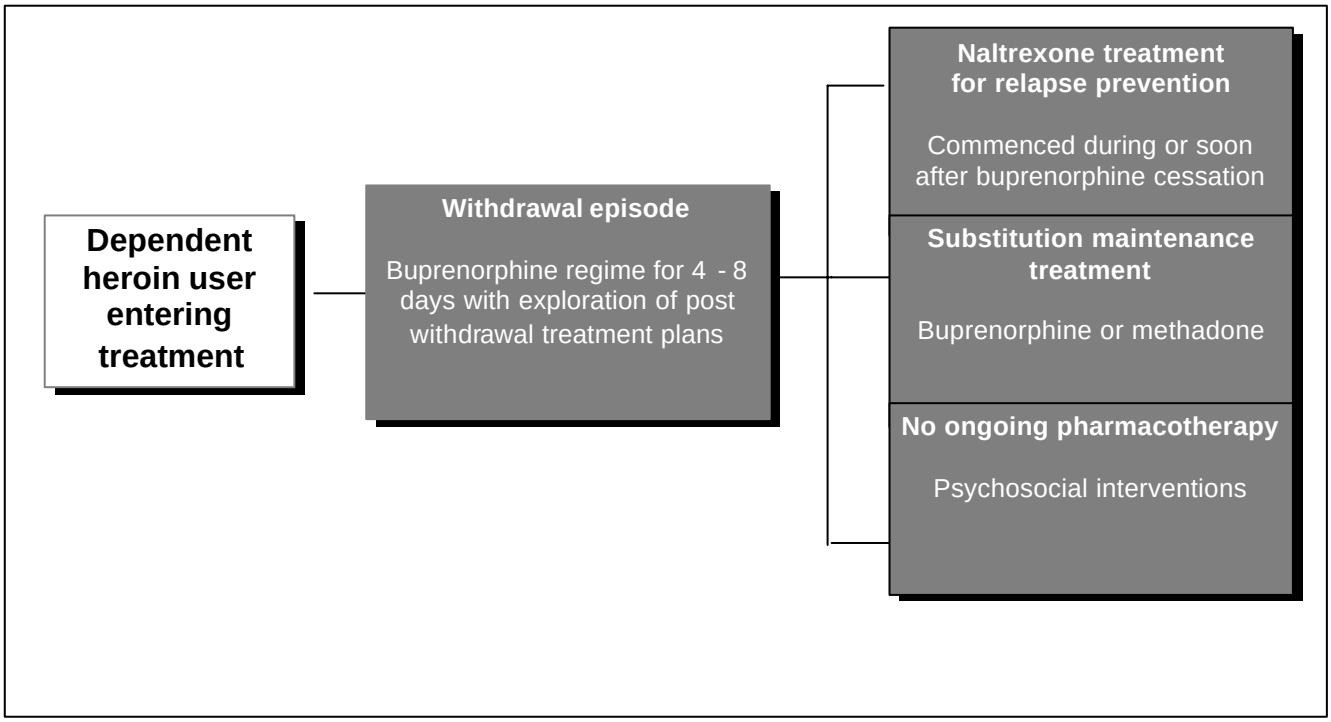
to review the medication, make any necessary adjustments, and liaise with the patient's usual medical practitioner, as necessary. Such medication could include anti-convulsants, anti-depressants, anti-psychotic drugs, anti-hypertensives, cardiac drugs, peptic ulcer treatment and antibiotics.

Gateway Model of Treatment with Buprenorphine

Buprenorphine is particularly useful in managing heroin withdrawal, in that it is not only effective during the withdrawal period, but also facilitates links to post-withdrawal treatment. Many patients entering withdrawal treatment do so without necessarily having considered all their treatment options, simply 'hoping' that an attempt at withdrawal will be sufficient to stop heroin use.

The use of buprenorphine for several days generally alleviates withdrawal symptoms without significant sedation, thereby allowing patients and clinicians to examine post-withdrawal issues relatively early on in the withdrawal episode. (On many other withdrawal medications, such as benzodiazepines or clonidine, patients are either so psychologically distressed or so heavily sedated that this would not be possible.) A formal review of treatment plans should be scheduled several days into the withdrawal episode, at which time treatment can be tailored accordingly. Those patients who want to extend the duration of their withdrawal program, or have reconsidered the role of a maintenance treatment program, can continue buprenorphine treatment over a longer period of time. Care should be exercised in transferring patients with short histories of heroin dependence from short-term withdrawal programs on to long-term substitution maintenance programs. These treatment pathways are shown in Figure 10.

Figure 10: Gateway Model of Treatment with Buprenorphine



Longer-term maintenance substitution treatment with buprenorphine (or methadone) should be recommended to patients who:

- cannot stop, or markedly reduce, their heroin use during the withdrawal episode
- relapse into regular heroin use as the dose of buprenorphine is reduced or ceased
- do not feel confident about maintaining abstinence, but do not want to relapse to dependent heroin use and the associated harms.

It is recommended that such patients stabilise on a maintenance substitution medication for a longer period of time before coming off their maintenance treatment, to give them the opportunity to first distance themselves from heroin use and possibly to address any problematic psychological and social issues which may be distressing them.

6.7 OPIOID DETOXIFICATION USING METHADONE

(1) Substitution

The advent of buprenorphine has transformed inpatient opioid detoxification. However, in certain circumstances an alternative protocol is necessary. The Opioid 3 protocol is based on methadone and is particularly suited for pregnant women, given that the safety of buprenorphine in pregnancy has not been established.

Opioid 3 (O3) Protocol

The Opioid 3 Protocol employs methadone as a substitute opiate. This is given in reducing doses over a 2-6 week period. It is usually reserved for cases where the clonidine-diazepam regime has been unsuccessful or where the patient is pregnant and so buprenorphine is not recommended.

When an opiate withdrawal syndrome is manifest, a dose of methadone 20mg (as the syrup) should be given. The patient should be monitored using the Subjective Opioid Withdrawal Scale. If signs of withdrawal are still present 4-6 hours later, a further 10mg is given, supplemented, if necessary, by another 10mg six hours after that. It is rare for more than 40mg to be required in a 24 hour period.

The amounts prescribed in the first twelve hours are added to determine the daily requirement, which is given as a single dose each day for the next three days. Thereafter the dose is reduced progressively. On an inpatient basis detoxification can be completed in 10-14 days. This is possible with dose reductions of 10mg every two days until a dose of 10mg is reached, whereupon the decrements should be 2.5-5mg. On an outpatient basis a longer period of dose reduction may be necessary: up to six weeks is appropriate (Saunders, 1995:14). As with any detoxification regime, there remains a high risk of relapse into opiate use. The alternative, maintenance on methadone, is often a better option.

(2) Symptomatic Relief

Additional medication for relief of opioid withdrawal symptoms is rarely necessary when methadone is used as the detoxification agent. The main problem is insomnia, in which case a benzodiazepine may be prescribed as outlined in the Opioid 1 protocol.

6.8 ALTERNATIVE OPIOID DETOXIFICATION PROTOCOLS

(1) Sedation

The Opioid 4 and 5 protocols employ clonidine and diazepam together with supplementary medications. The Opioid 4 protocol is based on clonidine and diazepam as appropriate where buprenorphine is unavailable or not preferred.

The Opioid 5 protocol is a regime for patients wishing to detoxify from medium to high dose methadone (daily dose exceeding 30mg).

Opioid 4 (O4) Protocol

This regime combines the alpha 2 adrenergic agonist **clonidine** and a sedative such as **diazepam**, together with drugs as required for the relief of symptoms such as muscle and abdominal cramps, vomiting and diarrhoea.

The clonidine-diazepam regime is used less commonly now following the introduction of buprenorphine. When it is used, the introduction of the two drugs should be guided by the appearance of severity of the opioid withdrawal syndrome as indicated by the Subjective Opioid Withdrawal Scale (SOWS) scores and patient comfort. If methadone is taken on the day of admission then therapy does not commence until the following day, or the day after that. Excessive sedation and hypotension may result should opioids as well as clonidine be administered together (Novak, 1991). Thus, systematic monitoring using the SOWS chart as discussed in Section **6.5** is strongly recommended.

The core opioid detoxification regime comprises clonidine and diazepam. Clonidine relieves most of the physical symptoms of opioid withdrawal such as chills, piloerection, and shakiness, and alleviates the psychological symptoms such as anxiety and craving to some extent. It is advisable to administer a test dose of 75 micrograms of clonidine and measure blood pressure 30 minutes later (precipitous falls in blood pressure have occasionally been reported). If there is no such effect, a dose of 450 to 1,200 micrograms per day is prescribed, according to the protocols. The exact dose depends on body weight, the severity of the withdrawal syndrome and subsequent response to clonidine. Typically, 150-300 micrograms is given four times per day. Omit dose if the blood pressure (systolic/lying) is less than 80mm Hg or pulse less than 50. The dose is maintained at this level for about three days after which it is reduced in a step-wise fashion over a further 2-3 days. Diazepam is given at a dose of 10mg every six hours for three days, after which it is tailed off over four days (Saunders, 1995). Diazepam alleviates some of the feelings of anxiety and cravings for opioids. However, some patients still require additional symptomatic relief for specific discomfort. These should be treated on an as required basis according to the particular symptom complex.

TABLE 18

OPIOID 4 (O4) PROTOCOL FOR INPATIENT HEROIN DETOXIFICATION CLONIDINE-DIAZEPAM DOSAGE

Sedation

CLONIDINE	6 am	12 md	6 pm	10 pm
Day 1	Nil	75mcg	150mcg	150mcg
Day 2	150-300mcg	150-300mcg	150-300mcg	150-300mcg
Day 3	150-300mcg	150-300mcg	150-300mcg	150-300mcg
Day 4	150mcg	150mcg	150mcg	150mcg
Day 5	150mcg	150mcg	150mcg	150mcg
Day 6	75mcg	75mcg	75mcg	75mcg
Day 7	Nil	75mcg	Nil	75mcg

DIAZEPAM	6 am	12 md	6 pm	10 pm
Day 1	Nil	10mg	10mg	10mg
Day 2	10mg	10mg	10mg	10mg
Day 3	10mg	10mg	10mg	10mg
Day 4	5mg	5mg	5mg	10mg
Day 5	5mg	5mg	5mg	5mg
Day 6	5mg	Nil	Nil	5mg
Day 7	Nil	Nil	Nil	5mg

Symptomatic Relief: Metoclopramide 10mg 8/24 PRN; an antacid (eg Gastrogel 15-20ml 6/24 PRN); Kaolin mixture 15-20ml 6/24 PRN; Propantheline 15mg 8/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN; Ibuprofen 400mg 8/24 PRN

Supplements: Thiamine, Vitamins A, D, E, C & B group

Supportive Environment: Supportive counselling and reassurances by the ward nurse; education about opiate withdrawal and sleep hygiene; behavioural management techniques; relaxation therapy

Note: *see pages 6-23 to 6-24 for details of these four S's*

***** *Omit dose if BP (systolic/lying) < 80 mmHg or pulse < 50 min. Give half dose or no dose if indicated or requested.*

****** *Whether 150mcg or 300mcg is given depends on the body size, the severity of dependence and the current withdrawal state.*

Note: Clonidine 75-150mcg can be given nightly as required at 0200 hours if the patient is awake and experiencing withdrawal symptoms.

Diazepam 5-10mg as required can be given between 12 midnight and 0300 hours nightly if the patient is unsettled.

Opioid 5 (O5) Protocol

The Opioid 5 Protocol is used for **inpatient methadone** detoxification.

TABLE 19A
OPIOID 5 (O5) PROTOCOL FOR INPATIENT METHADONE DETOXIFICATION - CLONIDINE DOSAGE

Sedation				
	6 am	**12 md**	**6 pm**	**10 pm**
Day 1	Nil	Nil	75mcg	150mcg
Day 2	150mcg	150mcg	150mcg	150mcg
Day 3	150mcg	150mcg	150mcg	150mcg
Day 4	150-300mcg	150-300mcg	150-300mcg	150-300mcg
Day 5	150-300mcg	150-300mcg	150-300mcg	150-300mcg
Day 6	150-300mcg	150-300mcg	150-300mcg	150-300mcg
Day 7	150-300mcg	150-300mcg	150-300mcg	150-300mcg
Day 8	150-300mcg	150-300mcg	150-300mcg	150-300mcg
Day 9	150-300mcg	150-300mcg	150-300mcg	150-300mcg
Day 10	150mcg	150mcg	150mcg	150mcg
Day 11	150mcg	150mcg	150mcg	150mcg
Day 12	150mcg	150mcg	150mcg	150mcg
Day 13	75mcg	75mcg	75mcg	75mcg
Day 14	75mcg	Nil	Nil	75mcg

Symptomatic Relief: Metoclopramide 10mg 8/24 PRN; Gastrogel 15-20ml 6/24 PRN; Kaolin mixture 15-20ml 6/24 PRN; Propantheline 15mg 8/24 PRN; Quinine Sulphate 300mg bd PRN; Paracetamol 1g 4-6/24 PRN; Ibuprofen 400mg 8/24 PRN
Supplements: Thiamine, Vitamins A, D, E, C & B group
Supportive Environment: Supportive counselling and reassurances by the ward nurse; education about opioid withdrawal and sleep hygiene; behavioural management techniques; relaxation therapy
Note: *see pages 6-23 to 6-24 for details of these four S's*

***** *Omit dose if BP (systolic/lying) < 80 mmHg or pulse < 50 min. Give half dose or no dose if indicated or requested.*

****** *Whether 150mcg or 300mcg is given depends on the body size, the severity of dependence and the current withdrawal state.*

Note: Clonidine 75-150mcg can be given nightly as required at 0200 hours if the patient is awake and experiencing withdrawal symptoms.

TABLE 19B
OPIOID 5 (O5) PROTOCOL FOR INPATIENT METHADONE DETOXIFICATION - DIAZEPAM DOSAGE

Sedation				
	6 am	**12 md**	**6 pm**	**10 pm**
Day 1	Nil	Nil	5mg	5mg
Day 2	5mg	5mg	5mg	5mg
Day 3	5mg	5mg	5mg	10mg
Day 4	5mg	10mg	10mg	15mg
Day 5	5mg	10mg	10mg	15mg
Day 6	5mg	10mg	10mg	10mg
Day 7	5mg	10mg	5mg	10mg
Day 8	5mg	5mg	5mg	10mg
Day 9	5mg	5mg	5mg	5mg
Day 10	Nil	5mg	5mg	5mg
Day 11	Nil	5mg	Nil	5mg
Day 12	Nil	Nil	Nil	5mg
Day 13	Nil	Nil	Nil	Nil
Day 14	Nil	Nil	Nil	Nil

Symptomatic Relief
Supplements
Supportive Environment

Note: *see previous page and also pages 6-23 to 6-24 for details of these four S's*

***** Diazepam 5-10mg as required can be given between 12 midnight and 0300 hours nightly if the patient is unsettled.

(2) Symptomatic Relief

Although the clonidine-diazepam regime alleviates the discomfort of the opioid withdrawal syndrome to a fair extent, some patients need additional symptomatic relief.

When specific withdrawal symptoms arise, reflecting a state of CNS hyperactivity, they should be treated on an as required basis, according to the particular symptom complex. In 5-10% of patients undergoing opioid withdrawal, one or more symptoms associated with withdrawal are particularly prominent.

- ✓ Metoclopramide is prescribed orally or IM at a dose of 10mg every 8 hours as required for nausea and/or vomiting
- ✓ Gastrogel 15-20ml orally is given every 6 hours as required for heartburn or indigestion
- ✓ Propantheline 15mg orally is given every 8 hours as required for abdominal cramps (common in the middle phase of opioid withdrawal)
- ✓ Kaolin mixture 15-20ml orally is given every 6 hours as required for diarrhoea (opiate derivatives such as Lomotil are not recommended for patients detoxifying from opioids)
- ✓ Quinine sulphate 300mg orally is given twice daily as required for muscle cramps (common in opioid withdrawal). **CAUTION** - excess quinine sulphate is toxic to the heart
- ✓ Paracetamol 1g orally is given every 4-6 hours as required for headaches and other minor pains. More severe aches and pains can be treated with non-steroidal anti-inflammatory drugs (**NSAIDS**) such as Ibuprofen 400mg orally every 8 hours as required provided there is no history of ulcers, gastritis or asthma. A cox-2 inhibitor such as Celecoxib is an appropriate alternative where there is a contra-indication for non-specific NSAIDS.

(3) Supplements

Supplements are necessary in a proportion of persons undergoing opioid detoxification. People with opioid problems are frequently malnourished, but overt vitamin deficiencies, and sub-normal electrolyte levels are less common than in the alcohol dependent population.

A multivitamin preparation is appropriate to cover possible deficiencies in B group vitamins and vitamin C.

Otherwise, supplementation is prescribed on an as required basis. Patients who are dehydrated (salt and water depleted) will require oral fluids, and possibly IV fluids.

(4) Supportive Care and Environment

Noisy, uncomfortable, over-stimulating and/or threatening environments aggravate withdrawal states. Correspondingly they can be alleviated by a calm, well lit, predictable, non-threatening environment, and by staff employing behavioural management techniques designed to soothe and allay fear.

In managing the opioid user's behaviour, adopt principles similar to the management of alcohol withdrawal syndrome. In addition:

- ✓ If the patient is angry or aggressive, use space to protect yourself.
- ✓ Let the patient ventilate his/her feelings. Acknowledge them.
- ✓ Be aware of the patient's drug seeking and staff splitting behaviour. Encourage the patient to re-focus his/her attention away from drugs and to channel his/her energies into more constructive activities.
- ✓ Setting limits on patients' behaviour is important. Empty threats are counter-productive and must be avoided. If the patient's behaviour is such that there is no benefit from continuing admission (and they are not confused or psychiatrically ill), they should be discharged, with alternative arrangements for ongoing care, where this is possible.

Continuation of Treatment for Co-existing Conditions

The patient's usual medical treatment of existing conditions should be continued. In addition, treatment may need to be instituted for an intercurrent illness diagnosed during detoxification. The principle is that detoxification should not interrupt the patient's usual or intended care. Sometimes it will be apparent that the patient's usual medication is inappropriate for the condition or because the patient has an alcohol or drug problem (which may not have been recognised by the prescribing doctor). In this case a medical officer in the unit should be asked to review the medication, make any necessary adjustments, and liaise with the patient's usual medical practitioner, as necessary. Such medication could include anti-convulsants, anti-depressants, anti-psychotic drugs, anti-hypertensives, cardiac drugs, peptic ulcer treatment and antibiotics.

6.9 AFTER-CARE

Access to structured after-care may increase rates of completion of withdrawal. Follow-up should be planned prior to or from commencement of detoxification. An important role of detoxification services is to provide links with post-detoxification services for those with other physical problems, or psychological or social needs (Lintzeris et al., 2001). Patients should also have access to counselling from their District Alcohol, Tobacco and Other Drug Services, relapse prevention programs, cognitive behavioural techniques, skills enhancement, residential rehabilitation programs, Narcotics Anonymous (NA), naltrexone treatment, or substitution maintenance programs with methadone or buprenorphine.

6.9.1 Transition to Post Detoxification Treatment

Buprenorphine maintenance treatment.

Transition to a buprenorphine maintenance treatment program simply requires the continuation of treatment, often with upward titration of the dose to achieve optimal maintenance dose levels (eg. 12-24mg per day).

Methadone maintenance treatment

The transition to methadone maintenance treatment requires the cessation of buprenorphine, with the first dose of methadone given at least 24 hours later.

Commencing naltrexone treatment after detoxification with buprenorphine

Naltrexone is an opioid antagonist which can support an abstinence-oriented treatment program in patients who have substantial social support. Normally a seven-day opioid-free period is required before naltrexone can be commenced. However, the pharmacological properties of buprenorphine allow the commencement of naltrexone without major delays. This is thought to be because buprenorphine has a higher affinity for opioid receptors than naltrexone, so the naltrexone does not significantly displace buprenorphine or cause the precipitation of severe opioid withdrawal.

The optimal method of inducting on to naltrexone from buprenorphine treatment has not yet been established, but two general procedures have been used:
1. commencing low doses of naltrexone whilst continuing buprenorphine
2. ceasing buprenorphine and commencing naltrexone several days later.

Sample dosing regimes for the two approaches are shown in the following table.

TABLE 20
NALTREXONE INDUCTION REGIMES

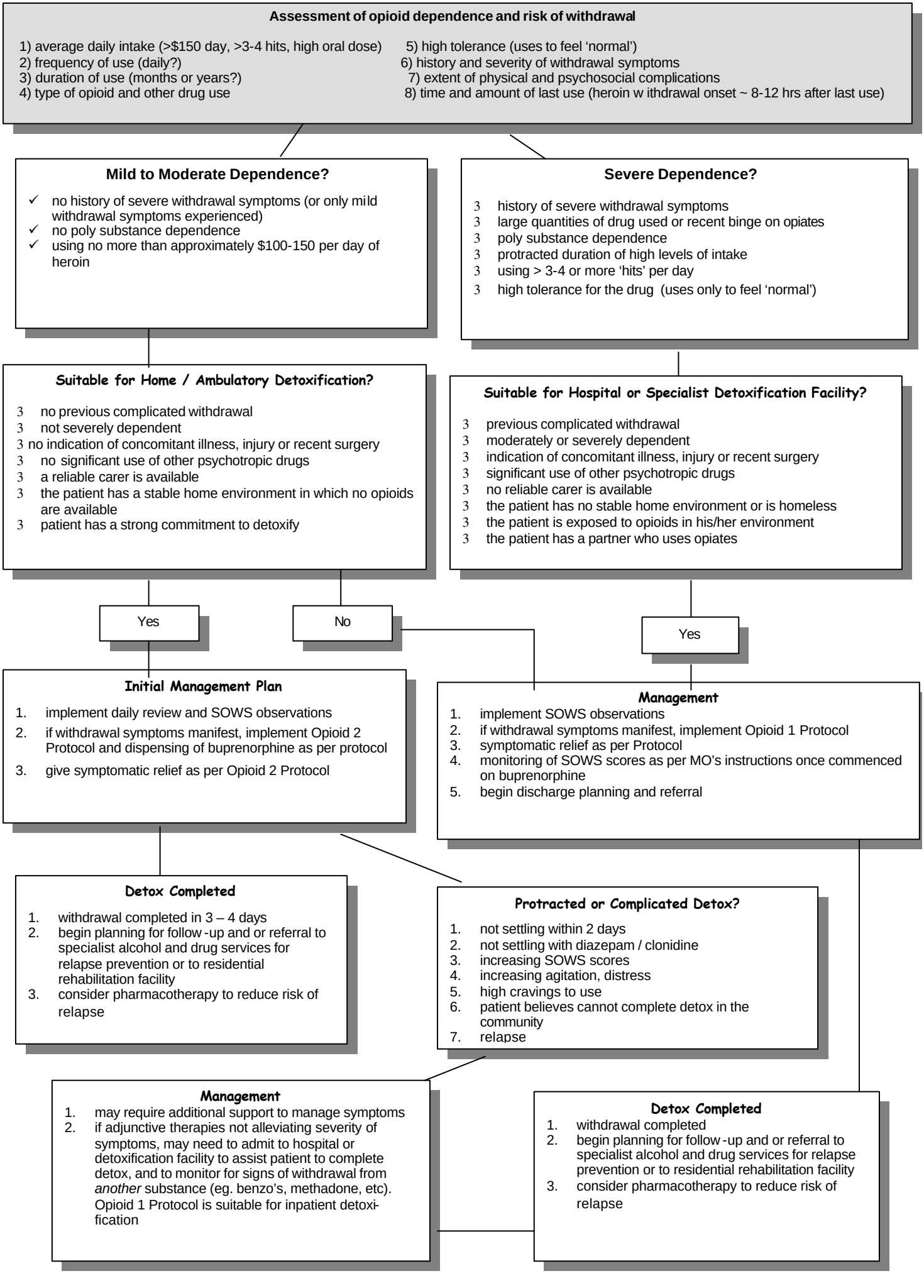
Day	Sample buprenorphine regime (S/L tablets)	Early NTX induction regime (oral)	Delayed NTX induction regime (oral)
1	6mg	0	0
2	10mg	0	0
3	8mg	12.5mg	0
4	6mg	12.5mg	0
5	4mg	25mg	0
6		50mg	0
7		50mg	0
8		50mg	0 or 12.5mg
9		50mg	12.5mg
10		50mg	25mg
11		50mg	50mg

Both regimes result in an increased severity of opioid withdrawal following the first dose of naltrexone. This typically commences 90 minutes to 4 hours after the first naltrexone dose, peaks around 3-6 hours after the naltrexone dose, and generally subsides in severity within 12-24 hours. The withdrawal is frequently experienced as moderate to severe at its peak. Subsequent doses of naltrexone produce considerably less severe withdrawal discomfort.

Most patients undergoing this procedure request symptomatic medication, and clonidine (100-150mcg every 3-4 hours as required) and a benzodiazepine (eg. diazepam 5mg 3-4 hourly, maximum of 30mg in a day, as required) should be prescribed.

Great care must be taken to inform the patient of the dangers involved in discontinuing naltrexone treatment and subsequently using opiates, due to dramatically reduced tolerance to opiates. Overdose may occur at much smaller than usual doses of opiates. Caution is advised when prescribing for those who are severely depressed, are polydrug users, have a history of head injury or seizures, have severe liver impairment, are pregnant, have chronic pain or cardiac disease.

6.10 Decision Tree for the Management of Opioid Detoxification



6.11 GUIDE TO THE USE OF THE SUBJECTIVE OPIOID WITHDRAWAL SCALE (SOWS)

ADMINISTRATION OF SOWS RATING SCALE

The SOWS Scale is the patient's assessment of their withdrawal symptoms, ie. a patient self-evaluation. Patients are asked if they have suffered the symptoms in the last 24 hours and to rate each symptom according to severity.

Each item is rated on a 4 point scale

0 = none **2 = moderate**
1 = mild **3 = severe**

As this is a patient self-evaluation the nurse's role is to assist the patient to complete the task, not do it for them or interpret their symptomatology.

For most patients the 10 items SOWS will take less than 1 minute to complete.

SOWS ITEM		**Symptom Domain**
1.	Feeling sick (nauseated)	nausea, vomiting
2.	Stomach cramps	abdominal cramps, diarrhoea
3.	Muscle spasms/twitching	leg cramps, restless legs
4	Feelings of coldness	hot and cold flushes, cold peripheries
5.	Heart pounding	jumping of heart in chest
6.	Muscular tension	stiff neck, shoulders, (tightness)
7.	Aches and pains	headache, painful joints, general aches, backache
8.	Yawning	not related to lethargy
9.	Runny eyes/nose	runny nose, redness/itching of eyes and nose, vision obscured from runny eyes.
10.	Insomnia, problems sleeping (complete in relation to previous night)	nightmares, early morning wakening, difficulty falling asleep, fatigue.

The symptom domains are included as a guide only and to aid clarification for the patient. If the patient feels they know how to complete the SOWS then no input from the nurse may be required.

Adapted from Gossop, M., 1990. The development of a short opiate withdrawal scale (SOWS). *Addictive Behaviour,* 15(5), 487-490.

A suggested interpretation of the SOWS Scores:

Severity	**SOWS Scores**
Mild	1 – 10
Moderate	11 – 20
Severe	21 – 30

6.11.1 Royal Brisbane & Royal Women's Hospital Health Service Districts

ALCOHOL AND DRUG SERVICE

SUBJECTIVE OPIOID WITHDRAWAL SCALE

UR……

NAME……

ADDRESS……

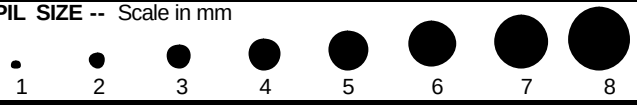
……

DOB……/……/…… M F

RATINGS: Score for how you feel now.

0 None **1 Mild** **2 Moderate** **3 Severe**

PUPIL SIZE -- Scale in mm



Date & Time of last Opiate use: ……/……/…….. ……am / pm	**DATE**										
	TIME										
	BAL										
Do you have nausea or are you vomiting?											
Do you have stomach cramps?											
Do you have leg cramps &/or restless legs?											
Are you having hot or cold flushes or shivering?											
Is your heart pounding?											
Do you have muscle tension?											
Do you have aches and pains?											
Are you yawning often?											
Do you have a runny nose &/or weepy eyes?											
Did you have sleeping problems last night?											
TOTAL											
B P SUPINE											
B P ERECT											
PULSE											
TEMPERATURE (per axilla)											
RESPIRATIONS											
PERSPIR-ATION 0 Nil 1 Moist skin 2 Beads on face & body 3 Profuse, whole body wet											
PUPILS + reactive -- no reaction B Brisk S Sluggish	**Size**										
	Reaction										
MEDICATION GIVEN?											
NURSE INITIALS											

SUBJECTIVE OPIOID WITHDRAWAL SCALE

10 / 09 / 2002

6.11.2 Additional Nursing Observations

Blood Pressure

1. Record lying and standing. Blood pressure less than 80/50 mm Hg constitutes hypotension – clonidine should be withheld.
2. Note if postural hypotension is being experienced – if too problematic clonidine may need to be withheld.
3. If the above occurs, notify the Medical Officer.

Pulse

1. Heart rate less than 50/min constitutes bradycardia – clonidine should be withheld.
2. If clinical evidence of impaired peripheral perfusion is noted, clonidine may need to be withheld.
3. If the above occur, notify the Medical Officer.

Temperature

Enter value on rating sheet – notify Medical Officer if outside normal range.

Respirations

Enter value on rating sheet. If compromised in any way take appropriate nursing actions and notify the Medical Officer.

Perspiration

Enter score on rating sheet.

0 no abnormal sweating
1 moist skin
2 localised beads of sweat on face, arms, chest, etc.
3 whole body wet from perspiration - profuse maximal sweating, clothes and linen wet

Pupils

1. Observe the size and reaction to light of the pupils.
2. Record if the pupils are slow to react to light.
3. Record whether or not the pupils are equal in size.

Critical Observation Parameters

The Medical Officer to be notified immediately if :

1. The blood pressure measurement indicates moderate or more hypotension.
2. The blood pressure measurement indicates hypotension requiring clonidine to be withheld.
3. The respiratory function becomes compromised.
4. Any arrhythmias are detected or suspected.
5. The consciousness level is more than 2 on the Level of Consciousness Scale or less than 10 on the Glasgow Coma Scale.
6. The patient sustains any injury.
7. The BAL is very high.
8. The accountable nurse is concerned about the patient's condition.

7. PSYCHOSTIMULANT PROTOCOLS

7.1 OVERVIEW OF PSYCHOSTIMULANTS

Amphetamines and cocaine are two types of psychostimulants commonly abused in Australia and the United States respectively. The protocols here will therefore cover only these two main types of psychostimulants. Amphetamine is the prototype of the family of synthetic stimulant drugs, which includes the widely abused methamphetamine. This form of amphetamine has been most abused because of its more pronounced effects on the central nervous system. It is powerfully addictive. Methamphetamine can be smoked, injected intravenously, snorted or ingested orally. Smoking and injecting lead to more immediate and intense pleasurable effects and in many areas have taken over from snorting as the most common method of use of amphetamines. Amphetamines act in a similar way to cocaine to stimulate the central nervous system, but their duration of action is much longer than that of cocaine. While cocaine has an approximate half-hour duration of action and has a half-life of one hour in the body, methamphetamine has acute effects that last from 8-24 hours and a half-life of around 12 hours (Proudfoot & Teesson, 2000). As a consequence, regular users of cocaine dose themselves much more frequently (up to six times a day) than amphetamine users (Pead et al., 1999).

Amphetamines act to cause wakefulness, increased mental alertness and ability to concentrate, hyperactivity, reduced appetite and euphoria. The negative effects of amphetamines include overstimulation with restlessness, insomnia, anxiety and tremor. Physical tolerance develops rapidly. However, when the amphetamines wear off, the person experiences a "rebound effect", that is, feels dysphoric, irritable, lethargic, and experiences general malaise. This phase becomes more pronounced in people who use amphetamines repeatedly and is termed the "crash" (Saunders, 1989). Excessive and continued use of amphetamines can also induce toxic psychosis characterised by delusions and hallucinations. It can also precipitate out-of-control rages and extremely violent behaviour (Proudfoot & Teesson, 2000).

The 1998 report from the Australian National Drug Strategy (Australian Institute of Health and Welfare, 1999) found that amphetamine was the first drug injected by a majority of those who had ever injected illicit drugs, indicating a major role of amphetamines in initiating injecting behaviour in young users.

Cocaine, on the other hand, is a natural substance that is derived from the leaves of the South American coca plant and is most commonly seen as a white powder called cocaine hydrochloride. This powder is usually taken nasally ("snorted") or injected. More recently a free-base form of cocaine ("crack") has been developed which can be smoked leading to almost immediate euphoric effects. Cocaine

differs from other drugs of abuse in that it tends to be used in heavy binges rather than on a more continuous basis. Cocaine abusers tend to also abuse other drugs (especially alcohol and sedatives) as well as having a high prevalence of other psychiatric disorders (Proudfoot & Teesson, 2000).

Cocaine is a highly reinforcing and addictive drug. Its effects include euphoria, increased heart rate, agitation, sexual arousal, increased alertness and energy, inability to assess risks, unpredictable and aggressive behaviour, reduced appetite, increased body temperature and dilated pupils.

Regular cocaine use can cause nasal congestion (if snorted), inflammation and perforation of the septum of the nose as well as infections. As with amphetamines, injecting cocaine also carries with it the risk of HIV and Hepatitis infection. Smoking crack cocaine can cause chronic inflammation and soreness of the throat and lung complications. Heavy (binge) use of cocaine can also result in increased anxiety, restlessness and paranoia which may lead to full-blown psychosis (Proudfoot & Teesson, 2000).

7.2 OVERVIEW OF PSYCHOSTIMULANT DETOXIFICATION

As with other abused drugs, detoxification is a key step towards long-term therapy or rehabilitation can commence. The settings for psychostimulant detoxification will depend on the needs of the patient and on whether or not a supportive home environment is available. It will also depend on whether the patient presents with an amphetamine psychosis and whether there are any intercurrent medical or psychiatric complications.

The mainstay of treatment for psychostimulants withdrawal is psychosocial supportive care and on-going counselling for relapse prevention. Most psycho-stimulant detoxification can take place on a home or ambulatory basis if the home environment is stable, a reliable carer is available and there are no psychostimulants or other psychoactive drugs in the home. Residential detoxification in a community setting will be required where no stable home environment is available or if the patient is homeless. Inpatient care is necessary where medical or psychiatric problems are acute. Thus, it is necessary to admit a patient who presents with psychosis or who presents requiring a more intensive monitoring because of depression and/or suicidality problems, and where a severe withdrawal is anticipated.

Presentations with psychosis

Many patients initially present with an amphetamine-related psychosis and then on recovery experience the various phases of the withdrawal syndrome. Typically a psychosis occurs during or at the end of a protracted period of amphetamine use or a ‘run’ as it is sometimes known, that an amphetamine-related psychosis will manifest itself. Signs of an impending psychotic episode include:

- ✓ increasing agitation
- ✓ insomnia
- ✓ anxiety
- ✓ fear
- ✓ suspiciousness
- ✓ paranoia
- ✓ over-valued ideas
- ✓ erratic behaviour

Patients who go on to develop a frank psychosis may experience hallucinations, delusions (particularly of a paranoid or persecutory flavour) and thought disorder. They are often extremely agitated and anxious, and are difficult to placate through reasoning alone. Due to the risk the patient poses to themselves or others, if the patient will not voluntarily accept mental health treatment it is often necessary to invoke the powers of the Mental Health Act to ensure that they are assessed and managed in a safe environment.

The symptoms of psychosis associated with toxicity should resolve within 7 days following abstinence. Usually, a low dose of the anti-psychotics haloperidol or risperidone, coupled with diazepam to reduce restlessness is effective in the management of an amphetamine-induced psychosis. The patient should be monitored over several weeks to ensure that depressive symptoms do not occur.

Amphetamine withdrawal and depression

Psychostimulant withdrawal is rarely life-threatening. However, the risk of uncontrolled psychostimulant withdrawal is that the person could become progressively more depressed, suicidal or liable to commit suicidal acts. There is also an increased likelihood of impulsive behaviour, acting out and the emergence of psychotic symptoms. Thus, the most important aspect of management is to provide a safe and supportive environment with monitoring and treatment for any persistent depressed mood or psychotic symptoms.

Detoxification may proceed without the assistance of drugs. There is no evidence that tapered withdrawal is preferable to abrupt cessation (Wickes, 1992:11). In Australia, the proportion of people presenting for treatment with a primary amphetamine problem has doubled in recent years (Torres et al., 1996, cited in Topp & Darke, 1997:113) although amphetamine use is still seen most commonly as part of a polydrug problem. Treatment of cocaine users is still the major concern in the United States, but is currently relatively uncommon in treatment services in Australia.

A decision tree for the management of psychostimulant detoxification is provided in Section **7.12** (page 7-20)

The protocols on psychostimulants will deal firstly with the management of amphetamine withdrawal and then move on to deal with the management of cocaine withdrawal.

7.3 MANAGING AMPHETAMINE WITHDRAWAL

Determining the appropriate management of patients with amphetamine problems involves:

(1) diagnosis of amphetamine dependence (including severity of dependence)
(2) detecting those at risk of developing a withdrawal syndrome
(3) determining if a dependent patient at risk of withdrawal can be safely managed in a particular setting.

(1) Diagnosis of Amphetamine Dependence

Dependence may occur with amphetamines as readily as other drugs such as alcohol, benzodiazepines and opiates. Prolonged and habitual users experience withdrawal syndromes when they stop using the drugs.

The criteria for dependence were presented in detail on pages 2-5 to 2-6. In summary, a diagnosis of amphetamine dependence can be made if **three or more** of the following criteria are evident (WHO ICD-10, 1993):

CRITERIA FOR DEPENDENCE	**COMMENTS (**mild+, moderate++, severe+++**)**
Compulsion to use	
Impaired control over drug use	
Withdrawal symptoms	
Increased tolerance	
Priority of drug use	
Continued use despite harmful effects	

(2) Detecting the Person at Risk of Withdrawal

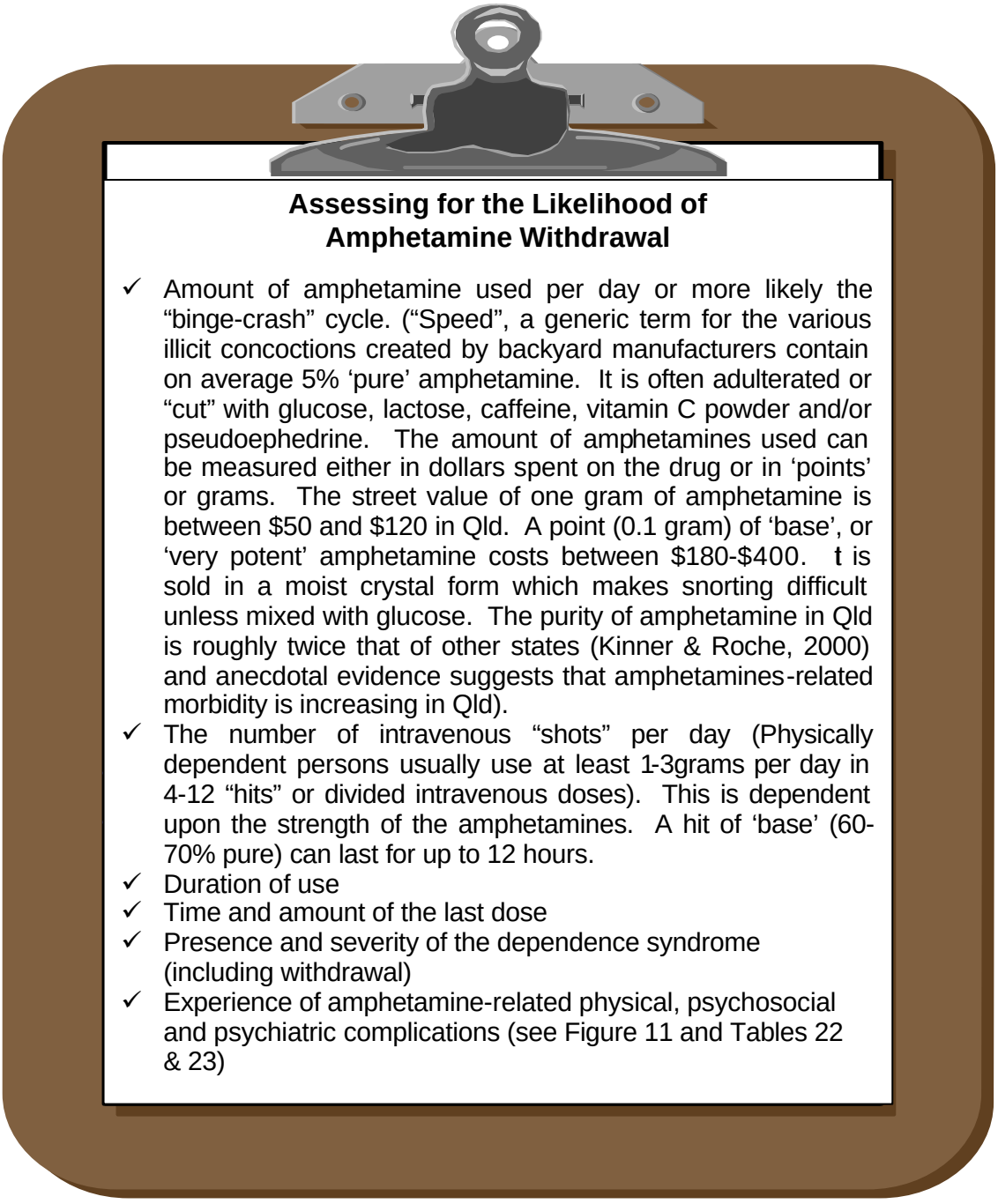
Withdrawal features, characterised by low mood and cravings, are common when a person who uses amphetamines heavily and regularly ceases his/her drug use. Continued use of amphetamines may occur to alleviate these effects of withdrawal. Many regular amphetamine users will also use a depressant drug like alcohol or benzodiazepines to alleviate the negative effects of heavy amphetamine use and to cope with the "crash hangover" and withdrawal features.

Many people with amphetamine problems will present with health, social or mental state problems associated with or exacerbated by amphetamine intoxication, withdrawal or "crash". These associated problems will be emphasised by the person rather than their amphetamine use. The person may be unaware that

these problems are even associated with amphetamine use. They will be drug seeking for benzodiazepines, codeine or other opioids to come off the amphetamines or to deal with the features of amphetamine intoxication, "crash" or withdrawal (Pead et al., 1999).

Therefore, on presentation it is important to fully assess the person for their level of amphetamine dependence, the likelihood of their withdrawal and their associated mental health problems. The areas to concentrate upon are outlined in the clipboard and in Tables 22 and 23.

Assessing for the Likelihood of Amphetamine Withdrawal



Assessing for the Likelihood of Amphetamine Withdrawal

- ✓ Amount of amphetamine used per day or more likely the "binge-crash" cycle. ("Speed", a generic term for the various illicit concoctions created by backyard manufacturers contain on average 5% 'pure' amphetamine. It is often adulterated or "cut" with glucose, lactose, caffeine, vitamin C powder and/or pseudoephedrine. The amount of amphetamines used can be measured either in dollars spent on the drug or in 'points' or grams. The street value of one gram of amphetamine is between $50 and $120 in Qld. A point (0.1 gram) of 'base', or 'very potent' amphetamine costs between $180-$400. It is sold in a moist crystal form which makes snorting difficult unless mixed with glucose. The purity of amphetamine in Qld is roughly twice that of other states (Kinner & Roche, 2000) and anecdotal evidence suggests that amphetamines-related morbidity is increasing in Qld).
- ✓ The number of intravenous "shots" per day (Physically dependent persons usually use at least 1-3grams per day in 4-12 "hits" or divided intravenous doses). This is dependent upon the strength of the amphetamines. A hit of 'base' (60-70% pure) can last for up to 12 hours.
- ✓ Duration of use
- ✓ Time and amount of the last dose
- ✓ Presence and severity of the dependence syndrome (including withdrawal)
- ✓ Experience of amphetamine-related physical, psychosocial and psychiatric complications (see Figure 11 and Tables 22 & 23)

FIGURE 11: Complications of Amphetamine Use

Physical (These complications are mainly related to injecting drug use)
- ✓ Bacterial endocarditis
- ✓ Septicaemia
- ✓ Metastatic cutaneous or deep abscesses
- ✓ Heart valve, bone, joint infection, inflammation
- ✓ Hepatitis B & C
- ✓ HIV/AIDS

Psychosocial
- ✓ Crime (especially burglary, larceny, extortion, fraud)
- ✓ Amphetamine and other drug dealing
- ✓ Prostitution
- ✓ Absenteeism
- ✓ Estrangement from family
- ✓ Unemployment

TABLE 22
MENTAL STATE PROBLEMS

- **'Odd thoughts' often prompt treatment**
- **Features**
  - ✓ Suspiciousness (paranoid), anger
  - ✓ Delusions, jealousy
  - ✓ Misperceptions, auditory hallucinations
  - ✓ Magical thinking
- **Insight?**
  - ✓ Worrying about unusual thoughts
- **Manifestation**
  - ✓ Carrying, keeping weapons
  - ✓ Checking doors, windows
  - ✓ Hiding under bed
  - ✓ Fear of being busted, ripped off
  - ✓ Avoiding friends
- **Transient / episodic / prolonged**
- **During / beyond drug intoxication**

(adapted from Pead et al., 1999)

Assessing the status of odd thoughts can be difficult even for the experienced practitioner because odd events are an integral part of the real world of illicit drug use, dealers, crime and the police. However, the aim here is to have health care practitioners prompt for and recognise mental state problems in people who use amphetamines (mental state screening). It is important though to establish a rapport with the person by taking a history of less sensitive aspects of their life before moving onto the mental state screening (Pead et al., 1999).

The amount of amphetamine use required to trigger a psychosis will vary widely from person to person and for one given person over time depending upon the contributions of the factors listed in Table 24. In a young person developing schizophrenia, amphetamine use may be only a minor contributor to psychosis (Pead et al., 1999).

TABLE 23

ASSESSING FOR THE RISK OF PSYCHOSIS

- **Intensity of amphetamine use**
  - ✓ high doses, injecting, long duration
- **Psychosis vulnerability**
  - ✓ hydration, sleep and nutrition
  - ✓ other concurrent drug use: cannabis, alcohol, hallucinogens…
  - ✓ current illness – systemic infection, thyroid disease
  - ✓ past history of:
    - ✓ drug-related psychotic symptoms in the past (kindling)
    - ✓ schizophrenia
    - ✓ paranoid disorder
    - ✓ brief reactive psychosis
    - ✓ mood disorder with psychotic features
    - ✓ family history of serious mental illness

(adapted from Pead et al., 1999)

Taking a history of factors which may contribute to psychosis in a person using amphetamines will assist in determining the need for specialist care and the information, advice and interventions that are appropriate.

(3) Assessment to Determine the Setting for Detoxification

Once a patient has been found to be dependent on amphetamines and at risk of withdrawal or psychosis, then his/her suitability for a particular detoxification setting must be determined. The areas outlined in the clipboards will assist health care practitioners decide which particular setting is most appropriate for the patient at hand after his/her assessment. The decision tree for the management of psychostimulant detoxification (see Section **7.12**) also provides explicit guide-lines as to where the patient can be safely detoxifed.

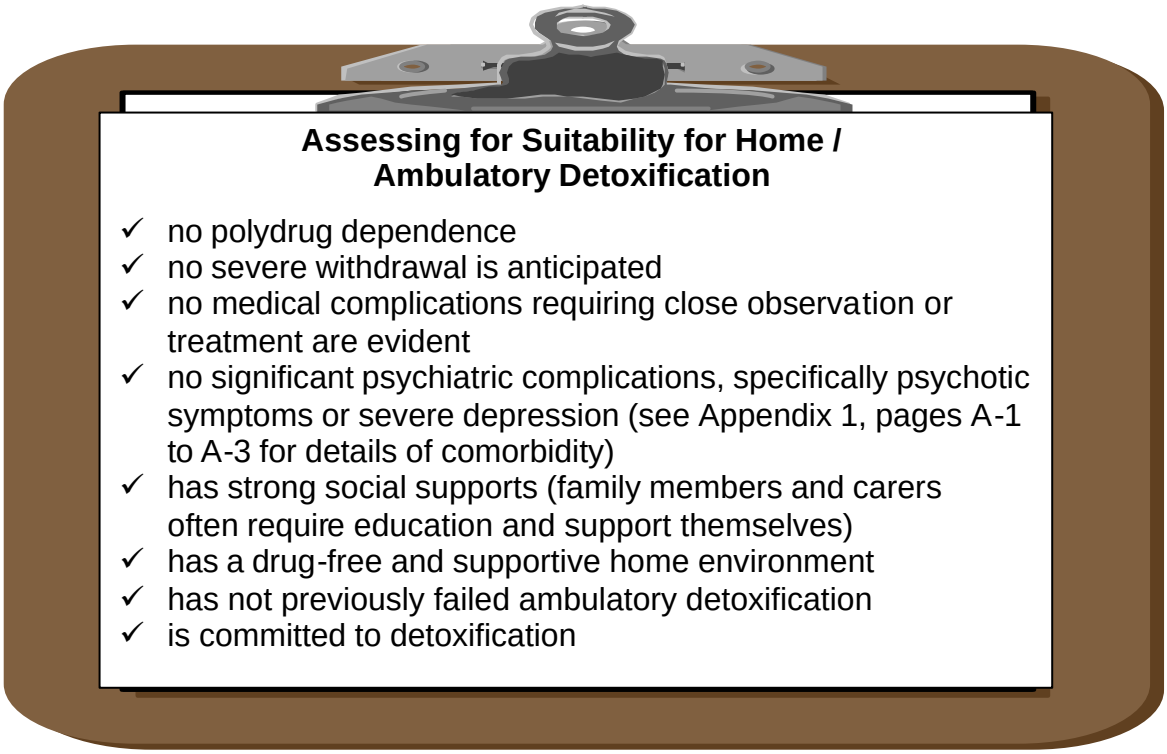
If the patient is experiencing amphetamine psychosis, he/she needs a psychiatric assessment and treatment instituted immediately. Patients with active psychosis would typically be admitted for psychiatric treatment then transferred to an

inpatient specialist detoxification facility (if there is one available) when the psychosis has settled.

Home/Ambulatory

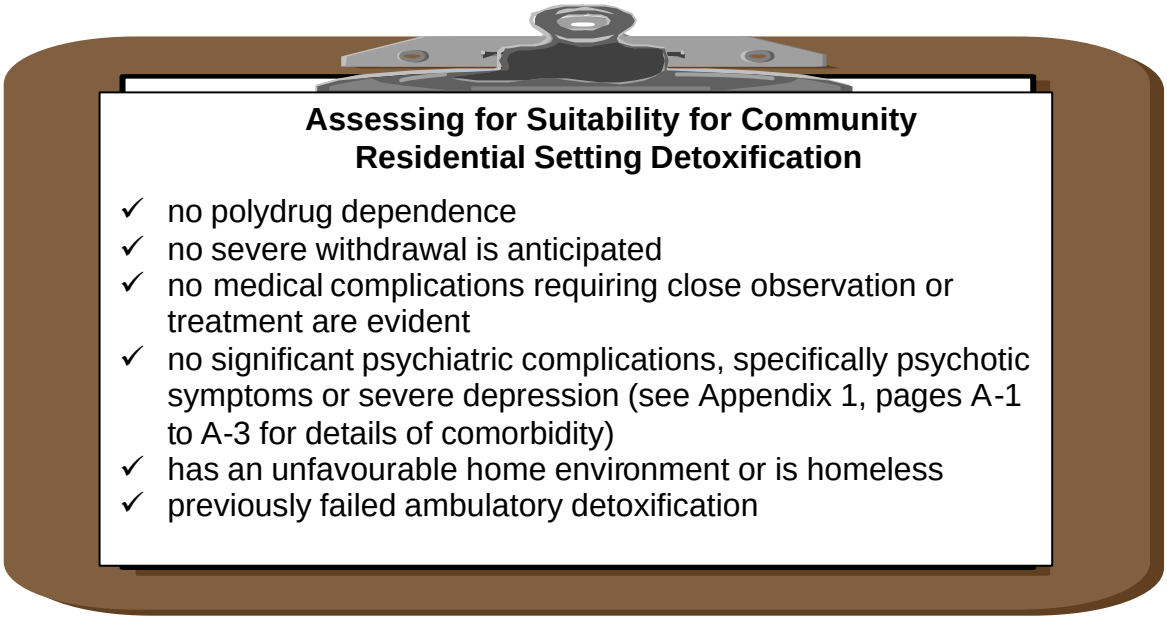
Home or ambulatory detoxification is suitable if the following criteria (also see the clipboard below) are met: the patient has a stable home environment and a reliable carer is available; the patient is not severely dependent and no severe withdrawal is anticipated; there is no indication of any concomitant medical or psychiatric illness specifically severe psychotic symptoms or severe depression; and there is no history of polydrug dependence.

For a home detoxification, the patient is supervised at home by a carer and has daily visits from a registered nurse or a general practitioner. In an ambulatory detoxification, the patient attends his/her District Alcohol, Tobacco and Other Drug Services or his/her local hospital (in some regional areas) daily, or sees his/her general practitioner second daily. This enables the withdrawal process to be monitored and appropriate interventions undertaken. The aim is to manage the symptoms of withdrawal, monitor the patient's mood, educate them about the course of withdrawal and the likelihood of enduring symptoms, and plan for after-care.



Community Residential Setting

When the home environment is not supportive of detoxification or where previous attempts have been unsuccessful, the patient can be referred to a community residential setting for detoxification. This setting is suitable for patients who meet the criteria outlined in the clipboard below.

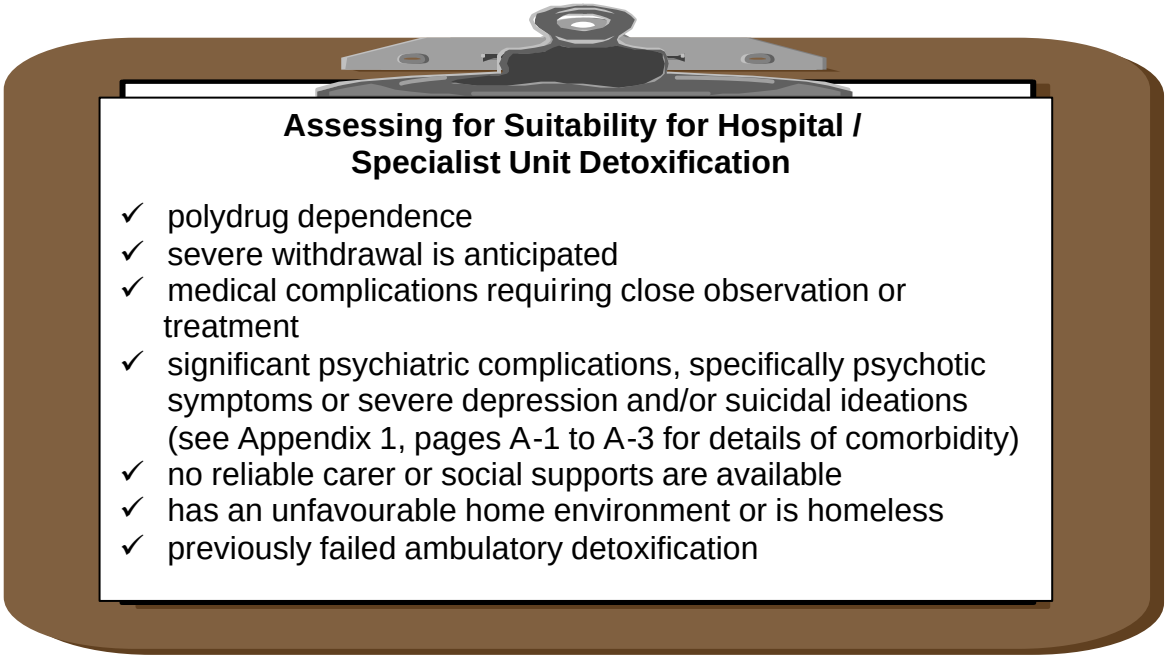


Assessing for Suitability for Community Residential Setting Detoxification

- ✓ no polydrug dependence
- ✓ no severe withdrawal is anticipated
- ✓ no medical complications requiring close observation or treatment are evident
- ✓ no significant psychiatric complications, specifically psychotic symptoms or severe depression (see Appendix 1, pages A-1 to A-3 for details of comorbidity)
- ✓ has an unfavourable home environment or is homeless
- ✓ previously failed ambulatory detoxification

Hospital/Specialist Detoxification Unit

The need for admission to a hospital or specialist detoxification unit is less common than for the other drug types covered in these protocols. These settings are suitable for patients who have had a previous complicated withdrawal (depression/psychosis); are moderately to severely dependent; where there is an indication of concomitant medical or psychiatric illness; a history of polydrug dependence; no stable home environment; no reliable carer is available; have access to, or may be exposed to amphetamines in their home environment; and have had previous unsuccessful home or ambulatory detoxifications. Inpatient care is also required for patients who present with psychosis or for patients who require more intensive monitoring because of his/her depression and/or suicidality problems. If inpatient treatment is necessary the duration of stay should be tailored to the individual. In all cases it should be long enough for the resolution of the psychotic or withdrawal symptoms to occur. If inpatient amphetamine detoxification is warranted, the length of stay is usually five days for uncomplicated withdrawal or seven days for a withdrawal complicated by amphetamine-induced psychosis.



7.4 FEATURES OF THE AMPHETAMINE WITHDRAWAL SYNDROME

7.4.1 Common Features of Amphetamine Withdrawal

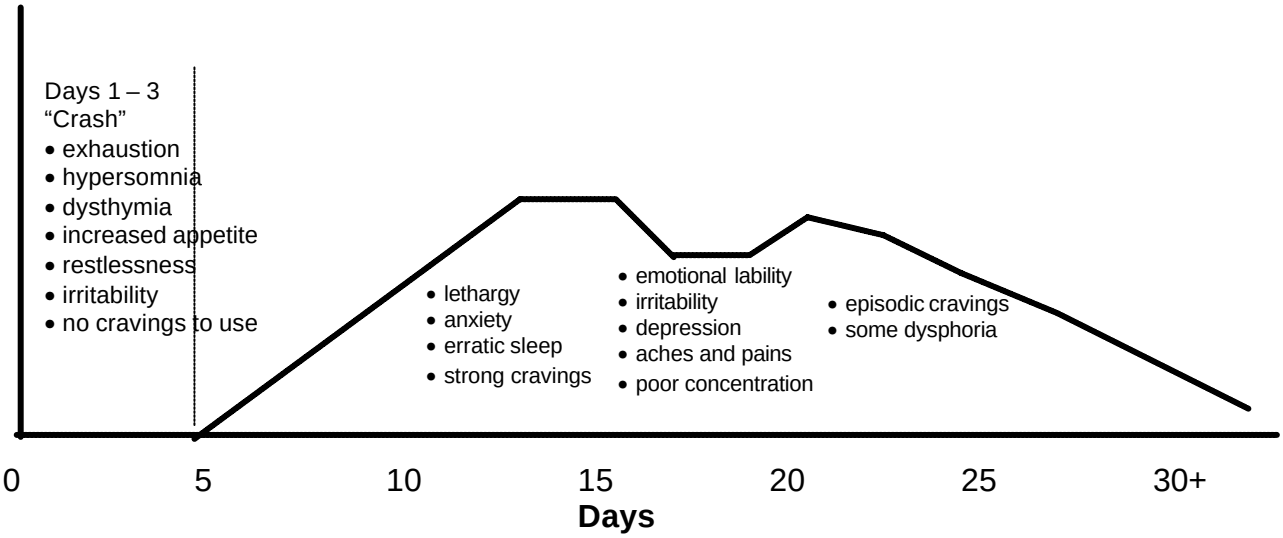
The withdrawal syndrome from amphetamines often emerges from a state of intoxication. Amphetamine intoxication is characterised by restlessness, agitation and apprehensiveness which may border on panic. This state may progress to a hypomanic picture with paranoid ideation, and auditory and visual hallucinations. There is tachycardia and elevation in blood pressure because of these drugs' sympathomimetic properties. There may be confusion and frank delirium. Convulsion and coma may result from poisoning and the outcome may be fatal, with death from exhaustion, aspiration or cardiac arrhythmia (Saunders,1995).

Chronic abusers of amphetamines may present with an acute psychotic episode which resembles paranoid schizophrenia (Novak, 1991:17).

An ongoing feature of intoxication, such as psychosis, can coexist with a withdrawal phenomenon such as depression. The time-course and features of a typical withdrawal state, unaffected by residual toxicity symptoms are as shown in Figure 12 and described in the text.

7.4.2 Onset and Duration

FIGURE 12: Typical Amphetamine Withdrawal



The withdrawal syndrome begins with what is described as "coming down" or a "crash". This acute period is typically characterised by hypersomnia, increased appetite, feeling flat, exhaustion and no craving to use amphetamines. The presentation could be described as the opposite of amphetamine intoxication.

Within two to five days the body begins to recover. This (notionally) second phase of the withdrawal syndrome is characterised by extreme mood swings, irritability, angry outbursts, sleep disturbances, headaches, aches and pains, poor concentration and a steady increase in cravings to use amphetamines. Patients often experience social and relationship conflict during this time due to irritability and mood swings. During this phase some patients may experience extreme rebound depression, with some contemplating and even attempting suicide. Mood monitoring is crucial during this period.

While the mood swings may last several months (up to six months to a year in some cases), there is usually a gradual return of normal sleep, mood and activity levels, and major improvements in general health and mood after two months from the onset of withdrawal.

Some people experience a psychotic episode in the context of protracted use of high doses of amphetamines. This is covered in Appendix 1**,** pages A-1 to A-3 concerning comorbid mental health disorders and substance use.

7.5 DETECTING AND MONITORING AMPHETAMINE WITHDRAWAL

If the patient's history or presentation suggests a possibility of an amphetamine withdrawal, the patient should be commenced on the Amphetamine Withdrawal Scale (AmpWS) as shown in Section **7.13**. It is a 10-item checklist of symptoms with a four point scale (0-3) to rate the severity of the symptom. The patient is asked to rate each symptom according to the severity of his/her withdrawal. This needs to be commenced as soon as possible after the assessment is obtained and continues until a decision is made either to hold the patient in the acute area of the hospital for further observation or transfer the patient to the ward. Once transferred, the monitoring is continued by the ward/unit nursing staff.

Procedure

- ✓ After the assessment, take and record the vital signs on the Amphetamine Withdrawal Scale to act as baseline data. Continue to monitor the patient fourth hourly until the patient is transferred to the ward.

- ✓ As an inpatient, monitor the patient fourth hourly if the patient is showing signs of the amphetamine withdrawal syndrome. Observe informally for any signs of change.

- ✓ When symptoms are resolving formal recorded observations can be done twice or once daily.

7.6 AMPHETAMINE DETOXIFICATION PROTOCOLS

(1) Sedation

The primary goal of pharmacological interventions is to obtain and sustain abstinence by lessening the discomfort of withdrawal. In the majority of cases no drug treatment is required (Wickes, 1992). However, on some occasions a physically exhausted but mentally overwrought patient may need a small dose of diazepam to initiate the phase of (restorative) hypersomnia. Tricyclic anti-depressants have been used to alleviate the depression of amphetamine withdrawal. The evidence is meagre and given the many side effects of these drugs, there are few occasions when they should be considered nowadays. Selective serotonin reuptake inhibitors (SSRIs) are becoming more widely used. Again the evidence that they alleviate withdrawal-related depression is small, but it is appropriate to consider an SSRI in patients with a persistently depressed mood.

Patients suffering from amphetamine induced psychosis should be treated with major tranquillisers, preferably haloperidol rather than phenothiazines (which lower the seizure threshold). Cardiac arrythmias should be treated with beta blockers and not lignocaine or related compounds which have properties similar to amphetamines (Saunders, 1989:52).

(2) Symptomatic Relief

Headaches and generalised body aches and pains can be problematic in the first one or two weeks as a result of increased muscle tension. These symptoms can be treated with paracetamol 1g every 4-6 hours as required. Alternative management includes light stretching exercises, warm baths or massages.

(3) Supplements

Supplements are sometimes necessary in persons undergoing amphetamine detoxification. Appetite is often reduced by amphetamine use and this can result in significant weight loss and malnourishment. The appetite usually returns within days of ceasing drug use, so the ward staff can encourage the patient to eat healthy foods such as fresh fruits and vegetables. However, a multivitamin preparation is appropriate to cover possible deficiencies in B group vitamins and vitamin C.

It is also beneficial for the patient to drink at least two litres of fluids, preferably water or fruit juice, throughout each day to promote the release of accumulated toxins.

(4) Supportive Care and Environment

Patients undergoing amphetamine withdrawal need a lot of support, explanations, and reassurances from the ward staff. They also need close monitoring of their withdrawal process and the organisation of medical or psychiatric reviews if necessary. A review would be particularly important if the patient experiences profound depression or suicidal ideation during the course of the withdrawal.

Patients frequently experience episodes of intense craving with each episode lasting less than an hour. The ward staff can help the patient through these episodes by encouraging distraction through activities such as watching TV or a video, listening to music or a relaxation tape and generally being available to talk and listen.

Some people experience mild paranoia during amphetamine use and this can increase during detoxification so it is important to reduce stress and maintain a non-threatening, non-stimulating environment as much as possible.

It is also important that the patient is well educated about the possibility of ongoing mood swings, sleep disturbances and other symptoms. Such information reduces the anxiety associated with withdrawal and increases a patient's confidence to complete the detoxification and enhances motivation to change.

Continuation of Treatment for Co-existing Conditions

The patient's usual medical treatment of existing conditions should generally be continued. In addition, treatment may need to be instituted for an intercurrent illness diagnosed during detoxification. The principle is that detoxification should not interrupt the patient's usual or intended care. Sometimes it will be apparent that the patient's usual medication is inappropriate for the condition or because the patient has an alcohol or drug problem (which may not have been recognised by the prescribing doctor). In this case a medical officer in the unit should be asked to review the medication, make any necessary adjustments, and liaise with the patient's usual medical practitioner, as necessary. Such medication could include anti-convulsants, anti-depressants, anti-psychotic drugs, anti-hypertensives, cardiac drugs, peptic ulcer treatment and antibiotics. In specific patients it could also include benzodiazepines (eg. clonazepam (rivotril) for epilepsy), opioids (eg. methadone in someone having a selective detoxification) and medication for pain relief.

7.7 MANAGING COCAINE WITHDRAWAL

At the present time very few cocaine users present for treatment in Australia. This reflects the relative scarcity and high costs (between $200 to $300 per gram) of the drug, and in all probability the predominant pattern of recreational weekend use rather than compulsive administration throughout the day. Nonetheless it is essential to enquire about cocaine use when patients present with acute psychoses, cardiac arrhythmias, evidence of intravenous drug use and nasal disorders (Saunders, 1989:52).

Determining the appropriate management of patients with cocaine problems involves the same process as discussed in Section **7.3** for amphetamine withdrawal. These include:

(1) diagnosis of cocaine dependence (including severity of dependence)
(2) detecting those at risk of developing a withdrawal syndrome
(3) determining if a dependent patient at risk of withdrawal can be safely managed in a particular setting.

(1) Diagnosis of cocaine dependence

Cocaine dependence occurs without the specific physiological withdrawal symptoms observed with the abstinence of alcohol, benzodiazepines and opiates. Cocaine dependence is likely to develop within a social/occupational context.

Initial tolerance to cocaine develops rapidly, but thereafter cocaine users seldom seem to develop tolerance for increased amounts. Tolerance may not be obvious because of the tendency to mix cocaine use with other drugs, in particular heroin (known as "speedball"), to enhance effects (Commonwealth Department of Human Services and Health, 1994:57).

The ICD-10 allows a diagnosis of dependence without a requirement for the presence of the physiological phenomena of tolerance, withdrawal and relief of withdrawal by substance use. This broader view is especially relevant to drugs such as cocaine, which do not have prominent physical withdrawal phenomena (Saunders et al., 2001). Therefore, a diagnosis of cocaine dependence can still be made if **three or more** of the following criteria are evident (WHO ICD-10, 1993):

CRITERIA FOR DEPENDENCE	**COMMENTS (**mild+, moderate++, severe+++**)**
Compulsion to use	
Impaired control over drug use	
Withdrawal symptoms	
Increased tolerance	
Priority of drug use	
Continued use despite harmful effects	

(2) Detecting the Person at Risk of Withdrawal

Cocaine is a highly reinforcing and addictive drug and it is widely accepted that its reinforcing properties are largely due to its action of blocking the reuptake of dopamine (Proudfoot & Teesson, 2000). Thus, people who use cocaine soon become compulsive users, especially when intravenous use or free-base are employed. The reward is immediate and the return to baseline mood levels or below occurs rapidly. Both the intense euphoria and its disappearance drive the person to seek more cocaine. With nasal absorption the mood peak is lower, but complusive patterns are known to develop with this technique as well (Arif, 1987).

After a prolonged series of stimulations and dysphoric reactions to cocaine, sudden cessation can produce a stimulant-withdrawal syndrome characterised primarily by deep depression. In an effort to relieve the depression, the person soon relapses into complusive use. In addition, during the withdrawal phase the person is unable to enjoy ordinary pleasures for days or weeks thereafter. This combination of positive and negative conditioning – the intense euphoria associated with cocaine use, the effort to avoid dysphoria, the distressing post-cocaine depression and the painful anhedonic residual phase – makes it easy to understand why relapse occurs so frequently during treatment (Arif, 1987).

A person who is dependent on cocaine may become irresponsible, moody, suspicious, irritable, and, in certain circumstances, violent or suicidal. Heavy cocaine use can lead to cocaine psychosis, a condition closely resembling amphetamine psychosis. It is characterised by delusional and hallucinatory experiences and paranoia.

As previously mentioned, it is therefore important to enquire about cocaine use when patients present with acute psychoses, cardiac arrhythmias, evidence of intravenous drug use and nasal disorders. The areas to concentrate upon when assessing a person at risk of cocaine withdrawal are similar to that of amphetamine withdrawal as discussed on pages 7-4 to 7-7. The reader is referred to those pages.

(3) Assessment to Determine the Setting for Detoxification

Once a patient has been found to be dependent on cocaine and at risk of withdrawal or psychosis, then his/her suitability for a particular detoxification setting must be determined. As there are few cocaine users presenting for treatment in Australia, the information provided here is based on the US experience.

Home or ambulatory detoxification is still preferable to inpatient detoxification if there is a stable home environment and a reliable carer as it causes less disruption to the patient and his/her family. The relapse rates are significant even after long hospital stays as experienced by treatment centres in the US. Inpatient detoxification is, however, recommended for patients with severe depression accompanied by suicidal ideation or psychotic symptoms, if either persists beyond the third day of the post-cocaine period, or homicidal ideation, and for those who have had several relapses following home or ambulatory detoxification. Other conditions that may require inpatient care include: heavy free-base or intravenous use; concurrent dependence on alcohol and other drugs; concomitant medical or psychiatric problems; no stable home environment; and lack of family or social support (Arif, 1987).

7.8 FEATURES OF THE COCAINE WITHDRAWAL SYNDROME

Gawin and Kleber (1984, cited in Wickes, 1992) divided withdrawal experienced after chronic cocaine use into three phases as described below.

Phase 1 "Crash": 9 hours - 4 days

The agitation, depression, anorexia and high craving experienced at the end of a "run" (heavy use for several days or weeks at a time) gives way to feelings of fatigue and increased desire to sleep which is as yet unattainable. Depression remains but craving decreases. Exhaustion eventually leads to prolonged but disturbed sleep. There is intense hunger on awakening with depression, but no craving.

Phase 2 Withdrawal: 1 - 10 weeks

There are a few days of respite where normal sleep patterns return and mood settles with low craving and low anxiety. This is replaced by depressed feelings, a lack of interest in life, a lack of energy and anxiety with possible sudden angry outbursts (wall). Craving is high, and is exacerbated by conditioned cues. It is said to be characterised by a particularly rapid onset and marked intensity when compared with other drugs. There is a high probability of relapse into drug use.

Phase 3 Extinction, Indefinite Duration

Episodic craving often in response to conditioned cues interrupts a normal mood and interest in life. It may last minutes or hours and may emerge months or years after the cessation of drug use. Relapse may occur.

Other symptoms experienced during withdrawal may include;

- ✓ sleep disorders
- ✓ vivid dreams
- ✓ hyperphagia
- ✓ irritability
- ✓ nausea
- ✓ muscle aches
- ✓ lethargy.

7.9 DETECTING AND MONITORING COCAINE WITHDRAWAL

There is currently no specific rating scale in general use for cocaine withdrawal. This is due to the relative infrequency of cocaine users presenting for assessment and detoxification. The Amphetamine Withdrawal Scale could be used for cocaine detoxification as the withdrawal symptoms are quite similar. Refer to Section **7.13** for the use of the Amphetamine Withdrawal Scale if required.

A suggested interpretation of the Amphetamine Withdrawal Scale Scores:

Severity	AmpWS Scores
Mild	1 – 10
Moderate	11 – 20
Severe	21 – 30

7.10 COCAINE DETOXIFICATION PROTOCOLS

(1) Sedation

As in amphetamine detoxification, the primary goal of pharmacological interventions is to obtain and sustain abstinence by lessening the discomfort of withdrawal. In the majority of cases no drug treatment is required. However, if dysphoric agitation occurs, it is best treated with diazepam. Propranolol may also

be given to more persistent cases (Gay, 1982). Research findings regarding the therapeutic effectiveness of the tricyclic anti-depressants in cocaine detoxification are equivocal. However, some studies conclude that they may have differential effectiveness dependent upon underlying pre-existing psychiatric conditions. (Proudfoot & Teesson, 2000). Stitzer and Walsh (1997, cited in Proudfoot & Teesson, 2000) concluded that although the serotonin reuptake inhibitor, fluoxetine hydrochloride (Prozac) may not prove effective for primary cocaine abusers, it has shown potential to effectively treat polydrug users. Other anti-depressants such as bupropion and trazodone have either too little research data on their efficacy in this area, or there have been equivocal findings (Proudfoot & Teesson, 2000).

Psychotic symptoms are usually transient (lasting less than 14 days) and usually remit following normalization of sleep patterns. Major tranquillisers such as chlorpromazine and haloperidol apparently have all been used successfully to manage patients with these symptoms (Arif, 1987).

(2) Symptomatic Relief

Generalised body aches and pains can be problematic in the first one or two weeks as a result of increased muscle tension. These symptoms can be treated with paracetamol 1g every 4-6 hours as required. Alternative management includes light stretching exercises, warm baths and massage.

(3) Supplements

Supplements are sometimes necessary in persons undergoing cocaine detoxification. Appetite is often reduced by cocaine use and this can result in significant weight loss and malnourishment. In severely malnourished patients who cannot take solid food intravenous solutions may be necessary. However, the appetite usually returns within days of ceasing the drug use, so the ward staff can encourage the patient to eat healthy foods such as fresh fruits and vegetables. A multivitamin preparation is appropriate to cover possible deficiencies in B group vitamins and vitamin C.

It is also beneficial for the patient to drink at least two litres of fluids, preferably water or fruit juice, throughout each day to promote the release of accumulated toxins.

(4) Supportive Care and Environment

Patients undergoing cocaine withdrawal need a lot of support and reassurances from the ward staff. They also need close monitoring of their withdrawal process and the organisation of medical or psychiatric review if necessary. A review would be particularly important if the patient experiences profound depression or suicidal ideation during the course of the withdrawal.

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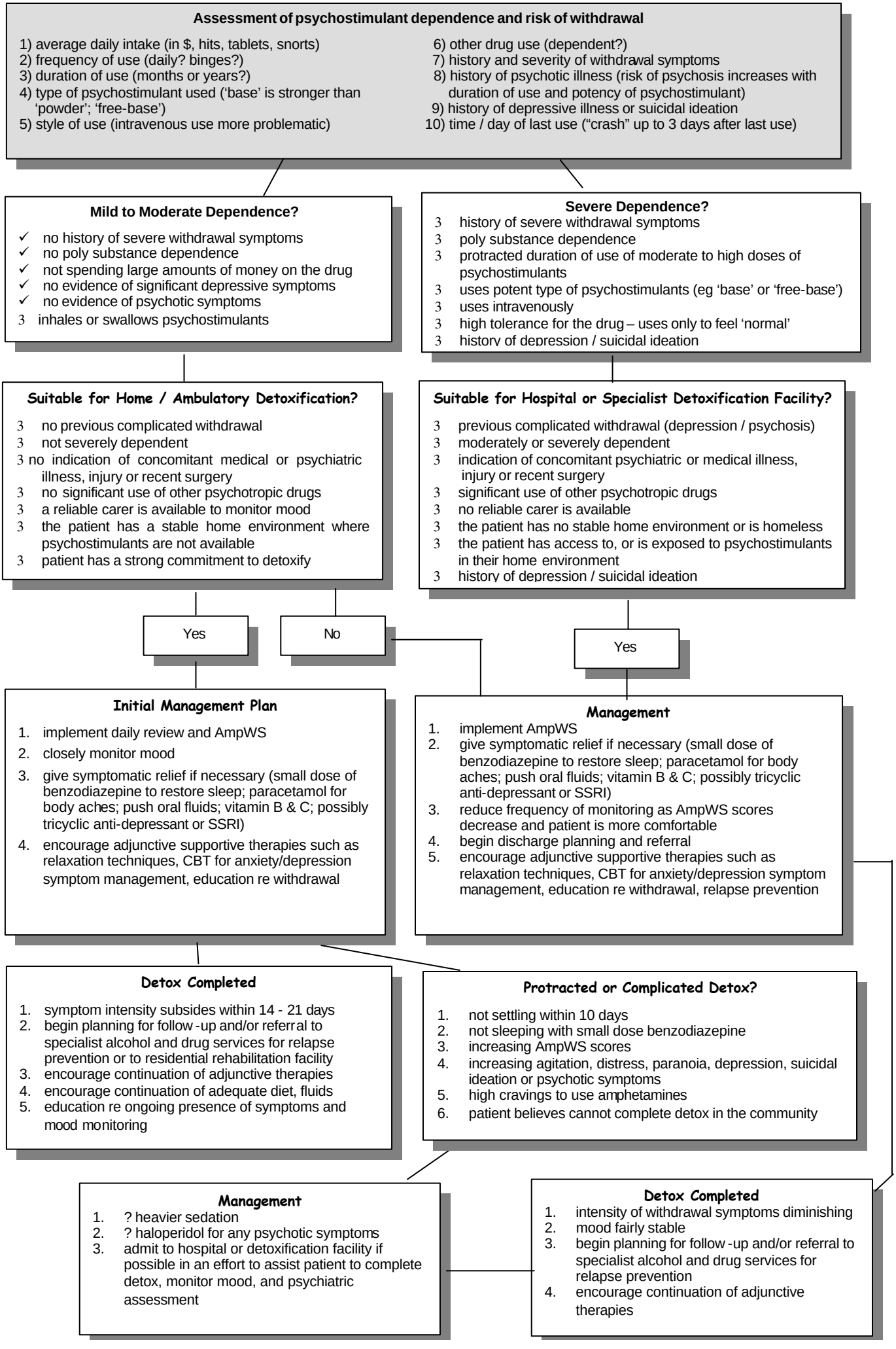
7.11 AFTER-CARE

As with all the drug classes, plans for after-care need to be considered prior to amphetamine or cocaine detoxification or during the early stages of detoxification in an effort to reduce the likelihood of relapse. Such plans could include referral to his/her District Alcohol, Tobacco and Other Drug Services for a relapse prevention program, cognitive behavioural therapy for anxiety/depression symptom management, residential rehabilitation programs or Narcotics Anonymous.

7.12 Decision Tree for the Management of Psychostimulant Detoxification



7.13 Royal Brisbane & Royal Women's Hospitals Health Service Districts

ALCOHOL AND DRUG SERVICE

AMPHETAMINE WITHDRAWAL SCALE

UR……

NAME:……

ADDRESS:……

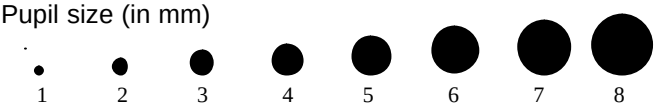
……

DOB:……/……/…… M F

RATINGS:

0 NONE **1 MILD** **2 MODERATE** **3 SEVERE**

Pupil size (in mm)



Date & Time of last Amphetamine use? ……/……/…… ……..AM / PM	**DATE**										
	TIME										
	BAL										
Do you feel tired?											
Are you sleeping a lot?											
Is your mood low?											
Are you easily annoyed?											
Do you feel anxious?											
Do you have aches / pains?											
Is your appetite poor?											
Are you hearing &/or seeing unusual / disturbing things?											
Do you feel suspicious / mistrustful of others?											
Is your concentration on tasks poor?											
TOTAL											
BLOOD PRESSURE											
PULSE											
TEMPERATURE											
RESPIRATIONS											
CONSCIOUS LEVEL **1** Alert,obeys,oriented **2** Confused,responds to speech **3** Stuporous,responds to pain **4** Semi-comatose **5** Comatose											
PUPILS + Reactive - No Reaction B Brisk S Sluggish	**SIZE**										
	REACTION										
MEDICATION GIVEN?											
NURSE INITIALS											

AMPHETAMINE WITHDRAWAL SCALE

REFERRALS

Alcohol and Drug Information Service (**ADIS**)
Biala
270 Roma Street
Brisbane, Qld. 4000
Phone: **3236 2414**
1800 177 833 (outside of metropolitan area)

- 24 hour phone counselling, support, information and referral

Note: please contact ADIS for information on rehabilitation services if needed or updated ATODS list

Drugs of Dependence Unit (Environmental health)
Health and Welfare Building
69 George Street
Brisbane, Qld. 4000
Phone: **3896 3900** (Monday to Friday between 0815 – 1700 hours). Outside Brisbane, Queensland Health through the Public Health Unit Network can also provide similar information from local environmental health services.

Operates a confidential telephone enquiry service which allows medical practitioners to:

- ascertain a patient's known status in regards to drug dependence (for controlled drugs, in most cases)
- obtain information about the recent opioid prescriptions received by a patient
- obtain information about treatment facilities that are able to assess and treat patients who may be drug dependent. This includes patients who wish to cease using heroin and other illicit drugs
- obtain information about your legal obligations under the Health (Drugs and Poisons) Regulation 1996.

Hospital Alcohol and Drug Services (**HADS**)
Royal Brisbane Hospital
Herston Road
Herston, Qld. 4006
Phone: **3636 8704**

- referrals direct or via other agencies; medical detoxification for alcohol and/or other drugs
- assessments & admissions via Biala, RBH Department of Emergency or RBH 3A Psychiatric Assessment Unit

ZONAL AND DISTRICT HEALTH ALCOHOL, TOBACCO AND OTHER DRUG SERVICES
CO-ORDINATORS / CONTACTS
As at 06-08-2001

DISTRICT HEALTH SERVICE	*CONTACT*	*PHONE/FAX*	*STREET ADDRESS*	*POSTAL ADDRESS*
Bayside	Mr Sandy Collie CNC Team Leader	Ph: (07) 3240 8311 Fax: (07) 3821 4782	Bayside Alcohol, Tobacco and Other Drug Service Redlands Health Service Centre Weippin Road CLEVELAND QLD 4163	PO Box 585 CLEVELAND QLD 4163
Bundaberg	Ms Karen McWilliam Co-ordinator	Ph: (07) 41502 740 Fax: (07) 4150 2729	Bundaberg Alcohol, Tobacco and Other Drug Services Bundaberg Base Hospital Bourbong Street BUNDABERG Q 4670	PO Box 34 BUNDABERG Q 4670
Cairns	Ms Jan Parr Coordinator	Ph: (07) 40 503 900 Fax: (07) 40 514 151	Cairns Alcohol, Tobacco and Other Drug Service 31 Shields Street CAIRNS Q 4870	PO Box 1336 CAIRNS Q 4870
Central West	Ms Glennis Ford Co-ordinator	Ph: (07) 46 583 344 Fax: (07) 46 583 496 Mob: 0408 009 056	Central West Alcohol, Tobacco and Other Drug Services 18 Duck Street LONGREACH Q 4730	18 Duck Street LONGREACH Q 4730
Charleville	Amanda Turner Co-ordinator	Ph: (07) 4654 1380 Fax(07) 4654 3298	Charleville Alcohol, Tobacco and Other Drug Services 2 Eyre Street CHARLEVILLE QLD 4470	PO Box 636 CHARLEVILLE QLD 4470
Cooktown	Oriel Murray Co-ordinator	Ph: (07) 40695270 Fax: (07) 40695617	Alcohol & Drug Program Hope Street COOKTOWN Q 4871	PO Box 287 COOKTOWN Q 4871
Fraser Coast District Health Service	Mr Mike Reynolds Co-ordinator	Ph: (07) 41 242 177 (Hervey Bay) (07) 4123 8733 (Maryborough) Fax: (07) 41 245 751	Fraser Coast Alcohol, Tobacco and Other Drug Services Bauer-Wiles Complex Community Health Neptune Street MARYBOROUGH QLD 4650	PO Box 301 Maryborough Q 4650

DISTRIC HEALTH SERVICE	*CONTACT*	*PHONE/FAX*	*STREET ADDRESS*	*POSTAL ADDRESS*
Gold Coast	Dr Lynn Hawken Director	Ph: (07) 55 718 777 Fax: (07) 55 718 505	Gold Coast Alcohol, Tobacco and Other Drug Services Ground Floor Quarters 1, Northside Clinic Gold Coast Hospital 108 Nerang Street SOUTHPORT Q 4215	Ground Floor Quarters 1, Northside Clinic Gold Coast Hospital 108 Nerang Street SOUTHPORT Q 4215
Gladstone	Ms Pam Frankham Co-ordinator	Ph: (07) 4976 3184 Fax: (07) 4976 3203	Gladstone Alcohol, Tobacco and Other Drug Services Park Street GLADSTONE Q 4680	PO Box 299 GLADSTONE Q 4680
Logan-Beaudesert	Ms Dora Cocker Acting Team Manager	Ph: (07) 3299 8760 Fax: (07) 3209 3601	Logan/Beaudesert Alcohol, Tobacco and Other Drug Services Cnr Wembley and Ewing Roads LOGAN CENTRAL Q 4114	PO Box 240 LOGAN CENTRAL Q 4114
Mackay	Mr David Goodinson A/Co-ordinator	Ph: (07) 49 683 858 Fax: (07) 49 683 857	Mackay Alcohol, Tobacco and Other Drug Services 12-14 Nelson Street MACKAY Q 4740	PO Box 688 MACKAY Q 4740
Mount Isa	Ms Doreen Entwistle Co-ordinator	Ph: (07) 47 447 102 Fax: (07) 47447 135	Mt Isa Alcohol, Tobacco and Other Drug Services 26-28 Camooweal Street MT ISA Q 4825	PO Box 2172 MT ISA Q 4825
Northern Downs	Ms Kaye Kirkman Co-ordinator	Ph: (07) 4662 8859 Fax:(07)4662 8424 Mob: 0407 132 527	Chinchilla Alcohol, Tobacco and Other Drug Services Slessar Street CHINCHILLA QLD 4413	PO Box 365 CHINCHILLA QLD 4413
Redcliffe-Caboolture	Mr Rob Yuill Nurse Practice Coordinator (Ms Tracey Silvester Executive Officer Community &Aged Care – for policy matters)	Ph: (07) 5433 83000 Fax: (07) 5433 7322	Redcliffe-Caboolture Alcohol, Tobacco and Other Drug Services McKean Street CABOOLTURE Q 4510	Caboolture Community Health Centre Locked Mail Bag No 1 CABOOLTURE Q 4510
Rockhampton	Mr Ric Dutton Co-ordinator	Ph: (07) 49 21 4 281 Fax: (07)49 214 279 Mobile: 0404 819 313	Rockhampton Alcohol, Tobacco and Other Drug Services District Support Unit 56 Alma Street ROCKHAMPTON Q 4700	PO Box 4041 Rockhampton Q 4700
Roma	Jennifer Highlands Co-ordinator	Ph: (07) 46 222 277 Fax: (07) 46 224 706	Roma Alcohol, Tobacco and Other Drug Services 69 Arthur Street ROMA Q 4455	PO Box 1030 ROMA Q 4455

DISTRIC HEALTH SERVICE	*CONTACT*	*PHONE/FAX*	*STREET ADDRESS*	*POSTAL ADDRESS*
Royal Brisbane Hospital and District	Mr Wade Norrie A/Nurse Practice Manager Hospital	Ph: (07) 3253 8377 Fax: (07) 3253 1862	Royal Brisbane Hospital Alcohol, Tobacco and Other Drug Services (HADS) Herston Road HERSTON Q 4029	Royal Brisbane Hospital Herston Road HERSTON Q 4029
South Burnett	Ms Kathy Baker Co-ordinator	Ph: (07) 41 629 220 Fax: (07) 41 629 380	Kingaroy Alcohol, Tobacco and Other Drug Services 116 Youngman Street KINGAROY Q 4610	PO Box 333 KINGAROY Q 4610
Southern Downs District Health Service	Vacant Co-ordinator	Ph: (07) 46 716 627 Fax: (07) 46 712827	Goondiwindi Health Service Bowen Street GOONDIWINDI Q 4390	PO Box 399 GOONDIWINDI Q 4390
Southern Public Health Unit Network	Ms Natasha Van Bruggen Network Co-ordinator ATODS Prevention and Health Promotion	Ph: (07) 3810 1537 Mobile: 0404823697	West Moreton Public Health Unit, C/o Ipswich Hospital, Chelmsford Avenue IPSWICH Q 4305	PO Box 73 IPSWICH Q 4305
Sunshine Coast	Ms Margaret Pultz Co-ordinator	Ph: (07)5470 6869 Fax: (07) 5470 6178	Sunshine Coast Alcohol, Tobacco and Other Drug Services C/- Nambour General Hospital Hospital Road NAMBOUR Q 4560	C/- Nambour General Hospital PO Box 547 NAMBOUR Q 4560
The Prince Charles Hospital and District	Mr Mark Fairbairn Manager	Ph: (07) 3238 4022 Fax: (07) 3236 2397	The Prince Charles Hospital Alcohol and Drug Services 270 Roma Street BRISBANE Q 4000	PO Box 8161 BRISBANE Q 4001
The QEII Hospital and District	Ms Bernie O'Brien Manager	Ph: (07) 3844 9222 Fax: (07) 3846 3345	QEII Hospital Alcohol and Drug Service 66 Peel Street SOUTH BRISBANE Q 4101	66 Peel Street South Brisbane Q 4101
Toowoomba	Mr Stuart Churchill Manager	Ph: (07) 46 316 100 Fax: (07) 46 316 080	Toowoomba Alcohol, Tobacco & Other Drug Services Toowoomba Base Hospital TOOWOOMBA Q 4350	Private Bag Mail No 2 TOOWOOMBA Q 4350
Toowoomba	Mr Craig Nelson Coordinator	Ph: (07) 46 316 100 Fax: (07) 46 316 080	Toowoomba Alcohol, Tobacco & Other Drug Services 3 Bell Street TOOWOOMBA Q 4350	PO Box 1775 TOOWOOMBA Q 4350
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APPENDIX 1

COMORBID SUBSTANCE USE AND MENTAL HEALTH DISORDERS

As many as 60% of Australian outpatients with a serious mental illness such as schizophrenia may have a substance use disorder (Fowler et al., 1998), while the prevalence of substance abuse among people with mood, anxiety or personality disorders is also extremely high (Regier, 1990). The combination of the two disorders referred to as comorbidity or dual diagnosis, is included in this manual due to the frequency with which health care practitioners manage these patients in the community. (Refer to Davies, J. (2000) for comprehensive information regarding mental health issues in general practice).

There are many reasons for the common co-occurrence of substance abuse and mental illness, although the issue is complex and remains unclear. For many people, substance use may be normative in the context of adolescent experimentation however the psychoactive effect of the substance can interact with a biological vulnerability to trigger a psychotic episode (Hall, 1998). For others, the mental illness may precipitate the use of substances as a way to control symptoms of psychosis, dysthymia, depression or the side effects of prescribed anti-psychotic medication (Dixon et al., 1990 and 1991; Noordsy et al., 1991). It may also be true that the dopamine pathway dysregulation of the mental illness itself reinforces the use of substances by stimulating the dopamine reward pathways (Green, 1999). The cognitive deficits associated with some psychoses have also been implicated in the development of problematic substance use due to the person's compromised ability to make prudent judgements (Kavanagh, 1995).

Substances can trigger transient mental health disorders such as depression and anxiety in the context of alcohol or benzodiazepine withdrawal or a psychosis in the context of amphetamine or cannabis intoxication (Bell, 1973; Hall, 1988; Hall, 1998). The onset of enduring psychotic disorders such as schizophrenia may be linked to substance use, as the chemical changes in the brain produced by drugs such as LSD may represent the internal stressor or assault that triggers psychosis in vulnerable individuals.

The negative effects of substance use on those with mental illness are often profound and are frequently at odds with a person's expectation of that effect (Young, 1994). For example, while small doses of alcohol may help to relieve feelings of tension and anxiety, alcohol is associated with reduced effectiveness of anti-psychotic medication (Soni & Brownlee, 1991), impulsive behaviour, increased depression and more frequent suicide attempts among people with mental illness (Drake & Wallach, 1989). Similarly, although people expect a

euphoric effect from cannabis it often increases the positive symptoms of psychosis, such as paranoia, hallucinations and suspiciousness (Kavanagh, 1995). Psychostimulants such as amphetamines pose a particular risk for relapse of psychotic symptoms (Pandurangi, 1989).

The social costs of substance abuse incurred by the mentally ill can also be serious and include family dysfunction, homelessness, poverty, disrupted relationships and exclusion from services (Drake et al., 1989).

Despite the impact of substance abuse on outcomes in mental health treatment, services often miss cases due to inadequate screening procedures. When dual problems are detected, many people 'fall between the gaps' of traditional mental health and alcohol and drug services, or receive less than optimal care (Mueser et al., 1992). There is little research in the literature evaluating treatment outcomes (Kavanagh et al., 1999), however, people with both a mental illness and substance abuse can improve considerably following identification and treatment.

It is becoming increasingly more evident that an integration of interventions for substance abuse and any mental health disorder is critical to the optimal effectiveness of treatment for this population (Drake et al., 1993). Integrated interventions usually include (Jenner et al., 1998):

- ✓ comprehensive assessment for both mental health and substance use disorders
- ✓ determination of reasons for use of substances
- ✓ exploring expectancies of drug use
- ✓ education regarding substance effects
- ✓ monitoring mental health symptoms
- ✓ goal setting
- ✓ managing cravings
- ✓ alternatives to drug use
- ✓ psychiatric symptom management
- ✓ relapse prevention for both disorders.

In summary, the compromised resources of many sufferers of psychotic disorders leave them extremely vulnerable to the negative impact of substance abuse. Because psychotic symptoms tend to be exacerbated by emotional arousal, people with dual diagnosis are vulnerable to both the effects of problems generated by their substance use (eg. legal problems and loss of accommodation) and to the direct pharmacological effects of the substances on arousal. The overall effect is that this group tends to experience more severe problems from a lower level of substance use than does the general population.

If it is necessary to manage an ambulatory withdrawal in a patient with a mental health disorder, special attention should be paid to the possibility of exacerbation of psychiatric symptoms such as anxiety, depression or psychoses. For this reason it is recommended that if an ambulatory detoxification is the only available

option, monitoring of the patient's mental state is shared by the general practitioner and a mental health clinician or community nurse. In this context, case conferencing and care planning are highly recommended to improve both short and long-term outcomes for these patients (see Davies (2000), “Substance abuse” and “Working with mental health services”).

APPENDIX 2

GUIDE TO THE USE OF THE WHO CRITERIA FOR DEPENDENCE CHECKLIST

1. *Compulsion (Craving)*

2. *Impaired control*
   - Have you often found that when you start using (*substance*) you:
     - ended up using much more than you were planning to?
     - ended up using for much longer than you were planning to?
   - Have you tried to cut down or stop using (*substance*)?
     - If Yes, did you ever actually stop using (*substance*) altogether?
     - How many times did you try to cut down or stop altogether?

3. *Withdrawal*
   - Have you ever had any withdrawal symptoms (such as – *describe relevant symptoms for the substance*) when you cut down or stopped using (*substance*)?
   - What symptoms did you have?
   - Did you find yourself using (*substance*) to relieve withdrawal symptoms or stop yourself from getting them?

4. *Tolerance*
   - Have you found that you needed to use a lot more (*substance*) in order to get the feeling you wanted than you did when you first started using it?
   - Did you find that when you used the same amount, it had much less effect than before?

5. *Prioritisation of substance use (salience)*
   - Have you spent a lot of time obtaining or using (*substance*)?
   - Have you had times when you would use (*substance*) so often that you started to use (*substance*) instead of working, spending time with family or friends, or engaging in other important activities?
   - Establish if there are problems related to substance use
     - Did you keep on using anyway?

6. *Continued use despite harm*
   - Did you find yourself carrying on using (*substance*) when you knew it was harming you?

(adapted from Saunders, Dore and Young, 2001)

APPENDIX 3

PRE- AND POST-TEST COUNSELLING FOR BLOOD BORNE DISEASES

Should any testing for blood borne disease be undertaken it is important that pre- and post-test counselling is undertaken. The results of testing can have significant consequences for the individual and counselling can help the person to come to terms with the possible outcome.

Pre-test Counselling Check List

The following to be discussed and worked through by the medical officer and the patient (Department of Health, Housing and Community Services, 1992:69 & 88):

- what the test means
- what a positive result means in regard to
  - medical aspects including advantages of early intervention
  - psychological aspects
  - notification requirements
  - social aspects and the need for support to be in place
  - insurance aspects
- what a negative result means
- what are the guarantees of confidentiality?
- preventative aspects whatever the test results
  - safe sex practices
  - safe needle and syringe use
- how the results are obtained ie in person

Post-test counselling Check List

- giving the result
- negative results
  - what the result means
  - preventative aspects whatever the test means
    - [safe sex practices
    - [safe needle and syringe use
- positive result
- counselling needs (short term)

✓ health implications
✓ support and support groups
✓ rights limitations and obligations
✓ disclosure and notification requirements
✓ information for safe practice (safe sex and needle and syringe use)

Follow-up appointment

APPENDIX 4

SLEEP HYGIENE

Disturbed sleep patterns are a common occurrence during detoxification. Difficulty falling asleep, disturbing dreams or nightmares, night sweats, waking up during the night or early in the morning are some of the common complaints made by patients during detoxification. It may be some time before sleep patterns return to normal so it is important to institute routines that promote good sleep early in the withdrawal process.

Strategies to assist patients to re-establish restful sleep habits during detoxification:

- ensure a quiet environment in the ward area at least two hours prior to lights out
- having a set time for lights out to assist patients to begin settling
- dim lights in the ward area at least one hour prior to lights out
- discourage exercise, stimulating activities and TV viewing late in the evening
- discourage stimulants such as caffeine or cigarettes late at night – replace with hot drinks such as warm milk or chamomile tea
- encourage a relaxation group early in the evening
- encourage patients to tidy bed area before retiring
- discourage daytime napping unless the patient is unwell
- the use of benzodiazepines to aid sleep is to be avoided as rebound insomnia may occur. The use of an anti-histamine such as Cyproheptadine 4mg has been found to be helpful if given prior to the patient retiring.
- if the patient is unable to settle despite the above measures, allow the patient to quietly read or listen to relaxation tape/CD. Discourage pacing as this will only prolong the insomnia.
- ensure the patients rise early (before breakfast) everyday

Strategies for patients to employ to re-establish restful sleep habits during detoxification:

- go to bed only when you are actually sleepy
- do not exercise before bedtime. Exercise during the day to increase physical tiredness.
- do not use your bed for activities other than sleeping eg reading
- do not nap during the day
- do some form of relaxation before sleeping
- get up at the same time every morning regardless of how long you have slept. This will help your body to develop a regular sleep rhythm

- most of the thinking and worrying that we do in bed needs to be done, it just does not need to be done in bed. Take time earlier in the day for thinking and worrying.
- avoid stimulants such as caffeine or cigarettes late at night, and cut down on your caffeine consumption during the day. Hot drinks such as warm milk and chamomile tea can help put you to sleep.