



Saskatchewan  
Ministry of  
Health



Saskatchewan College of  
Family Physicians



**CONCURRENT DISORDERS**

**AND**

**WITHDRAWAL MANAGEMENT**

**PROTOCOLS/GUIDELINES AND SERVICES**



Updated by the Addictions Medical Advisory Committee

February 2008



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Document Feedback Form

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1. Did you find the information useful?

Concurrent Disorders	Yes	_____
	Somewhat	_____
	Not at all	_____

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	Somewhat	_____
	Not at all	_____

2. Is there any information not in the document that you would have found useful to your practice?

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3. Do you have any suggestions for the committee regarding future projects?

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***Thank You!***

# **Concurrent Disorders**

## **Treatment of Co-Occuring Mental Illness and Addictive Disorders**

Compiled by the Addictions Medical Advisory Committee  
December 2004

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## Overview

Data from numerous studies indicate that the presence of comorbid mental illnesses and substance use disorders is a common occurrence. The NIMH's Epidemiological Catchment Area study conducted within the USA's general population in the early 1980s revealed that 45% of individuals with an alcohol use disorder and 72% of those with a drug use disorder had one or more co-occurring psychiatric disorders. Other studies of mental health and substance abuse treatment settings have revealed prevalence rates of 40-60% for substance use disorders in subjects presenting with a mental disorder.

Numerous factors can make the identification and successful treatment of these individuals difficult including symptom overlap between the disorders, finite treatment resources, treatment non-compliance, attitudinal barriers such as pessimism about outcomes, and the perception amongst many health care providers that they are ill-prepared or lack the expertise to treat this population. Scientific work in the area is now proceeding with increased enthusiasm, however a number of the clinical approaches presently in practice (such as specific pharmacological choices for particular combinations of mental illness and substance use disorders) have yet to be systematically examined in clinical trials. Despite these limitations, the treatment of patients with Concurrent Disorders remains important due to the increase in negative outcomes for both the psychiatric illness and the addictive disorder when they co-occur. These individuals, if untreated, are at greater risk for medical comorbidity (hepatitis, HIV, liver disease, etc.), relapse, hospitalization, suicide, violence, criminal involvement, financial difficulties, loss of family/friends and related psychosocial problems. Significant costs are incurred both emotionally and financially by the individual, family and society. It is for all these reasons that this brief "guide to the emerging Treatment Principles for Concurrent Disorders" has been prepared at this time. It should be viewed as an introduction to the evolving "clinical approach" that is being employed in addressing the treatment of people with co-occurring substance use and mental disorders.

Health Canada's document, "Best Practices Concurrent Mental Health and Substance Use Disorders", supports an "integrated approach" to the treatment of Concurrent Disorders. An integrated program/system will have linkages between its facilities and service providers so that effective interventions can be planned and implemented in a coordinated and concurrent fashion. Practically, a "bio-psycho-social-spiritual" model has been adopted so that a holistic and balanced approach is maintained within the assessment and treatment phases of service delivery. A "harm reduction" focus is emphasized, with initial goals that may include a decrease in usage of abused substances, and abstinence for substance dependent patients as an ultimate/long term goal. Non-confrontational and empathic approaches assist in establishing therapeutic alliance that in turn may lead to improved outcomes. The care provider and the affected individual need to view recovery as a process, not an event, with treatment approaches tailored to the appropriate stage of change the patient is at. Prochaska and DiClemente have outlined a six "Stages of Change" model that characterizes patients' recovery from "precontemplative" through to "maintenance" phases. Treatment providers need to be mindful that with change being a sometimes drawn out process, patient resistance is very often a part of the process that they will have to adapt to. Most importantly, health care providers must expect relapse to occur. With the attitude that "relapse is a part of recovery", it can be viewed as a learning opportunity versus a treatment failure. Success often depends on the acceptance, continuity and accessibility of service providers and keeping the patient engaged in treatment regardless of their stage in the recovery process.

The remainder of this guide will highlight some of the more important aspects of the *Assessment, Treatment Setting, Non-pharmacological Treatment, and Pharmacological Treatment* of individuals with Concurrent Disorders.

## Assessment

“Best Practices” for Concurrent Disorders recommends that all individuals seeking help from mental health treatment services be screened for co-occurring Substance Use Disorders, and that all people seeking help from substance abuse treatment services be screened for co-occurring Mental Illness. The purpose of screening is not to make a definitive diagnosis or develop a comprehensive psychosocial needs assessment, but to identify which individuals require further comprehensive assessment.

### Screening for Substance Use Disorders

1. Index of Suspicion: a checklist of clinical, behavioural and social indicators that raise suspicion for a substance use disorder. This may include housing instability, difficulty budgeting resources, social problems, legal problems, employment difficulties, cognitive impairments, violence, suicide ideation and/or attempts.
2. Asking a few questions: Have you had problems related to alcohol or drug use? Have others (friends, relatives, health workers) ever been concerned about your use? Have you ever said to another person “I don’t have a problem” when you actually questioned yourself that you may.
3. Brief Screening Instrument: CAGE questionnaire
4. Case Manager Judgment: in mental health settings where the treatment provider has maintained contact with the patient over a period of weeks-years, their judgment as to whether the individual has definitely or probably “had a drinking or other drug problem” may be one of the best predictors.
5. “Level 2” screening procedures require additional time and effort, but instruments such as the Michigan Alcoholism Screening Test (MAST), Drug Abuse Screening Test (DAST) and Alcohol Use Disorders Identification Test (AUDIT) are easy to administer and available within the public domain.

### Screening for Mental Health Disorders

1. Index of Suspicion: a simple ABC approach to conducting a mental status exam can reveal the behavioural, clinical and social indicators of a possible mental illness.
  - a. **A**pppearance, **A**lertness, **A**ffect (mood), **A**nxiety
  - b. **B**ehaviour: movements, purpose, organization, speech
  - c. **C**ognition: orientation, calculation, reasoning, coherence (including incoherent ideas, hallucinations and delusions)
2. Asking a few questions: Have you ever been given a mental health diagnosis by a qualified professional? Have you ever been hospitalized for a mental health related illness? Have you ever harmed yourself or thought of harming yourself, but not as a direct result of alcohol or drug use?

3. A need still exists for the development of a brief “Level 2” screening instrument; however among current alternatives in the public domain the best practice recommendation is utilization of the psychiatric sub-scale of the Addiction Severity Index (ASI).

It is anticipated that in the near future a self-administered, computer assisted instrument called the “CAMH Concurrent Disorders Screener” will be available for dissemination with the purpose of being able to screen for both substance use and mental health problems.

### **General Assessment Issues**

Individuals with a positive screen for Concurrent Disorders require comprehensive assessments that will assist to:

- (a) establish diagnoses
- (b) assess “stage of change” and treatment motivation
- (c) assess level of psychosocial functioning and other disorder-specific factors
- (d) develop a treatment plan

Suggestions to improve the reliability and accuracy of self-reported information by people with Concurrent Disorders during assessments include:

1. Utilization of multiple sources of information.
2. Conducting the assessment over more than one interview, and utilizing multiple assessment methods. It should be seen as on an ongoing process that requires regular revisiting.
3. Multiple assessments should include periods of abstinence (or significantly reduced substance use) where possible.
4. Establishment of good rapport prior to asking for excessive details.
5. Utilization of simple and direct questions that contain clearly defined time frames (where relevant).
6. Questions framed in a manner to normalize varying substance use patterns (e.g. Many people have experimented with...have you had experiences with...?).

Assessments by Addictions Counselors (through regional offices), ancillary investigations such as toxicology screens, other laboratory tests and imaging studies, and referrals to mental health specialists may need to be considered at various phases of the assessment and recovery process for individuals in whom there is a high index of suspicion for concurrent mental illness and substance use disorder.

## General Assessment Issues cont'd

Whether the mental illness and substance use disorder are linked in a causal fashion can be difficult if not impossible to determine for many individuals with Concurrent Disorders. Factors suggesting an increased likelihood of a “true” versus substance-induced psychiatric disorder include:

1. A family history of mental illness.
2. Onset of psychiatric symptoms predating establishment of the substance use disorder.
3. The presence (or worsening) of psychiatric symptoms during periods of abstinence.

In the absence of clear evidence for either the mental illness or substance use disorder having been induced by the other; both conditions should be treated as primary disorders.

## Stages of Change and Treatment Motivation

The following descriptions and diagram depict the stages of change patients will cycle back and forth through during the recovery process. Patients' motivational attitudes and physician/care providers' tasks at each stage in the recovery process are highlighted within this “wheel of change”.

**Pre-contemplation:** the stage at which there is no intention to change behaviour in the foreseeable future.

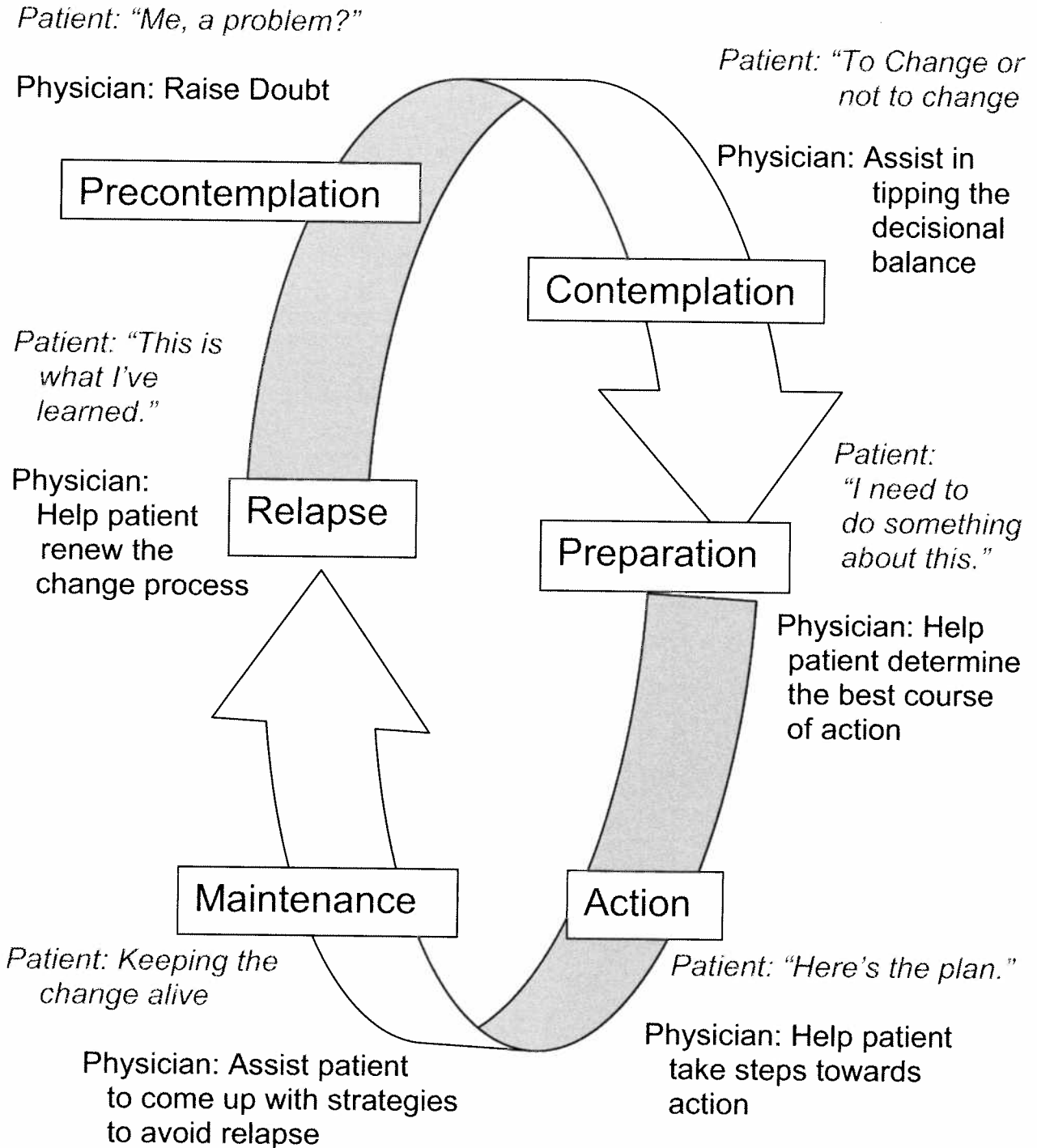
**Contemplation:** the stage in which people are aware that a problem exists and are thinking about overcoming it, but have not made the commitment to take action.

**Preparation:** there is intention to take action, but lack of success in taking action during the past year.

**Action:** stage in which individuals are modifying their behaviour, environment and/or experiences in order to overcome their problems.

**Maintenance:** stage during which individuals work to prevent relapse and consolidate prior gains.

Stages of Change Model & Motivational Interviewing Strategies



## Treatment Setting & Non-pharmacological Treatment

The treatment of both psychiatric and addictive disorders occurs in outpatient settings for the majority of affected individuals. However for more severely affected people or those suffering with potentially serious medical consequences of their illnesses there may be a need for more intensive treatment in a residential or inpatient setting.

Examples of treatment resources for individuals with concurrent mental illness and substance use disorders include:

### 1. Hospital Inpatient Treatment:

- a. Medical unit – for complicated substance intoxication or withdrawal states, and/or serious physical comorbidity associated with either the substance use disorder or mental illness.
- b. Psychiatric unit – for individuals with severe and acute mental illness that may/may not also require concurrent detoxification. This includes floridly psychotic, suicidal or potentially violent patients. Some patients may rarely require involuntary detention as guided by the Mental Health Services Act.

### 2. Residential Treatment:

- a. Detoxification – community facilities\* that normally are not staffed 24 hours/day by nursing or medical staff. Supportive treatment, periodic medical review and initial education are provided in a safe environment usually over a period of 7-14 days to individuals likely to suffer from withdrawal syndromes.
- b. Rehabilitation programs\* – longer term “active” residential treatment provided over a period of 2-12 weeks (average 4 weeks) to individuals no longer at risk for serious withdrawal syndromes. Focus is on education, skills acquisition, relapse prevention, stress management, motivational assessment processes and future treatment planning.

\*Refer to the appendix for a list of Saskatchewan facilities.

### 3. Outpatient Treatment:



- a. Addiction Services – regional offices provide some or all of the following services: Substance Abuse screening, Individual and Group Programs, Relapse Education, treatment for Problem Gambling, Safe Driving programs for impaired drivers, Adolescent services, Adult Family groups, Day program, and Dual Diagnosis (CD) counseling.
- b. 12 Step Programs – AA, NA, GA, etc.
- c. Medical offices – treatment provided by general practitioners, family physicians and psychiatrists in the community.
- d. Private Counselors – psychologists, social workers, addictions counselors, etc.
- e. Mental Health Services – regional offices may offer a variety of individual and group treatment services for individuals with psychiatric disorders through either regularly scheduled appointments/groups or day programs.
- f. Support Programs – the Schizophrenia Society and Mood Disorder groups are examples of consumer driven programs developed to assist individuals and their families recover from the effects of mental illness.



## Psychotherapeutic Treatment Modalities

1. Psycho education – more structured and content focused. Includes information on diagnoses, available treatments, prognosis, coping skills, and services available in the event of a crisis.
2. Motivational Interviewing
3. Cognitive Behavioural Therapy
4. Relapse Prevention
5. Twelve Step and Self-Help programs

Both individual and group approaches are successfully utilized with these treatment modalities, and there is commonly a need for additional Case Management and Family Therapy approaches.



## Pharmacological Treatment

The following general principles may guide the use of appropriate pharmacotherapy in individuals with Concurrent Disorders. The subsequent sections address recommendations for specific diagnostic categories.

1. Medications should be initiated and maintained for individuals with “serious and persistent mental illnesses” (SPMI) regardless of continuing substance use.
2. Pharmacotherapy can be considered for “psychiatrically complicated” individuals not responding to other measures.
3. Pharmacotherapy should always be accompanied by appropriate non-medication treatment strategies.
4. Interactions between prescribed and non-prescribed drugs need to be considered.
5. Attempts should be made to avoid the prescription of other drugs of dependence unless they are used for the treatment of an acute withdrawal syndrome or in the context of a harm reduction strategy (such as methadone maintenance treatment).
6. Pharmacotherapy could involve the use of specific “anti-craving” medications (such as naltrexone for either alcohol or opioid dependence).
7. The use of medications in Concurrent Disorders is not an absolute science (i.e. no fixed rules). Therefore the “artful” utilization of medication strategies is often required to promote optimal outcome of both disorders.
8. The use of pharmacotherapy in Concurrent Disorders involves an ongoing clinical relationship between physician and patient.
9. Continuous re-evaluation of diagnoses and the treatment plan is required.

## Depressive Disorders

1. Any individual who suffers from an "Affective Illness," such as Major Depressive Disorder or Bipolar Disorder, and also experiences psychotic symptoms as a feature of the mood episode while having been abstinent from drugs, should be treated as having a "Serious and Persistent Mental Illness" (SPMI).
2. The question of whether depression or substance abuse came first can be problematic, but should not delay treatment of either. Women more commonly than men will drink in response to a primary depressive disorder.
3. Long term use of stimulants, benzodiazepines, opiates, alcohol and possibly cannabis has been implicated in causing and/or aggravating depression.
4. If possible assess for symptoms of the mental illness in an "alcohol and drug free setting".
5. Moderate to severe and/or unresolved depression (with cessation of substance use) is a suggestive indication for the use of antidepressant medication.
6. No specific category of antidepressants is recommended over the others; however SSRIs, venlafaxine, mirtazapine and bupropion are considered better tolerated and safer medications due to the lowered risk of fatal overdose, reduced side effects, fewer drug interactions and ease of use.
7. Avoid the use of potentially addictive medications such as benzodiazepines during maintenance treatment.
8. Anticraving medications (naltrexone), methadone or buprenorphine (expected to be available late 2005 in Canada) can be utilized for the treatment of substance dependence in individuals also suffering from depression.

## Psychotic Disorders & SPMI

1. This category includes illnesses such as Schizophrenia, Schizoaffective Disorder and other chronic psychotic illnesses. Episodes of depression and mania may also be characterized by psychotic symptoms such as hallucinations, delusional beliefs and disorganized thought processes and behaviour. This would support treatment of the psychiatric condition along the lines of the general principles for “Serious and Persistent Mental Illnesses” (SPMI).
2. Substance misuse (especially cannabis, hallucinogens and stimulants) can precipitate or exacerbate symptoms in individuals predisposed to or affected by SPMI.
3. Access to social support, psychosocial rehabilitation, housing support depending on level of disability, and continuing case management with an individual clinician, community nurse or case management team, is often necessary.
4. Stabilization of mental illness may require voluntary (or involuntary) treatment in hospital.
5. Regardless of continuing substance use, these patients will require continued prescription of non-addictive medications for treatment of the mental illness.
6. Antipsychotic medications are usually required early in the treatment of psychotic illnesses, with indefinite maintenance therapy indicated for those with chronic or persistent illnesses. Atypical (second generation) antipsychotics such as clozapine, risperidone, olanzapine and quetiapine are considered first line choices, with initial studies showing that clozapine in particular may have a direct effect on the reduction of substance abuse. Mood stabilizers and antidepressants are useful adjuncts when symptom presentation dictates enhanced control of mood instability or depression. Benzodiazepines may assist in the attenuation of excessive agitation during acute episodes, but the potential for physiological dependence and misuse usually precludes their use in the long term.
7. The setting for substance detoxification will depend on the level of mental illness disability and symptom presentation. Inpatient or residential/social detox will need to be considered.
8. Participation in an abstinence oriented addictions program is encouraged, but abstinence should not be a mandated condition of treatment. Harm reduction interventions are to be promoted during the “motivational process”, and should include families and collateral supports.
9. Prescription medications for the treatment of addictions (including methadone) may be appropriate as indicated.
10. Dual Recovery and Rehabilitation Programs (that may be incorporated into mental health settings) are recommended if available. However, participation in community addictions recovery and maintenance programs such as 12 Step groups (AA, NA, etc.) at the patient's capacity level is encouraged.

## Bipolar Disorders

1. Bipolar Disorder-Type I is characterized by the presence of manic episodes that often include psychotic symptoms. Hospitalization for acute stabilization of mental illness is frequently necessary, and a chronic relapsing and remitting course is usually seen (although some individuals will experience progressive decline in their symptom presentation and level of functioning similar to Schizophrenia). Type I Bipolar Disorder is considered a SPMI that when co-occurring with substance abuse merits continued treatment of the condition with medications and addictions recovery programs regardless of whether abstinence is achieved. *In general treatment approaches are similar to the recommendations for Psychotic Disorders and SPMI, with emphasis on the use of mood stabilizers.*
2. A significant population of individuals with Bipolar Disorder responds best to lithium. However those with rapid cycling, Bipolar Type II (episodic depression and hypomania-without psychotic features), or atypical presentations may respond preferentially to the anticonvulsant category of mood stabilizers such as divalproex and lamotrigine. Studies with atypical antipsychotics such as olanzapine are also showing efficacy for Bipolar Disorder.

## Anxiety Disorders

This category of psychiatric illnesses includes Panic Disorder, Generalized Anxiety Disorder, Social Phobia, Obsessive Compulsive Disorder, Acute Stress Disorder and Posttraumatic Stress Disorder. The association between anxiety disorders and substance use disorder varies considerably, however there appears to be significant overlap for PTSD and the phobic conditions (panic disorder with agoraphobia and social phobia in particular).

1. Anxiety disorders are frequently complicated by other mental illnesses (such as depression) that need to be screened for, and they are often accompanied by “self-medication” with substances.
2. Psychoactive substance use and withdrawal can produce many signs/symptoms resembling an anxiety disorder that may hamper or delay appropriate assessment and treatment.
3. With the exception of PTSD, appropriate sequencing of the interventions for mood and anxiety symptoms in substance affected individuals suggests that the substance-related problems be addressed first. With PTSD a fully concurrent (as opposed to sequenced) treatment approach within an integrated model is recommended.
4. If this sequenced approach is unsuccessful or if features of an anxiety disorder persist despite abstinence from substances, then pharmacotherapy may be appropriate. Management utilizing behavioural and/or cognitive approaches is almost always indicated.
5. SSRIs and venlafaxine are considered first line treatments for individuals with various anxiety disorders, while buspirone may attenuate the symptoms of Generalized Anxiety Disorder specifically.
6. Long term use of benzodiazepines is rarely indicated, and in addition to the potential for physiological tolerance and abuse, there is an increased risk of fatal overdose when taken with alcohol and/or opiates.
7. Anticraving therapies, methadone and buprenorphine can all be considered to treat substance dependence in people with co-occurring anxiety disorders.

## Substance Dependence

A number of medications have been investigated for possible treatment of Alcohol and Drug Dependence syndromes, however very few have demonstrated safety and efficacy profiles that resulted in approval for this use. While a small number of studies have suggested potential benefits with psychotropic medications such as fluoxetine, clozapine and topiramate, only the following medications are currently indicated for the treatment of Substance Dependence syndromes (excluding Nicotine Dependence):

1. *Disulfiram* – approved for Alcohol Dependence due to its effects as a “deterrent to alcohol use/abuse” through the production of a highly unpleasant reaction when even a small amount of alcohol is ingested. The dosage range is 125-500 mg/day, however very few formularies and pharmacies continue to stock this medication. It may be a poor choice in psychotic and/or depressed individuals, and therefore is of limited value when treating people with Concurrent Disorders.
2. *Naltrexone* – approved as an adjunct in the treatment of Alcohol Dependence (doses of 50 mg/day) and Opioid Addiction (doses of up to 350 mg/wk). The mechanism of action involves the blocking of “cravings”, producing less of a high/euphoria which serves to lessen the reinforcing effect of alcohol thereby promoting abstinence and reducing risk for relapse. Due to its opiate antagonism it should not be given to individuals who have used narcotics within the last 10 days. Other cautions include concomitant use with chlorpromazine, liver disease, and individuals requiring surgery.
3. *Methadone* – a long acting synthetic opiate approved as “substitution therapy” for severe Opioid Dependence. As one component of a “harm reduction strategy”; its usage, prescription and administration is governed by federal regulations and provincial guidelines.
4. *Buprenorphine* – an opioid partial agonist that has recently been released in the USA for the treatment of Opioid Dependence. Future release in Canada will be subject to the following:
  - A. Supervised daily dosing by a Health Care Professional.
  - B. Training prescribed for physicians.
  - C. Maintenance of a list of trained physicians.

It is recommended that you check with the College of Physicians and Surgeons of Saskatchewan to determine if there are any additional requirements.

## References & Resources

This resource list has been selected with the intent that the user will find practical information that complements and expands upon the principles laid out in the preceding pages. In particular, the material available through the PARC website (ref 2.) reviews Concurrent Disorders treatment options in greater detail, while the SHR website (ref 7.) provides information on local resources.

Best Practices Concurrent Mental Health and Substance Use Disorders; Health Canada (a 2001 publication available at no cost through Publications, Health Canada)

Comorbidity of mental disorders and substance abuse: A brief guide for the primary care clinician; Primary Mental Health Care Australian Resource Centre (a 2002 publication available for electronic download via the PARC website – <http://som.flinders.edu.au/FUSA/PARC/comorbidhome.html>)

DSM-IV; American Psychiatric Association (the most accepted diagnostic and statistical manual for mental disorders in North America)

Minkoff, K. (2000). An Integrated Model for the Management of Co-occurring Psychiatric and Substance Disorders in Managed Care Systems. Disease Management & Health Outcomes, 8:250-7

Motivational Interviewing: Preparing People to Change, 2<sup>nd</sup> Edition; Miller, WR & Rollnick, S. (2002)

Saskatoon Health Region website (contains educational material on addictions including information on Calder Centre, Larson House, Community Outpatient Services, and Resources for Professionals) – [www.saskatoonhealthregion.ca/your\\_health/ps\\_addic\\_about.htm](http://www.saskatoonhealthregion.ca/your_health/ps_addic_about.htm)

The Rx Files; Pharmacy Department, Saskatoon City Hospital – [www.RxFiles.ca](http://www.RxFiles.ca)



# **Withdrawal Management**

## **Protocols/Guidelines and Services**



**Compiled by the Addictions Medical Advisory Committee  
Updated December 2004**







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## Introduction

The following are the general treatment guidelines and suggested withdrawal management protocols for alcohol, benzodiazepines, opiates and cocaine. This document is meant to serve as a reference for physicians' use in treating detoxification resulting from chronic substance use.

These guidelines should be implemented only after appropriate clinical assessment has taken place including history, physical examination, laboratory investigations and toxicology screens. One should be cautioned that the history regarding the substance(s) used may not always be accurate. Once stabilised, patients are encouraged to attend local Alcohol and Drug Services (Please refer to Appendix D).

The protocols have been developed by the Addictions Medicine Advisory Committee, the members of which represent Family Medicine, Pharmacology, Psychiatry, Saskatchewan Health and Alcohol and Drug Services across the province. This committee was established in 1997 in order to fulfill an obligation to clients to keep current in the medical aspects of chemical dependency and to begin to establish medical protocols/guidelines in chemical dependency treatment. In addition, this committee acts as a consultative resource for health districts and health professionals.

## Definitions

***Substance Withdrawal:*** *The signs and symptoms experienced when the use of a substance is ceased. These tend to be the opposite of the effects of the drug itself.*

***Treatment Context / Setting:*** *Guidelines for treatment within the following treatment settings will be referred to throughout this document.*

- **Outpatient** - indicated when there is good family support or other support systems in place.
- **Residential Social (Non-hospital) Detoxification Program** - indicated for individuals with an inadequate support system.
- **Brief Detoxification Program** – a safe environment for intoxicated adults to recover from drug/alcohol use. Clients are monitored 24 hours per day and can stay for up to 48 hours as required.
- **Inpatient Medical** - indicated where medical complications are present or anticipated.
- **Inpatient Psychiatric** - indicated for individuals with concurrent unstable psychiatric disorders.
- **Residential Treatment** – provides delivery of addiction treatment services with 24/7 support in a residential environment.

# 1. Alcohol

## 1.1 Alcohol Withdrawal Symptoms

Withdrawal Status	Signs and Symptoms
<b>Stage I</b> <b>Mild Withdrawal</b>	<ul style="list-style-type: none"> <li>• Slight tremors</li> <li>• Sweating</li> <li>• Feelings of apprehension</li> <li>• Slight increase in heart rate, blood pressure and respiration</li> <li>• Decreased appetite</li> </ul>
<b>Stage II</b> <b>Moderate Withdrawal</b>	<ul style="list-style-type: none"> <li>• Coarse tremor</li> <li>• Increased heart rate, blood pressure and respiration</li> <li>• Sweating</li> <li>• Gastrointestinal tract distress</li> <li>• Agitation</li> <li>• Insomnia</li> </ul>
<b>Stage III</b> <b>Severe Withdrawal</b>	<ul style="list-style-type: none"> <li>• Marked agitation</li> <li>• Tremor</li> <li>• Elevation of vital signs and autonomic activity</li> <li>• Alcoholic hallucinosis</li> <li>• Seizures</li> <li>• Insomnia</li> <li>• Sensory distortion</li> </ul>
<b>Stage IV</b> <b>Acute Medical</b>	<ul style="list-style-type: none"> <li>• Uncontrollable agitation</li> <li>• Gross tremulousness</li> <li>• Anxiety</li> <li>• Severe autonomic activity</li> <li>• Disorientation, delirium</li> <li>• Seizures</li> <li>• Delirium tremens</li> <li>• Death</li> </ul>

*\*Based on information provided by, and used with the permission of, the Province of Nova Scotia "Treatment and Rehabilitation Manual."*

**ADDICTION RESEARCH FOUNDATION CLINICAL INSTITUTE WITHDRAWAL ASSESSMENT FOR ALCOHOL**

Patient: \_\_\_\_\_ Date \_\_\_\_\_ Time: \_\_\_\_\_ (24 hr)

Pulse or heart rate, taken for one minute: \_\_\_\_\_ Blood pressure: \_\_\_\_\_

<p style="text-align: center;"><b>Nausea and Vomiting:</b></p> <p>Ask "Do you feel sick to your stomach? Have you vomited?"</p> <p>Observation:</p> <p>0 no nausea and no vomiting          1 mild nausea with no vomiting          2          3          4 intermittent nausea with dry heaves          5          6          7 constant nausea, frequent dry heaves and vomiting</p>	<p style="text-align: center;"><b>Tactile disturbances</b></p> <p>Ask "have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin?"</p> <p>Observation:</p> <p>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</p>
<p style="text-align: center;"><b>Tremor</b></p> <p>Arms extended and fingers spread apart.</p> <p>Observation:</p> <p>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</p>	<p style="text-align: center;"><b>Auditory disturbances</b></p> <p>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?"</p> <p>Observation:</p> <p>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</p>
<p style="text-align: center;"><b>Paroxysmal Sweats</b></p> <p>Observation:</p> <p>0 no sweat visible          1 barely perceptible sweating, palms moist          2          3          4 beads of sweat obvious on forehead          5          6          7 drenching sweats</p>	<p style="text-align: center;"><b>Visual Disturbances</b></p> <p>Ask, "Does the light appear to be too bright? Is its color different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?"</p> <p>Observation:</p> <p>0 not present          1 very mild sensitivity          2 mild sensitivity          3 moderate sensitivity          4 moderately severe hallucinations          5 severe hallucinations          6 extremely severe hallucinations          7 continuous hallucinations</p>
<p style="text-align: center;"><b>Anxiety</b></p> <p>Observation:</p> <p>0 no anxiety          1 mild 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</p>	<p style="text-align: center;"><b>Headache, fullness in head</b></p> <p>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.</p> <p>0 not present          1 very mild          2 mild          3 moderate          4 moderately severe          5 severe          6 very severe          7 extremely severe</p>
<p style="text-align: center;"><b>Agitation</b></p> <p>Observation:</p> <p>0 normal 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</p>	<p style="text-align: center;"><b>Orientation and clouding of sensorium</b></p> <p>Ask, "What day is this? Where are you? Who am I?"</p> <p>0 oriented and can do serial additions          1 cannot do serial additions or is uncertain about date          2 disoriented for date by no more than 2 calendar days          3 disoriented for date by more than 2 calendar days          4 disoriented for place/or person</p>

Total: CIWA-Ar Score \_\_\_\_\_ Rater's Initials \_\_\_\_\_ Maximum possible score: 67. The maximum score is 67 (see instrument). Patients scoring less than 10 do not usually need additional medication for withdrawal.

## 1.2 Management of Alcohol Withdrawal

### Protocol

#### I. *Benzodiazepines*

##### Indications

- May be used during any withdrawal phase, as required. Caution should be exercised with repeated use due to the frequency of poly-substance abuse.

**Note: Benzodiazepines may potentiate respiratory depression produced by alcohol, barbiturates and opiates. DO NOT COMMENCE within 12 hours of the last drink. Use up to 7 days.**

##### a) *Diazepam - Drug of choice*

##### Advantages

- Long half-life
- Rapid absorption
- Small dosage numbers
- Wide use - most family physicians are familiar with it
- Anti-seizure effects
- Can be used alone

##### Dosage

##### Outpatient

- Diazepam - patient weight: 76 kgs or less, 20 mgs per hour po for the first 3 hours  
76 to 90 kgs, 20 mgs per hour po for the first 4 hours  
over 90 kgs, 20 mgs per hour po for the first 5 hours

**N.B. This is the maximum recommended dosage.**

##### Residential Social Detoxification

- Diazepam - exactly the same as Outpatient protocol. Other anti-convulsants are generally not necessary.

##### Inpatient Medical

- Diazepam - 0.1 mg per kg IV, give the first dose slowly over 3 to 5 minutes.
- Then give 5 to 10 mg IV q 1 hr prn, reverting to oral recommendations as above.
- Treat GI symptoms as necessary.

##### Inpatient Psychiatric

- Diazepam - 10 to 20 mgs po q 1-2 hrs prn [HR >100 and diastolic B/P >100 are often used as objective measures of withdrawal].



## I. Benzodiazepines (con't)



b) **Lorazepam** - *Drug of second choice*

**Advantages**

- Multiple routes of administration
- Ease of administration
- Speed of onset
- Useful in elderly and in hepatic complications
- Dosage of lorazepam would be approximately 0.2 x that of diazepam

c) **Chlordiazepoxide** - *Drug of third choice*

**Aspects**

- Variable absorption
  - Dosage of chlordiazepoxide would be approximately 2 x that of diazepam
- 
- 

## II. Beta Blockers

### Indications

- Used in Stage II through Stage IV for tremors and tachycardia.
- Tend to be used in conjunction with benzodiazepines.

#### a) *Atenolol*

### Advantages

- Has been shown to have advantages over other beta-blockers in alcohol withdrawal treatment.

### Contraindications

- Congestive heart failure, diabetes and asthma **must** be ruled out.

### Dosage

#### Outpatient

- Atenolol - 50 mg po od for 7 days.

#### Residential Social Detox

- Atenolol - 50 mg po od for 7 days.

#### Inpatient Medical

- Propranolol - 1 mg IM or IV can be administered every 15 minutes up to a maximum of 4 mg during the Acute Medical Stage. **Vital signs must be monitored.** Switch back to oral atenolol as soon as possible if a beta-blocker still needed.

#### Inpatient Psychiatric

- Beta-blockers - same protocol as Inpatient Medical.



### III. Neuroleptics (Major Tranquilizers)

#### Indications

- For treatment of anticipated Stage III and Stage IV symptoms of alcohol withdrawal.
- Used in conjunction with benzodiazepines.

#### a) *Haloperidol*

#### Advantages


- Does not lower the seizure threshold as much as other neuroleptics have been shown to do

#### Disadvantages


- Potential extrapyramidal side effects
- Dystonia
- These can usually be reversed with Cogentin® or Benadryl® respectively

#### *Dosage*

#### Inpatient Medical

- 
- Haloperidol - 2 to 10 mg q 12 h po IM or IV.
  - May be combined with benzodiazepines.

#### Inpatient Psychiatric

- 
- Same as Inpatient Medical.
  - Other psychiatric medications as indicated.

## **IV. Nutrition and Hydration**

Make sure independent assessment is completed by health care personnel.

### **Outpatient**

- Multi-vitamins.
- Thiamine 100 mg po od.

### **Residential Social Detoxification**

- Multi-vitamins.
- Thiamine 100 mg po od.

### **Inpatient Medical**

- IV fluid as indicated.
- Glucose 25 g IV prn .
- Multi-vitamins.
- Thiamine 100 mg IV or po od.

### **Inpatient psychiatric**

- Same as Inpatient Medical.
- Thiamine 100 mg IV or IM x1, then 100 mg po od.

## 2. Benzodiazepines

### 2.1 High Dose Benzodiazepine Withdrawal Signs and Symptoms

Withdrawal Status	Signs and Symptoms
<b>Stage I</b> <b>Minor Withdrawal</b>	<ul style="list-style-type: none"> <li>• Anxiety</li> <li>• Insomnia</li> <li>• Tremor of the hands and fingers</li> <li>• Dilated pupils</li> <li>• Progressive weakness</li> <li>• Dizziness</li> <li>• Visual illusions</li> <li>• Nausea/vomiting</li> <li>• Weight loss</li> <li>• Orthostatic hypertension</li> </ul>
<b>Stage II</b> <b>Major Withdrawal</b>	<ul style="list-style-type: none"> <li>• Tonic clonic seizures</li> <li>• Delirium</li> <li>• Confusion</li> <li>• Disorientation</li> <li>• Agitation</li> <li>• Markedly elevated vital signs</li> <li>• Visual hallucinations</li> </ul>

*\*Based on information provided by, and used with the permission of, the Province of Nova Scotia  
 "Treatment and Rehabilitation Manual*

## 2.2 Management of Benzodiazepine Withdrawal

### Protocol

- If the patient is using short half-life benzodiazepines (see conversion table page 12), switch to long half-life benzodiazepines (diazepam) and withdraw slowly (decrease by 10% of the dose per week or every other week).
- For example: If a patient is using alprazolam at 5 mg per day then begin with diazepam at 50 mg per day (10 x 5 mg : conversion factor times daily dose) and reduce by 5 mg per day for the next 1 - 2 weeks, then 4 - 5 mgs per day for 1 to 2 weeks and so on with 10% stepped reductions. At 15 mgs per day decrease at 1 mg per day for 1 to 2 weeks until finished.
- Most patients will have difficulty controlling their use. Dispense weekly, or, if the pharmacist and patient are willing, every one to three days to provide a measure of external control.
- Highly motivated individuals could be withdrawn more rapidly once converted to a diazepam equivalent regimen.

## Diazepam Conversion Table

<b>DRUG NAME (®originator)</b>	<b>ACTIVE METABOLITES</b>	<b>PLASMA HALF-LIFE (Hours)</b>	<b>TOTAL HALF-LIFE (A) (Hours)</b>	<b>DIAZEPAM CONVERSION FACTOR (B)</b>
alprazolam ®Xanax	yes	10 to 14	20 to 28	10
bromazepam ®Lectopam	no	8 to 19	8 to 19	1.67
chlordiazepoxide ®Librium	yes	7 to 13	85 to 185	0.5
clobazam ®Frisium	yes	10 to 30	45 to 75	0.5
clonazepam ®Rivotril	no	18 to 28	18 to 28	5
clorazepate ®Tranxene	yes	1 to 3	45 to 115	0.66
diazepam ®Valium	yes	30 to 56	75 to 170	1
flumazenil ®Anexate (C)	no	1 (i.v.)	1	n.a.
flurazepam ®Dalmane	yes	first pass	50 to 100	0.33
lorazepam ®Ativan	no	9 to 19	9 to 19	5
nitrazepam ®Mogadon	no	23 to 29	23 to 29	1
oxazepam ®Serax	no	6 to 10	6 to 10	0.33
temazepam ®Restoril	no	5 to 17	5 to 17	0.33
triazolam ®Halcion	no	2 to 4	2 to 4	20

**(A) elimination half-life of parent drug plus half-lives of any active metabolites**

**(B) daily dose of the drug multiplied by diazepam conversion factor gives equivalent dose of diazepam**

**(C) flumazenil reverses the actions of the other benzodiazepines and may be used in benzodiazepine overdose. Caution: may precipitate seizures**

*\*Based on the Benzodiazepine Equivalent table noted in the 2004 CPS p.254*

### 3. Opiates

#### 3.1 Opiate Withdrawal Symptoms

Withdrawal Status	Signs and Symptoms
<p><b>Stage I</b></p> <p><i>Onset:</i> within hours of last dose</p> <p><i>Peak:</i> 36 to 72 hours</p>	<ul style="list-style-type: none"> <li>• Craving for the drug</li> <li>• Tearing</li> <li>• Running nose</li> <li>• Yawning</li> <li>• Sweating</li> <li>• Dysphoria</li> </ul>
<p><b>Stage II</b></p> <p><i>Onset:</i> about 12 hours</p> <p><i>Peak:</i> 72 hours</p>	<ul style="list-style-type: none"> <li>• Mild to moderate sleep disturbances</li> <li>• Dilated pupils</li> <li>• Loss of appetite</li> <li>• Piloerection</li> <li>• Irritability</li> <li>• Tremor</li> </ul>
<p><b>Stage III</b></p> <p><i>Onset:</i> about 24 to 36 hours</p> <p><i>Peak:</i> about 72 hours</p>	<ul style="list-style-type: none"> <li>• Severe insomnia</li> <li>• Violent yawning</li> <li>• Weakness</li> <li>• Nausea, vomiting, diarrhea</li> <li>• Chills, fever</li> <li>• Muscle spasms, especially in the lower extremities</li> <li>• Flushing</li> <li>• Spontaneous ejaculation</li> <li>• Abdominal pain</li> </ul>

*\*Based on information provided by, and used with the permission of, the Province of Nova Scotia "Treatment and Rehabilitation Manual."*

## 3.2 Management of Opiate Withdrawal Protocol

### a) *Codeine, or Acetaminophen plus Codeine*

#### Indications

- Appropriate at Stage I, II or III to reduce symptoms.

#### Contraindications

- Since one cannot determine the amount of acetaminophen the patient might have on board prior to commencing treatment, codeine 60 mg may be preferable to acetaminophen plus codeine.

#### Dosage

- Codeine - 30 mg x 2 po qid, and reduce by 30 mg every 24 hours until completed.
- Dimenhydrinate (®Gravol) for nausea.

### b) *Clonidine*

#### Indications

- Can be used alone, or in combination with either codeine or methadone, to reduce symptoms.

#### Dosage

- Clonidine - 0.1 mg qid for 3 to 4 days, then discontinue. May be used up to 8 days in some settings, decreasing by 0.1 mg per day q1-2 days.
- Dimenhydrinate for nausea as needed .
- Non-steroidal anti-inflammatories for pain as needed.

### c) *Methadone*

#### Indications

- Appropriate at Stage I, II or III, to reduce symptoms.

**N.B. Special licensing required.**

#### Dosage

- Low dose therapy.
- Methadone - 10 mg tid for three days then taper by 10 mg per day (Methadone related deaths have occurred, almost exclusively at doses in excess of 30 mgs per day. Reference Ball and Ross).
- 5 mg on final day.
- ®Gravol for nausea.

## OPIATE WITHDRAWAL SCALE

SYMPTOMS:		SCORE:
NAUSEA & VOMITING	0 = No nausea 1 = Mild nausea with no retching or vomiting 4 = Intermittent nausea with dry heaves 5 = Constant nausea, frequent dry heaves and/or vomiting	
PILOERECTION (GOOSEFLESH)	0 = No gooseflesh visible 1 = Occasional gooseflesh but not elicited by touch, not prominent 2 = Prominent gooseflesh, in waves and elicited by touch 3 = Constant gooseflesh over chest and arms	
PERSPIRATION	0 = No sweat visible 1 = Barely perceptible sweating, palms moist 2 = Beads of sweat obvious on forehead 3 = Drenching sweat over face and chest	
RESTLESSNESS	0 = Normal activity 1 = Somewhat more than normal activity (may move legs up and down, shift position frequently) 2 = Moderately fidgety and restless, shifting position frequently 3 = Gross movements most of the time or constantly thrashes about	
TREMOR (Arms extended and fingers spread)	0 = No tremor 1 = Tremor not visible but can be felt by finger tip to finger tip 2 = Moderate with patient's arms extended 3 = Severe even if arms are not extended	
LACRIMATION	0 = No lacrimation 1 = Eyes watering, tears at corner of the eyes 2 = Constant watering	
NASAL CONGESTION	0 = No nasal congestion 1 = Frequent sniffing 2 = Constant sniffing with watery discharge	
YAWNING	0 = No yawning 1 = Frequent yawning 2 = Constant uncontrolled yawning	
ABDOMINAL CHANGES	0 = No abdominal complaint, normal bowel movements 1 = Reports waves of abdominal cramping pain, active bowel sounds 2 = Reports abdominal cramping pain, active bowel sounds, diarrhea	
CHANGES IN TEMPERATURE (Ask "Do you feel hot or cold?")	0 = No report of temperature change 1 = Reports feeling cold, hands cold and clammy to touch 2 = Uncontrollable shivering	
MUSCLE ACHES (Ask "Do you have any muscle cramps?")	0 = No muscle aching, arm and neck muscles soft at rest 1 = Mild muscle pains 2 = Reports severe muscle pains, muscles of legs, arms, and neck in a constant state of contraction	

SCORE = < 10

Supportive Therapy

SCORE = 10 - 14

Supportive Therapy (May need Clonidine Protocol)

SCORE = 15 - 19

Clonidine Protocol plus Supportive Therapy

SCORE = > 20

Clonidine Protocol plus Supportive Therapy (May need Phenobarb)

**TOTAL**

## OPIATE WITHDRAWAL PROTOCOL

Monitor withdrawal symptoms BID and PRN using the **Opiate Withdrawal Scale (OWS)**

OWS < 10 =	Mild Withdrawal (use Symptomatic Protocol only)
OWS 10 - 15 =	Moderate Withdrawal (Symtomatic and Clonidine Protocols)
OWS > 15 =	Moderate to Severe Withdrawal (may need to add Phenobarb)

---

### Check to include: 1 **SYMPTOMATIC PROTOCOL (OWS < 10)**

include:

Use these treatment measures PRN for MILD withdrawal symptoms (OWS < 10)

- Dimenhydrinate 50 - 100 mg po/IM q4h prn for nausea and vomiting
- Loperamide 4 mg po X 1 dose, then 2 mg po to maximum 16 mg/24 hr prn for diarrhea
- Ibuprofen 400 mg po tid X 4 days prn for bone or muscle ache
- Acetaminophen 325 - 600 mg po q4h prn for headache or mild pain
- Dolomite 1 - 2 tabs po prn for mild muscle cramping (maximum of 3 tabs/24 hr)
- Chloral Hydrate 500 - 1000 mg po hs prn for sleep deprivation X 3 nights

### 2 **CLONIDINE PROTOCOL**

Start Clonidine for MODERATE withdrawal symptoms (OWS > 10)

Clonidine 0.1 mg po qid X 4 days (withhold dose if BP < 90/60), THEN

Clonidine 0.025 mg po qid X 2 days (withhold if BP < 90/60)

**Check BP before each dose**

### 3 **PHENOBARBITAL 30 - 60 mg po bid prn for Moderate to Severe withdrawal symptoms**

Add Phenobarbital to the Clonidine Protocol when the withdrawal symptoms become MODERATE to SEVERE (OWS > 15)

## 4. Cocaine

### 4.1 Cocaine Withdrawal Symptoms

Withdrawal Status	Signs and Symptoms
<p><b>Stage I</b></p> <p>Crash Begins within hours and lasts four days</p>	<ul style="list-style-type: none"> <li>• Agitation</li> <li>• Marked dysphoria</li> <li>• Fatigue</li> <li>• Hypersomnolence</li> <li>• Hyperphagia</li> <li>• Anorexia</li> <li>• Dysphoria</li> </ul>
<p><b>Stage II</b></p> <p>Begins after four days and lasts 1 to 10 weeks</p>	<p><i>First Week:</i></p> <ul style="list-style-type: none"> <li>• Normal sleep</li> <li>• Euthymia</li> <li>• Little anxiety</li> <li>• Minimal cocaine craving</li> </ul> <hr/> <p><i>The following can be anticipated in subsequent weeks</i></p> <ul style="list-style-type: none"> <li>• Anhedonia</li> <li>• Increasing anxiety</li> <li>• Panic</li> <li>• Depression</li> <li>• Loss of energy</li> <li>• Extreme cocaine craving</li> <li>• Relapse is likely to occur during this period</li> </ul>
<p><b>Stage III</b></p> <p>Begins after 1 to 10 weeks May last for months to years</p>	<ul style="list-style-type: none"> <li>• Cocaine craving with reminders of past cocaine use</li> <li>• Desire for cocaine abates with time</li> </ul>

*\*Based on information provided by, and used with the permission of, the Province of Nova Scotia "Treatment and Rehabilitation Manual."*



## 4.2 Management of Cocaine Withdrawal

- Management of cocaine withdrawal consists of dealing with the symptoms presented in the stages of withdrawal. Appropriate medications for the treatment of symptoms can be used as felt necessary, however, **prolonged benzodiazepine use, as with alcohol use, may induce euphoric recall and/or reduce impulse control resulting in relapse.**
- Pharmacological intervention is not routinely required for acute symptoms unless associated with cardiovascular complications. (Cocaine is rapidly metabolized and acute cardiac ischemia, cardiac failure, hypertension or tachycardia from acute intoxication may be present in immediate "withdrawal".)



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## APPENDIX A BENZODIAZEPINES

The benzodiazepines are a large family of compounds that act as agonists on specific receptors on cell membranes. Although the endogenous compound that stimulates these receptors has not yet been identified, the receptors themselves have been quite well characterized. So far, two subtypes of benzodiazepine receptors, referred to as BZ-1 and BZ-2, have been shown to be part of the GABA-A receptor. GABA is the major inhibitory neurotransmitter in the brain. Activation of the GABA-A receptor opens a chloride ion channel in the nerve membrane, which allows negatively charged chloride ions to enter the neuron. This increases the negative charge inside the neuron and reduces or blocks the transmission of action potentials. Stimulation of the BZ receptors increases the affinity of the GABA receptors for GABA and increases the amount of time the chloride channel stays open. Thus, the benzodiazepines potentiate GABA's inhibitory control over nerve impulse traffic. Clinical situations in which augmenting GABA inhibition can be beneficial include anxiety, insomnia and epilepsy.

Continuous exposure of a receptor to its agonist results in a reduction in the number of those receptors. When the receptors have been downregulated, the agonist has less of an effect and, if that agonist was being used for its therapeutic action, we say that the patient has developed tolerance to the direct drug effect. In general, it takes about three weeks for maximal receptor down regulation/tolerance to develop. Conversely, if the drug is withdrawn after tolerance has developed, it takes two to three weeks for the receptors to return to their pre-drug state. During withdrawal, the person experiences the exact opposite of the direct drug effects. Since the benzodiazepines reduce anxiety, produce sleep and reduce seizures, the benzodiazepine withdrawal syndrome includes increased anxiety, insomnia and convulsions. When a person stops taking a drug, that drug is cleared from the body over a period of time corresponding to 3 to 5 times the plasma clearance half-life of that drug. Since it takes several weeks for the receptors to return to their predrug state, but less than 1 day for short half-life drugs to be completely eliminated from the body, the withdrawal syndrome is considerably more severe with drugs having short half-lives than with drugs having long half-lives. When a person who has developed tolerance to a short half-life drug, such as triazolam or oxazepam, is to be withdrawn from that drug, substituting a long half-life drug, such as diazepam, from the same family will reduce the severity and the risks of withdrawal.

## APPENDIX B OPIOID ANALGESICS

Formerly known as narcotic analgesics, the opioid analgesics are compounds that act as agonists on the receptors for the endorphin family of neurotransmitters. The four endorphin neurotransmitters are endorphin, leucine-enkephalin, methionine-enkephalin and dynorphin. These endorphin neurotransmitters, also referred to as the endogenous opioid neuropeptides, are the products of 3 separate genes. To date, 3 classes of opioid receptors, called mu, delta and kappa, have been characterized, and each class has several subtypes. The endogenous opioid neuropeptides are inhibitory neurotransmitters and they reduce impulse traffic in neural pathways involved in anxiety and in the processing of pain sensory information. Most of the older narcotic analgesics, such as morphine, codeine and their synthetic relatives diamorphine, meperidine and methadone, are predominantly mu agonists but also stimulate delta and kappa receptors as well. Butorphanol, nalbuphine and pentazocine stimulate kappa receptors but block mu receptors, and so are mixed agonist/antagonist analgesics. Among the consequences attributed to mu receptor stimulation are euphoria, analgesia, respiratory (and cough) suppression, and constipation. Delta and kappa stimulation produce analgesia and 'depersonalization,' a mind-body separation that results in an 'out of body' experience.

Continuous exposure of a receptor to its agonist results in a reduction in the number of those receptors. When the receptors have been downregulated, the agonist has less of an effect and, if that agonist was being used for its therapeutic action, we say that the patient has developed tolerance to the direct drug effect. In general, it takes about three weeks for maximal receptor downregulation/tolerance to develop. Conversely, if the drug is withdrawn after tolerance has developed, it takes two to three weeks for the receptors to return to their pre-drug state. During withdrawal, the person experiences the exact opposite of the direct drug effects. Since the opioids reduce anxiety and pain, and produce euphoria and a sense of relaxed well being, the opioid withdrawal syndrome includes increased anxiety, hyperalgesia, dysphoria and agitation. When a person stops taking a drug, that drug is cleared from the body over a period of time corresponding to 3 to 5 times the plasma clearance half-life of that drug. Since it takes several weeks for the receptors to return to their predrug state, but less than 1 day for short half-life drugs to be completely eliminated from the body, the symptoms of withdrawal are much more severe with drugs having short half-lives than with drugs having long half-lives. When a person who has developed tolerance to a short half-life drug, such as morphine or heroin, is to be withdrawn from that drug, substituting a long half-life drug from the same family, such as methadone, will reduce the severity and the risks of withdrawal.



## APPENDIX D

### Alcohol and Drug Services

Saskatchewan offers a full range of recovery services for individuals and their families who have problems because of alcohol and/or other drug use. Outpatient services are available in each of Saskatchewan's 12 health regions as well as through a number of community-based organizations located throughout the province. Inpatient, detoxification and long term residential facilities are also available in several health districts.

#### Services available include:

##### **Outpatient Service**

Outpatient service agencies are the starting point for families and individuals concerned about their own, or others', use of alcohol or other drugs. Most people with substance use problems can be adequately helped on an outpatient basis. Outpatient services are available in every health district. Qualified addictions rehabilitation counselors provide a wide range of services, including assessments, intensive one on one and group counseling, education and support. Clients that attend outpatient appointments carry on with their day to day activities, such as working, school and caring for the family.

##### **Social Detoxification Services**

For people with more severe substance use problems, recovery often begins in a detoxification facility. Staff at these facilities work to provide a safe and comfortable environment in which the client is able to undergo the process of alcohol and other drug withdrawal and stabilization. Usually, detoxification lasts seven to ten days. During this time, clients may be required to attend self-help groups such as Alcoholics Anonymous (AA) or Narcotics Anonymous (NA), and participate in activities held at the facility.

##### **Brief Detoxification Unit**

Provides a safe environment for intoxicated adults to recover from drug or alcohol use. The unit is monitored 24 hours per day and clients can stay up to 48 hours as required. To be admitted to the Brief Detoxification Unit the client must meet four criteria – 1. Be conscious; 2. Present no risk of harm to self or others; 3. Voluntarily accept services; 4. Not require immediate medical or psychiatric treatment (e.g. be medically stable)

##### **Residential Treatment**

Some people may require residential treatment. These programs offer activities similar to those of outpatient services, but on a more structured and intensive basis, with the client actually living at the facility. These programs usually last about four weeks, but may be longer depending on individual needs.

##### **Long Term Residential Services**

Many people with substance use problems require assistance in other life areas as well. Long term residential facilities provide services for a more extended period to individuals recovering from chemical dependency and addiction. These facilities offer counseling, education and relapse prevention in safe and supportive environment. Life skills training, which allows clients to further develop and enhance the skills needed for successfully building recovery, is also an important service offered at such facilities.



## DIRECTORY OF ADDICTION SERVICES

Please refer to the Saskatchewan Health website for an up to date list of Addictions Services in Saskatchewan and their contact information.

[http://www.health.gov.sk.ca/ps\\_addictions.html](http://www.health.gov.sk.ca/ps_addictions.html)





# Crystal Meth Fact Sheet

Compiled by the Addictions Medical Advisory Committee  
May 2007



## Crystal Meth Fact Sheet

### Street Names:

meth  
crystal meth  
crystal  
ice  
crank  
glass  
jib  
speed

**Methamphetamine** is a drug which decades ago was marketed for clinically indicated conditions, but is now produced from rather inexpensive substrates in any number of illicit laboratories in the community. Like most illicitly produced drugs the purity, strength and constituents of the final product may vary, leading to a variation in effects. Methamphetamine belongs to the amphetamine class of drugs, which like cocaine and other stimulants can have a profound effect on "speeding up" the Central Nervous System (CNS). In recent years there has been an exponential surge in its popularity and subsequent negative consequences from its use, especially in the teenage to young adult population.

**Drug Effects:** Effects of the drug are related to its ability to both enhance release and block reuptake of catecholamines, such as dopamine and norepinephrine. Depending on the mode of use the initial effects may be immediate (smoking or injection use) or take 15-30 minutes (swallowing). Immediate effects are usually characterized by a powerful sense of euphoria that is often referred to as a "rush". Other effects the user may be seeking include increased energy levels, alertness, a sense of confidence, reduced appetite and decreased need for sleep. This is often accompanied by physical effects that include tachycardia, tachypnea, hypertension, diaphoresis, mydriasis and hyperthermia. Clinical toxicity of stimulants is primarily related to cardiovascular and CNS complications and this can lead to fatalities.

**Methamphetamine Induced Psychosis:** Unwanted and potentially dangerous CNS effects may include anxiety, agitation, compulsive behaviour, delirium, paranoia, psychosis and violence. Psychotic symptoms are most often characterized by persecutory ideation, auditory hallucinations and delusions of persecution; but at times disorganized thought processes, affective changes and other hallucinations are evident. The presentation may closely resemble the acute symptoms of a psychotic mania or paranoid schizophrenia. For the majority of individuals this will be a "transient drug-induced" state lasting hours to a few days. However some individuals, especially with chronic use but even following long periods of abstinence, may develop a persisting psychotic illness often characterized by paranoia, auditory and visual hallucinations, and delusions (including the sensation and/or belief of insects crawling under the skin).

### Methods of Use:

It is a white, crystalline powder that can be swallowed or snorted. It can be dissolved in water or alcohol, and is often injected or smoked in a pipe like crack cocaine.

**Withdrawal Syndrome:** cessation (or significantly reduced usage) of methamphetamine can lead to withdrawal symptoms similar to that seen with other stimulants. Stimulant Withdrawal can be characterized by an early "crash" that includes depression, anxiety, agitation, and intense drug craving. This may be followed (over the course of days to weeks) by fatigue, loss of physical/mental energy, decreased interest in activities, dysphoria/depression, hypersomnolence, anhedonia and general mood dysregulation.

Because the Stimulant Induced Psychotic Disorder may develop during the same period when the individual would experience withdrawal symptoms, a mixed symptom presentation may be seen.

**Assessment:** Both physical and mental health screens need to be performed on individuals suspected of using methamphetamine. Safety of the individual and others needs to be assessed. In addition to a thorough history and physical examination, toxicology screening can be extremely useful. Standard immunoassay Urine Drug Testing (UDT) may reveal a positive result for amphetamines, but assessors should be aware of the tendency for multiple substances to have been abused when assessing individuals. Laboratory testing for concomitant alcohol intoxication should include blood alcohol levels. Imaging studies are not usually indicated, unless the presentation suggests the possibility of other CNS, organic or injury related pathology. Repeated physiological assessments and further investigation of psychostimulant toxicity may be warranted.

**Management:** Treatment will depend on the state (stimulant toxicity, withdrawal, drug induced psychosis) the individual presents in, their capacity to consent to treatment, and their motivation for seeking recovery ("stage of change").

1. Safety of the individual and others is a priority. Screen for risk of suicide and violence towards others. In highly agitated patients "de-escalation" of the situation, approaching the patient in a non-intimidating manner and management in a low stimulation environment that permits constant observation may help to avoid exacerbation of symptoms.
2. Uncomplicated **Stimulant Withdrawal** may initially be managed by referral to community Social Detoxification facilities. Pharmacological management is not usually indicated
3. There are currently no approved medications for the treatment of **Methamphetamine Induced Psychosis**, however pharmacological management is frequently utilized in managing both acute and persisting psychotic states. Whenever possible oral medications should be offered preferentially over intramuscular formulations, which all of the following are available in.

**a. Acute Psychosis:**

- i. Benzodiazepines are frequently cited as the initial choice of medications due to their safety profile and ability to achieve relative calm or appropriate levels of sedation. **Lorazepam 2-4 mg**, repeated in 1-2 hours if needed.
- ii. Atypical Antipsychotics may treat both the agitation and psychosis. **Zyprexa 10-15 mg po** (tablet or rapid dissolving Zydys formulation), with repeat doses of 10 mg q2h as needed up to a maximum 24 hour dose of 40mg. An intramuscular preparation exists and has more rapid onset of action, but is not available in most emergency rooms and should not be used simultaneously with IM benzodiazepines.
- iii. Conventional Antipsychotic use should be limited to **Haloperidol**. It would usually be given at a dose of 5 mg, repeated in 1-2 hours if needed, and has the advantage of being readily available in IM formulation and safely combined with Lorazepam.

**b. Persisting Psychosis:**

- i. Management would usually include **Atypical Antipsychotics** followed by **Conventional Antipsychotics** in usual doses used to treat other psychotic conditions.
4. Stabilization and Maintenance treatment for Stimulant Abuse/Dependence should be considered for all affected individuals and can be facilitated through referral to community Addictions Services offices, residential Rehabilitation (if necessary) and/or other community resources including individual counsellors and 12 Step programs.