



New York State
Office of Alcoholism & Substance Abuse Services
Addiction Services for Prevention, Treatment, Recovery

Addiction FYI Yearbook 2008

This yearbook is a compilation of all the Addiction Medicine Briefs and FYI's sent out during the year (2008).

This yearbook contains the following FYI's:

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Vigabatrin

OVATION Pharmaceuticals, Inc. announced on January 23rd, 2008 that it has signed a five-year Cooperative Research and Development Agreement (CRADA) with the National Institute on Drug Abuse (NIDA), a division of the National Institutes of Health, to study the company's novel anticonvulsant product, vigabatrin, for the treatment of cocaine and methamphetamine dependence.

Numerous anticonvulsants have been researched in the attempt to treat stimulant dependence, though none have been shown to be particularly effective. An addiction medication that can supplement behavioral treatment for the patient with stimulant dependence is crucial. The U.S. Office of National Drug Control Policy currently estimates that there are three million cocaine users and more than 300,000 methamphetamine users in the United States. Untreated stimulant dependence results in significant increases in health, social service and criminal justice costs to society and is a major contributor to the spread of infectious diseases like HIV, tuberculosis and hepatitis. To date, there are no medications approved by the U.S. Food and Drug Administration for the treatment of cocaine or methamphetamine addiction. Current treatments focus on cognitive behavioral therapy and symptomatic treatments.

Vigabatrin was synthesized in 1974 as the first designer drug for the treatment of epilepsy. It is an irreversible GABA (gamma-aminobutyric acid) transaminase which inhibits the enzyme that breaks down GABA, resulting in a two-to three-fold increase in brain levels of GABA. GABA is a neurotransmitter that has an inhibitory effect. Increasing the inhibitor acts to prevent epileptic seizures. The idea behind using vigabatrin for stimulants is that an increase of an inhibitory neurotransmitter should balance out the stimulant effect of drugs like cocaine and methamphetamines. Following oral administration, vigabatrin crosses the blood-brain barrier and is active within the central nervous system. It is rapidly and completely absorbed following oral administration with relative bioavailability estimated at 100 percent.

Vigabatrin has been marketed in Canada, Mexico and the United Kingdom using the trade name Sabril. Possible adverse effects that can occur when using this medication include:

amnesia, blurred vision, blue-yellow color blindness, decreased vision or other vision change, eye pain, increase in seizures, abdominal pain, abnormal coordination, clumsiness, agitation, anxiety, confusion, depression, constipation, diarrhea, dizziness, drowsiness, tremor, unsteadiness, vomiting, weight gain

Patients with a history of emotional or behavioral disturbances may be more likely to have an episode following vigabatrin therapy.



Salvia



Currently, there is a lack of information regarding plants or weeds commonly found in our environment that can cause serious harm when ingested, smoked, or rubbed into the skin. Most of these substances are not illegal. Many of these contain psychoactive drugs. A psychoactive drug is a substance which affects the central nervous system and alters consciousness and/or perceptions. Research suggests that teen misuse of these weeds and plants increases when they are in bloom in the Spring and Summer months, though they can be used year round and could possibly be purchased over the internet.

Recently, there have been several news items about *Salvia divinorum*. *Salvia*, also called Diviner's sage is a perennial herb in the mint family. The herb is native to Mexico but grows in the United States as well. In Mexico, the Mazatec Indians use the herb in healing ceremonies.

Salvia contains Salvinorin A which is a hallucinogen. Salvinorin A can be absorbed from the plant by smoking, chewing, tea infusions or inhaling vapors of the burning leaves. When absorbed the effects that can be seen include hallucinations and synesthesia (where one misinterprets sensory input; smell a color for example). Long-term effects are unknown, but may be similar to LSD where one can see flashbacks and depression.

Corvalolum

Corvalolum (in Russian, КОПЕАЖИОЖИ) or Corvalol is a sedative and spasmolytic medication manufactured and routinely prescribed in Russia as a sedative and/or vasodilator (blood vessel dilator). It is frequently prescribed for cardiac conditions as well.

This medication is very popular among Russian and Eastern European immigrants in the United States. Corvalolum is reported to be available over-the-counter in primarily Russian and Polish communities in New York City despite the fact that the FDA has banned it from the US. The medication is brought into the country largely in tourist baggage under the Personal (medication) Importation provision and is typically identified as a heart medication. Corvalolum is also currently being advertised as an herbal remedy available on the internet.

This medication is unapproved for use or distribution in the United States because of the presence of two co-occurring substances-alpha-bromideisovaleric acid ether (aka, bromisovalum) and Phenobarbital (a Class IV scheduled substance).

The risk of substance dependence is based on the presence of the Phenobarbital component. Phenobarbital, which is a barbiturate - a nonselective central nervous system depressant - is primarily used as a sedative hypnotic and also as an anticonvulsant when prescribed in sub-hypnotic doses. Phenobarbital is chemically designated as 5-Ethyl -5-phenylbarbituric acid; the molecular formula is: C₁₂H₁₂N₂O₃.

The preparation is taken in water or with sugar three times a day, 15 to 20 drops each time. If necessary, the dosage can be increased up to 40-50 drops. There is approximately 17 mg/ml of Phenobarbital contained in this preparation. A single dose of Corvalol (1 ml) contains: Phenobarbital (17mg), bromisovalum(derivative of bromine and valeric acid – 20 mg), peppermint oil (1.5 mg), sodium hydroxide (to convert poorly soluble Phenobarbital into Phenobarbital sodium) and ethanol.

Dosing up to 130 mg per day is quite conceivable. At this dose, or higher, there is a potential for either an inadvertent or intentional overdose or misuse of the product that could lead to a permanent disability or fatality.

Corvalol is nearly identical in both composition and effects to **Valocordin**, the main difference being that Corvalol is manufactured in Eastern Europe, whereas Valocordin is manufactured in Germany. The word "Valocordin" itself is a registered trademark of the German pharmaceutical company Krewel Meuselbach GmbH.

ADDENDUM: Sedative – Hypnotic Intoxication, Overdose and Withdrawal

Intoxication:

- Decrease in anxiety
- Sedation
- Occasional elation secondary to depression of inhibitions and judgment



- Pupils are midpoint and slowly reactive

Overdose:

- Sedation with decrease in level of consciousness
- Decrease in respiratory rate
- Hypotension (low blood pressure)
- Decrease in body temperature
- Gastric (stomach) paralysis
- Respiratory compromise

Withdrawal:

- Mood changes
 - Negative
 - Dysphoria
- Sleep changes
 - Insomnia
 - Alterations of sleep - wake cycle
- Physical changes
 - Increase in pulse rate
 - Increase in blood pressure
 - Increase reflexes
 - Tremors
 - Restless
 - Nausea
 - Ataxia
 - Seizures
 - Postural hypotension
 - Pupils are dilated
 - Metallic taste
- Perception changes
 - Illusions
 - Hallucinations
 - Depersonalization
 - Sensory hyperactivity (lights brighter, noise louder, etc.)



Yaba

Yaba is a combination of methamphetamine (30%) and caffeine (70%). Yaba, which means crazy medicine in Thai, is produced in Southeast and East Asia. The drug is popular in Asian communities in the United States and increasingly is available at raves and techno parties. A tablet version has become the most popular form of the drug in East Asia, according to the [United Nations Office on Drug Control](#) (UNODC).

The tablets are inexpensive to manufacture, costing about \$1 (US) and some labs can manufacture up to 10,000 tabs per hour. The main ingredients, which include salt, household cleaning products, distilled cold medicines, and lithium from camera batteries, can be bought legally. These tablets are generally no larger than a pencil eraser. They are brightly colored, usually reddish-orange or green. Yaba tablets typically bear one of a variety of logos; R and WY are common logos.



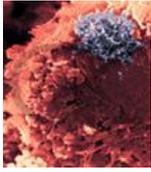
Yaba Tablets - Bureau of Immigration and Customs Enforcement

The tablets sometimes are flavored like candy (grape, orange, or vanilla). Another common method is called “chasing the dragon”. Users place the yaba tablet on aluminum foil and heat it from below. As the tablet melts, vapors are inhaled. The drug also may be administered by crushing the tablets into powder, which is then snorted or mixed with a solvent and injected.

Individuals who use yaba face the same risks as users of other forms of methamphetamine: rapid heart rate, increased blood pressure, and damage to the small blood vessels in the brain that can lead to stroke. Overdoses can cause hyperthermia (elevated body temperature), convulsions, and death. Individuals who use yaba also may have episodes of violent behavior, paranoia, depression, anxiety, confusion, and insomnia.

Although most users administer yaba orally, those who inject the drug expose themselves to additional risks, including contracting HIV (human immunodeficiency virus), hepatitis B and C, and other blood-borne viruses.

HTLV



HTLV is a human retrovirus that was discovered in 1980. Human T-lymphotropic viruses, type I (HTLV-I) and type II (HTLV-II), were the first human retroviruses discovered. Both belong to the oncovirus subfamily of retroviruses. They are only distantly related to the human immunodeficiency viruses (HIV-1 and HIV-2), which belong to the lentivirus subfamily of retroviruses and which cause acquired immunodeficiency syndrome (AIDS). Infections with HTLV-I and HTLV-II are most easily detected by a blood test. The presence of antibodies to HTLV-I or HTLV-II indicates that a person is infected with the virus.

Prevalence

Approximately 10-20 million people around the world are estimated to be infected with HTLV-I. There has been a tendency for the geographic distribution of HTLV-1 to center around the tropics. Areas with the highest prevalence of HTLV-I infections include southern Japan, the Caribbean, equatorial Africa, parts of South America, eastern Siberia, and the Pacific islands. HTLV-II predominates in Native American populations and among intravenous drug users. In some areas where HTLV-I infection is endemic, prevalence rates as high as 15 percent have been reported in the general population. Seroprevalence increases with age; in older age groups, rates are usually higher among women.

In the United States, HTLV-I/II seroprevalence rates among volunteer blood donors average 0.016 percent. Approximately half of HTLV-I/II-seropositive blood donors nationwide are infected with HTLV-I. HTLV-I infected donors most often report a history of birth in HTLV-I endemic countries or sexual contact with persons from the Caribbean or Japan. Smaller percentages report a history of either injecting drug use or blood transfusion. Clusters of HTLV-I infections have also been reported in African-Americans from the southeastern United States and in immigrants from HTLV-I endemic areas residing in Brooklyn, New York.

Transmission

Transmission of HTLV-I occurs from mother to child, by sexual contact, by blood transfusion, and by sharing contaminated needles. Mother-to-child transmission occurs primarily through breast-feeding (approximately 5 percent of children born to infected mothers but not breast-fed acquire infection). Sexual transmission of HTLV-I appears to be more efficient from males to females than from females to males. In the United States, approximately 25-30 percent of sex partners of HTLV-I/II-seropositive blood donors are also seropositive. Having multiple sexual partners is considered a very high risk behavior. Sharing blood-contaminated needles is the likely mode of transmission among injecting drug users.

HTLV-I is not transmitted by casual contact. Health-care workers caring for HTLV-I infected persons need to be primarily concerned about needle-stick exposure. Universal precautions, recommended for contact with all patients, are otherwise adequate to guard against HTLV-I transmission.



Until recently, partly because of the lack of serologic tests to differentiate HTLV-II from HTLV-I, no information was available regarding the epidemiology or modes of transmission of HTLV-II. HTLV-II is prevalent among injecting drug users in the United States and in Europe; more than 80 percent of HTLV-I/II seropositivity in the United States is due to injection drug use.

Diseases

Two diseases have been definitively associated with HTLV-I; adult T-cell leukemia/lymphoma (ATL) and a chronic degenerative neurologic disease, HTLV-I-associated myelopathy/tropical spastic paraparesis (HAM/TSP). Most HTLV infections remain asymptomatic. However, there is a 1-4 percent risk of disease development, usually between the ages of 30-50 after an incubation period of 10-40 years. Less is known about HTLV-II, but is common among intravenous drug users and linked to a form of atypical hairy cell leukemia.

Adult T-cell Leukemia/Lymphoma:

- Characterized as an acute aggressive leukemia of mature CD4+ T lymphocytes
- An individual infected with HTLV-1 has about a 1percent chance of developing a tumor
- There are five stages of ATL: (1) asymptomatic carrier stage, (2) preleukemic state, (3) chronic/smoldering ATL, (4) lymphoma type, and (5) acute ATL
- Most HTLV-1 infected individuals are asymptomatic carriers of the virus
- The preleukemic state and chronic/smoldering ATL stages represent transitional states in the development of malignancies evident in acute ATL
- Hypercalcemia (high blood calcium), abnormal liver function values, and lytic bone lesions are common
- Immunosuppression can lead to a variety of opportunistic infections
- Death usually occurs in a year following acute ATL

Myelopathy/Tropical Spastic Paraparesis:

- Also known as HTLV-1 Associated Myelopathy
- Carriers of the HTLV-I virus have less than a 1percent chance of developing HAM/TSP
- Most common in 20-50 year old women
- This is a neurological disease where the virus infects the central nervous system in addition to the blood
- Characterized by progressive demyelination of the long motor neuron tracts of the spinal cord
- Clinical manifestations start with lumbar back pain which radiates down the legs, leading to lower extremity weakness, sensory disturbances and sensory loss, urinary frequency, retention or incontinence



Recently, infective dermatitis, a chronic eczema associated with *Staphylococcus aureus* and beta-hemolytic streptococcus, has been reported in Jamaican children infected with HTLV-I.

There are serologic tests to determine HTLV infection. U.S. blood donors whose serum specimens are repeatedly reactive by the HTLV-I enzyme immunoassay and confirmed as seropositive for HTLV-I/II by the additional specific tests are notified and permanently deferred from donating blood.

Recommendations for Counseling

Persons found to be seropositive for HTLV-I/II according to the USPHS criteria, and positive for HTLV-I by additional testing, should be informed that they are infected with HTLV-I. They should be told that HTLV-I is not the AIDS virus, that it does not cause AIDS, and that AIDS is caused by a different virus called HIV. They should be told that HTLV-I is a lifelong infection. They should be given information regarding modes and efficiency of transmission, disease associations, and the probability of developing disease.

In particular, persons infected with HTLV-I should be advised to:

- Share the information with their physician
- Refrain from donating blood, semen, body organs, or other tissues
- Refrain from sharing needles or syringes with anyone
- Refrain from breast-feeding infants
- Consider the use of latex condoms to prevent sexual transmission
- If the HTLV-I-positive person is in a mutually monogamous sexual relationship, testing of the sex partner should be recommended to help formulate specific counseling advice.

Medical Follow-up

A periodic medical evaluation of HTLV-I or HTLV-I/II infected persons by a physician knowledgeable about these viruses is recommended. This evaluation might include a physical examination, a neurologic examination, and a complete blood count with peripheral smear examination. Medical evaluation of HTLV-II infected persons should be considered optional.

Vaccine Development

While there is no present licensed vaccine, there are many factors which make a vaccine against HTLV-1 feasible. The virus displays relatively low antibody production variability, natural immunity does occur in humans, and experimental vaccination using envelope antigens has been shown to be successful in animal models.

References

1. Dosik H, Denic S, Patel N, Krishnamurty M, Levine PH, Clark JW. Adult T-cell leukemia/lymphoma in Brooklyn. *JAMA* 1988; 259:2255-7.



2. Khabbaz RF, Onorato IM, Cannon RO, et al. Seroprevalence of HTLV-I and HTLV-II among intravenous drug users and persons in clinics for sexually transmitted diseases. *N Engl J Med* 1992; 326:375-80.
3. Feigal E, Murphy E, Vranizan K, et al. Human T-cell lymphotropic virus types I and II in intravenous drug users in San Francisco: risk factors associated with seropositivity. *J Infect Dis* 1991; 164:36-42.
4. CDC website: www.cdc.gov



Hepatitis C – Is it Curable?

- Dr. Bernstein's short answer is YES.
- 6 million Americans are infected with HCV with the greatest prevalence in 40-59 year olds.
- Less than 150,000 people have been treated.
- Curable can mean a sustained viral response (SVR) and no viral RNA in the serum and the liver.
- The ability to achieve a SVR is based on:
 - The patient must maintain the response (viral RNA undetectable for 6 months after stopping treatment)
 - The patient must not relapse
- Current SVR rates with Peg-Interferon plus Ribavirin are 76-82% in genotype non-1 HCV after 24 weeks of treatment (Strader Hepatology 2004).
- Factors predicting a response to therapy:
 - Genotype
 - Liver histology (biopsy viewed under a microscope)
 - Rapidity of viral clearance
 - Adherence to therapy
 - Patient size (more fat, less response)
 - Hepatic steatosis (fat in the liver)
- Adverse effects from interferon include flu like symptoms and neuropsychiatric problems such as depression.
- Why are we not treating patients?
 - Not enough specialists - we must consider the use of physician extenders (nurse practitioners, physician assistants and registered nurses) " all of whom can do a great job
 - Patients are not given the opportunity due to occasional incorrect conclusions (patient can't adhere to regimen, patient has normal liver functions, patient's psychiatric history)
- How can we improve cure rates?
 - Make current therapy easier to take
 - Place more importance of viral kinetics
 - Realize that not one size fits all
 - Perhaps with newer therapies (protease inhibitors and polymerase inhibitors) realizing that interferon is the platform for all future combinations



- The durability of the SVR -“ if negative at 6 months 97-99% of patients will be negative at 5 years. RE-INFECTION IS STILL POSSIBLE
- KEY POINTS: IT IS CURABLE -“ Current published data supports this - though small amounts of virus may remain in the liver after SVR (they may be present in a normal population as well). Disseminating the fact that HCV is curable may increase treatment rates. Remember, Hep C is spread primarily through blood exposure, always apply universal precautions.



Vaccines for the Treatment of Drug Addiction

Pharmacokinetic Approaches to Treatment of Drug Addiction (Gorelick – *Exper Rev Clin Pharm* 2008)

- The pharmacokinetic approach to treatment targets the drug molecule unlike the pharmacodynamic (pharmacologic) approach which targets the body aiming to modulate or disrupt the action of the drug on the sites of action in the body.
- Drugs that can be affected by the pharmacokinetic treatment are being studied (cocaine, nicotine, PCP and methamphetamine). These treatments are not available yet and are presently being researched.
- Pharmacokinetic effects include:
 - Acutely reducing free drug concentrations after drug intake so that there might be reduced drug toxicity or overdose
 - Long-term prevention of effective concentrations at the site of action in the brain might keep the dependent patient from experiencing re-enforcing effects from drug taking
 - Analogous to receptor blockade
 - 2 advantages over pharmacodynamic approach:
 1. Knowledge of drug mechanism of action is not needed
 2. No drug-drug interactions
 - Disadvantages:
 1. Only good against the specific drug used
 2. This treatment will not reduce drug craving or withdrawal
 3. Difficult to motivate patients to agree to this treatment
 - **Best delivered with concurrent psychosocial treatment**
- Two Pharmacokinetic Approaches:
 - Peripheral blocker
 1. Binds drug of abuse so that the complex that is formed is too large to cross the blood brain barrier
 - This is accomplished by drug specific antibodies that are actively made by the body (Active immunity) or by creating antibodies outside the body (passive immunity)
 - Peripheral blockers could also slow drug clearance. Thus a cigarette smoker would have higher nicotine levels and need to inhale less
 - Increased metabolism of drug
 1. This approach uses catalytic monoclonal antibodies or enzymes that metabolize the drug used



Must be cautious as catalytic treatments may produce active drug metabolites. This is not a concern when treating cocaine with this method as there are no significant active metabolites

- Specific Drug vaccines:
 - Anti cocaine vaccines
 1. Conjugating succinylnorcocaine to nontoxic cholera toxin. Vaccine produces anti-cocaine antibodies in 4 weeks in about $\frac{3}{4}$ of the subjects in one trial
 - Anti nicotine vaccines
 1. 3 being studied: Nic QB, Nic VAX, Ta-Nic
 - Catalytic Cocaine Antibodies

Bind to cocaine enzyme and metabolizes the cocaine, then antibody is free to bind and metabolize another cocaine molecule
- Ethical Issues - These treatments lead to detectable levels of antidrug antibodies, thus confidentiality risks exist as the antibody can be detected long after drug use has stopped.
- Issues that need to be addressed in the future
 - Ability to achieve consistently high antibody levels
 - Determine optimum concurrent treatment
 - Minimize potential adverse immune responses



Vascular Benefits of Stopping Smoking Are Rapid

People who quit smoking will see a rapid decline in the risk of death from coronary heart disease (CHD) and other vascular disorders, a new analysis of the Nurses' Health Study shows. The Nurses' Health Study began following 121,700 female nurses in the United States in 1976. Subjects have provided health information every 2 years since initiation of the study, including data regarding cigarette use.

Although the study was only in women, the authors of the study feel that the results are applicable to men as well. They found that 61% of the full benefit of quitting in regard to coronary heart disease (CHD) mortality and 42% of the full benefit of quitting in regard to cerebrovascular deaths was realized within the first five years of stopping smoking.

The relationship between an increasing risk of death with increasing numbers of cigarettes smoked per day varied by disease outcome — the trend was less pronounced for vascular disease, suggesting that the first few cigarettes account for most of the increased risk; in contrast, an increased number of cigarettes smoked per day substantially increased the risk of death from respiratory disease.

Vascular disease mortality by number of cigarettes smoked per day among 104,519 women in the Nurses' Health Study followed up from 1980 to 2004^a

	Never smoker	Past smoker	Current smoker	Current smoker, 1-14 cigarettes smoked per day	Current smoker, 15-24 cigarettes smoked per day	Current smoker, 25-34 cigarettes smoked per day	Current smoker, ≥35 cigarettes smoked per day	p value
Total vascular disease deaths, n^b (n = 2957)	1073	977	907	261	396	163	87	
Multivariate HR^c	1 (reference)	1.32	3.26	2.66	3.53	3.73	3.73	<0.001

a. All covariates, including smoking, updated until diagnosis of disease

b. Includes CHD and cerebrovascular disease

c. Hazard ratio (HR) adjusted for age, follow-up period, history of hypertension, diabetes, high cholesterol, body-mass index, change in weight from age 18 to baseline (1980), alcohol intake, physical activity, previous use of oral contraceptives, postmenopausal estrogen therapy use and menopausal status, parental history of myocardial infarction (MI) at age 65 years or younger, cigarettes smoked per day during the period prior to quitting, and age at starting smoking

It took much longer for the excess mortality risk associated with respiratory disease and smoking-related cancers to approach that of a never smoker: 20 years for chronic obstructive pulmonary disease (COPD) and 30 years for lung cancer. The study found a 58% increase in risk of dying from other cancers that are not thought to be associated with smoking. One of these was colorectal cancer (current smokers had a 63% increased risk of dying and former smokers had a 23% increased risk of dying,



compared to nonsmokers. In the current study, smoking increased the risk of death due to cancers of the cervix, colon and rectum, and stomach. However, the risk of ovarian cancer mortality was not significantly increased with smoking.

Source

Kenfield SA, Stampfer MJ, Rosner BA, et al. Smoking and Smoking Cessation in Relation to Mortality in Women. *JAMA*. 2008; 299:2037-2047



Many Students Binge to Celebrate Turning 21 (a very dangerous practice)

- Interviews with college students found that 34 percent of male drinkers and 24 percent of females said they had celebrated their 21st birthday by consuming 21 or more drinks according to a University of Michigan study (to be published in the Journal of Consulting and Clinical Psychology).
 - The University of Michigan study, involving 2,518 college students, looked into the "21 at 21" drinking ritual, which often involves drinking shots of liquor. The tradition has been linked to a number of alcohol-overdose deaths among birthday celebrants.
 - The researchers estimated that half of the men and more than one-third of the women in the study had a blood-alcohol level of 0.26 percent or higher when celebrating their 21st birthday, more than three times the legal limit and a level that placed them at high risk for injury or death.
- The metabolism of alcohol explains why this is a deadly problem.
 - Alcohol is metabolized in the body at a rate called "zero-order metabolism". This means that no matter how much alcohol is consumed, the body can only metabolize one drink per hour.
 - What is a standard drink?
 - US standard drink contains about 14 grams (0.6 fluid oz.) of pure alcohol
 - 12 oz of beer or wine cooler =
 - 8 - 9 oz of malt liquor =
 - 5 oz of table wine =
 - 3 - 4 oz of fortified or dessert wine =
 - 2 - 3 oz of cordial, liqueur or aperitif =
 - 1.5 oz of spirits (a single jigger of gin, vodka, whiskey, etc.)
 - Thus, one drink will lead to a blood alcohol concentration of 0.015, three drinks consumed in one hour will lead to approximately 0.05 and the 21st birthday ritual can lead to a level over 0.30 which can be associated with a stuporous state or even coma. The "21 at 21" celebration has been deadly in the past. (The level attained depends on gender, weight, and how exact each drink is measured – see chart below).



BAC Chart for Men

Men										
Approximate Blood Alcohol Percentage										
Drinks	Body Weight in Pounds									
	100	120	140	160	180	200	220	240		
0	.00	.00	.00	.00	.00	.00	.00	.00	.00	Only Safe Driving Limit
0	.00	.00	.00	.00	.00	.00	.00	.00	.00	Only Safe Driving Limit
1	.04	.03	.03	.02	.02	.02	.02	.02	.02	Driving Skills Significantly Affected
2	.08	.06	.05	.05	.04	.04	.03	.03		
3	.11	.09	.08	.07	.06	.06	.05	.05		
4	.15	.12	.11	.09	.08	.08	.07	.06		
5	.19	.16	.13	.12	.11	.09	.09	.08		Possible Criminal Penalties
6	.23	.19	.16	.14	.13	.11	.10	.09		Legally Intoxicated
7	.26	.22	.19	.16	.15	.13	.12	.11		
8	.30	.25	.21	.19	.17	.15	.14	.13		
9	.34	.28	.24	.21	.19	.17	.15	.14		
10	.38	.31	.27	.23	.21	.19	.17	.16		Death Possible

Subtract .01% for each 40 minutes of drinking.
One drink is 1.25 oz. of 80 proof liquor, 12 oz. of beer, or 5 oz. of table wine.

BAC Chart for Women

Women										
Approximate Blood Alcohol Percentage										
Drinks	Body Weight in Pounds									
	90	100	120	140	160	180	200	220	240	
0	.00	.00	.00	.00	.00	.00	.00	.00	.00	Only Safe Driving Limit
0	.00	.00	.00	.00	.00	.00	.00	.00	.00	Only Safe Driving Limit
1	.05	.05	.04	.03	.03	.03	.02	.02	.02	Driving Skills Significantly Affected
2	.10	.09	.08	.07	.06	.05	.05	.04	.04	
3	.15	.14	.11	.10	.09	.08	.07	.06	.06	
4	.20	.18	.15	.13	.11	.10	.09	.08	.08	
5	.25	.23	.19	.16	.14	.13	.11	.10	.09	Possible Criminal Penalties
6	.30	.27	.23	.19	.17	.15	.14	.12	.11	Legally Intoxicated
7	.35	.32	.27	.23	.20	.18	.16	.14	.13	
8	.40	.36	.30	.26	.23	.20	.18	.17	.15	
9	.45	.41	.34	.29	.26	.23	.20	.19	.17	
10	.51	.45	.38	.32	.28	.25	.23	.21	.19	Death Possible

Subtract .01% for each 40 minutes of drinking.
One drink is 1.25 oz. of 80 proof liquor, 12 oz. of beer, or 5 oz. of table wine.



Bed Bugs

Bed bugs are parasites that preferentially feed on humans. If people aren't available, they instead will feed on other warm-blooded animals, including birds, rodents, bats, and pets. Bed bugs and their relatives have evolved as nest parasites. Certain kinds inhabit bird nests and bat roosts and await the return of their hosts; others have adapted well to living in the 'nests' (homes) of people. Bed bugs and their relatives occur nearly worldwide. Bed bugs can infest airplanes, ships, trains, and buses. Bed bugs are most frequently found in dwellings with a high rate of occupant turnover, such as hotels, motels, hostels, dormitories, shelters, apartment complexes, tenements, and prisons. Such infestations usually are not a reflection of poor hygiene or bad housekeeping.

Bed bugs have been documented as pests since the 17th century. They were introduced into our country by the early colonists. Bed bugs were common in the United States prior to World War II, after which time widespread use of synthetic insecticides such as DDT greatly reduced their numbers. Improvements in household and personal cleanliness as well as increased regulation of the used furniture market also likely contributed to their reduced pest status.

In the past decade, bed bugs have begun making a comeback across the United States. The widespread use of baits rather than insecticide sprays for ant and cockroach control is a factor that has been implicated in their return. They are most abundant in rooms where people sleep, and they generally hide nearest the bed or other furniture used for sleeping. Bed bugs are most active in the middle of the night, but when hungry, they will venture out during the day to seek a host.

Hatchling bed bugs are about the size of a poppy seed, and adults are about 1/4 of an inch in length. From above they are oval in shape, but are flattened from top to bottom.



Common name	Scientific name
Bed Bug	<i>Cimex lectularius</i>
Tropical Bed Bug	<i>Cimex hemipterus</i>

Their color ranges from nearly white (just after molting) or a light tan to a deep brown or burnt orange. Bed bugs cannot fly. When disturbed, bed bugs actively seek shelter in dark cracks and crevices. Cast skins of bed bugs are sometimes discovered. Although such a finding confirms that bed bugs had been present previously, it does not confirm that any continue to infest the residence. Thus, inspect carefully for live crawling bed bugs. Bed bugs have a beaklike piercing-sucking mouthpart system. The adults have small, stubby, nonfunctional wing pads. Eggs are white and about 1/32 inch long.

Bed bugs superficially resemble a number of closely related insects (family Cimicidae), such as bat bugs (*Cimex adjunctus*), chimney swift bugs (*Cimexopsis* spp.), and swallow bugs (*Oeciacus* spp.). A microscope is needed to examine the insect for distinguishing characteristics, which often requires the skills of an entomologist.



Female bed bugs lay from one to twelve eggs per day, and the eggs are deposited on rough surfaces or in cracks and crevices. The eggs are coated with a sticky substance so they adhere to the substrate. Eggs hatch in 6 to 17 days, and nymphs can immediately begin to feed. They require a blood meal in order to molt. Bed bugs reach maturity after five molts. Developmental time (egg to adult) is affected by temperature and takes about 21 days at 86° F to 120 days at 65° F. The nymphal period is greatly prolonged when food is scarce. Nymphs and adults can live for several months without food. The adult's lifespan may encompass 12-18 months. Three or more generations can occur each year.

Bed bugs seek out people and animals, generally at night, while these hosts are asleep, and painlessly sip a few drops of blood. While feeding, they inject a tiny amount of their saliva into the skin. Repeated exposures to bed bug bites during a period of several weeks or more causes people to become sensitized to the saliva of these bugs; additional bites may then result in mild to intense allergic responses. The skin lesion produced by the bite of a bed bug resembles those caused by many other kinds of blood feeding insects, such as mosquitoes and fleas. The offending insect, therefore, can rarely be identified by the appearance of the bites. A physician should be consulted to rule out other causes for the lesions and to offer treatment, as needed. The affected person should resist the urge to scratch the bites, as this may intensify the irritation and itching, and may lead to secondary infection. Physicians often treat patients with antihistamines and corticosteroids to reduce allergic reactions and inflammation. Bed bugs are not known to transmit any infectious agents.

Because bed bugs readily hide in small crevices, they may accompany (as stowaways) luggage, furniture, clothing, pillows, boxes, and other such objects when these are moved between apartments, homes and hotels. Used furniture, particularly bed frames and mattresses, are of greatest risk of harboring bed bugs and their eggs. Bed bugs can wander between adjoining apartments through voids in walls and holes through which wires and pipes pass.

Bed bugs do not have nests like ants or bees, but do tend to congregate in habitual hiding places. Characteristically these areas are marked by dark spotting and staining, which is the dried excrement of the bugs. Also present will be eggs and eggshells, molted skins of maturing nymphs, and the bugs themselves.

Another likely sign of bed bugs is rusty or reddish spots of blood on bed sheets, mattresses, or walls. Heavy infestations may have a musty or "buggy" smell, but the odor is seldom apparent and should not be relied upon for detection.

Solving the Bed Bug Problem:

Reduce clutter to limit hiding places for bed bugs.

Thoroughly clean the infested rooms as well as others in the residence. Scrub infested surfaces with a stiff brush to dislodge eggs, and use a powerful vacuum to remove bed bugs from cracks and crevices. Dismantling bed frames will expose additional bug hiding sites. Remove drawers from desks and dressers and turn furniture over, if possible, to inspect and clean all hiding spots.



Mattresses and box springs can be permanently encased within special mattress bags. Once they are installed, inspect the bags to ensure they are undamaged; if any holes or tears are found, seal these completely with permanent tape. Any bugs trapped within these sealed bags will eventually die.

To prevent bed bugs from crawling onto a bed, pull the bed frame away from the wall, tuck sheets and blankets so they won't contact the floor, and place the frame legs into dishes or cups of mineral oil.

Caulk and seal all holes where pipes and wires penetrate walls and floor, and fill cracks around baseboards and cove moldings to further reduce harborages.



Bed bugs hidden beside a recessed screw under a nightstand



Bed bugs often reside along baseboards. Photo shows eggs, nymphs, and adults beneath carpet edge.

Bedbugs also succumb to cold temperatures below 32° F, but the chilling period must be maintained for at least two weeks. Attempts to rid an entire home or apartment of bed bugs by raising or lowering the thermostat will be entirely unsuccessful. Most housecleaning measures are of little benefit in bed bug management. Site-specific vacuuming, however, can help remove some of the bugs before treatment with insecticides. Bed bugs (especially the eggs) can be difficult to dislodge. Optimum results will be achieved by moving and scraping the end of the suction wand along infested areas such as seams, tufts and edges of bedding, and the perimeter edge of wall-to-wall carpets. Afterward, dispose of the vacuum contents in a sealed trash bag. Steam cleaning of carpets may be helpful for killing bugs and eggs that vacuuming may have missed. Because bed bugs and other pests may spread through cracks and holes in the walls, ceilings and floors, it is wise to inspect adjoining apartments on the same floor as well as those directly above and below.

- Don't panic. Although bed bugs can be annoying, they can be battled safely and successfully if you adopt a well-considered strategy.
- Do not apply pesticides unless you fully understand what you are applying and the risks involved. You are legally liable if you misapply a pesticide, or apply it without a license to the property of another (including common spaces in apartment buildings). Generally, landlords, owners and building managers cannot legally apply pesticides. They should, instead, hire a licensed pest control operator to confirm the infestation and to develop an integrated pest management plan.
- Do not dispose of furniture that is useful. Infested furniture can be cleaned and treated. Placing infested furniture (particularly mattresses) into common areas or on the street may simply help spread bed bugs to the homes of other people. Infested furniture intended for disposal should be defaced to make it less attractive to other people. Officials in some municipalities affix to potentially infested furniture a label to warn of bed bugs. To reduce opportunities of infested furniture re-entering their building, building managers should ensure that any disposed



furniture is locked within a dumpster or immediately carted away to a landfill or waste facility.

- **Do NOT apply any insecticide or pesticide to mattresses or to surfaces that would be in direct contact with a person, unless the label instructions specifically state that the product can be applied in that manner. Some products can be harmful to people and pets. READ and UNDERSTAND the label.**

Insecticide formulations used to treat bed bug infestations consist mainly of the following:

Insecticidal dusts abrade the insect's outer waxy coat and cause the bugs to dry out quickly. Some consist of a finely ground glass or silica powder. These dry dusts may be applied in cracks and crevices, as well as within the hollow interior of a tubular bed frame. Some dust formulations include another kind of insecticide.

Contact insecticides are those that kill the bugs shortly after they come into direct contact with the product or its residue. These mainly consist of one or more kinds of pyrethroids (synthetic analogs of the extract of chrysanthemum flowers). These products tend to rapidly 'knock down' bugs that wander over or otherwise contact the insecticide. Because pyrethroids can be irritating and repellent to many insects, bed bugs may avoid treated surfaces. A different kind of contact insecticide, chlorfenapyr, is now available in a product available to pest control operators. This product is non-repellent and effective for a longer period.

Insect Growth Regulators (IGR) affect the development and reproduction of insects. Although these products can be quite effective in reducing the population of the pests, they do not kill bugs quickly. Thus, pest control operators often use these products as a supplement to other kinds of insecticides.

Finally, a common question: "How do I get bed bugs out of clothes that have been in a bedroom where they are?" This is actually easier than you think - all you have to do is run them through a washer and dryer. A lot of people think it has to be more complicated, but that's not the case - even about five minutes in most dryers is enough to kill both the adults and the developing bedbugs (larva, nymphs, eggs). The reason they die off is because of the heat - they just can't survive the temperatures (up to 175 degrees) of most washers and driers.

What if you have something you can't put in a washing machine (stuffed animals, rugs, shoes, etc.)? If you can put it into a dryer, that will work, and it's very effective. Dry cleaning will also work. One other option is to put the item in a plastic bag and place it in the freezer for about a week. It takes much longer to kill them using cold than heat, so this method is not ideal. But if you absolutely can't wash it and it won't be damaged by cold, then you can put an item in the freezer and they will die off eventually.

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SBIRT and Billing Codes (Medicare Codes are Billable Now)

Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an evidence-based, public health program that providers can use in many different clinical settings to detect problem drinking or drug use and then provide a brief intervention. At present, fewer than 10 percent of adults with alcohol or drug disorders are identified and treated. This initiative with new billing codes should encourage doctors to address alcohol and drug problems, leading to a reduction in the tremendous social and medical costs associated with untreated addiction.

What is SBIRT?

Screening. With just a few questions on a questionnaire or in an interview, practitioners can identify patients who have alcohol or substance use problems and determine how severe those problems already are.

Brief Intervention. If screening results indicate moderate risk, individuals receive brief interventions. The intervention educates them about their substance use, alerts them to possible consequences, and motivates them to change their behavior.

Brief Treatment. If individuals are at moderate to high risk, the next step is brief treatment. Similar to brief intervention, this emphasizes motivations to change and client empowerment.

Referral to Treatment. For those whose screening indicates a severe problem or dependence, the next step is referral to substance abuse treatment.

Why use SBIRT?

SBIRT has proved highly effective in motivating those whose substance use is unhealthy to alter their use. The federal Screening, Brief Intervention, Referral and Treatment (SBIRT) programs that are funded through SAMHSA have shown that of everyone screened, 20 percent are positive for risky, problematic substance use. Of that 20 percent, 70 percent can be treated by a single brief intervention, 15 percent need six or fewer follow-up interventions that can be done by telephone, and 15 percent have dependence and need specialty substance abuse treatment. Preliminary SBIRT data show a total of 74 percent of high-risk individuals reported lowering their drug or alcohol consumption after one or more brief treatment sessions, and 48 percent reported stopping use. Making behavioral health screening part of primary care makes sense and by taking this public health approach to substance abuse, we can lower health care costs because we're reaching individuals before they need specialized treatment.

Are there codes that can be used for reimbursement?

In January 2008, the AMA introduced new health care codes for substance abuse screening and brief intervention. Physicians now have four different codes that can be used in 2008 for screening and brief intervention (SBI). Two of the codes are for



privately insured patients (99408 and 99409), and two for Medicare patients (G0396 and G0397). Fees are based on length of activity (15 -30 minutes; more than 30 minutes).

The definitions of the Healthcare Common Procedure Coding System (HCPCS) codes focus on "assessment" instead of "screening." These codes, again, will only be used for people age 65 and above. The G-code definitions are "Alcohol and/or substance (other than tobacco) abuse structured assessment (e.g., AUDIT, ASSIST, DAST) and brief intervention, 15-30 minutes" for G0396, and "Alcohol and/or substance (other than tobacco) abuse structured assessment (e.g., AUDIT, DAST) and intervention, greater than 30 minutes" for G0397. Note that Medicare calls the 15-30 minute intervention "brief," but does not use that same denomination for the longer intervention. The G codes also are defined as "assessment" instead of "screening. Medicare will instruct its carriers to pay for G0396 and G0397 "only when considered reasonable and necessary."

For patients not covered by Medicare - in other words, patients under age 65 - the only codes physicians can use are the Healthcare Common Procedure Coding System (CPT) codes. Private payers have yet to weigh in on whether they will cover these codes. But Medicare made it much easier for them to do so by publishing the RVUs (relative value units) for the CPT codes. These RVUs, when multiplied by the conversion factor, give the dollar amount payable per code. Since most payers rely on the Medicare fee schedule, at least as a jumping off point, to set their own fees, the publishing of RVUs makes it much more likely that non-Medicare patients will get these services as well. Medicaid coding is in place, but requires each individual state Medicaid authority to "turn on" the codes. As of this date, NYS has not activated the codes for use in Medicaid patients.

Payer	Code	Description	Fee Schedule
Commercial Insurance	CPT 99408	Alcohol and/or substance abuse structured screening and brief intervention services; 15 to 30 minutes	\$33.41
	CPT 99409	Alcohol and/or substance abuse structured screening and brief intervention services; greater than 30 minutes	\$65.51
Medicare	G0396	Alcohol and/or substance abuse structured screening and brief intervention services; 15 to 30 minutes	\$29.42
	G0397	Alcohol and/or substance abuse structured screening and brief intervention services; greater than 30 minutes	\$57.69
Medicaid	H0049	Alcohol and/or drug screening	\$24.00
	H0050	Alcohol and/or drug service, brief intervention, per 15 minutes	\$48.00

For more information you can visit the SAMHSA website: <http://www.sbirt.samhsa.gov/about.htm>

For more information on the AUDIT: http://whqlibdoc.who.int/hq/2001/WHO_MSD_MSB_01.6a.pdf

For more information on the DAST: http://www.projectcork.org/clinical_tools/html/DAST.html

For more information on the ASSIST:

<http://www.ihs.gov/medicalprograms/behavioral/documents/TheAssistguidelinesforuseinprimarycareV11draft.pdf>



DXM Suspected as 'Snurf' Pill Ingredient

4 students at a Pennsylvania school became sick several days ago after buying a package of small pink pills on the Internet, pills that were labeled "Snurf". The four 10th-grade boys were hospitalized after the use. It is suspected that dextromethorphan (DXM) may be the main active ingredient in so-called 'Snurf' pills. The ingredients in the Snurf pills remain a mystery: the packaging claims they are herbal and include "fevizia, palenzia, and de la Amazon," but no such herbs exist. Other products, sold as Snuffadelic and Red Dawn Vector Euphoria Enhancer, claim to have the same ingredients.

DXM is the main ingredient in cough medications like Robitussin and other over-the-counter products, which themselves have grown in popularity as drugs of abuse, especially among younger teens. Abuse of cough medications is not a new phenomenon. Information about this abuse dates back to the 1950's when cough preparations contained codeine or similar compounds.

DXM is a synthetically produced substance, the methylated dextrorotary analogue of levorphanol, a substance related to codeine. The cough suppressant ability of the opiates act on the cough center located in the medulla oblongata and raises the threshold of the cough reflex. It does not have other opiate effects such as analgesia, sedation, or constipation. DXM is found in over 75 OTC medications.

Recent research is examining DXM as an anti-epileptic, neuroprotector and anti-parkinson agent. However, DXM's antagonism of the N-methyl-D-aspartate receptor (NMDA) by way of its immediate metabolite dextrorphan leads to its potential as a substance of abuse when used in greater than recommended dosages. Dextrorphan's effect can last 3 - 6 hours and cause a PCP intoxication - like syndrome. Thus, DXM has been classified as a dissociative agent, much like PCP and Ketamine. With DXM intoxication, one can see hyperexcitability, lethargy, ataxia, slurred speech, hypertension, elevated heart rate, nystagmus and hallucinations. It is also thought that DXM can cause the release of serotonin. If used with an antidepressant of the SSRI class (Prozac, Paxil, etc.), it can cause a potentially fatal condition known as the Serotonin Excess Syndrome.

The drugs are not illegal, but the "herbal" label may fool teens into thinking that they are safe. This is just part of a surge in abuse of over-the-counter drugs by young teens.

