

Statement of J. Ward Donovan, M.D.
Associate Professor of Medicine
Pennsylvania State University
College of Medicine
Director, Central Pennsylvania Poison Center
March 8, 1999

Re: House Bills 111 and 183
Pennsylvania House of Representatives
Judiciary Committee

Thank you for this opportunity to comment on these proposed bills, intended to regulate gamma-hydroxybutyrate (GHB) as a controlled substance. As a board-certified medical toxicologist and Director of the Central Pennsylvania Poison Center, I would specifically like to address the clinical effects of this agent, the extent of its abuse, and its potential medical uses.

GHB is a naturally occurring substance in the human brain. The drug was first studied in 1960 as an anesthetic, because it induces a sleep-like state with only minor heart and blood pressure effects in therapeutic doses. However, interest in this use declined because of its ability to induce seizures. However, in the 1970's interest in GHB resumed for the treatment of sleep disorders. It has also been theorized to have steroid-enhancing effects, and the ability to stimulate growth hormone. Despite the fact that this has never been proven, these potential effects created popularity for the drug amongst body builders. Outside the United States, GHB is used to treat narcotic and ethanol withdrawal, and it is effective in reducing the tremors, sweating, depression, nausea, and anxiety associated with withdrawal.

Since 1990, there have been many reports of GHB abuse and serious adverse effects. It has been popularized as a euphoriant, aphrodisiac, dietary supplement, strength enhancer, and sleep inducer. It has been implicated in some reports as a "date rape" drug. GHB is an illicit street drug sold under the names "Liquid Ecstasy, Soap, Scoop, Cherry Menth, Nature's Quaalude, and Georgia Homeboy". It has also been marketed under a variety of names, including Sodium Oxybate, Gamma-OH, Gamma Hydrate, and Somatomax BM. It can be homemade with recipes readily available on the Internet from gamma-butyrolactone (GBL), an industrial and household solvent. GBL can also be ingested as a precursor of GHB, and is illegally marketed as a food supplement under the names "Revivariant" and "Renewtrient".

The clinical effects of GHB are primarily neurologic, and vary widely with the dose. Beneficial effects are the induction of rapid eye movement sleep, which decreases the symptoms of narcolepsy. In controlled clinical trials, treatment for narcolepsy has been promising, with minimal side effects. However, ingestion of higher doses and interactions with other drugs can have serious adverse effects. Its euphoric properties create a feeling of a "high", making it particularly liable for abuse. It rapidly induces sleepiness and can cause unconsciousness within thirty minutes. Higher doses induce vomiting, delirium, agitation, muscle twitching, and even seizures. The respiratory and heart rates can be seriously decreased, and the patient may need to be placed on life support systems. A characteristic course of abuse or overdose is rapid loss of consciousness, with sudden recovery a few hours later and amnesia for the entire event.

In 1998, the Central Pennsylvania Poison Center was contacted about 10 individuals exposed to GHB, and all of these were intentional cases of abuse for the purpose of achieving a "high". Three of these individuals had hallucinations, and another three were unconscious and required admission to an intensive care unit. One of these patients was critically ill enough to require transfer to our Regional Poison Center at the M.S. Hershey Medical Center. Seven cases of GHB exposure requiring hospitalization were also reported during the last 6 months of 1998 by the Philadelphia Poison Center.

However, the extent of abuse by GHB should be placed in context. The Central Pennsylvania Poison Center of the Penn State Geisinger Health System provides poison and drug information services for 3.6 million Pennsylvanians in 34 counties. During 1998, there were over 34,000 human drug or toxin exposures managed by our center, and a total of over 42,000 inquiries. Of the exposure cases, 570 were due to drug abuse, and 332 were due to product tampering or malicious intent. Thus, GHB accounted for only 0.03% of our total human exposures, and 1.8% of the abuse cases. It is important to point out that we had no reported cases of tampering or malicious use of GHB. While many cases of GHB abuse were undoubtedly not reported to our center, our extensive network of participating member hospitals assures us that most cases of GHB exposure requiring an emergency department visit would have been captured by this system.

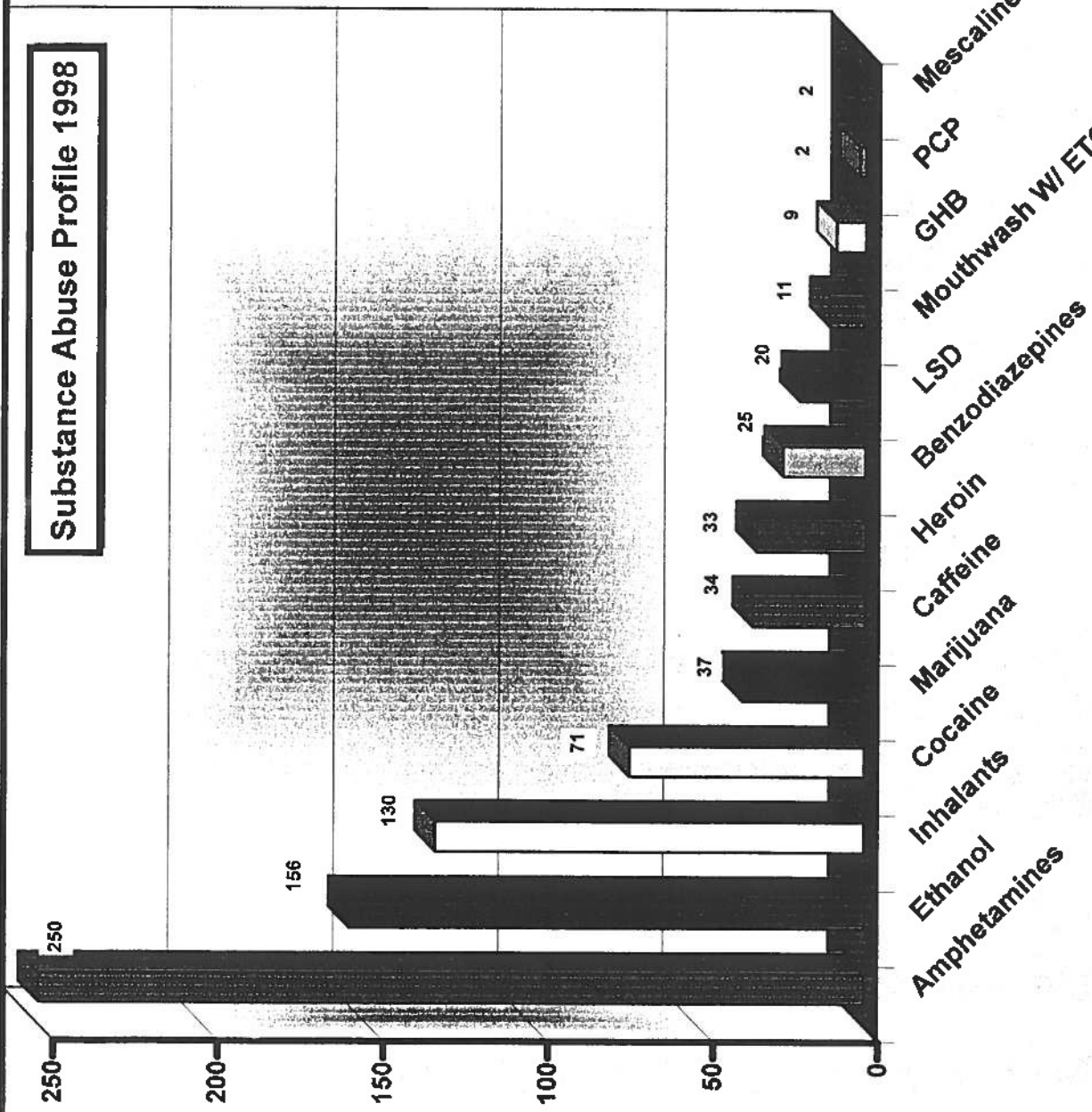
In contrast to the small number of reported cases of GHB during 1998, there were 250 cases of abuse of stimulants such as Ritalin and fenfluramine, which are Scheduled drugs. There were 25 cases of benzodiazepine abuse (eg. Valium), and 130 cases of inhalant abuse of household products and aerosols. As these figures demonstrate, abuse of some drugs and products will continue to occur, whether restricted or readily available.

There is also a very promising legitimate use for GHB. Clinical studies in the United States and Europe have found that it is effective for improving night-time sleep, and in controlling hallucinations and sleep paralysis in narcolepsy patients. This condition is thought to affect between 120,000 and 180,000 individuals in the United States. It is a potentially disabling illness causing excessive daytime sleepiness, sudden loss of muscle control, and hallucinogenic dreams. There is currently no other consistently effective therapy for these individuals, and GHB potentially can allow many of them to return to normal lives.

Therefore, I urge support of legislation to make GHB a controlled substance in Pennsylvania, to reduce its potential for abuse and in some rare cases of use for malicious purposes. At the same time, I do not believe that this drug warrants classification as a Schedule I or II agent, which would almost certainly eliminate its future research and production as a therapeutic agent for narcolepsy. Furthermore, even strict restrictions will not eliminate this drug's availability for illicit purposes.

Thank you again for allowing me to present this information to you.

Substance Abuse Profile 1998



- Amphetamines
- Ethanol
- Inhalants
- Cocaine
- Marijuana
- Caffeine
- Heroin
- Benzodiazepines
- LSD
- Mouthwash W/ ETOH
- GHB
- PCP
- Mescaline/Peyote

Substances of Abuse