New Leaf Treatment Center (NLTC)
Lafayette, CA
Outpatient Sedative-Hypnotic Detoxification:
Symptom-guided Detoxification Using Replacement and Adjunctive Medications

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Introduction: Addiction and dependency are a disease of the pleasure-producing chemistry of the brain. The principal mechanism of addictive disease is the brain's relentless neuroadaptation induced by over-exposure to psychoactive chemicals. A period of regular sedative-hypnotic substance use will produce these adaptive changes in the brain. As a result of this neuroadaptation, sedative-hypnotics are often used addictively and when prescribed patients all too easily fall into dependent use patterns. For dependent individuals, abrupt discontinuation of sedative-hypnotics can result in life-threatening or fatal withdrawal symptoms.

The harmful effects of sedative-hypnotic dependency include impaired cognition (memory and concentration are challenged), emotional blunting (failure to process emotional experiences such as loss), weakness and poor coordination (increasing the risk of injury) and worsening anxiety as tolerance develops. Whether the dependency is the result self-administration practices or arises out of the all too common over-prescribing of benzodiazepine tranquilizers and addictive sleep aides, the fact remains that managing the appearance of side effects or withdrawal poses a difficult challenge to the user and the clinician.

Withdrawal from any psychoactive drug results in mood and functional disturbance: dysphoria, anergia, anhedonia and craving for the drug. Cessation of sedative-hypnotic drug use (or tolerance unmet by the current dose) typically causes a cluster of withdrawal symptoms. These withdrawal symptoms tend to be the opposite of the symptoms the sedative-hypnotic drug was designed to control. As such, the hallmark of benzodiazepine withdrawal symptom is anxiety. Dependence produces withdrawal symptoms which range from tachycardia, hypertension, confusion, with delirium and seizures characterizing the most severe cases (see NLTC website for a copy of the Sedative-Hypnotic Symptom Assessment Key which provides a list of typical withdrawal symptoms and a method for scoring symptom severity). Dependent individuals begin to report withdrawal symptoms between doses because tolerance needs are not being met with the current dosing regimen The intensity and health risks of withdrawal symptoms will be influenced by many variables (e.g. which sedative-hypnotics have been used, dosage, duration of dependency, number of withdrawal experiences producing kindling effects and individual physiology). We note that it has long been known that chronic alcoholics are at risk for fatal seizures if alcohol is abruptly discontinued, yet all too often the same logic is not applied to abrupt discontinuation of other sedative-hypnotics when in fact the same risk exists.

The protracted suffering and distress of withdrawal leaves the user dysfunctional and at high risk of relapse. Therefore, optimal treatment of any addiction or dependence ought to focus on minimizing, and

when possible eliminating, withdrawal symptoms, including the symptom of craving. Good management of withdrawal symptoms is a vital step toward enabling the user to stop the compulsive use of the drug.

At New Leaf sedative-hypnotic addiction or dependence treatment focuses on managing withdrawal symptoms using long-acting replacement medication with a dose titration geared to controlling the individual's withdrawal symptoms. The ultimate goal is to taper (and in most cases discontinue) the long-acting replacement detoxification medication.

The following is an overview for managing sedative-hypnotic withdrawal using a **symptom-guided approach** to detoxification. This approach is consistent with the available science of sedative-hypnotic dependency and extensive clinical experience. This method is significantly different from more common **protocol-driven approaches.**

Note: Appendix A of this document provides a summary of the sedative-hypnotic detoxification protocol without the added background and educational information.

Definition - Sedative-Hypnotics are substances which depress or slow down bodily functions. This class of medications are often referred to as tranquilizers, sleeping pills or sometimes as sedatives or hypnotic medications and these medications are commonly used to treat anxiety, insomnia and as muscle relaxants. The "party" or "date rape" drug GHB is a sedative-hypnotic. Any form of alcoholic beverage is a sedative-hypnotic (tranquilizers and other sedative-hypnotic prescription medications are essentially alcohol in pill form). See Appendix B for a list of sedative-hypnotic adverse effects.

Table 1: Categories and Specific Examples of Sedative-Hypnotic Substances

Types	Common Examples
Anti-anxiety (anxiolytic) medications, the benzodiazepine classification of tranquilizers (commonly called "benzos")	Xanax (alprazolam) , Ativan (lorazepam), Klonopin (clonazepam), Valium (diazepam)
Sleeping pills, barbiturates or hypnotic medications	Ambien (generic name zolpidem), Seconal, pentobarbital, Lunesta, Sonata
Muscle relaxants	Soma (generic name carisoprodol)
Alcohol	Any type of alcohol
Other Central Nervous System Depressant/intoxicant	GHB, Xyrem

NLTC Sedative-Hypnotic Outpatient Symptom-Guided Detoxification Protocol: A compassionate approach to the treatment of sedative-hypnotic dependency. This protocol was developed over many years of working with individuals dependent on various sedative-hypnotic substances. This protocol uses the term "**Symptom-Guided Detoxification"** because symptom management is the primary goal**.** This goal is accomplished using three basic strategies; 1) Discontinuing all short-acting sedative-hypnotic use, 2) Substitution with a long-acting replacement medication and 3) Monitoring withdrawal

symptoms to guide dosage titration to find the replacement medication dose that matches the individual's sedative-hypnotic tolerance.

The term, “The Promised Land”, is used to denote the ideal replacement medication dosage. Clients appreciate knowing the clinician is working to get them to “The Promised Land”.

While a general estimate of the replacement medication dose should be calculated (see Tables 3 and 4 in Phase 2 for dose equivalency information), the goal of eliminating withdrawal symptoms is made possible by using symptom monitoring to guide dose titration of replacement medication.

Each phase of the NLTC protocol is presented in the table below and then discussed in detail in the following pages.

Table 2: Phases and Advantages of Symptom-Guided Protocol

Phase	**Advantages**
Intake	Client's history and treatment needs are evaluated, client and their support system are informed and participate as valuable members of the treatment team
Induction	Symptom monitoring allows replacement dose titration to match individual tolerance, detoxification is comfortable, drug craving is eliminated, treatment outcome is optimized
Consolidation/Stabilization	Detoxification continues to be comfortable, client receives additional treatment based on NLTC Craving Identification and Management (CIM) and receives treatment and learns strategies for managing underlying mental health issues
Taper	Symptom monitoring allows tapering to proceed without causing withdrawal symptoms, kindling (central nervous system damage) is avoided and long-term healing is promoted.

Phase 1: Intake (Appendix A Steps 1 – 8)

- **Have the client stop all short-acting sedative-hypnotic substance use (including alcohol)**
- **Attitude - patience, patience and more patience is required of clinician and client**
  - Clinician: A trusting, non-judgmental and supportive relationship is established. The client is encouraged to feel safe and able to be honest about use history. Fear of withdrawal is acknowledged and discussed. Optimism regarding success is encouraged.
  - Client: Fear is normalized; client and family/friends are reassured. Clients and their support system approach treatment with an optimistic attitude.
- **Patient Medical History** – thorough medical history including:
  - Current medication list
  - Medication and substance abuse history
  - Amount used (doses, estimation of alcohol or other intake)
  - Length of use for each addictive medication or substance
  - Experience with developing tolerance as evidenced by increasing doses or adding another medication or substance to control withdrawal symptoms

- Some sense or estimate of the number of withdrawal episodes for each substance
- Time and date of last use for each addictive substance or medication

Notes: It is virtually impossible to conduct an adequate sedative-hypnotic detox if other short acting psychoactive medications continue to be in use. For example if opiate addiction is also an issue and short-acting opiates are being used, this dependency must also be addressed. If stimulant use is concurrent, safety becomes an issue.

Expect some clients to present with Axis II pathology. Before induction and during early detox, signs of Axis II pathology can appear to be an issue simply due to the side effects of long-term sedative-hypnotic use. Persevering with the detox will enable the clinician to determine whether or not personality disorders are a likely reason for the original prescribing or self-medication with sedative-hypnotics. Regardless of the cause Axis II pathology can make persevering through the detox process quite a challenge.

- **Physical Assessment:** General PE including neurological assessment, orientation (consider using a standardized evaluation tool such as the Folstein mini-mental exam), DTR's, clonus, pupils, EOEM, including check for nystagmus, check for tremor, evaluate balance, coordination (closed-eyes-finger-to-nose touch test, one leg balance test) and gait (tandem gait assessment).
- **Is Detox Appropriate?:** At this point the clinician will have a sense of the client's condition and support system and can determine if out-patient detox is an appropriate expectation. Out-patient detox requires that the client is capable, or has reliable, supportive assistance with correct medication dosage and insuring medications are taken at the prescribed times. To insure proper use of medications support and assistance is always preferable.
- **Attitude of Family and Friends**: Do not underestimate the attitude of family and friends toward detox. If the client's support system is convinced of the efficacy of detox and understands the potential challenges (i.e. symptom variability is to be expected and is not a sign of failure) and the long-term commitment requirements, then they can serve as valuable allies. If such understanding is not in place family and friends can sabotage the process, and may even convince the client to give up and even try some other “quick-fix” treatment.
- **Using the Symptom Assessment Key:** The NLTC Sedative-hypnotic Withdrawal Symptom Assessment Key is available on the NLTC website. Assist the client with filling out the assessment key in order to obtain baseline symptom scores.
- **Length of Treatment –** Explain the protocol and discuss what to expect. Key issues to cover:
  - Symptom-guided detox works precisely because it is not a “quick fix” form of treatment.
  - The exact length of time from induction to the end of the replacement medication taper is impossible to predict.
  - Monitoring during the dose titration phase:
    - Follow up appointments are more frequent initially, becoming less frequent once symptom management has stabilized
    - Clients must be advised to call for advice and concerns as needed 24/7
    - Monitoring is necessary throughout the taper and discontinuation phase

- **Stress and Environmental Stimulation –** Stress and being over-stimulated complicates assessments of withdrawal symptoms and negatively impacts brain chemistry. Stress intolerance is normal and expected.
- **Fear –** Patients requiring detox will be in withdrawal, uncomfortable and fearful. Being encouraged to contact the on-call clinician will greatly assist in managing concerns and improve compliance.
- **Detox Life-style Considerations –** In addition to controlling stress and environmental stimulation, a monk-like lifestyle is ideal in early detox. Despite anergia and anhedonia, a predictable daily schedule, mild exercise, enjoyable, minimally stimulating distractions and optimal nutrition is most helpful.
- **Therapy –** Intensive individual psychotherapy is not appropriate initially, however, combinations of individual, family, and group therapy can be helpful when used to provide support and encouragement during the detox process. More intensive 1:1 psychotherapy may be added later as appropriate.
- **Symptom Fluctuations –** During detox withdrawal symptom severity will vary from one hour to the next and from one day to the next. Many factors have an effect on withdrawal symptoms - stress, environmental stimulation, number of experiences with untreated withdrawal (kindling), underlying health and mental health conditions, etc. Once a period of good symptom control has been achieved (assessment key scores of mostly 0), do not be tempted to change a medication dose based on reports of a "bad day".
- **Evaluating Causes of Symptom Fluctuations –** Symptom variability is associated with recovery, however it is important to look for possible causes of symptom flares: 1) Verify compliance with medication dose and dosing intervals, 2) Review the importance of stress reduction and an undemanding and predictable life-style, 3) Discourage over-focusing on symptoms, 4) If symptoms scores remain increased for an extended period of time (length of time is a judgment call) an additional degree of tolerance may have been "uncovered" and further dosage titration may be required (see discussion below on "uncovering").
- **Harm Reduction -** Caution clients not to drive, operate machinery or make important life-decisions until the dose of replacement medication has been stabilized and absence of intoxication or signs of over-medication has been confirmed. Caution clients that mixing detox meds with other sedating medications can result in overdose and possibly death. Encourage the client to report any spike in drug cravings or any actual return to using sedative-hypnotic or other psychoactive substances. No medication changes should be made without a consultation. Encourage complete honesty about past, present and future use history.
- **Obtain consent for treatment and a commitment to treatment.**

Phase 2: Induction (Appendix A Steps 9 – 10)
Induction Dosage Titration Goal: Eliminate withdrawal symptoms **without causing intoxication or signs of over-medication**.

Note: Inadequate dosing or too-rapid tapering can cause malignant hyperthermia and withdrawal psychosis.

Chlordiazepoxide and phenobarbital are the long-acting replacement medications used for detoxification.
The starting dose of long-acting replacement medication is based on an equivalency calculation using the client's current dose of sedative-hypnotics, including any regular alcohol intake.

Table 3: Sedative-hypnotic equivalents to 30 mg phenobarbital*

Generic Name	Trade Name	Dose
Barbiturates		
Amobarbital	Amytal	100 mg
Butabarbital	Butisol	100 mg
Butalbital	Fiorinal	100 mg
Pentobarbital	Nembutal	100 mg
Secobarbital	Seconal	100 mg
BZDs		
Alprazolam	Xanax	0.5 mg
Chlordiazepoxide	Librium	25 mg
Clonazepam	Klonopin	2 mg
Clorazepate	Tranxene	15 mg
Diazepam	Valium	10 mg
Estazolam	ProSom	1 mg
Flurazepam	Dalmane	30 mg
Halazepam	Paxipam	40 mg
Lorazepam	Ativan	2 mg
Oxazepam	Serax	30 mg
Prazepam	Centrax	20 mg
Quazepam	Doral	15 mg
Temazepam	RestoriI	15 mg
Triazolam	Halcion	0.25 mg
Z-Drugs		
Zaleplon	Sonata	20 mg
Zolpidem	Ambien	10 mg
Eszopiclone	Lunesta	2 mg
Other sedative-hypnotics		
Carisoprodol	Soma	350 mg
Ethanol	various	1 fluid ounce
Meprobamate	Miltown	200 mg

*equivalents for purposes of detoxification; higher or lower doses may be required depending on a variety of factors including whether the patient is intoxicated or in withdrawal when taking their usual sedative hypnotic dose; if the calculated daily replacement dose is greater than 180 mg it may be advisable to administer one-third of the daily dose and observe for 90 minutes; inpatient treatment should be considered for doses of greater than 600 mg per day

Table 4: Sample calculation for **estimating** the starting dose for the long-acting replacement medication dose.

Drug	**Chlordiazepoxide (Librium)**	**Phenobarbital**
Valium 60 mg per day Ativan 8 mg per day Alcohol 2 oz per day	150 mg 100 mg 50 mg	180 mg 120 mg 60 mg
Total	= 300 mg per day. This should be divided into 3 or 4 doses per day on a fixed schedule.	= 360 mg per day. This should be divided into 3 or 4 doses per day on a fixed schedule.

Calculate the equivalent dose of Librium or phenobarbital for the current amount of each sedative-hypnotic substance being used to determine a starting dose for replacement medication. During the initial period of detox this total daily dose will be divided into 3 or 4 equal doses to be taken every 6 or 8 hours. If doses cannot be divided evenly the extra amount is typically added to the nighttime dose.

Long-acting replacement medication supply or prescription - having an in-office supply of chlordiazepoxide or phenobarbital will facilitate induction. Alternating the client or a member of their support system should be given a prescription to fill for an estimate of the quantity that will be needed for at least the first seven to ten days of treatment.

Filling a prescription brings up the issue that induction and dosage titration can be managed outside the office if the client is relatively stable and the clinician and client firmly commit to monitoring and advising via telephone calls every 60 - 90 minutes until withdrawal symptoms scores are essentially 0 - 1. Because seizures can result from sedative-hypnotic withdrawal facilitating induction becomes very important when a client is experiencing significant withdrawal symptoms.

Phase 2: Induction (continued) (Appendix A Steps 11 – 23)

Begin Long-acting Replacement Medication Note: Induction is started when the client is experiencing withdrawal symptoms with elevated symptom scores on the withdrawal assessment key.

- The client should begin replacement therapy by taking the calculated induction dose (1/3 of the total daily replacement dose) of chlordiazepoxide or phenobarbital.
- Reassess withdrawal symptoms scores 60 - 90 minutes after the initial induction dose
- Use the scores on the withdrawal symptom key to guide administering additional replacement medication doses as needed.
- The amount of the next titration dose is a judgment call based on the degree of change in the withdrawal symptom scores. If symptom assessment scores on the key indicate there has been little or no improvement then administer the same dose again. If symptom scores show moderate improvement in withdrawal scores an appropriate portion of the starting dose should be given. The goal is to move the withdrawal symptom scores relatively quickly to the 0 -1 range; waiting 60 - 90 minutes between doses and repeating the symptom assessment key scoring until this is accomplished.

- Note: to avoid over-medicating and symptoms of intoxication, it is not necessary to achieve complete symptom control at this point
- **The goal (or "promised land" dose) is reached when symptoms scores on the assessment key are 0 -1 and there are no signs of intoxication.**
- Reaching the "promised land" can take some time. Reassurance and encouragement will help the client manage any impatience with the process.
- Induction is essentially complete once the client's vital signs are in the normal range and their most troubling withdrawal symptoms (usually anxiety and agitation) are manageable.
- The cumulative dose required to reach withdrawal symptom assessment scores of 0 - 1 is the dose to be divided evenly to be taken on a strict dosing schedule.
- Another judgment call is required to determining whether a Q 6 hour dosing schedule versus a Q 8 hour dosing schedule is best. The patient's general condition and the degree of difficulty required to achieve reasonable withdrawal symptom are considered.
- If the client is on a Q 8 hour dosing schedule and withdrawal symptoms reappear before the next dosing interval, the total dose required to achieve withdrawal scores of 0 - 1 is then divided into four even doses and he dosing schedule is shifted to Q 6 hour intervals.
- After about a week of stable dosing all clients can typically be shifted to the more convenient Q 8 hour dosing schedule. This is possible because the full accumulation of active metabolites has been reached at around the 7 day mark. Reconfigure the total daily dose into three even doses and shift to Q 8 hour dosing intervals.

Monitoring, Assessing and Managing Sedation

- All reports of excessive sleeping and fatigue are not signs of intoxication and over-medication.
- **Clients should be strongly advised not to drive, operate machinery or make important decisions until a stable, non-sedating dose is well established.**
- Most clients require a few days or even weeks of extra sleep during the early detox period. Extra sleep is required because sedative-hypnotic dependence has been interfering with normal sleep cycles, sometimes for many years, significantly disrupting sleep and creating an extreme sleep deficit.
- Because it takes about a week for the active metabolites of the replacement medication to be fully established during dosage titration it is possible exceed the client's level of tolerance.
- A replacement medication dose that exceeds the client's level of tolerance will produce typical intoxication symptoms: nystagmus, slurred speech, impaired coordination such as ataxia and imbalance. Excessive sedation and feeling intoxicated are at the very least annoying and can be dangerous if intoxication is not recognized and addressed.
- Differential diagnosis for complaints of fatigue and excessive sleeping include:
    - Over-medication (client will have physical symptoms of intoxication)
    - Expected sleep debit (this need is more profound and lasts longer for some clients)
    - The client may have returned to use/abuse of sedative-hypnotic substances. A non-judgmental attitude encourages the client to be honest about this issue. Random urine drug screens can help determine if clients are mixing other sedating medications with detox medications.

- Managing return to use/abuse of sedative-hypnotic substances
    - Review the importance of abstinence from all sedative-hypnotics other than the replacement medication.
    - Evaluate and treat typical reasons clients may resort to self-medication
    - Insomnia and mental health issues are common problems. Appendix C provides some basic information about managing these issues during sedative-hypnotic detox.
    - Individual therapy can work with the client to help the client learn techniques for managing stress and anxiety
    - While every attempt is made to avoid discontinuation of treatment, if the client remains unable to initiate abstinence this may need to be considered.
- Intoxication caused during dosage titration is managed by having the client skip a dose or two, then return to regular dosing intervals using a lower dose of replacement medication. The amount of the dose decrease is another judgment call, but don't rush to skip doses. Carefully assess for symptoms of intoxication versus the more likely explanation which is often a continued need for additional sleep.
- During dosage titration and the early stabilization period of detox most clients benefit greatly from assistance with monitoring for intoxication. Someone other than the client will be much quicker to notice slurring of speech and other signs of intoxication. Due to memory impairment clients often require assistance with taking the correct medication dose, adhering to the dosing schedule, basic support and help with stress reduction and the chores of daily living.

Reappearance of Withdrawal Symptoms and Managing "Uncovering"

If withdrawal symptoms reappear after a period of several weeks (or more) of symptom control several things should be assessed:

- Is the client being diligent with their replacement dosing regimen?
- Is the client making decreasing medication doses without consultation?
- Is the client experiencing normal symptom variability, basically having a "bad day"? As discussed earlier, there is an expectation for periodic symptom flares and variability in symptom scores.
- Is the client simply being impatient with the process? Unmet expectations can be distressing and cause a symptom flare.
- Is there something going on that is stressful? Is the client being reinjured or at having symptoms due to some increase in their stress?

If none of these issues are likely consider that a new level of tolerance may have been "uncovered". This simply happens to some individuals during detox. For persistent symptom flares with a sustained escalating trend to withdrawal symptom severity documented on the symptom assessment key, return to the process used during the initial dose titration.

Post-Visit Monitoring and Dose Titration

Whenever the switch to monitoring at home is made the client will need to know how important it is to follow the detox protocol. The client (hopefully with assistance) must continue self-monitoring as

recommended on the symptom assessment key and taking replacement medications at the correct dosing interval at home.

The client and clinician should discuss whether there will be regularly scheduled follow up calls or if calls will be made on a PRN basis. A client should be able to contact a clinician 24/7 in case there are concerns, symptom scores are not stable or signs of intoxication occur. At this point the client continues with the process of monitoring the severity of withdrawal symptom scores using the assessment key, but should not be overly focused on symptoms. A degree of symptom fluctuation is expected. Self-assessments are documented on the assessment key.

Self-assessment schedule for the first week:

- Before each dose of replacement medication
- 60 - 90 minutes after a dose,
- Anytime the intensity of withdrawal symptoms increase
- The client and those involved in providing support must also monitor for and immediately report to the clinician and symptoms of intoxication
- As long as withdrawal assessment scores are consistently 0-1 the client will continue taking the calculated dose on the recommended dosing interval.

Phase 3 Consolidation/Stabilization (Appendix A Steps 24 – 34)

Consolidation/Stabilization - a period of time on a stable dose of long-acting replacement medication is required once the "promised land" dose is reached and withdrawal symptoms have been eliminated. A minimum of two to four weeks on a stable dose of long-acting replacement medication is required, allowing brain chemistry time to repair.

With proper medication dosage titration the client will eventually feel reasonably comfortable. Physical damage from withdrawal will be avoided. A comfortable patient is less likely to return to self-medicating with short-acting sedative-hypnotics.

At some point during this phase it is the time to consider whether the issue is sedative-hypnotic dependency or addiction. For some clients sedative-hypnotic dependency is iatrogenic and they do not require addiction treatment. For some clients the underlying reason for the dependency (Axis II disorders such as dependent personality disorder or generalized anxiety disorder) may need to be addressed. If it is apparent that the client has addictive disease (history of self-medicating, using un-prescribed medications, etc.) addiction treatment will be necessary.

At NLTC treatment is individualized, however, addiction treatment usually involves the following components:

- Medical management - ongoing sedative-hypnotic medication supervision and appropriate treatment of other addictions as well as treatment of other medical and/or mental health conditions

- Education - NLTC uses its own education and treatment model based on **Craving Identification and Management (CIM)** Clients are taught about the four causes of cravings which are summarized with the acronym **EWMS: Envionmental** cueing (exposure to substances), **Withdrawal** (it is important to reassess for signs of withdrawal particularly whenever drug craving is significant), **Mental health** (for some clients underlying mental health conditions, particularly generalized anxiety disorder and depression, may be present and require treatment) and **Stress (**stress causes drug craving). Typically clients dependent on sedative-hypnotics have not developed adequate stress management skills. Not only are client taught how to recognize (identify) when they are experiencing cravings, but they how tools for managing cravings.
- Individual and Group therapy can be an important part of treatment, however, decisions about if and when to employ group, individual or family therapy are highly individualized. In the early stages of sedative-hypnotic detox, therapy would strive to avoid creating any stress or anxiety. Dealing with issues such as PTSD is typically delayed for a period of time and is focused on the client learning how to feel safe.

Important adjunctive sedative-hypnotic detox treatment components - N-acetylcysteine (NAC) and Baclofen are typically included in the detox regimen. NAC and Baclofen are used to aid the repair of brain's neurotransmitters. NAC helps repair $GABA_A$ receptors and Baclofen works on the $GABA_B$ receptors.

NAC - n-acetylcysteine: an amino acid greatly assists with detox management by minimizing glutamate rebound during sedative-hypnotic withdrawal. This glutamate rebound is responsible for the hyperactivity associated with insomnia, anxiety and autonomic hyperactivity. Typically clients are instructed to start taking NAC very early in the detoxification process. Researchers have used daily dose ranges between 1,800 mg - 3,600 mg per day taken in divided doses three or four times per day (typically taken at the same time as the long-acting replacement medication dose). A client-oriented handout that provides detailed information about NAC is available on the NLTC website.

Baclofen: Baclofen is a weak GABA B receptor activator (agonist) with effects similar to GHB. Baclofen's much lower affinity for this receptor decreases the effects of the sedative-hypnoticand significantly reduces abuse potential. Researchers have found that Baclofen is appropriate for replacement/substitution therapy as it assists with mitigating withdrawal and craving. The typical Baclofen dose is 80 mg daily, taken in divided doses. The dosing schedule is the same as the chlordiazepoxide or phenobarb schedule. When a Q8H dosing schedule is established the first two doses of each day should be 20mg and the HS dose should be 40mg

Phase 4: Taper (Appendix A Steps 35 – 43)

Once the individual has spent some time on the long-acting replacement medication a slow tapering process is undertaken. The length of time spent in the stabilization phase depends on many factors, mainly how severely affected the client was and the degree of difficulty involved in establishing a stable replacement medication dose.

Tapering off of the replacement medication becomes possible as the body and mind repair from the damage caused by dependence on sedative-hypnotic substances. The amount of each dose taper is approximately 10% of the current dose of replacement medication. It is reasonable to attempt a dose decrease every 1 - 2 weeks, however just as with replacement dosage titration, dosage reduction is based on symptom monitoring using the **NLTC Sedative-Hypnotic Withdrawal Symptom Assessment Key.** Anytime withdrawal symptom scores increase noticeably during a taper, the timing and/or the amount of the dose decrease should be adjusted. Typically it is advisable to return to the previous dose for another week or more and then proceed with a smaller dose decrease. There is no reason to rush the taper and every reason to approach the taper process with slow deliberation. Keep in mind that withdrawal symptoms cause re-injury to the brain chemistry.

Be aware that a client may exhibit signs of sedation on a previously well-tolerated dose of replacement medication. This lower tolerance is a positive sign and indication that brain chemistry repair has taken place. When this occurs, a dose decrease is required.

APPENDIX A

NLTC Sedative-Hypnotic Outpatient Detoxification Summarized

Phase 1: Evaluation and Client Education

1. Discontinue all short-acting sedative-hypnotic medications and substances including alcohol.
2. Create a sense of trust and acceptance.
3. Complete the intake history and physical including a neurological assessment (including evaluation of DTRs, tremor and nystagmus).
4. Explain how to use the NLTC Sedative-Hypnotic Withdrawal Assessment Key. Detailed instructions are provided on the key. All NLTC Withdrawal Assessment Keys are available on the NLTC website.
5. Work with the client to record current symptom scores and required assessment key information
6. Explain the detoxification protocol, treatment expectations and goals.
7. Provide all harm reduction information.
8. Obtain consent for treatment, commitment to the process.

Phase 2: Induction - proceed with induction as indicated based on elevated scores on the assessment key.

9. Calculate the estimated replacement medication dose using the equivalency chart in Table 3. An example calculation is provided in Table 4.
10. Obtain supply of replacement medication from office stock or have the client fill a prescription.

The issue of filling a prescription brings up the issue that induction and dosage titration can be managed outside the office if the client is relatively stable and the clinician and client firmly commit to monitoring and advising via telephone calls every 60 - 90 minutes until withdrawal symptoms scores are essentially 0 - 1. Because seizures can result from sedative-hypnotic withdrawal facilitating induction becomes very important when a client is experiencing significant withdrawal symptoms.

11. Administer the calculated starting dose of replacement medication.
12. Have the client fill out the assessment key again 60 to 90 minutes after the initial dose
13. If withdrawal symptom scores remain elevated the induction process continues with PRN dosage titration. The amount given for titration doses is a judgment call based on the amount of progress made in reducing withdrawal scores. If symptom scores improvement is more substantial the titration dose will be some fraction of the initial dose. Continued dosage titration is based on the degree of progress toward eliminating withdrawal symptoms.
14. In another 60 - 90 minutes the client should again fill out the symptom assessment key. If symptoms scores remain significantly elevated give another titration dose.
15. Repeat this cycle until withdrawal symptom scores are generally in the 0 - 1 range. To avoid over-medicating and causing symptoms of intoxication it is not necessary to achieve complete symptom control at this point.

16. See section on Monitoring Assessing and Managing Sedation in the body of this text.
17. Once good symptom control is achieved add up the total amount of replacement medication administered. This is now the total daily dose that will be prescribed and administered in evenly divided doses on a regimented schedule**.**
18. Typically replacement medication doses are given on a strict Q 8 hour schedule. If doses can't be evenly divided the extra amount is added to the last dose of the day (the HS dose).

Note: If the client is on a Q8 hour dosing schedule and withdrawal symptoms reappear before the next dosing interval, the total dose required to achieve withdrawal scores of 0 - 1 is then divided into four even doses and he dosing schedule is shifted to Q6 hour intervals. After about a week of stable dosing, all clients can typically be shifted to the more convenient Q8 hour dosing schedule.

19. Advise the client and/or their support person to set alarms for each dosing time.
20. Continue monitoring symptoms at home and proceed with dosage titration as required.
21. At this point the maximum interval between symptom assessments should be 8 hours.
22. Once the daily dose has been determined and a dosing schedule has been determined the client should continue to fill out the withdrawal symptom assessment key several times a day for the next week while the “promised land” dose becomes well established. Scores should be recorded on the assessment key before and after each replacement medication dose per the instructions on the assessment key, skipping scoring after the last dose of the day unless the client is struggling with insomnia.
23. Because a proper amount of sleep and a proper sleep cycle is so important insomnia should be treated with an appropriate non-addictive sleep aid. See Appendix C for a detailed discussion regarding managing insomnia.

Phase 3: Consolidation/Stabilization

24. Clients must agree to call if symptoms of intoxication or inadequate withdrawal symptom control develop.
25. Clients should be encouraged to call for questions or concerns are needed while striking a balance of not being overly focused on symptom fluctuation. Clients should understand symptom management and improvement are not expected to be completely linear during detox. Expect some intervals of “bad days”.
26. “Uncovering” - If withdrawal symptoms reappear after a period of stability, it is a judgment call whether a new level of tolerance has been uncovered versus an episode of symptom variability. Replacement medication doses can be increased if needed based on a sustained increase of withdrawal symptom scores. This issue was discussed in detail earlier.
27. Follow up office visits are scheduled at appropriate intervals based on the client's condition. Some key issues to monitor include: 1) adequacy of withdrawal symptom management (replacement medication dosage titration continues as appropriate), 2) check for nystagmus and assess for other symptoms of over-medication (intoxication), 3) random urine drug screens confirm safety and compliance, 4) provide support and encourage continued stress reduction and other detox friendly

life-style considerations, 5) evaluate and treat mental health issues, insomnia and other issues as needed with appropriate medications and other therapeutic interventions, 6) monitor for appropriate time to begin addiction treatment for appropriate clients.

28. Clients should be encouraged to call anytime if symptoms of intoxication develop (ataxia, slurred speech, gait appear unsteady or signs of imbalance or problems with coordination develop).
29. Clients should not be overly focused on symptom variability, but clients should be encouraged to call if they have concerns or questions about detox or a change in condition occurs.
30. To whatever degree possible it is important to live a calm, predictable, life style during this period of time.
31. Once the “promised land” dose is reached and withdrawal symptoms have been eliminated, no medication changes should be made for a period of at least two week, usually longer. This will allow the brain chemistry time to repair.
32. Periodic office visits continue to as described above to monitor, treat and support the client during this process.
33. Expect some clients to present with underlying Axis II pathology. This can make persevering through the entire detox process challenging for the client and clinician.
34. As discussed earlier addiction education and treatment should be provided for appropriate clients as their condition stabilizes.

Phase 4- Taper

35. After a period of time on the long-acting replacement medication a slow tapering process is undertaken.
36. Allow at least 2 - 4 weeks of stabilization on a detox dose that has allowed the patient to be relatively comfortable and able to function normally before considering any dose tapering.
37. The length of time spent in the stabilization phase depends on many factors, mainly on the client's overall condition and how severely the client appears effected by this and other dependency issues. The degree of difficulty in finding an ideal replacement medication dose is another factor to consider.
38. Tapering and discontinuation is also a Symptom-Guided process therefore tapering can be halted and the dose of replacement medication can return to the dose that was previously working to control symptoms.
39. Whenever the tapering process is started have the client resume tracking symptom assessment scores on the NTLC Sedative Hypnotic Withdrawal Assessment Key. Symptom scoring will take place just as it did during the initial dose titration period.
40. Tapering schedule is open ended and depends on the how the patient is tolerating the process.
41. Anytime withdrawal symptom scores increase, it is advisable to return to the previous dose for a period of time. After another week or more try another taper using a smaller dose decrease.
42. There is no reason to rush the taper and every reason to approach the taper process with slow deliberation. Keep in mind that withdrawal symptoms cause re-injury.

43. Most clients can eventually discontinue their replacement medication. For individuals with an extensively damaged central nervous system sometimes this is not possible

APPENDIX B

List of sedative-hypnotic adverse effects

- Impaired cognition (negatively impact on thought process)
- Memory impairment
- Impaired mental alertness (over-sedation), lethargy and decreased motivation (anergia)
- Increased incidence of accidents
- Emotional blunting, impaired emotional processing, impaired emotional development. Interruption of natural and necessary emotional processes. For example, if the substance is used to treat generalized anxiety, emotions are dulled and the process of developing appropriate psychological adjustment is suppressed. The ability to learn and use appropriate coping strategies is delayed or entirely prevented. Reactions to loss and other traumas can become buried and may create chronic emotional disturbances.
- Mood changes, new onset depression or worsening of existing depression, anxiety or worsening of anxiety, panic attacks, agoraphobia
- Dementia (often this is temporary if the causative medication is discontinued following an appropriate detoxification process) This is more common in the older adults
- Tolerance: the original dose progressively has less effect. For the original effect to continue, a higher or more frequent dose is required.
- Physical dependence (the phenomenon of tolerance is why dependence on a drug develops).
- Tingling, numbness and burning sensations - sometimes described as electric shocks
- Menstrual disturbances
- New or increased severity of chronic pain - aches, pains and flu-like symptoms
- Stomach and intestinal upsets
- Changes in appearance - glazed eyes, poor complexion
- Visual changes - corrective prescription instability, light sensitivity
- Urinary symptoms (similar to those of a urinary tract infection such as burning and frequency)

Some symptoms caused by dependency may not appear until use of the substance is discontinued. In general, the symptoms caused by dependency will resolve with proper detoxification treatment, healthy life-style choices, patience and **time.** To a large extent, the repair process, including improvement of memory and cognition in general, will occur over the first six months. For some individuals repair appears to continue over a longer period of time. In some cases complaints of various physical and/or psychological symptoms individuals do not entirely resolve. A common long term complaint is a decrease in the ability to tolerate stress. For most, the ability to tolerate stress does improve significantly over time.

APPENDIX C
Miscellaneous Notes

Treating insomnia or other sleep disturbances: If difficulty falling or staying asleep continues to be an issue once the replacement medication dose (Librium or phenobarb) is properly titrated, a trial of Trazodone is appropriate. The dose range is quite wide: 50mg - 300mg. A reasonable starting Trazodone dose is 50mg at HS. This dose may be repeated every 30 - 45 min. as needed up to 200mg. If it becomes obvious that 50mg is not an adequate starting dose, change the start dose to 100mg and repeating 50mg doses PRN Q 30 - 45min. Remeron 15-30mg is an alternative sleep aide typically used if Trazodone is ineffective. If an antidepressant is required Remeron could be appropriate as both an antidepressant and the first choice sleep aide.

Mental Health Considerations: Benzos may have become a dependency issue if they were prescribed or used to self-medicate for psychiatric symptoms. The potential for underlying mental health issues range from generalized anxiety to more complex disorders such as major depression, bipolar affective disorder, borderline personality disorder, etc. Those most likely to experience disruptions to the detox process are those individuals with previously undiagnosed mental health problems. Undiagnosed and untreated mental health issues may become apparent during the detoxification process.

Special Precautions for clients on antihypertensive and cardioplegic medications: BP and heart rate can't be used as valid indicators for titration. Hypotensive crisis is a possibility once detox meds are optimized. Increased fluid and salt intake can help minimize this possibility. Careful weaning off the medication may be appropriate. Many clients have been prescribed these meds by physicians who are unaware they were dealing with someone with hypertension caused by sedative-hypnotic withdrawal (For example: If a daily drinker stops drinking for a day or two before a medical appointment and doesn't to their drinking pattern and dependency an elevated BP and heart rate due to withdrawal may be diagnosed as a cardiac disease or primary hypertension.

Necessity for Rapid Taper: If there is a need for a rapid typical taper schedule 30mg Phenobarbital reduction every two to three days. Individuals starting on a dosage of < 100mg per day are usually withdrawn in 15mg increments. If using Librium 25mg reductions are made on the same schedule. For individuals on lower end starting doses 5 and 10mg Librium capsules are available.

Use patterns that create dependency and/or damage to brain chemistry: Dosing can be as infrequent as once a day. For example: Ambien (zolpidem), used once a day, every day for more than about two weeks (some reports indicates a little as ten days of regular use) creates dependency. In the case of alcohol, excessive intake once a day as well as binge drinking is damaging. Any psychoactive drug taken on a regular basis can adversely affect brain chemistry.