AN ABSTRACT OF THE THESIS OF


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Ray Tricker

Methamphetamine has flooded the media for the past two decades however, this drug has impacted the nation for many decades prior. Since its synthesis in 1893, methamphetamine has appealed to various aspects of society including soldiers, housewives, college students, businessmen, truck drivers, drugged crazed hippies, and athletes. The extensive effects, easy production methods, and low-cost has caused methamphetamine to maintain an influence in the US for almost a century. However, the reality of methamphetamine use is unknown to the majority of today’s society.

The media has profiled users, exaggerated use, and amplified the effects through prevention programs such as the Oregonian’s Faces of Meth and the Montana Meth Project. This has caused a current, ignorant perspective of methamphetamine use. The actuality of the matter is that methamphetamine remains to be one of the least used drugs in America but is being defined by the socially stigmatized term “epidemic”. The false portrayal of methamphetamine by the media is in hopes to prevent further use.

Nevertheless, is it moral for the media to exaggerate drug use for the good of society? Methamphetamine is not a drug to be reckoned with but, it is also not the sloughing beast that has been displayed in the media.

Key Words: methamphetamine, drug, society, media, history

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The Historical and Current Perspectives of the Methamphetamine Abuse Phenomena in the United States

by

Avary Justice Kolasinski

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The Historical and Current Perspectives of the Methamphetamine Abuse Phenomenon in the United States

Introduction

Methamphetamine has been a growing phenomenon in the United States for the past two decades. The drug has been shown to be spreading across the nation faster than any other illicit drug. Numerous communities, families, and individuals reported to have been destroyed by this ravaging beast. The current social view is that methamphetamine use has grown to epidemic proportions and that our nation is going to be ruined by this drug if the spread is not ceased immediately.

Society’s understanding of methamphetamine is based on the medias deception of the drug, user, and effects it can have on an individual, community, and family. Recent reports have appeared to focus on the physical destruction of methamphetamine use by exposing users rotted smile, scarred face, and distasteful appearance. These images have profiled and stereotyped methamphetamine users, typically, to be Caucasian, blue-collar males. In addition to appearance, the term epidemic has contributed a significant amount of stigma to methamphetamine. Merely defining drug use as an epidemic causes society to become overwhelmed and anxious, in turn, creating a moral panic that has historically served as a “successful” drug prevention strategy.

This drug has recently caused uproar in news stations, media articles, and political debates. Nevertheless, the US media has been known to exaggerate drug use in hopes to diminish the spread of the drug. American history can be divided into drug epidemics,
some that have been supported by national data the media has claimed while others have been significantly exaggerated. The ongoing fallacies portrayed by the media makes it difficult to believe the epidemic claims of methamphetamine use across the nation.

Although it may seem otherwise from the recent media focus, methamphetamine has made itself a history in the US since its initial use in the 1920s. Much of society is oblivious to the history of methamphetamine however, it is an important factor when analyzing the fluctuations of methamphetamine use. Understanding the historical perspectives of methamphetamine aids in the analysis of the current perspectives of methamphetamine with respect to both the user profile and the social view. Because of the recent focus on methamphetamine throughout the country, it is important to decipher whether meth is the horrible drug that has reached every corner of America or whether it is solely a prevention strategy used by the media.
Review of Literature

Background of Methamphetamine

The most appealing quality of methamphetamine is its unique chemical structure that produces immediate effects incomparable to any other drug. These intense effects became well known to the public within the first two years of use in the early 1920s however, the chemistry of methamphetamine was not understood at this time. As methamphetamine became more popular, scientists became more interested in the chemical aspects of the drug, prompting numerous experiments. The results of these experiments transformed the view of methamphetamine from a drug of pleasurable wonder to a drug of known disaster. Current reports state that the effects of “meth makes crack look like candy.”1 The level of understanding of methamphetamine’s biological mechanisms and chemical aspects directly influences the lifestyle of the user, route of administration, and methods of production, all contributing factors to this drug’s detrimental consequences on society.

Description of Methamphetamine

Methamphetamine (C\textsubscript{10}H\textsubscript{15}N) is a psychostimulant of the phenethylamine and amphetamine class of psychoactive drugs.2,3 Psychostimulants are psychoactive drugs that temporarily improve or accelerate either mental or physical function or both. This drug has obtained more than four hundred different names over the years including Ice, Crank, Speed, Meth, Crystal, Tina, Nazi Dope, Blizzard, and its scientific (IUPAC) name N-methyl-1-phenylpropan-2-amine.2,4,5
Methamphetamine consists of many precursor chemicals, ephedrine being the well-known ingredient that is used in a majority of today’s production methods. Ephedrine is a natural substance derived from the Chinese herb Ma Huang, also known as Ephedra. For over 5,000 years, the Ephedra herb has been used in traditional Chinese medicine for the treatment of respiratory problems including asthma and hay fever. In 1893, a Japanese chemist, Nagai Nagayoshi, unintentionally synthesized methamphetamine. It did not take long for intrigued chemists to experiment with this new drug and produce crystallized methamphetamine in 1919. Meth was a drug unlike any other, mainly because of its molecular structure.

Chemical Enantiomers

One of the most unique features of methamphetamine is the wide variety of effects it can produce. This range of effects is because of the drug’s ability to slightly alter its molecular structure in specific environments. That is, methamphetamine occurs in two enantiomers that have significantly different physical and mental effects.

![Methamphetamine Enantiomers](image.png)

**Figure 1- Methamphetamine Enantiomers.** The left compound is the levorotary enantiomer. The right compound is the dextrorotary enantiomer.

The dextrorotary enantiomer, d-methamphetamine, possesses the psychostimulant effects of the drug, while the levorotary enantiomer, l-methamphetamine, is Central Nervous System (CNS) inactive. Although it is very rare, the United States Food and Drug Administration (FDA) has approved methamphetamine for the treatment of Attention
Deficit Disorder (ADD), Attention Deficit Hyperactive Disorder (ADHD), severe obesity, and nasal congestion under the trade name *Desoxyn*.  

Street meth and prescription meth are derivatives of different procedures and have significantly different effects on the body. The illicit methamphetamine may be sold as pure d-methamphetamine or in a racemic mixture, a mixture that contains equal amounts of both d and l enantiomers. This form of meth is usually cut with caffeine or sugar in order to create a more stimulating effect. Prescribed methamphetamine is typically in the form of l-methamphetamine or methamphetamine hydrochloride.

The dextrorotary enantiomer is two to four times as stimulating to the brain as the levorotary enantiomer through the route of administration of least stimulation. The l-enantiomer is more stimulating to the Cardiovascular System (CS) and nasal sinuses hence its use in the medical field. Medical methamphetamine does not have any significant effects on the Central Nervous System nor contains any addictive qualities. This paper mainly deals with the illicit form methamphetamine, which will be referred to as meth. If a discussion of the medicinal form of methamphetamine occurs, it will be obviously stated.

**Methamphetamine in the Brain**

Methamphetamine works at the most basic level of pleasure, by increasing the release of dopamine, norepinephrine, and serotonin in the brain. Dopamine is the neurotransmitter that acts as the body’s reward system, creating a sense of pleasure and contentment. It is released through everyday experiences such as receiving a good grade on a test, chocolate, sex, or even winning a competitive game. Norepinephrine controls heartbeat, appetite, attention, and fight or flight responses. This
neurotransmitter can be synthesized from dopamine and released into the blood as a hormone or can occur naturally as a neurotransmitter in the Central Nervous System or Sympathetic Nervous System (SNS).\textsuperscript{9,11} Serotonin controls mood, emotions, memory, learning, sleep and appetite.\textsuperscript{5,10} In a healthy brain, these substances are released, used by the body, and then reabsorbed for the brain to reuse them when stimulated again.\textsuperscript{10}

Methamphetamine acts in a unique way by substantially increasing the chemical release, decreasing the metabolism, and blocking the reuptake of these three neurochemicals.\textsuperscript{2,5,11} By increasing a release and inhibiting reuptake, the neurotransmitters stay in synapse longer, hence failing to shut off the euphoric effect. Additionally, because of its similar structure, meth can bind to nerve receptors and mimic the neurotransmitters, artificially acting as these pleasurable neurochemicals.\textsuperscript{6}

The National Institute on Drug Abuse (NIDA) (2005) explains that due to the decreased metabolism in the brain, the drug effects last substantially longer.\textsuperscript{6} Furthermore, methamphetamine remains in the blood stream unchanged for extended periods of time since it is solely metabolized by the liver and then excreted by the kidneys. The rate of excretion of methamphetamine is considerably slower than that of other drugs but is also heavily influenced by diet and lifestyle of the user.

The standard half-life of strong stimulants, such as cocaine, is thirty to ninety minutes where as methamphetamine has a half-life of nine to twelve hours, depending on the method of ingestion.\textsuperscript{6} This extended chemical imbalance that occurs within the brain while high on meth results in nerve cell death and nerve cell structural change. In addition, over the course of use, the inhibited reuptake of the neurochemicals results in the weakened ability of the brain to naturally produce them.\textsuperscript{5,9} These effects in the brain
force a meth user into a deep state of depression during abstinence, hence contributing to
the high rate of relapse of methamphetamine users.  

**Effects of Methamphetamine**

**Immediate Effects of Meth Use**

The dextrorotary enantiomer of methamphetamine causes a variety of immediate
effects. According to Tom Scheve (2009), a Discovery Channel journalist, typical effects
of prescribed doses of methamphetamine include but are not limited to:  

- Heightened competence in motor skills and mental activity
- Increased alertness, a feeling of arousal or wakefulness, a diminution of fatigue and drowsiness
- Stimulation of the need for motor activity and locomotion
- Feeling of euphoria and inhibition of depression
- Increased heart rate
- Inhibition of appetite but increased metabolism
- Increased libido
- Expansion of bronchial tubes, making breathing easier
- Constriction of blood vessels, increasing blood pressure
- Dryness of mouth
- Feeling of confidence and grandeur
- Dilation of pupils
- Urination and swallowing become difficult
- Increased sweat glands

**Dopamine Release**

One of the most appealing effects of methamphetamine is the immediate sense of
euphoria. Euphoria is defined as an “emotion of intense state of transcendent happiness
combined with an overwhelming sense of contentment.”¹⁴ This is not typically achieved
during the normal course of the human experience but may be compared to sex, love,
religious rituals, meditation, and triumph. This exaggerated physical and psychological
state is typically caused by an instantaneous release of dopamine in the brain in
combination with self-awareness and contentment. Figure 2 compares the amount of dopamine released through different experiences measured by the percent basal rate.

![Figure 2- Percent Basal Rate of Dopamine Release](image)

The graph compares the percent basal rate of dopamine released during an activity or consumption of a substance.

Basal rate is the rate of the continuous supply of a chemical, in this case, dopamine. As shown, food has a 150%, sex has a 200%, nicotine has a 225%, alcohol has a 200%, cocaine has a 350%, and methamphetamine has a 1,250% basal release. Hence, methamphetamine releases six times more dopamine than any natural human experience and three times more dopamine than other strong stimulant such as cocaine. Various studies have concluded that the high basal rate of methamphetamine is the reason for its highly addictive quality.

**Long-Term Effects of Meth Use**

Despite the immediate effects, high and prolonged doses methamphetamine can cause serious physical and mental problems. There is a significant burden on the Nervous, Circulatory, Renal, and Respiratory Systems when this state of artificial euphoria is sustained for an extensive period of time. The persistent levels of dopamine and norepinephrine cause sleeplessness, anxiety, and paranoia. Excessive serotonin
causes aggression, psychotic episodes, and sudden mood changes.^{4} These unnatural levels place a strain on the body, resulting in acute physical problems that come from the extended period of being hyper alert. In addition to the above list, high dose effects include:\^{2,5,8,9,10,12,13,15}

- Increased respiration
- Hyperthermia
- Increased heart rate and blood pressure
- Irregular heart beat
- Cardiovascular collapse
- Irritability
- Prolonged insomnia
- Organ damage
- Kidney failure
- Confusion
- Anxiety and nervousness
- Tremors
- Convulsions and seizures
- Paranoia and hallucinogens
- Aggression and irritability
- Depression
- Shaking and extremely painful stomach cramps
- Uncontrollable rage
- Severe skin reactions
- Profuse perspiration, dehydration, and dizziness
- Dangerous weight loss and malnutrition

Chronic methamphetamine users frequently report having permanent brain damage impairing reasoning, judgment, and motor skills.\^{10} Many of these effects can also cause irreversible damage to blood vessels in the brain that can result in a stroke. Long-term overstimulation of dopamine can cause neurotoxicity resulting in memory loss, impaired attention, and executive function even after long periods of abstinence.\^{10,11}

Using brain-imaging techniques, researchers at UCLA’s Integrated Substance Abuse Programs have found evidence of methamphetamine toxicity in 2004.\^{16} These images showed that meth eats away at brain tissue directly affecting the ability to feel pleasure. They have also reported “depending on the intensity of the rush, a user’s body temperature can spike to 107°F.”\^{16} Due to the rapid spread of methamphetamine users,
many Emergency Rooms now keep ice beds handy so that when an individual comes in with such a fever, they have can attempt to decrease the body temperature. As statistics show, overheating is the secondary cause of methamphetamine-related deaths, the primary being lab explosions.\textsuperscript{16}

**Meth Mouth**

One of the most notable effects of methamphetamine use is the development of meth mouth. Meth mouth is a dental condition that is characterized by severe decay, loss of teeth, fracture, enamel erosion, and other serious oral problems. According to the American Dental Association (2008), the cause of this condition is currently unknown but is thought to be a combination of drug-induced psychological and physiological effects.\textsuperscript{17,18} The primary causes are considered to be methamphetamine-induced dry mouth and grinding of the teeth, which become significantly prominent with chronic methamphetamine use. Other causes contributing to meth mouth include extended periods of poor nutrition, frequent consumption of carbonated beverages, lack of dental hygiene, and the toxicity of the drug, which causes deterioration of enamel.\textsuperscript{17,18}

**Fixations and Hallucinations**

While high, meth users tend to get very focused on a specific task. Due to the drugs effects and extensive half-life, users can maintain an interest in rather useless activities for a great period of time.\textsuperscript{12} Well known convict Seth Ferranti (2005) has reported many personal stories on his popular website “The Gorilla Convict”.\textsuperscript{19} He has explained that while he and his friends were high on methamphetamine, they would take
apart a variety of appliances such as engines, televisions, radios, and his personal favorite, vacuum cleaners. Ferranti describes one instance:  

*One of my tweaker friends, Big Coop, was always taking apart his vacuum cleaner. Swearing that there were bugs in it. He said he could hear the coded transmissions, and that big brother was onto him. So we would take apart the vacuum cleaner, literally hundreds of times, and spend all night putting it back together again.*

This type of fixation is very common with methamphetamine users. Another typical consequence of prolonged intoxication is hallucinations. Many users have reported seeing what is now referred to as “shadow people.” This specific hallucination has not been reported with any other drug use hence seems to be unique to methamphetamine users.

**Paranoia and Obsession**

Prolonged methamphetamine use is also attributed with paranoia and obsession. Studies have concluded that short-term meth use is associated with paranoid psychosis whereas large dose long-term use has been associated with schizophrenic psychosis. Paranoid psychosis is a break from reality where an individual experiences extreme fear and anxiety associated with delusions. Schizophrenic psychosis is characterized by distortions of reality in which the individual experiences disturbances of thought and language and then withdraws from social contact.

Joe Herzanek (2008), a certified Addiction Counselor and Interventionist, describes in his article “Meth Myths” that many paranoid users think police are constantly watching them. Users will cover their windows with sheets, mattresses, or black paper and hide in closets until they come down from their high.
explains an obsessive behavior that meth users portray while high or coming down from a binge, mentioning that one user “became so obsessed with the color black that he painted the entire interior of his house that color, including doors, windows, and the kitchen counter.” Another woman was in a paranoid state when she thought her car radio was talking to her; she became so scared that she had to pull over to the side of the road and sit outside of her car for 5 hours until she no longer heard the voices.

**Formication**

Another effect that is universally associated with methamphetamine use is formication. Formication is the medical term for the sensation that resembles insects crawling on or under the skin. This experience may sometimes cause feelings of itchiness, tingling, pins and needles, burning, or in some cases, pain. In meth users, formication is very common due to constriction of the blood vessels the drug causes. The paranoia and hallucinogenic effects of methamphetamine typically cause the user to feel a sense of itchiness and triggers the scratch reflex. Fixation and paranoia convince the user that this sensation is being caused by actual insects and may not be able to stop itching. In addition, the user feels compelled to try to remove the insects from under their skin. This constant picking at the skin is why many methamphetamine users have sores and scars on their arms and face. Though formication is not unique to methamphetamine use, it is much more common in meth users than any other drug users.

**Serious Health Consequences**

According to Dr. Alex Walley (2010), an Assistant Professor of Medicine at Boston University, there is a considerable number of serious health consequences related
to methamphetamine use that much of society does not know. Long-term users report undesirable effects such as memory loss, inability to concentrate, volubility, emotional liability, and an unwanted tendency toward violence. Other health consequences are listed in Figure 3 below. Methamphetamine mainly affects the Pulmonary, Nervous, and Cardiovascular Systems but the extreme drain drug use has on an individual causes detrimental effects on other systems as well.

The major contributing factors to the health consequences are the lack of sleep a user experiences from meth runs, extreme appetite suppression, and direct organic damage particularly to the brain and nerves. Many of the consequences described are direct effects of the toxicity of the drug and the prolonged hyperactivity experienced by the individual.

Figure 3- Serious Health Consequences of Chronic Methamphetamine Use. The specific health consequences that occur from long-term chronic methamphetamine use with description are arranged by the primary system affected.

<table>
<thead>
<tr>
<th>Pulmonary System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute pulmonary edema</td>
<td>The accumulation of fluid in the air spaces in the lungs that can lead to impaired gas exchange and may cause respiratory failure.</td>
</tr>
<tr>
<td>Pulmonary Hypertension</td>
<td>The increase of blood pressure in the arteries and veins of the lungs that leads to a shortness of breath, dizziness, fainting, and in severe cases, heart failure.</td>
</tr>
<tr>
<td>Inhalation injury</td>
<td>The result of frequent or widespread use of household cleaning agents and industrial gases which can cause symptoms ranging from minor respiratory discomfort to acute airway and lung injury and even death.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cardiovascular System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>The condition in which the blood pressure in the arteries is elevated which causes the heart to work harder to circulate blood through the blood vessels.</td>
</tr>
<tr>
<td>Dilated Cardiomyopathy</td>
<td>The condition in which the heart becomes weakened and enlarged causing inefficient circulation. This can affect the lungs, liver, and other body systems.</td>
</tr>
</tbody>
</table>
Even months after a user has been abstinent, negative effects will continue to occur; the typical effects are severe depression and prolonged inability to experience pleasure. Methamphetamine produces a significant reduction in the density of critical

<table>
<thead>
<tr>
<th>Figure 3 CONTINUED</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arrhythmia (tachycardia)</strong></td>
<td>The condition in which there is an abnormal heartbeat. Meth users specifically tend to experience tachycardia, a heartbeat that is too fast.</td>
</tr>
<tr>
<td><strong>Acute coronary syndromes</strong></td>
<td>The group of symptoms attributing to the obstruction of the coronary arteries resulting in chest pain, chest pressure, nausea, and sweating.</td>
</tr>
<tr>
<td><strong>Aneurysm</strong></td>
<td>The condition in which a localized, blood-filled balloon-like bulge appears in the wall of a blood vessel. They commonly occur in arteries at the base of the brain and in the main artery carrying blood from the left ventricle of the heart.</td>
</tr>
<tr>
<td><strong>Skin</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cellulitis</strong></td>
<td>The diffuse inflammation of connective tissue that occurs where the skin has previously been broken such as cuts and intravenous drug injection.</td>
</tr>
<tr>
<td><strong>Excoriations</strong></td>
<td>The condition in which individuals produce skin lesions through a repetitive, compulsive excoriation of their skin.</td>
</tr>
<tr>
<td><strong>Chemical burns</strong></td>
<td>The condition that occurs when the skin is exposed to a corrosive substance such as a strong acid or base. It may cause extensive tissue damage.</td>
</tr>
<tr>
<td><strong>Abscess</strong></td>
<td>The collection of pus that has accumulated within a tissue due to an inflammatory process in response to bacteria, parasites, or other foreign materials such as splinters and needles.</td>
</tr>
<tr>
<td><strong>Renal/Metabolic</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Rhabdomyolysis</strong></td>
<td>The condition in which damaged skeletal muscle tissue breaks down rapidly and damage muscle cells that can be harmful to the kidneys.</td>
</tr>
<tr>
<td><strong>Acute renal failure</strong></td>
<td>The rapid loss of the kidneys’ ability to remove waste and help balance fluids and electrolytes in the body.</td>
</tr>
<tr>
<td><strong>Acidosis</strong></td>
<td>The increase of acidity in the blood and other body tissues.</td>
</tr>
<tr>
<td><strong>Hyperthermia</strong></td>
<td>The elevation of body temperature due to failed thermoregulation that occurs when a body produces or absorbs more heat than it dissipates.</td>
</tr>
</tbody>
</table>
dopamine transporters in the brain. The longer and more intense the use is, the greater loss of dopamine transporter density and thus the more severe psychiatric symptoms.

A study using PET scans found that three critical areas of brain function were dangerously affected by methamphetamine use including: an extreme loss of dopamine transporters, whole brain inflammation, and loss of motor and cognitive ability. The reduction of dopamine transporters creates an inability of the brain to produce dopamine naturally resulting in extreme depression and inability to experience pleasure. In time, the brain’s natural dopamine capabilities can return to slightly under normal levels however, this takes years of sobriety.

**Methamphetamine Binge**

**Beginning of the Binge**

A novice methamphetamine user can ingest one-eighth of a gram of the substance to produce the effects described above; a regular user averages about one-quarter of a gram. To begin a run, also known as a binge, a user may take multiple grams to produce a longer and more exhilarating high. An immediate rush from the drug is followed by an extended euphoric feeling that can last anywhere from 4 to 24 hours. As explained above, the half-life of methamphetamine is very long thus producing much longer effects than any other known drug.

After the initial ingestion, the user continues a regular re-dosing of meth in order to maintain a constant high. This ongoing mental and physical hyperactivity causes the user to require only very little rest. The rush becomes weaker each time the user administers more of the drug because of the physical exhaustion of the brain and body
from lack of rest. A typical run lasts three to five days, but can sometimes last two
weeks, until the user does not feel a high from the drug or when the drug or money has
been used up. At the end of a run, the user most likely will experience tweaking and a
comedown from the high.

**Tweaking and the Comedown**

Tweaking occurs at the end of a run when the drug has gotten to such low levels in
the system that the user no longer experiences the pleasurable effects. A 19-year-old
Methedrine user describes this through personal experience:

> The higher you get, and the better your high is, the worse it’s
gonna be when you come down. Coming down… It’s not a
physical withdrawal… it’s a mental withdrawal… It’s like a
celebration of disillusionment.

At this time, the user can become extremely agitated, angry, confused, depressed, tired
but unable to sleep, violent, anxious, and paranoid. This decline is referred to as
crashing and is due to the severe fatigue that comes from the end of a run of very little
rest. Typically methamphetamine users take depressants such as barbiturates, alcohol, or
heroin to calm down and sleep off the negative effects of the crash. The amount of
depressants the user takes forces them to sleep for days straight after which, they wake up
and are instantly in search for ways to obtain more meth.

**Production of Methamphetamine**

In contrast to essential chemicals used in refining coca leaves into cocaine or
opium into heroin, many precursor chemicals are used in the manufacture of
methamphetamine. Depending on the method and recipe used, the process can involve
up to 32 different chemicals. Lab seizures around the nation have been rising in the past decade despite the increased difficulty of obtaining the main ingredients.

A recent contributor to the vast spread of methamphetamine is the ability to produce meth unnoticed in small remote locations. This has not always been the case. When methamphetamine was first synthesized the manufacturing methods did not need to be known by users because of its wide availability. Once the government began to restrict prescribed methamphetamine, addicts discovered methods of individual production that would maintain their habit.

The illicit manufacturing of methamphetamine is thought to have begun in San Francisco in the early 1960s. By 1967 San Francisco had become a center for meth cooks. Tighter restrictions lead to more inventive recipes and in turn, a higher purity. Today, there are three primary cooking methods: the P2P method, the Nazi method, and the Red-P method.

P2P Method

The P2P method uses phenyl-2-propanone and methylamine as the main precursors. Depending on the recipe, this method may also utilize hydrochloric acid, mercuric chloride, aluminum foil, sodium hydroxide, formic acid, and/or mercury, among other chemicals. This is by far the most time consuming method and the most demanding of the cooks skills and attention. One P2P recipe found online describes a three-day process that involves constant monitoring and modulation of the mixture’s temperature, demanding the mixture to be stirred every thirty minutes. The special laboratory equipment and complexity of this process is not appealing to street chemists whose only concern is the final product. In fact, this process produces the racemic
mixture, dl-methamphetamine, which is the form of illicit methamphetamine with lowest potency.\textsuperscript{10}

Currently the P2P method is primarily used by large drug cartels in Mexico.\textsuperscript{22} However, it is the earliest known method of cooking meth in the US and was legal until the 1940s. When street chemists first began cooking methamphetamine, motorcycle gangs utilized this method. One of the most popular of these gangs was Hell’s Angels, a motorcycle gang that started in California and helped expand the availability of methamphetamine around the nation.\textsuperscript{12,22} Hell’s Angels was known for producing methamphetamine using P2P and supplying it across the country. The mass cooking and distributing of methamphetamine significantly increased meth use until 1980 when P2P became a Schedule II controlled substance and methylamine was added to the DEA’s watch list.\textsuperscript{12,23} As it became more difficult to obtain the required precursor chemicals, street chemists worked on discovering a different production method.\textsuperscript{22}

Reduction Methods

It didn’t take long for street chemists to determine a new precursor chemical for the production of methamphetamine. The first clandestine laboratories that used the reduction method appeared in 1982, although the technique was understood well before that.\textsuperscript{6} Weisheit and White (2009) explain in their book *Methamphetamine: Its History, Pharmacology, and Treatment* that “it is called a reduction method because it involves removing an oxygen molecule, as can be seen by comparing the formula for ephedrine with that for methamphetamine” as shown in Figure 4.\textsuperscript{4}
Soon after the first lab, meth recipes began to focus around the reduction of ephedrine and pseudoephedrine, chemicals were found to create a product twice as potent as the P2P derived product. This now predominant method is very simple and only relies on household ingredients and equipment. The typical equipment used in the reduction method includes:

<table>
<thead>
<tr>
<th>Aluminum foil</th>
<th>Blenders</th>
<th>Cheesecloth</th>
<th>Clamps</th>
<th>Coffee filters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funnels</td>
<td>Gas cans</td>
<td>Ice chests</td>
<td>Jugs</td>
<td>Lab beakers</td>
</tr>
<tr>
<td>Pails</td>
<td>Paper towels</td>
<td>Plastic storage containers</td>
<td>Propane cylinders</td>
<td>Tempered glassware</td>
</tr>
<tr>
<td>Rubber tubing</td>
<td>Strainers</td>
<td>Tape</td>
<td>Rubber gloves</td>
<td>Thermometer</td>
</tr>
<tr>
<td>Towels</td>
<td>Buckets</td>
<td>Bed sheets</td>
<td>Lab glassware</td>
<td>Bottles</td>
</tr>
</tbody>
</table>

By-products of this procedure are often extremely toxic, volatile, and can negatively affect an individual’s health as far as six miles from the production site. Even though this is an extremely dangerous method, it has become particularly popular due to the simplicity of the procedure, lack of chemical knowledge needed, and potency of the final product. The derived product is pure d-methamphetamine, the illicit form of methamphetamine that is twice as potent as the racemic mixture and currently the most common form found in the drug trade. The reduction of the over-the-counter cold

![Chemical Structure of Amphetamine, Methamphetamine, and Ephedrine](image)
medicine to extract ephedrine and/or pseudoephedrine is the first stage of two methods: the Nazi or Birch method and the red phosphorous or Red-P method. These methods are essentially the same with the exception of the primary agents used in the reaction.

**Nazi Reduction Method**

Some researchers believe that the Nazi method got its name because the Germans supposedly used it during World War II, but others suggest the name came from the Nazi symbols on the letterhead of the paper an early cook used to record the recipe. Despite the name, this method utilizes anhydrous ammonia, lithium (typically extracted from lithium batteries), sodium hydroxide, and toluene (paint thinner or camping fuel). Except for ephedrine, all of the chemicals used in this production method are toxic.

The Nazi method is by far the most dangerous method due to the extremely explosive and toxic chemicals used. The “Shake and Bake” derivative of the Nazi method has the highest rate of explosions. This method uses a 2-liter soda bottle to carry out the reaction and produce methamphetamine. The Nazi method is typically used for the production of individual use since it does not yield a ample amount of product.

Detailed cooking instructions can be found with a quick search on the Internet. One website begins with a list of warnings such as “BE EXTREMELY CAREFUL WITH ETHYL ETHER. PEOPLE KILL THEMSELVES….BECAUSE IT CAN Eplode EASILY” and “DON’T BUY ALL MATERIALS AT ONCE. DRUGISTS NORMALLY KNOW WHATS GOING ON IF YOU DO.” After the warnings, the cook goes on to give a detailed list of the chemical materials and equipment needed for the production:

- Dilute hydrochloric acid- sold as a brick and driveway cleaner (muriatic acid)
- Sodium hydroxide- drain cleaner (lye)
• Ethyl ether- you will have to make this using starting fluid
• Bezenedrex of Vick’s nasal inhalers- 12 of them
• Two large eyedroppers
• Ten small glass bottles
• Once large glass or porcelain bowl
• Coffee filters
• One small jar with a top
• One Pyrex baking dish
• One glass test tube

The procedure is then thoroughly explained in only ten steps, estimating about three hours of cooking.\textsuperscript{26} The ease and little time constraint of the Nazi method appeals to many meth users, making it the most used method in the United States.

\textbf{Red P Reduction Method}

The Red P method produces much more methamphetamine hence, is typically used in super-labs. The main precursor chemicals include red phosphorous, a chemical extracted from the striker plates of matches, and ephedrine/pseudoephedrine.\textsuperscript{22,23} As with the Nazi method, a detailed procedure can be found on the Internet, explaining the required ingredients and equipment. Many of the ingredients and equipment are the same as the Nazi method, differing slightly in different recipes.

Depending on the recipe, red phosphorous is combined with iodine and/or hydriodic acid to ignite the reaction. Once this reaction is complete, the red phosphorus is filtered out and added to a lye solution in order to neutralize the remaining acid.\textsuperscript{12,23} After, a substance is then added to bind to the liquid methamphetamine, which is then drained. Hydrogen chloride gas is bubbled through the liquid methamphetamine, making it a crystalline hydrochloride salt. This solution is then poured through a filter cloth. The methamphetamine that remains on the filter is then dried and stepped on (mixed down with inert filler in order to maximize profits), weighed, and packaged for sale. The entire
process generally takes about two days time but results in hundreds of thousands of methamphetamine doses.\textsuperscript{12,23}

Precursor Chemicals

Along with the potential health risks of using methamphetamine, there are the potential consequences of manufacturing methamphetamine. Prescribed drugs are legally manufactured in a controlled laboratory by an experienced chemist. Neither a controlled laboratory nor an experienced chemist is needed for the production of methamphetamine. The combination of the inexperienced cook and highly volatile chemicals create a substantially high potential for accidents and explosions.\textsuperscript{22,23} Weisheit and White (2009) describe that though methamphetamine is made with household items, these materials can be detrimental to the human body in high exposure or ingestion.\textsuperscript{4}

Anhydrous Ammonia

The most dangerous chemical used in the production of methamphetamine is anhydrous ammonia, a key ingredient in the popular Nazi method.\textsuperscript{22} This chemical is used in farming communities as a source of nitrogen fertilizer and as an industrial refrigerant; it is one of the top twenty chemicals produced in the United States.\textsuperscript{4,28} The natural state of anhydrous ammonia is a gas however, it is stored under pressure as a liquid when used as a fertilizer. The liquid is injected into the ground where it expands into a gas, absorbs moisture from the surrounding ground, and remains in the ground in the form of nitrogen.

Liquid form of anhydrous ammonia has a high potential for explosion when mishandled. To keep anhydrous ammonia as a liquid, it must be stored and handled
under considerable pressure. The issue with the complexity of transporting liquid anhydrous ammonia is relevant when meth cooks try to transport the liquid in a container that cannot withstand the pressure or is made out of the wrong material. This can easily cause an explosion with deadly consequences.

The term “anhydrous” means “without water.” Anhydrous ammonia is a hydroscopic chemical, which means that it seeks water from the nearest source. In the case of humans, if anhydrous ammonia gas is exposed it will instantly remove water from the skin, eyes, nose, throat, and lungs. This exposure leads to serious chemical burns. Weisheit and White (2009) explain this process:

_When large amounts are inhaled, the throat swells and victims suffocate. Exposure to vapors or liquid can also cause blindness… The chemical freezes on contact at room temperature. It will cause burns similar to, but more severe than, those caused by dry ice._

The anhydrous ammonia will then burn its way into the body, killing all of the cells it comes into contact with. There have been many cases when anhydrous ammonia is released from the tank and causes clothing to literally freeze to the skin of an exposed individual. An individual is at risk of this harmful gas when within 20 feet of it. Due to the highly volatile nature, it is not legally available to the general public. Anhydrous ammonia can be purchased legally only by those with a special license, typically for farming; because of this, meth cooks must obtain large amounts of anhydrous ammonia through illegal channels.

Martyny and colleagues (2008) undertook a series of studies that involved testing the real-world conditions under which methamphetamine is produced. In one study, three abandoned houses were used and environmentally monitored the amount of anhydrous ammonia produced during the production of meth using the Nazi method. The results
concluded that within the first five minutes of cooking, anhydrous ammonia was detected in the air; within sixteen minutes, all of the environmental monitors were overloaded.\(^{29}\)

According to the Occupational Safety and Health Administration (OSHA) (2008), the recommended exposure of anhydrous ammonia is 50 ppm (parts per million) over an eight-hour period. The National Institute for Occupational Safety and Health advises that an individual should not be exposed to more than 35 ppm in an hour. It is also suggested that levels of anhydrous ammonia 300 ppm and above are “immediately dangerous to life and health.”\(^{29}\)

The Martyny study detected an average exposed amount of anhydrous ammonia of 130 ppm to 437 ppm over the three-hour cooking procedure, with initial levels of 2,000 ppm. Another result found was that areas distant from the manufacturing site had consistent levels of 500 ppm of anhydrous ammonia exposure. Though these levels are not necessarily fatal, they do cause severe respiratory problems.\(^{29}\) The dangers of anhydrous ammonia and use in the manufacturing of methamphetamine have negatively affected the farming industry and have potential to escalate to a nationwide industrial problem.\(^{10}\)

**Additional Chemicals**

*Figure 5- Precursor Chemicals Used in the Production of Street Methamphetamine.*\(^{23,28}\) The table consists of typical precursor chemicals and a description of the toxicity.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>One of the main chemicals in drain cleaner, it is also used in aluminum etching and to create biodiesel. Ranchers use it as serial killers and city workers use it to dissolve dead bodies.</td>
</tr>
<tr>
<td>Iodine</td>
<td>It is a natural element that can be very helpful to the body in small amounts but becomes very toxic in large amounts.</td>
</tr>
</tbody>
</table>
Another primary health hazard from manufacturing methamphetamine comes from using camping fuel, acetone, and other highly flammable solvents. Alone, these

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red phosphorous</td>
<td>Combining red phosphorous and iodine produces hydriodic acid, a highly controlled substance. In the manufacturing of meth, red phosphorous is obtained from matches.</td>
</tr>
<tr>
<td>Ether</td>
<td>This chemical was once called “sweet vitriol” due to its hypnotic effect. It is a highly flammable substance that is typically used as an anesthetic agent.</td>
</tr>
<tr>
<td>Drano</td>
<td>The warning label states: “DANGER: MAY BURN EYES AND SKIN ON CONTACT. HARMFUL IF SWALLOWED…TOXIC GAS MAY FORM IF MIXED WITH OTHER CHEMICALS. IF SWALLOWED…SEEK IMMEDIATE MEDICAL AID.”</td>
</tr>
<tr>
<td>Breaker fluid</td>
<td>This substance will eat away the paint and chrome of a car if spilt. The high concentration of polyethylene glycol can cause it to ignite into a violent fireball.</td>
</tr>
<tr>
<td>Lighter fluid</td>
<td>This is a highly flammable liquefied gas that, when inhaled, can cause narcosis, asphyxia, cardiac arrhythmia, and death.</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>This is a highly corrosive liquid that, in high concentrations, will literally eat away human flesh.</td>
</tr>
<tr>
<td>Lithium</td>
<td>This chemical is typically obtained from lithium batteries. If inhaled, it can irritate the nose and throat and sometimes cause a buildup of fluid in the lungs, leading to pulmonary edema.</td>
</tr>
<tr>
<td>Toluene</td>
<td>It is a clear, water-insoluble liquid that is found in paint thinners and should not be inhaled due to its health effects. It can cause nausea, unconsciousness, weakness, confusion, memory loss, hearing and color vision loss, and death.</td>
</tr>
<tr>
<td>Mercuric chloride</td>
<td>This chemical compound of mercury and chlorine is highly toxic, not only acutely but as a cumulative poison.</td>
</tr>
<tr>
<td>Formic acid</td>
<td>This acid occurs naturally in the venom of bee and ant stings. Despite the low toxicity, the concentrated acid is corrosive to the skin and may cause blindness.</td>
</tr>
<tr>
<td>Mercury</td>
<td>A chemical known for its toxicity, mercury is used in thermometers, barometers, manometers, and fluorescent lamps.</td>
</tr>
</tbody>
</table>
chemicals are not particularly dangerous however, they become extremely dangerous when meth cooks combine them around an open flame. There is an extremely high risk of fire and explosions during the cooking process.\textsuperscript{10,23} Individuals involved in lab explosions must be decontaminated and treated for chemical burns because of the chemicals dispersed through the air at the time of the explosion. Burn units report difficulty treating patients involved in meth lab explosions because of the immense exposure to toxic chemicals, melted materials around their body, lack of insurance, and the aggression and secrecy of the patient.\textsuperscript{10}

**Routes of Administration**

There are many different ways to administer methamphetamine, each differing in timing and intensity of the rush. Methamphetamine may be orally ingested, smoked, snorted, injected, or inserted through the anal or vagina. Studies have shown that the subjective pleasure of methamphetamine use is proportional to the rate at which the drug concentration in the blood increases.\textsuperscript{30} From this, one can conclude that the route of administration directly affects the risk for psychological addiction independently of other risk factors such as dosage and frequency of use. In addition, the user’s mood while intoxicated varies depending on the route of administration.

These adverse effects appeal differently to specific populations and cultures around the US. One study determined the preferred route of administration for the states with highest incidence of methamphetamine usage. For example, San Diego is known for smoking methamphetamine; Texas uses injection; Minnesota residents snort their meth; and Hawaii is popular for smoking crystal methamphetamine.\textsuperscript{4,15} Frequent using can build a tolerance to the drug, driving users to experiment with different routes of
administration that produce more intense effects. Treatment specialists can typically tell how long an individual has been using methamphetamine solely based on their preferred route of administration.

**Oral Ingestion**

Methamphetamine can be orally ingested. This method of administration has a slow rate of absorption and is typically used for medicinal purposes. Oral ingestion can be used recreationally to produce an initial interest to the drug; once interested, a user tends to use methods that produces stronger effects. The pill form of methamphetamine slows metabolic functions, which prevents its own absorption into the blood stream. As a result, the percent of the drug absorbed into the bloodstream is very low.

Cruickshank and Dyer (2009) contend in their “Review of the Clinical Pharmacology of Methamphetamine” that the metabolism does not appear to be altered by a chronic exposure via oral ingestion. Additionally, the low blood concentration produces muted effects; that is, there is no instantaneous rush and only 67% of the drug is absorbed into the bloodstream. The minimal effects can be felt after 20 to 30 minutes of oral ingestion.

The peak blood concentration of methamphetamine is observed at 3.5 hours after administration and the effects are felt for 10 hours. About 70% of the ingested dose is excreted from the body within a day and between 30% and 54% of the initial ingestion is excreted unchanged. Cruickshank and Dyer (2009) found that a lower initial dose excretes a greater percent of unchanged methamphetamine. This unexpected finding is explained through the combination of the slow absorption rate along with the, comparatively, short half-life of oral ingestion. The half-life ranges between 6 and 9
28 hours depending on the dose and diet of the individual; the average half-life calculated to be 7 hours.\textsuperscript{31} Despite the muted effects, oral ingestion is still used as a method of administration throughout the United States.

**Inhalation**

Smoking methamphetamine became increasingly popular in the 1960s due to the rise of experimentation within the drug culture. This method increases the blood concentration of methamphetamine within seconds making it the second fastest route of administration.\textsuperscript{9} The act of smoking refers to vaporizing the drug to inhale the resulting fumes rather than burning the drug and inhaling the smoke.\textsuperscript{2,32}

Methamphetamine is typically smoked in a glass pipe that is made from glass blown Pyrex tubes and light bulbs.\textsuperscript{2,18} Many users have reported detrimental chemical reactions when smoking with pipes made of other materials. The most performed technique, referred to as “Chasing the White Dragon”, uses an aluminum foil piece that is heated from underneath by a flame.\textsuperscript{18,32} The efficiency of smoking methamphetamine is very high, allowing between 70\% and 90\% of the chemical to be absorbed into the bloodstream within 7 seconds of inhalation.\textsuperscript{31} The percent range depends on the smoking technique.

A brief, intense sensation, also known as a rush, is reported with smoking methamphetamine. Users have difficulty describing the feeling of a rush because that kind of extreme pleasure is incomparable to any human experience. A sense of euphoria follows the initial rush. The euphoric high can last from 4 to 10 hours depending on the dosage.\textsuperscript{10} Peak blood concentration is obtained between 2 to 4 hours after inhalation after which, a concentration plateau is sustained for an additional 2 hours. The average half-
life via smoking is 11 hours, ranging from 8 to 18 hours. Approximately 37% of the drug is excreted from the body unchanged. Smoking methamphetamine declined as the polydrug culture of the 1960s changed but has made its way back into the current drug culture. According to the latest survey by the National Institute on Drug Abuse (NIDA) (2012), smoking is the most common method used to administer methamphetamine in the US. 4,18

**Insufflation**

Another popular method of administration is insufflation, also known as snorting. In this case, methamphetamine is bought as (or is made into) a powder form so that it can be easily inhaled through the nasal cavity where it is absorbed through the mucous membrane in the sinus cavity. 2,18 This method allows the drug to be absorbed straight into the bloodstream. While insufflation does not produce a rush, it does produce an enhanced euphoric effect for the first 2-3 minutes before a settling euphoric high. 2,10 The euphoric high is felt 3 to 5 minutes after insufflation and lasts about 9 hours. Approximately 79% of the drug is absorbed into the blood stream and peak plasma concentration occurs after 4 hours. 31 The effects of snorting are not as intense as smoking or injecting but remains to be a prevalent method of administration within the United States.

**Injection**

Injecting methamphetamine has become increasingly standard within the past decade. Researchers assert that the increased injection use is a direct result of the effects liquid methamphetamine produces. 2 This method of administration has obtained 50
different names over the past two decades including “slamming” and “banging.” A user typically administers anywhere from 100 mg to 1 g of the liquid drug via a hypodermic needle. It is by far the fastest and most intense route of administration, producing an extreme rush within the first 5 seconds of injection and resulting in the highest blood plasma concentration.

Cruickshank and Dyer (2009) affirm that 100% of the administered methamphetamine is absorbed into the bloodstream via injection. Peak concentration is achieved almost instantaneously, which is expected as it is directly injected into the bloodstream. However, there does appear to be an unexplainable rebound in concentrations occurring within the first hour.

The average half-life via injection is 10 hours with approximately 45% of the initial dose excreted from the body unchanged. The drug can be detected in the blood for 36-48 hours after use. In addition to the typical detrimental consequences of methamphetamine use, injection also causes risk factors relating to needle use. Skin allergies known as “speed bumps” have been reported more frequently with injection of meth than other injected drugs. Although the euphoric effects of methamphetamine are intensified via injection, the negative effects are as well. Paranoia, hallucinations, and fixations are more frequent and enhanced with injection administration.

**Insertion**

The final and least common route of administration is the suppository method. This is when an individual uses an anal or vaginal insertion of the drug. Users frequently report an increased sexual pleasure and longer lasting effects using this method. Researchers insist that this is due to the combination of a high percent of absorption and
lack of filtration by the liver. Since the synthesis of methamphetamine, this method has and remains to be the least common method of administration. Nicknames for suppository administration include butt rocket, booty bumping, bumming, shelving, and suit-casing. The lack of use has attributed to the lack of study of this method thus the half-life, peak blood concentration, and time of effects have not yet been established.

**Tolerance**

Tolerance is not yet completely understood due to the complexity and the instantaneous chemical effects of methamphetamine. However, it is known that the drug does produce a tolerance within the first use. The extent of tolerance and rate at which it develops varies among individuals, just as other drugs. Some of the factors affecting the tolerance of methamphetamine include diet, dosage, duration of use, frequency of administration, route of administration, and lifestyle of the user.

For chronic methamphetamine users, each successive rush becomes less euphoric driving the user to ingest a higher dose of meth to achieve the same high. The declining rush is because of prolonged overstimulation of dopamine receptors that cause receptors to down-regulate in order to compensate for the increased levels to dopamine. The depleted levels of neurotransmitters in the brain force the need for larger quantities of methamphetamine to achieve desired effects, as one study concludes. This study showed the evident tolerance to the CNS effects demonstrated by observed rats.

The study found that methamphetamine concentrations in the brains of rats receiving long-term doses were decreased when compared to the non-exposed rats when given a subsequent high-dose. It was also found that the plasma concentrations in the long-term exposed rats were higher than in the non-exposed rats. This suggests that
tolerance is not principally due to enhanced metabolism or increased excretion ability, but rather to changes in the structures responsible for uptake.\textsuperscript{34}

The normal brain produces natural dopamine and is at a fully functional level before the use of methamphetamine. As methamphetamine use increases, the function of the brain decreases, and the natural level of dopamine the brain is able to produce is substantially less.\textsuperscript{5,11,12} Additionally, the ability of reuptake of dopamine in the brain is inhibited. Reuptake is necessary for normal brain activity because it allows for the recycling of neurotransmitters, regulates the level of neurotransmitters present, and controls how long a signal resulting from neurotransmitter release lasts.\textsuperscript{11} The inhibition results in a substantially low production of natural dopamine directly forcing the need for a higher dosage to obtain a euphoric high.\textsuperscript{5,12}

Howard Abadinsky (2010) describes in his book \textit{Drug Use and Abuse: A Comprehensive Introduction} that “because tolerance for methamphetamine occurs within minutes- meaning that the pleasurable effects disappear even before the drug concentration in the blood falls significantly- users try to maintain the high by binging on the drug.”\textsuperscript{35} Although significantly depleted during use, the neurotransmitter levels can become fully replenished over years of abstinence.\textsuperscript{12} Studies show that recovering methamphetamine addicts have about 80\% of normal dopamine levels after 18 months of abstinence.\textsuperscript{4,11} As discussed, a tolerance of methamphetamine is not yet completely understood but has been frequently observed.

\textbf{Addiction}

Addiction is a very complicated concept that has much stigma behind it. The definition of addiction has been debated for many years and yet there is still no universal
agreement. This psychological phenomenon has a number of distinguishing features including tolerance, physical dependence, craving, and compulsive drug seeking despite known adverse consequences. With regards to this paper, addiction will be defined as dependence, which is characterized by experiencing at least three of the following symptoms:\textsuperscript{36}:

- Tolerance, defined as either a need to use large amounts of the substance to achieve a high or the decreased effect with continued use of the same amount
- Withdrawal
- Increased dosage and duration of the substance use
- Unsuccessful attempts to cut down or control substance use
- Increased time spent to obtain the substance, use the drug, or come down from the drug
- Give up social, occupational, and recreational activities because of substance use
- Continued substance use despite awareness of its negative consequences, whether physical or psychological

Many sources report methamphetamine as a “very addictive drug” and chronic users report a distinguishing high rate of relapse throughout their efforts to quit.\textsuperscript{5,18,37} The compulsive, drug-seeking behavior features both physical and psychological addiction that is displayed by methamphetamine users. The dependent qualities of this drug are believed to be the result of the functional and molecular changes known to occur in the brain from meth use: the amount of dopamine release during use, and the depletion of neurotransmitters after use. Research has proven that methamphetamine releases six times more dopamine than any natural human experience and three times more than any other drug.\textsuperscript{8} The intense pleasure feeling from using meth leaves the user in a state of wanting to reach that level of pleasure again.

The rate of dependence is affected by many factors including genetics, previous drug use, lifestyle, and route of administration. Dr. David Smith (1972) stated that “high doses of methamphetamine use… can produce a moderate degree of physical dependence and classic withdrawal reactions lasting two to four days.”\textsuperscript{13} Additionally, the inhibition
of neurotransmitters diminishes the ability of the brain to naturally produce dopamine causing a user to go into a deep state of depression during abstinence. Similar to the high of methamphetamine, the resulting depression is unlike any natural experience or comparable to any other drug. The incomparable highs and low of methamphetamine lead many people to believe that meth is significantly addictive.

Withdrawal

The psychological addiction is overridden by the physical addiction when withdrawal symptoms occur. As mentioned, a user in abstinence experiences extreme depression, one of the main reasons for relapse. Other withdrawal symptoms include extreme fatigue and increased appetite. The severity of these symptoms is directly affected by the dosage and duration of an individual’s use.

Case reports indicate that initial withdrawal is characterized by a period of increased sleep duration, particularly rapid eye movement sleep, for 3 to 8 days. Reported symptoms also include: anxiety, irritability, headaches, agitation, hypersomnia (excessive sleeping) then insomnia, suicidal ideation, and akathisia (unpleasant sensations of inner restlessness that manifests itself with an inability to sit still or remain motionless). Withdrawal symptoms of an occasional user typically last days and of a chronic user lasts weeks or even months.

Prolonged insomnia following a period of hypersomnia has been frequently reported however, is not a consistent result. Researches have found that recovering methamphetamine users experience reduced sleep quality but not so much quantity. On the contrary, others have found insomnia to be a significant withdrawal symptom. Impaired sleep quality usually occurs during the late stages of withdrawal symptoms and
has been associated with reduced clear headedness upon waking. This has suggested that there is a direct link between sleep, mood, and cognitive function as individual experiences methamphetamine withdrawals.\textsuperscript{31}

Approximately 90\% of cases involving chorionic meth use involve withdrawal symptoms and more than 20\% of addicts develop a long-lasting psychosis resembling schizophrenia.\textsuperscript{21} A less systematic user will experience no acute, immediate physical symptoms during the abstinence of meth but do experience muted cognitive withdrawal symptoms. It is often 30 to 90 days until the user becomes aware of the withdrawal symptoms. Before this period, the user does not comprehend the deep depression or lack of energy experienced, in turn, stimulating an intense craving for the drug.\textsuperscript{8} This makes the beginning stages of treatment and abstinence extremely difficult.

**Treatment**

Addiction is known to be one of the hardest diseases to treat because of the physiological and psychological hold it has on a user. In the United States, addiction treatment maintains national goals traditionally defined as the achievement of “sustained abstinence form primary and secondary drugs and overall improvement in physical, emotional, and relational health and social functioning.”\textsuperscript{4} Treatment centers are financially supported through federal and state agencies, private insurance, and fees charged to individual service consumers. Special treatment may be provided in three different settings: abstinence-based outpatient programs, inpatient/residential programs, and outpatient methadone maintenance programs.

Just as other addictions, a detox facility can significantly help the beginning stages of treatment and ease withdrawal symptoms. Although detox will successfully
cleanse the body, there is more action needed to treat the mental aspects of addiction in order to avoid relapse of both the drug and the lifestyle. Inpatient and outpatient drug treatment offers specific techniques that help individuals maintain a sober life.

Recovering from methamphetamine addiction naturally is possible, but individuals whose experience is severe often require one or more episodes of professional treatment before they achieve a sustainable level of recovery. In the United States, specialized addiction programs are proven to result in long-term abstinence but are not well attended due to low attraction, problems of access and retention, low rates of continuing care participation, and high post treatment relapse. The treatment of methamphetamine addiction requires addressing unique issues found in this pattern of drug dependency.

With methamphetamine, the brain’s wiring changes significantly from excessive use. It takes a substantial amount of time for the receptors to regrow and function at their natural ability. At the beginning stages of recovery, the user must train their mind that happiness and pleasure is not associated with the drug once their receptors are fully healed. Researchers have recently conducted experiments of a possible aid for meth recovery. Though still in the beginning stages of research, they have found that daily administration of the amino acids L-tyrosine and L-5HTP/tryptophan can accelerate the brain’s recovery processes. Doctors are also beginning to prescribe stimulants such as d-amphetamine to break psychological addiction, a concept similar to recovering heroin addicts.
**Overdose**

Despite what many may think, fatal overdose is very rare with methamphetamine.\(^\text{13}\) Fatal methamphetamine overdose has been reported following an injection dose of 20 mg; however, it has also been observed that an individual has injected 640 mg of methamphetamine and survived, although with transient psychosis.\(^\text{31}\) User’s deaths are commonly due to overheating, accidents, suicides, and homicides.

Overheating is the leading cause of death in meth users. Depending on how the individual is affected by the drug, the user’s body temperature can spike to 107°F.\(^\text{16}\) Emergency Rooms currently keep ice beds for the specific reason of cooling the body and stabilizing the effects of an overdosed meth user.

The second leading cause of death is lab explosions. As discussed, methamphetamine production is extremely dangerous. Fortunate cooks who remain alive after an explosion are covered in chemical burns and substances melted to their skin. Suicides occur during the deep state of depression meth users undergo during the initial stages of abstinence. Homicides typically occur during the comedown from a binge when the user is experiencing extreme, uncontrollable rage.\(^\text{4}\)

When overdose of methamphetamine occurs without fatality, common features of the user include agitation, dilated pupils, tachycardia (irregular heart beat), hypertension, and rapid respiration. Other features include shivering, dyspnea (shortness of breath), chest pain, hyperpyrexia (overheating), and cardiac, hepatic, and/or renal failure. Comas and seizures may occur but are less frequent.
Summary of the Background of Methamphetamine

Methamphetamine originally existed without any known medical purpose but the effects of the drug in society became well known. The miracle drug has faded in and out of the US drug culture in proportion to the legal restriction on the precursor chemicals. The restriction efforts only forced methamphetamine users to develop new production methods, routes of administration, and lifestyles. These developments, specifically the production methods, resulted in a higher understanding of the chemical aspects of methamphetamine and a more potent form of the drug. As the effects of meth intensified with the higher purity, meth users began to become more addicted to the drug. The chemical effects on the brain and body of the current form of meth are understood, but addiction treatment is still in the process of development. Since its synthesis in the early 1920s, methamphetamine has made a notable history in our society.
Review of Literature

History of Methamphetamine in the US

Despite the recent popular media coverage, methamphetamine is not a new drug. In the 1990s methamphetamine gained national attention through its social destruction in Hawaii, Montana, Oregon, and California. Use of this drug has significantly fluctuated throughout the past century due to the government’s reactions to increased use and damaging social effects. Methamphetamine has ranged from an FDA approved treatment to an illicit street drug to an energy supplement distributed to soldiers. Since its synthesis, methamphetamine has made a lasting impact on our nation’s history.

Early Development of Methamphetamine (1880-1939)

The Synthesis of Methamphetamine

The main precursor chemical used in current methamphetamine production is the natural chemical ephedrine that is derived from Ephedra. The Ephedra herb contains both ephedrine and pseudoephedrine as its principal active constituents. The chemical synthesis of ephedrine was first accomplished in 1885 by Japanese chemist, Nagai Nagayoshi. Two years later Nagayoshi isolated the natural chemical from the Ephedra herb. In that same year, a Romanian chemist Lazar Edeleano synthesized the first amphetamine that was later identified as phenylisopropylamine.

An interest in amphetamines grew throughout the chemistry world, prompting Nagayoshi to conduct a number of experiments with this newly discovered drug. One of
Nagayoshi’s experiments was focused on developing a synthetic substitute for ephedrine. Without specific intention, this lead to the first synthesis of methamphetamine in 1893 by Nagayoshi.\textsuperscript{18,39} Akira Ogata, a Japanese pharmacologist, synthesized methamphetamine separately from Nagayoshi in the early 1900s. Ogata then went on to crystallize methamphetamine in 1919 via the reduction of ephedrine using red phosphorus and iodine.\textsuperscript{4}

Introduction to the Public

Amphetamine and methamphetamine became the new spotlight drugs of America in the 1920s without any known medical purposes.\textsuperscript{6} Gordon Alles, a well-known American chemist and pharmacologist, began a clinical study of the psychoactive effects of methamphetamine in 1929.\textsuperscript{4,40} In collaboration with pharmacologists and clinicians at the University of California, Alles conducted experiments by resynthesizing methamphetamine and testing the physical and psychological effects on himself. These experiments lead to the discovery of some beneficial properties of methamphetamine including increased alertness, energy, concentration, and self esteem and concluded the potential use as a decongestant and bronchodilator.\textsuperscript{40,41} He went on to receive a patent on the orally active amphetamines in 1932.\textsuperscript{40}

Medical Perspective of Methamphetamine

Meanwhile, as US pharmacists across the nation heard the results of Alles’s experiments, they began to ponder whether methamphetamine could be used as a substitute for ephedrine. The US media began to flaunt these psychostimulants despite minimal understanding. Pharmacists interested in the properties of meth conducted
further experiments that lead to the discovery of the drug’s use in treating asthma, hay fever, narcolepsy, and depression. Once all of these findings were reported, the American Medical Association approved the use of methamphetamine and amphetamine for a variety of treatments in early 1931. A few months later, the Philadelphia pharmaceutical firm Smith, Kline, and French investigated the base form of methamphetamine then patented it in 1933. That same year Smith, Kline, and French introduced the Benzedrine Inhaler, a capped tube containing oily methamphetamine base as the main ingredient.

The initial promotion of Benzedrine as a nasal decongestant had much appeal to the American public. The growing popularity of the inhaler prompted Smith, Kline, and French to release a tablet form of the drug in the latter months of 1933. Although no legal category of prescription-only drugs existed, the Benzedrine Inhaler and tablets were advertised as over-the-counter drugs, nevertheless easily accessible without prescription until the 1950s. An individual was directed to inhale vapors every hour as needed for congestion or take one tablet every 2 to 4 hours as needed.

It didn’t take long for the public to realize the stimulating effects of Benzedrine, skyrocketing the sales of the inhaler. Alles transferred his patent of methamphetamine salts to Smith, Kline, and French in 1934. The firm then continued to sponsor further clinical development. By 1936, methamphetamine in the form of Benzedrine was recommended for treatment of more than 30 different conditions including:

- Narcolepsy
- Epilepsy
- Fatigue
- Depression
- Schizophrenia
- Alcoholism
- Morphine and codeine addiction
• Nicotine addiction
• Barbiturate intoxication
• Enuresis (bed wetting)
• Radiation sickness
• Sea sickness
• Dysmenorrhea (painful menstruation)
• Colic
• Obesity
• Persistent hiccups
• Stimulation of sexual libido
• Treatment of hyperactive children

The easy accessibility and intriguing effects of Benzedrine established the 1930s drug culture that focused on this US “wonder drug.”

The American Medical Association’s Council on Pharmacy and Chemistry came out with a statement in 1937 that “a feeling of exhilaration and sense of well-being was a consistent effect and patients volunteered that there had been a definite increase in mental activity and efficiency.” Soon after this statement, the American Medical Association officially approved the use of Benzedrine for the treatment of the conditions listed above.

Initial Recreational Use of Methamphetamine

In the late 1930s, the Benzedrine Inhaler began to be used for reasons other than medical. Americans were living through the Great Depression at this time. The hardship of daily life caused experimentation with anything that would ease the stress. It was then discovered that the nasal strips of the Benzedrine Inhaler could be removed and dunked in coffee to create a pleasant long-lasting high. The Benzedrine Inhaler contained the equivalent of fifty-six amphetamine tablets prompting people with absolutely no medical condition to purchase an obscure amount of inhalers. The medical uses of methamphetamine were slowly forgotten as the drug made its way into all aspects of society.
Dr. Charles Bradley, an American psychiatrist, had his suspicions about this instant popular miracle drug. In 1936, Dr. Bradley conducted the first of many experiments using amphetamine and methamphetamine to treat children with learning disabilities. The drug was viewed as safe with a little to no rate of addiction at the time. Two prominent physicians were noted stating, “There is no evidence in the entire literature of medicine that stimulants become habit-forming.” Six years into his research, Dr. Bradley had a sudden glimpse of the addictive qualities of methamphetamine but not yet knowing the true extent of the addiction.

The national view was slightly tempered from this finding however, Dr. Bradley eased the public’s view by proclaiming, “…addiction is very rare and only occurs in the severe psychopath who would have probably become addicted to some drug or other anyway.” Dr. Bradley’s experiments led a number of US professionals to explore the physical, physiological, and chemical effects of methamphetamine. This constant research did not discover anything outstanding but only added to Dr. Bradley’s hypothesis that the addictive quality of methamphetamine is minimal. In the late 1930s, medical warnings of the potential addictive qualities were required to be published on all amphetamine prescriptions. Nonetheless, the lack of negative findings maintained a steady increase of methamphetamine’s social acceptance.

**Methamphetamine Use during World War II (1940-1949)**

**Use Throughout the War**

By the beginning of World War II, amphetamines and the proposed medical benefits were known across the nation. Burroughs Wellcome Company introduced over-
the-counter tablets to the commercial market in 1940 under the name Methedrine.\textsuperscript{10,18} Additionally, Benzedrine sales were fueled by advertising and marketing strategies advocating the drug for the treatment of depression. From this, methamphetamine gained credibility as the first antidepressant and was, again, unanimously accepted by the general public.\textsuperscript{41}

The positive social view impelled the use of methamphetamine as an advantage in World War II. Both soldiers and Allied forces were given pill forms of methamphetamine, also known as \textit{pep pills}, \textit{tanks chocolate}, or \textit{pilot’s salt}, throughout the duration of the war.\textsuperscript{4,40,41} Allied forces used methamphetamine to sustain their energy, enhance performance, and maintain concentration on long flights. Soldiers were given pep pills to fight off ground war fatigue and enhance performance.\textsuperscript{7,10}

The US military supplied these pep pills as a general medical supply and in emergency kits.\textsuperscript{40,41} An army survey of fighter pilots taken in 1945 found that of the 15\% who regularly used pills in combat, a majority “made their own rules” and took the energy supplement “whenever they felt like it” rather than as directed.\textsuperscript{40,41}

Meanwhile in the states, the war did nothing to diminish the drug’s growth; amphetamine tablet sales quadrupled from 1942, reaching $2 million by 1945.\textsuperscript{41} Half of these Benzedrine sales were for weight control, depression, or as an energy supplement. By the end of the war, consumption rate in the US was greater than 2 tablets per person per year; over 16 million young Americans had been exposed to Benzedrine; more than 200 million tablets were nonchalantly distributed to American soldiers during the war; and over half a million American civilians used the drug specifically for psychological purposes or for weight loss.\textsuperscript{10,41}
The Initial Promotion by the Media

After the conclusion of the war, Benzedrine sales quickly exploded in the United States. Many sources believe this was the beginning of the first methamphetamine surge in the United States, unfolding primarily because of the nation’s explosive postwar prosperity and the crucial influence of the American media. The media of the 1940s and early 1950s promoted methamphetamine as a “confidence drug”; there were ads convincing readers to “reach for a pill instead of a cocktail”; that methamphetamine was associated with sophistication and class.

Figure 6- Advertisements for Methamphetamine and Amphetamine Products from the 1950s.

The initial medical benefit of these pills was forgotten as the drug began to be portrayed as a pleasurable leisure activity. Furthermore, the courts upheld the patent on amphetamine salts in 1946 that Alles’s contained. Within a year, Smith, Kline, and French’s annual sale of Benzedrine skyrocketed from $2.9 million in 1946 to $5.7 million in 1947.
A Shift in the National Drug Culture

A noticeable abuse of methamphetamine, now known as the “bolt and jolt” culture, had begun to develop across the nation. This subculture was characterized by using a combination of drugs to obtain an intense, but dangerous, high. The culture was beginning to be seen in various aspects of society, one being the military prison. Two psychiatrists Russell Monroe and Hyman Drell, stationed at a military prison in 1945, became curious of the reason behind the large number of agitated, hallucinating patients they had encountered throughout the war. Monroe and Drell took a survey of their patients, revealing that one-quarter of the inmates had been eating the contents of Benzedrine Inhalers; one-third of the abusers had learned this habit in the military before imprisonment; and 27% of the abusers had been given methamphetamine throughout the war, mainly by officers.41

The end of World War II brought veterans back to America along with the extreme exposure to Benzedrine; moreover, the American Medical Association approved advertising of methamphetamine for weight loss in 1947.41 As a direct result, Benzedrine sales increased to $7.3 million within the first two years after war.41 Smith, Kline, and French maintained control of the methamphetamine monopoly until late 1949, when Alles’s patent expired. This surged an overwhelming consumption of pharmaceutical methamphetamines. The Food and Drug Administration estimated that by 1952, production of methamphetamine had nearly quadrupled the estimates from 1949.41

The US methamphetamine problem was beginning to get out of hand. It began with a core of people who were exposed to the drug through medicinal purposes or while in the military; then the drug use found its way into mainstream population through new
forms of the drug, overprescribing, and overproduction. Every aspect of society including Bohemian groups, students, truck drivers, housewives, beach bums, businessmen, and veterans was using methamphetamine.\textsuperscript{18}

Students at the University of Minnesota were one of the first known subpopulations that reported misuse.\textsuperscript{4,40} The period of initial exposure in which the effects of the compound spread throughout the campus was followed by a period of campus wide infatuation with the drug. Pharmaceutical industries noticed an addiction occurring outside of the campus, instigating the voluntary removal of the drug from the market. The removal of the Benzedrine inhaler by Smith, Kline, and French in 1949 was the most shocking voluntary action of them all.\textsuperscript{4,41} Despite the removal of Benzedrine from the market, methamphetamine use flourished and remained generally accepted throughout society.

**Post-World War II Methamphetamine Problems (1950-1959)**

**Drug Use Among Youth**

Methamphetamine was both legal and free of any influential stigma for two decades after the end of World War II.\textsuperscript{6} Amphetamines could be purchased as Benzedrine, Dexadrine, and Methdrine tablets at student unions, truck stops, and convenient markets.\textsuperscript{6,41} Very few thought about the side effects or considered the potential of long-term effects of these widely distributed drugs. In particular, Benzedrine began to gain popularity in America’s counterculture and Beatnik society.

The spread of methamphetamine had a lot to do with the new cultural phenomenon of youth drug use. Speed was associated with being “real” and
“independent” thus maintained its grip of social influence. This association developed from the publicized experimentation of methamphetamine among celebrities to enhance the “authenticity and artistic view” aiding in their work. It was noticed that this experimentation transformed the poly-drug culture of the ‘40s into an injection culture of the ‘50s.

The patent for the Benzedrine inhaler expired in 1952, prompting other inhalers to appear on the market by the over-the-counter names: Valo, Wyamine, and Nasal-Ato. Youth began extracting the medicated strips in these highly available inhalers and soaking them in water to create a liquid version of the drug they could directly inject into their bloodstream. Additionally, youth placed the strips in soda, gum, and hard candies or just simply swallowed them to obtain a lasting high.

The First Crackdown on Methamphetamine

The methamphetamine exposure to a vulnerable population, such as youth, and a highly publicized drug incident created a cultural alarm. A drug panic followed on the heels of the first methamphetamine surge, which initiated the first amphetamine crackdown. In 1954, The Food and Drug Administration passed a law that required physician prescription for access to any amphetamines or methamphetamine. This crackdown, however, did not diminish use of methamphetamine for very long.

Methamphetamine Use during the Vietnam War

Contrary to the stories surrounding marijuana use among American soldiers during the Vietnam War, the drug of choice among soldiers was methamphetamine. The reality of the situation was that in order to remain alive and keep others alive, a soldier
must remain alert, and it was well known that smoking marijuana had the opposite effect. American soldiers resorted to *go pills*, relying on the energized, concentrated effects they produced.\textsuperscript{10,41}

At the dawn of the war, the Pentagon officially sanctioned the use of amphetamines by servicemen based on previous government tests. These tests conducted in the late ‘40s and early ‘50s indicated that amphetamine use improved mental performance by 5%. Though this may not seem like enough of a percentage to approve drug use, 5% improvement is the difference between “safely landing on a carrier deck in heavy seas at night and colliding with it.”\textsuperscript{6} Armed services continued to use methamphetamine as an advantage throughout the Vietnam War. Every branch of the armed services had unregulated access to methamphetamine tablets however, just as in World War II, the niche was with the Air Force and Army pilots.\textsuperscript{6}

At this time, the first negative side effects of methamphetamine use were reported. A feeling of “being weird,” a complete loss of appetite, and general sense of nervousness soon overwhelmed veterans that used the drug to counter fatigue and enhance concentration.\textsuperscript{6} Barbiturates, under the trade name Binoctol, became the new countermeasure of these unwanted side effects. Ten and Twenty-five milligram strength tablets were made available to servicemen allowing them to sleep without the unwanted feelings associated with methamphetamine.\textsuperscript{6}

As the war deepened with no hope for ending, it was difficult to identify the form of methamphetamine the soldiers accessed and the extent of use, as no official documentation existed. The government’s apprehension in providing accurate data on methamphetamine use was because of the contradiction between civilians and soldiers.\textsuperscript{6}
While servicemen were being handed tablets on a daily basis, civilian drug use became stricter, only allowing individuals with a prescription to purchase any form of amphetamine.

**The Largest Drug Culture in History (1960-1969)**

In the late ‘50s, methamphetamine use increased, leading the US into a second methamphetamine surge that was well underway by 1960. This surge was distinctive in several ways: the escalating use was due to the appearance of new forms of methamphetamine; there was little to no dormancy period; and the initial stage of the surge was quickly controlled. It began as the California well-known “bolt and jolt” poly-drug culture was reconstructed, using a combination of more intense drugs to achieve a maximum effect. At this time, it was popular to mix various amphetamines with heroin or barbiturates for increased pleasure and notable sophistication. This allure to amphetamine, particularly methamphetamine, then began sweeping the nation.

**California’s Initial Contribution to Methamphetamine Use**

California can be attributed to the spread of methamphetamine through the early sixties. The state was known throughout the country as an easy access state even despite the previously enforced prescription requirements. Doctors were willing to prescribe methamphetamine for any condition and in some cases, even making up conditions for prescriptions. In effect, the pharmaceutical industry increased production of amphetamines from 16,000 pounds in 1949 to more than 75,000 pounds in 1958. Federal officials estimated that nearly eight billion legally manufactured amphetamine
and barbiturate tablets were in circulation within the US in the early 1960s. The increase in production caused a filtering of tablets into the illegal market.

As history tells, the drug culture of the late ‘50s throughout the ‘60s was one of the largest that has evolved in the US. Constant protesting stimulated the “cultural appetite for introspection while elevating the values of nonconformity and activism.” This culture turned to drugs for this; specifically LSD, marijuana, hallucinogens, and heroin. Of all the major drugs used, heroin is by the far the most addictive, which is why it is not surprising that many physicians in California began prescribing injectable ampoules of methamphetamine as treatment for the heroin addicts in the mid ‘60s. Two popular pharmaceutical firms, Abbott and Burroughs Wellcome, legally manufactured liquid methamphetamine under the trade names Desoxyn and Methedrine.

Development of the Speed Freak Culture

Injectable methamphetamine began to flood the illegal market as the drug culture took a violent turn. Users began extending their high by prolonging their speed runs. The longer the speed runs, the more irritated, dissolved, and aggressive the users became. Within a few months, this West Coast culture was known across the nation as “speed freaks.” These high dose compulsive users would often take as much as a half-gram in one injection, or for those who preferred tablets, two to four 10 mg capsules at once.

Due to the ongoing effects of methamphetamine, users became very violent and the crime associated to drugs dramatically increased. The media was flooded with stories of psychotic episodes of individuals who had been high for three to six days straight. The Haight-Ashbury District of California is a well-known example of the increased meth
injection use, which will be discussed in further detail later. Injectable methamphetamine is the most cultural altering example of iatrogenesis in the US.\textsuperscript{41}

**Widespread Appeal of Methamphetamine**

In combination with these new forms of methamphetamine, new distribution networks operated by motorcycle gangs developed in California. Distribution attributed to the broad segment of society that used methamphetamine for various reasons. The availability of prescription, low cost, lengthy duration of effects, and easy access were all contributing factors to the large range of appeal.\textsuperscript{10,41} The drug began to take a root in every corner of America. Truck drivers and college students used meth to stay awake and focus through all hours of the night, businessmen used as a form of energy and concentration, and “drug focused hippies” used for the euphoric sensation.

Surprising use occurred among housewives, a segment of society that seemed to develop a quick weakness for the drug.\textsuperscript{6} The draw lay in the enhanced self-esteem produced by meth, along with its ability to be used as an appetite suppressant and energy enhancer. Hence, while their husbands were at work, wives could maintain the cleanliness of the home, take care of the children, and cook for the hardworking husband all while staying fit and trim.

*Figure 7- Weight Loss Advertisements for Methamphetamine and Amphetamine Products from the 1960s,\textsuperscript{138})*

![Figure 7- Weight Loss Advertisements for Methamphetamine and Amphetamine Products from the 1960s](image-url)
Government Intervention on Meth Use

The government’s estimates of amphetamine use called for an immediate intervention. The Food and Drug Administration launched a campaign in 1962 that addressed the problem of methamphetamine abuse in the US. In that same year, the Drug Abuse Control Amendment allowed the FDA control over amphetamines, barbiturates, and LSD. The drugs then became to be referred to as dangerous and addictive.

The national lexicon prevention slogan, known as “speed kills,” attempted to inform young users of methamphetamine’s dangerous effects. As a part of the prevention methods, federal and state laws limited access to manufacturing and distributing amphetamine, barbiturates, and LSD. The prevention efforts did not affect the user population as much as the government expected. So, in 1963, the State Attorney General of California and US Department of Justice requested that the injectable ampoules of amphetamine and methamphetamine products be entirely removed from the market. After this restriction was passed, the intravenous users were substantially cut off from their supply resulting in an ushering of illicit manufacturing of meth.

Methamphetamine use had only slightly decline, prompting the US to pass the Drug Abuse Control Amendments in 1965. This final prevention method of the ‘60s successfully reduced the availability of supplies produced by pharmaceutical companies resulting in a decline of issued prescriptions to 31 million in 1967. Nevertheless, the hardcore users of the early 1960s served as a fuse that ignited a broader subculture in the latter part of the decade. It did not take long for these users to work around the enforced restrictions and discover new supplies to use in their illegal clandestine labs. The results
of the alteration in precursor chemicals included a substantial drop in purity of the street
drug, a sparked phenomenon of “look alike drugs,” and an increase of imported supplies.
This began the initial stages of the street production of methamphetamine.

The Haight-Ashbury District

The Haight-Ashbury District of San Francisco, California in the ‘60s was the
“fertile ground from which the methamphetamine problem would bloom and spread
throughout the US.” This was where doctors began freely prescribing injectable
methamphetamine for the treatment of various conditions. The word that injectable meth
was easy accessibility in Haight-Ashbury spread around the nation. The Kennedy
administration attempted to regulate amphetamine use however, their efforts hardly
dented the supply of the drugs.

The drug supply in the Haight-Ashbury district was overflowing due to the
willingness of the pharmaceutical companies and physicians to produce and prescribe the
drug in vast quantities. In an attempt to estimating the true severity of the meth
epidemic, the FDA Commissioner George Larrick testified to a House Committee in
1965 that “…our survey of production figures were incomplete because records kept by
several basic manufactures were grossly inadequate and also because two of the nation’s
largest pharmaceutical companies declined… to provide the information requested.” The
government restrictions on the pill form of methamphetamine were not taken seriously
and, as a result, did not alter the drug’s popularity. At this time however, the government
did not understand the significance of the threat methamphetamine was to society.
The Government's Understanding of Drug Use

Use in the Haight-Ashbury District reached its peak as the drug flourished, obtained both legally and illegally. Local pharmacies began selling injectable methamphetamine without prescriptions, with forged prescriptions, or for made up conditions. Pharmacists would take phony telephone orders from fake doctors in order to obtain “legal methamphetamine,” then would give fake prescriptions to users who were willing to provide a small profit. Through this sneaky transaction, injectable methamphetamine was used more frequently than ever on the West Coast.

Meth use became out of control. The need for the drug grew to create a demand so high that no pharmaceutical company could pretend it to be legitimate. This forced legislation to take immediate action; the State Attorney General of California and US Department of Justice requested that injectable amphetamine products be entirely removed from the market in 1963, and so they were. Users were suddenly faced without a way to maintain their addiction. As a result, their void was filled in a threatening manner. The inexperienced IV meth users began experiments to create different forms of the drug, which resulted in severe destruction to both the individual’s health and society.

Dr. David E. Smith, a doctor in Haight-Ashbury District, described that the arrival of methamphetamine use resulted in the death of the underlying idea of the sixties. The romantic image that the drug users of the sixties aspired to portray turned into an addictive culture that obsessed with an altered form of reality.

Dr. David Smith’s Research and Findings

In 1965, Dr. Smith began his now famous research on amphetamines at the San Francisco General Hospital while living in the Haight-Ashbury District. Dr. Smith was
working on his post doctorate fellowship that focused on treating addiction in San Francisco at this time. His research entailed administering amphetamines to lab mice in increasing quantities until half of the mice died by either a stroke or cardiac arrest. The medical term for half of the tested mice dying is called “medium dose lethal.” The mice that did survive the first stage of the experiment were then moved into a new cage.

The control group of mice that were not administered any amphetamines went on about a healthy life. They ate food, drank water, and groomed each other as normal mice do. However, it had been observed that the amphetamine-exposed mice began attacking each other on a regular basis.

Dr. Smith became intrigued with this behavior; upon closer examination he had noticed that the mice were interpreting usual grooming behavior as aggressive and became defensive. Soon after, more amphetamine-exposed mice were dying by attack than by seizure, stroke, or cardiac arrest brought about from the immense doses of administered drug. The medical term for the amount of amphetamine that is required to kill half of the mice through physical violence is called “aggregate amphetamine toxicity.” Dr. Smith concluded that the aggregate amphetamine toxicity of amphetamine is substantially lower than the medium dose lethal. That is, the dosage of amphetamine required to kill by the way of physical injury is substantially lower than the dosage required to kill by the way of overdose.

As Dr. Smith continued these experiments, he began to observe the unmistakable correspondences between the aggregated lab mice and the drug users on the streets of the Haight-Ashbury District. He studied people on the streets, in the grocery stores, and roaming the parks when he began to notice the severity of the drug problem. Dr. Smith
described the district as the “biggest drug taking culture in the history of human civilization.” The district was filled with millions of young people experiencing free love, peace, and an abundance of mind-altering drugs, mainly LSD and mescaline.

**The First Appearance of Street Production**

Just prior to what is now known as The Summer of Love in 1967, California reported an unusual number of explosions and fires in local residences located in the outskirts of the hills and desserts. Once these explosions had been extinguished, officials made their way through the rummage. What was found were charred ruins of sophisticated labs containing remains of triple-neck reaction vessels, Buchner funnels, separatory funnels, Bunsen burners, a number of toxic acids including hydrochloric acid, sulfuric acid, acetone, methyl ethyl, ketone, lead acetate, and finally, a compound in which the officials could hardly pronounce correctly, phenyl-2-propanone. Phenyl-2-propanone, P2P, was the active ingredient in cold medicines at this time. Pharmaceutical companies used P2P as a precursor chemical to make prescription amphetamine and methamphetamine.6.41

The major challenge that the California government faced was that at the time, none of the chemicals in these labs were controlled substances. Furthermore, nothing used throughout the process of making methamphetamine was illegal until the procedure was completed and methamphetamine was present. In theory, a lab cook could legally perform the procedure as long as they stopped one step before forming the first molecule of methamphetamine. This challenge was unique to methamphetamine. Due to this legal loophole, small clandestine labs began to pop up all over California and produced tremendous quantities of liquid methamphetamine at ease.
The largest producer of methamphetamine was the motorcycle gang known as Hell’s Angels. This gang saw methamphetamine as the perfect opportunity to produce and distribute a drug that seemed to appeal to a variety of people. Additionally, the drug worked well with their lifestyle. The substantial profits encouraged them to corner market as well as produce the drug for their own use. Meth that was distributed via motorcycle networks was predominantly injectable or crushable tablet forms.

**The Prevalence of Methamphetamine Users**

By 1967, the craze hit a peak of 31 million issued amphetamine prescriptions nationwide in one year. Most of these prescriptions were given in tablet form due to the low cost and the ability to alter the tablets for different routes of administration. In the ‘60s, thousands of amphetamine tablets were sold for less than a dollar.

During this time, a disproportionate amount of injectable methamphetamine was limited to the Haight-Ashbury District. Even though a majority of the young people in the district preferred LSD, mescaline, and music, it did not stop them from giving into the meth craze. Dr. Smith began to recognize the increasing number of addicts in Haight-Ashbury, prompting him to set up free health clinics. The purpose of the Haight-Ashbury Free Clinic was to serve as a primary care facility for the uninsured, homeless, and addicted; patients usually portraying all three characteristics.

Dr. Smith was also interested in some of the psychiatric patients at the San Francisco General Hospital. His thorough observations led him to believe that the patients displayed specific qualities that did not line up with typical schizophrenia. Further interests led him to research, of which Dr. Smith conducted routine urine screens on the patients. He concluded that a majority of the patients were not actually
schizophrenic but instead, suffered from an amphetamine psychosis. These psychiatric patients were heavy meth users who were receiving the wrong treatment. Dr. Smith’s amphetamine psychosis discovery emphasized “just how unprepared the medical community was for this amphetamine epidemic.”

The prevalence of methamphetamine use in the 1960s was overlooked because of the frequency of multiple drug use throughout the decade. By the late ‘60s, amphetamines were undergoing a transformation from prescription drugs to a street drugs. Meth began to be distributed in massive quantities produced from home labs in late 1968. These home labs were not as precise, sanitary, or cautious as the laboratories that produced prescribed methamphetamine, which resulted in more frequent, negative reactions with use.

The nation, specifically California, began to feel the first impact of the devastation methamphetamine can have on a community. Meth’s initial social view as a “Mom and Pop drug” started to appeal to all segments of society. Law students, housewives, truck drivers, shift workers, and businessmen became interested and soon after, reliant on methamphetamine to get them through their daily routine. Meth discontinued to be the drug choice of the hippies and became to be known as a bourgeois drug that was taken by people who wanted to be productive. Dr. Smith stated that by the end of the ‘60s “nearly everyone in the Bay area was taking something.” The IV methamphetamine users of the ‘60s transitioned to alcohol, sedatives, and narcotics, then entered addiction programs in the mid-‘70s.

Very few people in the ‘60s gave much thought to the possible consequences of their actions. The Haight-Ashbury District was a “cultural Mecca” for these young
people who filled their thoughts with imagination and their bodies with toxins.\textsuperscript{6,40} The Haight-Ashbury District created an effect that began the push towards the pandemic of tens of millions of people who, in their earlier years, experimented with a number of mind-altering compounds.\textsuperscript{6}

\textbf{The After Effect of the Sixties (1970-1987)}

\textbf{The Comprehensive Drug Abuse Prevention and Control Act of 1970}

The government did not want the decade of the ‘70s to be a worsened version of the ‘60s. Thus, in hopes of preventing their nightmare, Congress passed the Comprehensive Drug Abuse Prevention and Control Act in 1970.\textsuperscript{10,41} This act made it so that methamphetamine was illegal to possess, in any form, without a prescription. Additionally, the law placed amphetamines under the Schedule II category of the Controlled Substance Act (CSA).\textsuperscript{10,40}

The CSA is Title II of the Comprehensive Drug Abuse Prevention and Control Act that consolidates a number of laws regulating the manufacture and distribution of various drugs including methamphetamine.\textsuperscript{13} Additionally, the CSA provides a division of drugs based on the abuse potential and medical usefulness. Drugs can be distinguished into the following five categories\textsuperscript{13,43}:

- Schedule 1: Drugs with high potential for abuse and no currently accepted medical use. Heroin and mescaline are included in this category.
- Schedule 2: Drugs with high potential for abuse but are considered medical useful. The abuse of drugs in this category may lead to severe psychological or physical dependence. Cocaine, codeine, amphetamines, and methamphetamine are included in this category.
- Schedule 3: Drugs with a relatively low potential for abuse and are acceptable in current medical practice.
- Schedule 4 and 5: Drugs that include minor tranquilizers and few miscellaneous others.
The ‘70s then saw an instantaneous decline in amphetamine use, specifically in methamphetamine use. The legal foundation of the federal government’s mandate severely reduced the approved production quotas of amphetamine and methamphetamine by drug companies, forced the removal of injectable liquid methamphetamine from the shelf, and reclassified non-injectable forms of amphetamines as a Schedule II drug. This induced a regression in available prescriptions, which directly diminished the availability of medical methamphetamine in the streets. The diminished availability of prescribed methamphetamine forced users to turn to street manufactures. There were still some individuals who could obtain prescription pills from their doctors but in very limited quantities. The early ‘70s started to see the end of the methamphetamine surge.

The Maintained Prevalence of Methamphetamine

Although the methamphetamine market was in sudden shock, the mindset of the Haight-Ashbury District prevailed up and down the West Coast. The combination of frustration and craving stimulated the emergence of speed labs. While individual methamphetamine production became a problem throughout the coast, the national media portrayed it as unique to California. Chemists of these newly installed methamphetamine labs had difficulty retrieving the needed ingredients in the US but had found availability from Canada and Mexico.

Illegal production of methamphetamine helped maintain the addiction that developed in the ‘60s. Motorcycle gangs on the West Coast controlled meth production throughout the ‘70s. The gangs soon took on meth manufacturing, selling, and distributing to users across the nation. Hells Angels, a well-known California motorcycle
gang, controlled most of the production and distribution of street methamphetamine however, there were also a number of local clandestine labs that also contributed to the nations use. The primary lab for Hells Angels meth production was located in San Francisco, California. Members of the gang would distribute the product across the country by storing the drug in the crankshafts of their choppers, which is where the nickname “crank” comes from.

Labs in the ‘70s, whether small or large, were located on the outskirts of the town in unnoticed shacks surrounded by unused land. The need for such space was due to the manufacturing method used. The only known method at the time was the P2P method, which produces a nauseating smell that could easily be detected by the police. In some cases, labs were built in pig farms and behind chicken coops to mask the pungent smell.

Users began to move closer to production sites to maintain their habit, resulting in a sudden and noticeable shift from urban to rural populations. Additionally, as discussed with the P2P method, the potency of the street drug was minimal, the procedure was time consuming and demanding, and the manufacturing process required a number of sophisticated laboratory equipment. Only patient chemists were able to understand and correctly perform the challenging method of methamphetamine production at this time.

**Restriction of P2P and Early Use of Ephedrine**

Throughout the decade, further restrictions on methamphetamine prescriptions resulted in a nationwide decline in methamphetamine use. Then, the government shocked the meth market by placing P2P in the Schedule II category of the CSA in 1980. The placement of the main precursor drug resulted in an instantaneous decline in lab seizures.
and thus, an even further decrease in use. The drug quickly faded from national
popularity however, the decline was very brief. The enforced restriction of P2P
stimulated meth chemists to configure a new way to manufacture methamphetamine.

In the early 1980s, a new method of production was discovered in San Diego.
This resulted in an explosion of meth use in Southern California, including San Diego,
Riverside, and San Bernardino.\textsuperscript{10,24} The new production procedure was based on
hydroiodic acid and ephedrine reduction, which was considerably simpler than any
previous manufacturing method. Additionally, the production did not require strong
background knowledge of chemistry, it was not as time demanding, ephedrine was
unregulated, and the potency of the final product was substantially higher.

In the early 1970s, the purity of street methamphetamine averaged at 30%; by
1983, the purity of street meth had reached an all time high with an average of 60%\textsuperscript{6}
The increased purity was solely due to the new precursor chemical cooks were using,
ephedrine. Ephedrine was “the true menace of the methamphetamine epidemic.”\textsuperscript{44}
Within months, meth manufacturing “grew from small shops set up to supply biker gangs
to multiple home labs” primarily on the West Coast.\textsuperscript{10,45} It became the well-known
cottage industry spreading across the nation.

This new potent form of methamphetamine gained notoriety as “the new crack
cocaine” and according to one source, “San Diego became the new meth hub.”\textsuperscript{10,24} This
new recipe made way across the nation. Ephedrine remained unregulated and so meth
use began to rise in the US, yet again. The relative ease of the new method for
manufacturing methamphetamine, wide availability of the precursor chemicals, and
absence of commercial production also led to a rise of individual clandestine labs.
In 1985, an analogue meth-related arrest meant nothing. However, the following year Congress passed the Drug Analogue and Anti-Drug Abuse Acts. These acts prohibited all possible variations of any controlled substances, even the forms that had not yet been discovered. The government hoped that a substantial decline would result from the acts nonetheless, the DEA estimated that more than 400 labs were seized in 1987, an increase from the estimated amount in 1985.

In the late ‘80s, anyone could make methamphetamine. It became popular to purchase large quantities of ephedrine powder, which sped up the reduction of the already minimal time consuming method. The bulk of the ephedrine powder in the US was imported which posed the problem of a large number of underground manufacturers and further difficulty diminishing use.

**Further Restrictions that Altered Methamphetamine Production (1988-1995)**

**Passage of the Chemical Diversion and Trafficking Act of 1988**

In 1988, the government tried to take control of ephedrine by passing the Chemical Diversion and Trafficking Act (CDTA) as an amendment to the CSA. The original proposal of the regulations covered both the raw materials and products made from them, requiring detailed record keeping of precursor chemicals and import/export reporting’s on all transactions involving such materials. Then began lobbying by various pharmaceutical companies in an effort keep the ephedrine-based products exempt from the list of CDTA chemicals. This was because the ephedrine-based cold medicines were widely used in the US for medicinal purposes and so companies would substantially reduce sales if these products were to be included.
Pharmaceutical companies argued that they had the right to legally market and distribute cold medicine under the Food, Drug, and Cosmetic Act. After an ongoing haggling of pharmaceutical companies, an accommodation was reached in the final draft of the CDTA. There was an exemption for the tablets and capsules containing ephedrine used as cold medicine, hence, ephedrine remained unregulated.

As a result, methamphetamine production continued, as predicted. According to the DEA, it takes approximately 48,000 twenty-five milligram tablets to extract a single kilogram of pure ephedrine. Meth producers began to legally order tablets in one hundred and one thousand count bottles. Ads for companies selling bulk ephedrine tablets were found throughout national magazines such as Cosmopolitan, High Times, and Hustler. They claimed that these ads were for energy boosters, weight loss supplements, and bronchodilators.

Will Glaspy, a former DEA agent who worked on meth cases in Southern California, described the scene: “you could literally walk into a chemical supply company with a recipe for meth, hand them the recipe, and tell them: ‘Give me everything on that list so that I can manufacture meth. And it was neither legal nor illegal.’” Legal prosecutors found it difficult to take known meth production to court because of the exemption of such chemicals in the legislation.

Production Use of Ephedrine to Pseudoephedrine

The rise of meth use forced legislation to make ephedrine a controlled substance in the late ‘80s. This restriction did not substantially diminish drug use because users still obtained the ephedrine precursor legally from Canada and Mexico. However, it became more difficult to find the quantities need for the demand of the drugs production. Yet
again, street chemists began to experiment with different precursor chemicals.
Pseudoephedrine was quickly found capable of producing the left handed molecule which could then form a mirror image of itself, making the right handed d-isomer meth base. The rush produced by this new smoke-able form was incomparable to any other route of administration known at the time. As a result, profits exploded and addiction seemed to become much more frequent with methamphetamine users.

Hundreds of meth labs were seized in 1987 and 1988 in San Diego; by 1990, use had appeared in Phoenix, Denver, and Portland. Methamphetamine use quickly increased in rural America. One source describes these communities as “socially and economically disrupted and demoralized were similarly vulnerable.” Well into the ‘90s, meth use centered in the West began to move into the Southwest, Texas, and even to states west of the Mississippi River.

Passage of the Domestic Chemical Diversion Control Act of 1990

In response to the spread of use across the country, the Department of Justice’s Office of Diversion Control drafted the Domestic Chemical Diversion Control Act (DCDCA) in late 1990. This sought to restrict the ephedrine tablets and capsules to the general public in addition to giving law enforcement the authority to punish companies that divert large quantities of ephedrine without proof that they were not involved in the illegal production of meth. It wasn’t until 1993 that the law passed Congress and became effective. There were three major consequences from this restriction.

First, the legislation only applied to ephedrine tablets thus making it legal to obtain pseudoephedrine products. It didn’t take much for illegal chemists to shift from ephedrine to pseudoephedrine and continue the spread of meth production and use across
the nation. To the cook’s surprise, manufacturing meth with pseudoephedrine resulted in an even more potent final product. As a result, pharmacies and convenience stores across the nation became the main suppliers of meth production where cooks would purchase massive quantities of cold medicine in order to extract ephedrine for production.\(^4\)

Secondly, the 1990s ushered in a worldwide web explosion. The Internet allowed makes shift meth labs, meth use, addiction, procedures, and all other aspects of the drug world to be easy posted without any consequences. Manufactures shared recipes and effective methods to produce the drug. Through the Internet sharing of the meth world, manufactures became more adept with their cooking skills and as a result, increased the street drugs potency.\(^4,10\)

Finally, meth production-based markets shifted from the US to Mexico, where ephedrine was still readily available. Mexican drug trafficking organizations quickly added methamphetamine to their “product line,” which instantaneously increased meth use throughout South.\(^4,10\) The drug soon made its way from the Western Mountain Region and the Midwest.\(^15\) There became to be a strong hold of meth manufacturers in the Midwest during the late ‘90s because of the easy access to anhydrous ammonia from the abundance of farming.\(^10,24\) Additionally, the low populated rural areas made the perfect site by diminishing the potential to be discovered by the law.

As meth use increased, US and Mexican border patrols observed an increase in the quantity of precursor chemicals that were being confiscated. Meth manufactures began to complete production in the US rather than manufacturing meth in Mexico that tended to be filled with impurities. The drug laws and nature of the meth molecule made it so that almost all of the procedure could be carried out in Mexico, up until a molecule
of meth was produced. At this stage, the drug was smuggled into the US where the final steps of the procedure were carried out, creating a substantial amount of methamphetamine. Penalties for this procedure, before the methamphetamine was made, were at most deportation. In the sense of the law, the Mexican immigrants were only smuggling cold medicine into the US. 4,44

**Bulk Ephedrine Sale Discoveries**

**US Customs Service Discovery in Dallas/Fort Worth Airport**

In March 1994, the government discovered more reasons behind the failure of their enforced restrictions. The US Customs Service at Dallas/Fort Worth Airport came across a peculiar shipment that originated in Switzerland and was making its way to Mexico City. 6,12 The only reason customs had discovered the shipment is because of the lack of proper exportation documents. Upon closer examination, customs saw that the package, a drum set, had had the labeling removed, the lid had been turned inside out, and the brokers name had been concealed with black paint. Opening these drums revealed 3.4 metric tons of ephedrine manufactured by a company in India, sold to a firm in Switzerland, and shipped to Mexico. 6,12

The package was not supposed to stop in the United States, however due to scheduling difficulties, it was diverted to the Dallas/Fort Worth Airport. Hence, the package was under US jurisdiction. This was the largest shipment intercepted by American law enforcement since the passage of CDTA and remains to be one of the largest in US history. 6
The discovery of the package stimulated investigations that quickly revealed an international chemical diversion trade. The trade involved enormous amounts of precursor chemicals, that were restricted in the US, produced in the Czech Republic, sent to Switzerland, then made way to Mexico.⁶ Once the supply had reached Mexico, it would go one of two directions. Either immense amounts of ephedrine could be illegally imported into America and contribute to US methamphetamine production or remain in Mexico and contribute to the growing use there. Despite where the chemicals ended, the international trade was realized to be a significant problem. In one year, in the mid 1990s, the Swiss officials reported that at least 70 metric tons of ephedrine had been shipped to Mexico.⁶,¹² Mexican labs and clandestine labs across America had an unlimited supply of precursor chemicals resulting in a flood of methamphetamine into the street.

Clifton Pharmaceuticals

Another pharmaceutical company by the name of Clifton Pharmaceuticals appeared on the DEA’s watch list in 1995 for the illegal and massive importations of ephedrine and pseudoephedrine.⁶ Chemicals from this company had been found in various clandestine labs that had been seized across the US. An undercover DEA agent approached Clifton Pharmaceuticals in May 1995, purchasing over 20 million sixty-milligram pseudoephedrine tablets for $180,000.⁶ This undercover discovery triggered a federal search and seizure of the Clifton Pharmaceutical plant in Pennsylvania. The seizure found enough ephedrine, pseudoephedrine, and P2P powder, tablets, and capsules to fill five 50-foot tractor-trailers. The ephedrine and pseudoephedrine alone weighed 25 metric tons.⁶

Passage of the Methamphetamine Control Act in 1996

During the mid-1990s, the DEA estimated that a $500 investment in precursor chemicals would yield 1 pound of meth, which typically sold for $20,000. The meth market was a nearly forty-fold return on investment. A combination of increased purity, high return on investment, and easy access of precursor chemicals caused meth use to reach a peak. In efforts to reduce the meth problem, Congress passed the Methamphetamine Control Act in 1996. This act “strengthened penalties for possession, distribution, and manufacturing as well as tightened controls on precursor chemicals.” The precursor chemicals included all drug products containing ephedrine, pseudoephedrine, and P2P.

Additionally, cold medicines were required to come in blister packs. In theory, this was a “safe harbor” by that the nuisance of blister packs would prevent meth cooks from purchasing cold medicine. In contrast to the government’s thoughts, this was exactly what individuals high on meth would want to do. Rogene Waite of the DEA’s Office of Diversion disagreed with this theory, arguing that “sitting around the house peeling foil from thousands of blister packs is just the kind of repetitive motion meth users are drawn to.”

In October 2001, the DEA recommended to Congress that due to the appeal of blister packs to meth users, they should be removed from exemption. That same year, Canada joined Mexico as a major supplier of precursor chemicals into the US. To help cut back on the US meth problem, the Canadian government created a stricter licensing system of ephedrine and pseudoephedrine in 2003. Furthermore, ephedrine was officially
banned in pure form in the US under the Ephedra Prohibition Act and pseudoephedrine became more tightly controlled.\textsuperscript{10}

A National Survey on Drug Use and Health (2003) found that “approximately 12 million Americans had tried meth at least once.”\textsuperscript{46} Meth use continued to increase in the US in 2004, which forced Mexican drug cartels to smuggle more precursor chemicals to meet the demands.\textsuperscript{6} Street methamphetamine once again, became more pure and potent across the nation.

\textbf{State-by-State Restrictions}

The increased use prompted Oklahoma to be the first state to pass a comprehensive legislation in April 2004 that restricted ephedrine and pseudoephedrine products.\textsuperscript{10} It included limited sales of these products to pharmacies, required the products to be placed behind pharmacy counters, and required proof of identification for the purchase of these products. The effects of this legislation were substantial and significantly decreased methamphetamine use and production in Oklahoma. The overwhelmingly positive results spread throughout the country, prompting other states to follow Oklahoma’s lead.

Throughout 2004 several states began to change their view of the methamphetamine problem. This resulted in a numerous prevention efforts by a various states. Illinois began to regulate the total number of cold medicine packets containing pseudoephedrine and the number of packets sold in a single transaction.\textsuperscript{10} The state also required that all cold medicine containing pseudoephedrine or ephedrine be sealed in blister packs. Oregon began requiring a proof of identification in November 2004 for the purchase of over the counter cold medications containing these precursor chemicals.\textsuperscript{10}
Indian took a different approach to the drug problem; the state began a retailer education program that was used to help workers identify customers that had a higher probability of purchasing cold medications for illicit purposes.\textsuperscript{10} North Dakota began considering any possession over 24 grams of a precursor chemical for methamphetamine a felony.\textsuperscript{10}

**Passage of the Combat Methamphetamine Epidemic Act of 2005**

These efforts only had a minor impact on methamphetamine use within the state so the government was still concerned by the continued popularity of the drug. For further prevention, the House of Representatives passed the Combat Methamphetamine Epidemic Act in December 2005.\textsuperscript{10,25} This was a first step of a nationwide prevention that required all drugs containing ephedrine, pseudoephedrine, and phenylpropanolamine to be kept behind the pharmacy counter and required proof of identification upon the purchase of such drugs. Additionally, this act limited the purchase amount to no more than 9 grams per 30 days and enhanced penalties for individuals who manufacture the drug in areas where children reside.\textsuperscript{10,25} These restrictions had a significant impact on the purchase of precursor chemicals through the increased accountability of the Federal regulators at all points of distribution.

**Summary of the History of Methamphetamine in the US**

Some studies report that the United States is currently in the middle of a methamphetamine surge. As history shows, some drug surges end not because of the public efforts and restrictions made on the drug but simply because the appetite for the particular effects the drug produces are not appealing to the culture. This surge has occurred within the culture obsessed with caffeine and productivity. Methamphetamine
made its way perfectly into the mindset of the culture as an additional supplement to the
“coffee shops, caffeine spiked drinks, and over-the-counter pick-me-ups.” In addition to
the culture, the increased meth use is attributed to the current potency of street
methamphetamine. The combination of homemade recipe availability, easy production,
cheap cost, and long lasting, intense effects makes meth popular in all regions of the US.

A new drug culture has been developed with methamphetamine, leading to a
national epidemic of use and home lab productions across the country. As Dr. Lester
Grinspoon (2005), a professor of psychiatry at Harvard Medical School, described, “just
a couple of decades ago, this was being prescribed by the ton load… physicians really
believed it was like a panacea and that there was no downside.” Today,
methamphetamine is considered dangerous and a destruction to all of society.
**Review of Literature**

**Trends in the Prevalence of Meth Use**

The typical methamphetamine user has not always been portrayed as you see today: a skeleton face that is covered by scabs, their eyes hopelessly staring into the camera. The culture associated with methamphetamine has changed significantly since the synthesis of meth in 1893. Initially methamphetamine was used as treatment for a variety of conditions; moving through the years to World War II, meth was given to soldiers as “go pills;” continuing into the 1960s by the popular hippie culture; and currently making its way to rural America. Although the drug culture has changed within the past decade, the number of users has not so much. According to Ralph Weisheit and William L. White (2009) in their book *Methamphetamine: Its History, Pharmacology, and Treatment*, the overall rates of use did not increase substantially from 1999 to 2004. Methamphetamine use has been maintained because of its appeal to a variety of users. Though the media may not inform society, methamphetamine has reached all corners of America over the past century, not just the past decade.

**The Historical Increase of Methamphetamine Use**

**Initial Use of Methamphetamine (1920-1974)**

Methamphetamine abuse is not a new phenomenon. The drug has been widely available since the late 1920s and made its way to all aspects of society. The US Air Force began using meth in World War II to “sustain performance of sleep deprived pilots.” John F. Kennedy was injected with a small dose before debates against
Nixon.\textsuperscript{41,47} Jean-Paul Sartre was high during the time he wrote \textit{Critique of Dialectical Reason}.\textsuperscript{47} Pete Rose was frequently taking small doses when he set a record of 4,256 hits.\textsuperscript{47}

By 1970, amphetamines became the second most abused drug in America, with a particular taste for methamphetamine. In the year from 1970 to 1971, the US pharmaceutical industry produced over 10 billion tablets, which substantially succeeded the amount deemed for proper medical use.\textsuperscript{10} Additionally, a national survey from the early 1970s reported that of 7,000 college students, 11\% used methamphetamine for various reasons including energy to study for exams, a weight loss enhancer, and at parties for the pure euphoric effect.\textsuperscript{10}

\textbf{Fluctuations in the Prevalence of Methamphetamine (1975-2005)}

Legal restrictions of precursor chemicals, quota regulations, and prescription limitations dramatically reduced drug use from the mid-1970s to the early 1980s. However, by 1983, methamphetamine use began to resurface. Hawaii, California, and Oregon saw the beginning of this increased popularity as methamphetamine regained foothold in the US. The increase was a direct consequence of the newly discovered production method, higher purity, new methods of administration, and precursor chemicals that had not yet been restricted. From 1983 to 1988, methamphetamine-related treatment admission more than doubled; from 1988 to 1992, admissions yet again doubled; then from 1992 to 2002, meth-related admissions quintupled.\textsuperscript{41}

Over the past two decades, methamphetamine use has fluctuated across America. From 1990 to early 2000, use continued to gradually increase with a few random declines. The SAMHSA Treatment Episode Data Set reported only one state in 1992 had
more than 40 admissions for methamphetamine per 100,000 residents; then by 2002, the number grew to 18 states.\textsuperscript{10,48} One-source reports that from 1993 to 2003, there was a spike in methamphetamine-related treatment admissions from 2\% to 7\%.\textsuperscript{49}

These national figures are deceptive of the prevalence of use in specific areas. Hunt, Kuck, and Truitt (2004) report in their article “Methamphetamine Use: Lessons Learned” that methamphetamine use data as a nation was not overwhelming but, in certain areas, the drug had reached epidemic numbers. For example, California increased meth-related treatment admissions from 8\% in 1992 to 31\% in 2003, and both Iowa and Arkansas increased from 2\% in 1992 to 22\% in 2003.\textsuperscript{10}

America witnessed a significant surge from 1994 to 1997: an estimated 1.8 million people had admitted to having tried methamphetamine at least once in their lifetime in 1994; however, this number rose to 5.3 million in 1997.\textsuperscript{15,48} The study reports that a majority of these users were young women and teenage girls who used the drug in order to lose weight, for various medical reasons, and for a boost in energy.

Street meth became less available by the end of 1995 due to the numerous restrictions the government placed on precursor chemicals, trafficking, and prescription amphetamines. This resulted in a decline of illicit methamphetamine use; still, the US saw a surge in prescription amphetamine use. Physicians had difficulty resisting the urge to prescribe drugs such as Ritalin and Adderall to patients who seemed to lack necessary motivation to complete everyday tasks. The DEA reported that from 1995 to 2005, the medical consumption of prescribed amphetamines has more than quintupled.\textsuperscript{41,48} Furthermore, amphetamine prescription use had exceeded the historic peak of 2.5 billion in 1969 to 2.6 billion in 2005.\textsuperscript{41}
By 1997, methamphetamine use was on the rise. DAWN reported that more than half of the emergency room visits by people under 35 years old were due to methamphetamine-related problems. Other findings by DAWN concluded that a third of these patients were women, which was an increase from the number of women users in the previous decade, and the mean age was close to 38, which is substantially different from the 1979 report that concluded only 10% of methamphetamine users were over the age of 35. These results prompted researchers to redefine an original population of users: middle-aged women.

**Current Use of Methamphetamine**

**Problems with Nationwide Drug Analysis Program**

Prior to 1999, drug researchers had reported nationwide figures of drug use. However, it should be noted that at this time researchers underwent difficulties analyzing...
national methamphetamine trends. One problem was the grouping of amphetamine and methamphetamine into the same category in national surveys. This made it impossible to evaluate the prevalence of a specific stimulant. Secondly, there was no part of the surveys that deciphered between illicit use of amphetamines and legal use of them. Prescription drugs such as Ritalin, Adderall, or diet pills containing phenylpropanolamine were reported in the same category in these national surveys.

The Arrestee Drug Abuse Monitoring Program

These analyzing problems changed in 1999. One major source of this change is the Drug Use Forecasting Program (DUF) that has focused on collecting data of illicit substance use from arrestees since 1987. By 1999, DUF expanded their collection sites to over 35, increasing the number of participants and enhancing the analysis. By analyzing the methamphetamine use among arrestees, one can estimate the prevalence rates of methamphetamine use around the surrounding area and even nationwide.

In 2000, DUF “revamped” their data collection to include a “rigorous sampling strategy” and was renamed Arrestee Drug Abuse Monitoring Program (ADAM). The data collected after 2000 gave much more creditable estimates of the prevalence of methamphetamine use hence, analyses prior to 2000 does not give the ability to evaluate trends of methamphetamine use across the country. However, the prior 2000 data does show a rise in methamphetamine use among arrestees that is worth noting.

The site in Nebraska was virtually free of methamphetamine use until the middle of the 1990s, then rose to over 20% of the urine screens testing positive for methamphetamine in 2003. Such an increase occurred in San Jose as well, maintaining a rate fewer than 20% throughout the 1990s then increased to over 35% in 2003.
Oregon was the state that maintained a gradual increase in percent of arrestees testing positive for methamphetamine. In 2003 there were 11 of the 35 sites that reported 25% or more of arrestees testing positive, 5 of which reported more than 35%: San Diego, Phoenix, San Jose, Sacramento, and Honolulu. Though the exactness of the results should not be considered, the fact that the West, specifically California, had a serious methamphetamine problem in the late 1980s to mid-1990s cannot be ignored. By early 2000, ADAM data showed that the Southwest and Midwest became frequent methamphetamine users.

**The Youth Risk Behavioral Surveillance System**

The Youth Risk Behavioral Surveillance System (YRBSS) has estimated both national and county methamphetamine use among youth since the early 1990s. A national estimate for use between 1999 and 2003 was based on information from 34 different cities and states and concluded well-supported trends. YRBSS has reported that some states in the US have been left unchanged; other states, such as Vermont, Montana, and Philadelphia, have significantly decreased their methamphetamine use; and some states have remained relatively stable in their use.

At this time, the YRBSS results of use among adolescents created an interesting comparison to adult methamphetamine use results other similar surveys such as NSDUH. Much research has concluded a high concentration of adult methamphetamine use in the West where as the adolescent use reported highest in Vermont, Delaware, and Maine. Additionally, the YRBSS national estimates have declined, with the largest decreases shown in Figure 9.
The Treatment Episode Data Set

The Treatment Episode Data Set (TEDS) conducts drug use research based on information that is gathered from patient admissions to treatment programs across that nation. TEDS reported that nationwide methamphetamine-related admissions accounted for 1% of total admissions in 1992 and over 7.4% in 2002 (that is 135,737 of the patients). Of the 21 states with admissions levels over the national average, 12 of them reported rates of more than twice that (15%). Oregon was the state leading methamphetamine-related treatment admissions in 2003 with 33% of the total admissions; this was a four-fold increase for the state from the 1992 admissions rate. Arkansas, Oklahoma, Idaho, Utah, Iowa, and Nebraska reported a 20% methamphetamine admissions rate in 2003, all which reported a 3% rate or less in 1992. TEDS hypothesized that a reason for the drastic treatment admissions may be because of the change in popular ingestion methods.

In the early 1990s, the main method of administration was inhalation/snorting, of which 39% of all methamphetamine users favored; the second was injection with a 32% popularity rate; and then smoking reporting a 12% popularity rate among users. By 2003, these preferences changed considerably. Smoking became the popular method of

<table>
<thead>
<tr>
<th>State</th>
<th>Year</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>1999</td>
<td>10.8%</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>7.4%</td>
</tr>
<tr>
<td></td>
<td>2003</td>
<td>8.6%</td>
</tr>
<tr>
<td>Montana</td>
<td>1999</td>
<td>13.5%</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>12.6%</td>
</tr>
<tr>
<td></td>
<td>2003</td>
<td>9.3%</td>
</tr>
<tr>
<td>Nevada</td>
<td>1999</td>
<td>16.2%</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>15.6%</td>
</tr>
<tr>
<td></td>
<td>2003</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

Figure 9- The YRBSS Estimates for Alabama, Montana, and Nevada from 1991 to 2003.
administration, of which over 50% of all methamphetamine users favored; then came injection with 20% popularity rate.\textsuperscript{10}

Monitoring the Future Program

Research conducted in San Diego County in 2000 and 2001 found a new population of meth users. In 2001, 37% of female and 32% of male adult arrestees tested positive for meth.\textsuperscript{52} This was a significant increase from the reported distribution in 2000. Other such data agrees with the slight increase in methamphetamine use beginning 2000. The data source, Monitoring the Future (MTF), did not have accurate records available before 1999 because the annual survey only regarded amphetamines as a single category rather than deciphering between amphetamine and methamphetamine. However, in 1999 the survey changed layout and the results were reported as shown in the Figure 10.\textsuperscript{10}

\textbf{Figure 10- The Percent of the Population Reported Using Ice from 1998 to 2000 and Methamphetamine from 2000 to 2005.}\textsuperscript{10}

<table>
<thead>
<tr>
<th>Year</th>
<th>Drug</th>
<th>Percent of population reporting use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>Ice</td>
<td>5.3%</td>
</tr>
<tr>
<td>1999</td>
<td>Ice</td>
<td>4.8%</td>
</tr>
<tr>
<td>2000</td>
<td>Ice</td>
<td>4.0%</td>
</tr>
<tr>
<td>2000</td>
<td>Meth</td>
<td>7.9%</td>
</tr>
<tr>
<td>2001</td>
<td>Meth</td>
<td>6.9%</td>
</tr>
<tr>
<td>2004</td>
<td>Meth</td>
<td>6.2%</td>
</tr>
<tr>
<td>2005</td>
<td>Meth</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

MTF has also produced estimates of methamphetamine use based on geographic regions. These findings concluded that between 1999 and 2004, the highest prevalence was in the West with a 4.9% average report; then North Central reporting 3.3%. These regions concluded a percent more than twice that of the Northeast (1.3%) and the South (1.4%).\textsuperscript{10}
The National Drug Threat Assessment Survey

The National Drug Threat Assessment Survey (NDTAS) reported that meth lab seizures were much more frequent in the West, Midwest, and partially in the Deep South. The year between 2002 and 2003 showed an increase from 94 to 143 in the number of clandestine meth labs seized in the Northwest. The same research concluded that there has been an increase in use by subpopulations in the Northeast, Mid-Atlantic, and some of the South. The following states reported meth-related treatment admissions of less than 1% and less than 10 annual ER mentions in (year): Connecticut, Delaware, Washington DC, Maine, Maryland, New Hampshire, New Jersey, Rhode Island, Vermont, Ohio, Pennsylvania Michigan, Virginia, Massachusetts, and New York.

The Spread of Methamphetamine Use into Rural Areas

In the early 2000s, it seemed as though a number of national studies concluded that meth use was spreading across the nation to the East Coast, specifically into rural areas. One principal study conducted by the National Center on Addiction and Substance Abuse at Columbia University focused on the differences of potential methamphetamine use between urban vs. rural areas. The study found that teens and young adults were significantly more likely to have used methamphetamine in rural areas than in urban areas. Researchers concluded that methamphetamine appears to be a particular problem for rural communities. Some hypotheses for this difference that focused on treatment admissions include:

- The tax base in rural communities is much smaller than urban communities, hence limiting resources for prevention efforts, treatment, and legal enforcements of passed legislation.
- The stigma behind methamphetamine use may discourage users to admit into treatment so, in order to decrease the risk of public exposure of their problem, they move to rural areas to keep their problems disclosed.
• Due to the small size of rural communities, conducting undercover police work is much more difficult and complicated.

In order to obtain treatment services, longer distances need to be traveled by rural community members, making them less likely to enter treatment.

2003 Quest Diagnostic Drug Testing Findings

Quest Diagnostic’s 2003 Drug Testing Index produced one of the most interesting indicators of the rise in methamphetamine. The Drug Testing Index was a collection of the mandatory drug tests of workforce employees at Quest. In 2004, the index “derived from over 7.1 million urine screens.” The results of the 2003 index showed that a total of 0.49% of the workforce tested positively for amphetamine use, a 44% raise from the 2002 index of 0.34%.

This one year surge represents the largest rise within the past 5 years of the Drug Testing Index, with the second largest annual increase of 17%. Specifically, methamphetamine use was shown to have increased by more than 68% from 2002 to 2003, reaching rates of 0.32% (in 2002, positive methamphetamine was 0.19%). Analysts have hypothesized that the increase of methamphetamine use is responsible for the “rise in overall workforce positivity.” The Quest data “may reflect use in subpopulations that are not methamphetamine users willing to report in NSDUH, seeking treatment (TEDS), or being arrested (ADAM).”

Geographic Shift of Methamphetamine Use to the Southwest

When the US began to enforce restrictions of precursor chemicals in the early 2000s, production supplies came from Mexico. This formed a movement of methamphetamine users to the Southwest in order to obtain precursor chemicals quicker,
more frequently, and at a cheaper cost. That is, meth users became “more geographically dispersed.”

The DEA’s National Clandestine Laboratory Seizure System reported that this shift caused a decline in meth manufacturing by more than half in the West, dropping from 4,073 in 1999 to 1,810 in 2003. In effect, the DEA reported that lab seizures in Southern and Midwest states nearly doubled during this four year period, from 1,280 to 2,676 in the South and from 1,424 to 2,534. The Northeast remained nearly untouched, yet there was still an increase in lab seizures from 4 in 1999 to 30 in 2003.

Differences in the Purity of Street Methamphetamine Among Regions

The purity of methamphetamine varied with region as manufacturers began obtaining their precursor chemicals from Mexico and so set up labs in the South. The DEA’s Special Testing and Research Lab concluded the following purities in their 2003 research: 48% pure as a national average, 83% pure on the Southwest boarder, 56% pure in the Northeast, and over 90% pure in Mexico. This implies that after methamphetamine is manufactured in Mexico and moves farther away from the border, the drug’s purity decreases as it is cut. Additionally, Dr. Hunts (2004) suggest that regional purity is also due to regional differences in production and trafficking.

Trafficking Trends of Methamphetamine

To analyze the trafficking trends of methamphetamine, Dr. Dana Hunt (2004) used data by the US Customs Service, which included the number of “drug seizures at US airports, seaports, and land border ports-of-entry.” Dr. Hunt concluded from this data that the West maintains a large margin of the methamphetamine market. Meth seizures
peaked in the Western region during 2000 but dropped 26% by 2003, from 489 to 362. In the Northeast, seizures were too small to make any conclusions. In the Midwest, seizures remained small but increased from 13 in 2000 to 63 in 2003. Furthermore, seizures in the South slightly increased, but not to the extent of the number indicated in the West. Dr. Hunt (2004) suggests in 2003, there was a “shift in methamphetamine trafficking from Western ports of entry to other regions of the US.”

Highest Prevalence of Methamphetamine Use in 2004 and 2005

By 2004, methamphetamine use reached a peak. The NSDUH reported that 3 million Americans reported having consumed amphetamines for recreational purposes, doubling the number of the previous decade. Of the 3 million, 250,000 to 350,000 were considered addicts. The spread of methamphetamine into rural communities continued during this time.

The NDTAS conducted in February 2005 found that 40% of agencies reported methamphetamine as their primary drug, 36% reported cocaine, and 9% reported heroin. Furthermore, the leading states of methamphetamine-related treatment admissions were Oregon, Hawaii, Iowa, Washington, California, South Dakota, Utah, and Montana. Rates in these states estimated 200 methamphetamine-related admissions for every 100,000 people in the state. The lowest meth-related admissions were found on the East Coast in states such as New Jersey, Rhode Island, New York, Massachusetts, Maryland, Connecticut, and Pennsylvania. These states had estimated rates of 9 or fewer methamphetamine-related admissions per 100,000 people in the state.
The National Survey on Drug Use and Health in 2008

The National Survey on Drug Use and Health (NSDUH) showed a significant increase of methamphetamine use from 2008 to 2009 after a decline in 2005. The data from 2009 suggested a movement of methamphetamine to more “traditional areas of concentrated use in the West, Midwest, and South.” Specifically, rural areas in these regions experienced an increase in drug use. A survey of individuals 12 years of age and older indicated that 0.4% of metropolitan areas had used methamphetamine in the past year whereas 0.6% of rural areas had. Additionally, there have been recent indicators that methamphetamine use began to raise again in 2009 however, use has not reached the level that occurred in 2004. Government officials are currently worried that there will be a repeat surge of methamphetamine use across the nation within the next decade.

Reasons for the Rebound of Methamphetamine Use

Some sources are not surprised that methamphetamine use is on a rebound. National drug use is very cyclic and a recent increase of meth use agrees with “the pattern” the drug has created in the past decades. When the government restricts a precursor chemical or adds a different barrier to production, use will briefly decrease until street chemists find a way around these barriers to increase production, which increases accessibility, resulting in an increase of use.

The recent restriction of precursor chemicals was in 2005, when both ephedrine and pseudoephedrine sales were restricted. By 2009 methamphetamine manufacturers began to obtain chemical precursors in bulk from Mexico and street chemists reverted to the initial method of producing methamphetamine using the chemical P2P. Although this process is more difficult and time consuming, today’s street chemists have refined
their skills and in turn, have increased potency and purity of the final product to make the procedure well worth the time. According to the DEA, when the procedure is done correctly, the P2P method can produce methamphetamine with a purity of over 90%.56,57

The Government’s Response to the Geographic Movement of Methamphetamine Use

Since the 1980s, methamphetamine use seemed to have fluctuated but maintained a foothold in the West. By 2003, the drug began to move across the nation, specifically to the rural areas. The drug has made its way to the Midwest but has remained to be “firmly fixed in the West,” as shown in Figure 11.10

![Figure 11](image)

Figure 11- Admission Rates for Primary Methamphetamine and Amphetamine Use from 1999 to 2009 Reported by State of Jurisdiction.139

Law and legal restrictions, however, noticed this spread and quickly passed the Combat Methamphetamine Epidemic Act of 2005 as an effort to suppress this spread.10 The DEA’s National Forensic Laboratory Information System has collected data from both state and local labs before and after this restricted. The results concluded that
methamphetamine is the nation’s “third most frequently identified drug.” Additionally, society seems to already have profile a methamphetamine user however, the media portrayed meth user may not be the individual that is causing the high national meth use.

**Methamphetamine Users Not Portrayed by the Media**

Early reports of methamphetamine use “employ rhetorical devices, ‘speed kills’, purposely designed to inflame citizen demand.” The media has targeted a specific subgroup of society to give the drug a face to its destructive properties. Nonetheless, there are other users throughout society that are not portrayed in the media. Great social panics are not linked “to what drug is being used but to who is using and why.”

**Major League Baseball Player- Steven Bechler**

Since its synthesis, methamphetamine has been used by a variety of people including Adolph Hitler, Johnny Cash, Jack Kerouac. One of these most influential hidden users was Baltimore Orioles pitcher, Steven Bechler. Amphetamine use, specifically methamphetamine, has found its way into a number of different subpopulations of America, one being professional sports. Major League Baseball has had ongoing problems with their athletes using methamphetamine and ephedra, the over the counter supplement. This quickly changed after February 16, 2003.

Bechler arrived to a training session and began practicing as usual. A few hours later, Bechler collapsed. His temperature spiked to 108 degrees and doctors reported that his organs immediately began to fail. The following day, Bechler passed away at the hospital due to a heatstroke. The heatstroke was thought to have occurred because of a
combination of the heat that day in Fort Lauderdale and Bechler’s use of methamphetamine.

Bechler illegally obtained and used medicinal methamphetamine to aid in losing weight, maintaining shape, and keeping energy for the hard days during training season. The death of this Orioles pitcher prompted the FDA to “require products to bear warning labels” of any product containing ephedra that the drug “can cause heart attack and stroke.” Nutrition Business Journal estimated in 2002 that $1.3 billion supplements containing ephedra were sold, then in 2003, $500 million. The seriousness of ephedra and danger of the drugs containing it was brought into the spotlight. However, the FDA did not enforce strict federal regulation due to the lack of proof of that ephedra was dangerous. Within months after Bechler’s death, the American Medical Association ban ephedra, the FDA followed in the spring of 2004.

The Typical Housewife

Another primary user of methamphetamine is “the typical housewife.” This subpopulation developed in the 1950s when society pressured women to be super-wives, super-moms, super-thin, and super-nice. In order for a woman to complete all of her daily tasks, a boost of energy, appetite suppressant, and enhanced concentration was a necessity and at the time, methamphetamine was readily available.

Today’s society is not much different than the 1950s; wives are still expected to uphold an image of running the perfect home and raising the perfect children while still keeping the house clean, being a good cook, and staying fit. During the 1980s, housewives began to reemerge as methamphetamine users however, the doses taken by
these housewives are significantly different than the doses administered by speed freaks.

The main differences in the two are compared in Figure 12.\textsuperscript{13}

<table>
<thead>
<tr>
<th></th>
<th>Housewife</th>
<th>Speed Freak</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quantity</strong></td>
<td>10 mg</td>
<td>500 mg</td>
</tr>
</tbody>
</table>
| **Method of**  
| **Administration**  | Oral ingestion | Injection, smoking, and snorting |
| **Motives for use**  | Weight loss, energy boost, increased concentration | Euphoric rush and long lasting high |
| **Lifestyle**        | Remains functioning in daily life | Life revolves around the drug, lack of job, sleep, and increased crime |

*Figure 12- Comparison of Quantity, Method of Administration, Motives for Use, and Lifestyle Between Housewife and Speed Freak Usage of Methamphetamine.*\textsuperscript{13}

**US Air Force Majors Schmidt and Umbach**

As discussed earlier, the military remains to use amphetamines during combat and has become a source of insight for the methamphetamine problem in the US. The use of these stimulants became known across the nation on April 18, 2002 when two US Air Force F-16 pilots dropped a bomb during flight on “friendlies.” Majors Harry Schmidt and William Umbach were under the influence of Dexedrine, one of the many amphetamines available to pilots during war. During their shift, Schmidt and Umbach saw flashes on the ground. The two assumed that they were being fired at and, as protocol, asked for permission to fire. Schmidt was told to hold fire “until the target could be identified as friendly or hostile by AWACS.”\textsuperscript{6} However, Schmidt did not have the patience to hold fire, declared self-dense, and dropped a 227-kilogram laser-guided bomb in the area of the flashes.

Within seconds after dropping the bomb, the AWACS report came back and concluded that the site was friendly. The flashes Schmidt and Umbach saw were the
Canadian forces “conducting live fire exercises on the ground.” From the bombing, four soldiers were killed and eight were wounded. When questioned, Schmidt and Umbach reported that they “felt obligated to take” amphetamines before flight and for that, the drugs “impaired judgment making them impatient and overly aggressive.”

The Air Force guidelines included available amphetamines for any mission of over 8 hours. Schmidt and Umbach’s mission was 14 hours so the drugs were not only available to them but the two pilots felt compelled to take them. According to the after report, Umbach took a 5 mg dose two hours before the accident and Schmidt took a 10 mg dose one hour before the accident. These doses are small and produce effects similar to drinking a cup of strong coffee. Despite the small dose, reports have made the claim that this tragedy “has to do with the military’s ‘go pill’ and ‘no-go pill’ (Ambien and Restoril).”

The Range of Methamphetamine Users

Within the past 5 years, the media has racially, geographically, and economically profiled methamphetamine users. SAMHSA (2007) reported “meth has become drug of choice among poorly educated people who have stayed behind as others migrated to urban areas.” The drug has become known as the “poor man’s cocaine;” the user, a redneck without any teeth and little care for appearance. The truth is that methamphetamine users range through all social classes of society.

The new victims of intense drug use include college students, the middle class, “soccer moms,” truck drivers, and businessmen. A survey in mid-2000s revealed a substantial use of methamphetamine by medical students. Both Ritalin and methamphetamine became so popular on college campuses that the drugs were known as
Vitamin R and Vitamin M, respectively. Furthermore, there has been a recent trend of parents taking their child's Ritalin, dissolving it in water, and injecting it into their veins, just as the 1950s users did. These users are attracted to meth because, in small doses, the drug provides an increase of energy, ability to concentrate, weight loss technique, and libido increase. Analyzing the data below will give a better perception of a majority of the meth users in the US.

**Racial Characteristics of Methamphetamine Users**

The public perception of a typical methamphetamine user is a Caucasian, middle aged, blue-collar worker. This perception has proved to only be partially true. A National Survey on Drug Use and Health conducted in 2005 reported that a majority of methamphetamine users are American Indian or Alaska Native (1.5%), followed by Hispanics (0.9%), Caucasians (0.8%), Asians (0.7%), and African Americans (0.2%). The annual survey, Monitoring the Future, conducted on high school seniors found only three ethnic categories of users: Caucasians, African Americans, and Hispanics. In 2006, Hispanics were found to be the most frequent users (3.7% of the respondents) followed by Caucasians (2.6%) and African Americans (0.4%).

The TEDS data reported that methamphetamine is the drug of choice for Caucasians, concluding that 73% of patients that entered treatment reported a methamphetamine problem, 49% reported cocaine powder, 48% reported heroin, and 35% reported crack. The study also found that there was a growing methamphetamine problem among American Indians.

This data concludes that methamphetamine use is popular among Caucasians but it is also popular among Hispanics, American Indians, and Asian/Pacific Islanders’.
Additionally, consistent data has showed that African Americans have a particularly
distaste for methamphetamine. Although methamphetamine is used among white people,
the “notion that methamphetamine is ‘white man’s crack’ is an exaggeration.”

**Gender of Methamphetamine Users**

**Equal Methamphetamine Use Among Males and Females**

In 2005, an estimated 1.3 million persons aged 12 and older admitted to using
methamphetamine within the past year. Of them, 556,000 were female and 741,000 were
male. The NSDUH (2009) reported at this time that men were twice as likely to use
methamphetamine than women. Another study concluded that within the high school
community, all drugs reported higher use among males; methamphetamine, however,
displayed a different gender split.

In 1999, NSDUH reported that 5.0% of the surveyed boys used methamphetamine
compared to 4.5% of the girls. The slight difference in male to female use continued
until 2006, when female users exceeded male users by 1.0%. Treatment admissions
agree with the high school trend reporting that 53.8% of the methamphetamine-related
admissions were female and 46.2% were male. Note that this 7.6% gap between genders
is smaller than the gap for other drugs such as heroin, marijuana, powder cocaine,
hallucinogens, and inhalants. Dr. Ralph A. Weisheit (2009) concluded from this data that
methamphetamine use is not unique to females. Although females may have different
and more obvious reasons for using methamphetamine, neither gender has a significant
appeal to use.
Many other reports have also concluded that methamphetamine use tends to be equal among females and males. A Monitoring the Future among 12th graders found that 6.6% of males reported have using meth compared to the 5.7% reported females.\(^{10}\) In a 2003 TEDS survey, of the reported methamphetamine users, 55% were male and 45% were female.\(^{10}\) Figure 13 shows the results of the 2003 TEDS report of the gender split among other drugs\(^{10}.\)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Male Users</th>
<th>Female Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crack</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>66%</td>
<td>34%</td>
</tr>
<tr>
<td>Heroin</td>
<td>68%</td>
<td>32%</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>55%</td>
<td>45%</td>
</tr>
</tbody>
</table>

Figure 13-2003 TEDS Report of the Gender Split for Crack, Cocaine, Heroin, and Methamphetamine Users.\(^{10}\)

**Higher Use of Methamphetamine Among Female Arrestees**

Despite the above, the population within the prison tends to portray a higher number of female meth users. In 2005, two-thirds of the women arrestees in the state prison were charged with methamphetamine-related crimes.\(^{61}\) Many of these women have testified that they thought it was a “good, easy way to lose weight.” Figure 14 compares the male to female percent of methamphetamine-related arrestees.\(^{46,48,54,55}\)

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past Week</td>
<td>4.0%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Past 30 Days</td>
<td>4.7%</td>
<td>11.3%</td>
</tr>
<tr>
<td>Past Year</td>
<td>7.7%</td>
<td>15.3%</td>
</tr>
<tr>
<td>Average number of days used in the past 30 days</td>
<td>7.1 days</td>
<td>8.4 days</td>
</tr>
</tbody>
</table>

Figure 14- Average Percent of Methamphetamine-Related Arrestees (from Total Number of Arrestees) by Gender from 2000 to 2006.\(^{46,48,54,55}\)
Reasons for the Increase of Female Methamphetamine Users

Even if the split may be gender neutral among the population, and slightly female dominated among the prison population, there is a reason for the increase in female users from the 1970s to the 2000s. It has been recently reported that a majority of female meth users first tried meth as teenagers, later to become long-term chorionic users.\textsuperscript{52} The appeal of methamphetamine for these users were the effects of the drug including weight loss, enhanced self-confidence, increased energy, and enhanced sexual pleasure.

One study researched the motivation behind female methamphetamine use, patterns, and related medical and social problems. Researchers found that women users typically ranged in age from 18 to 56; 44\% of the users were Caucasian, 33\% were African American, 16\% were Latina, 2\% were Native American, and 5\% reported other.\textsuperscript{52} Of the female users sampled, 96\% had less than a college education, 38\% reported having a psychiatric diagnosis such as depression, bipolar disorder, or schizophrenia. The most popular method of administration was smoking, 83\%, followed by snorting, 66\%, and injection, 25\%.\textsuperscript{52} The motivation for using methamphetamine included:\textsuperscript{52}:

- 56\% to get high
- 37\% to get more energy
- 34\% to cope with mood
- 29\% to lose weight/feel more attractive
- 28\% to party
- 27\% to escape
- 18\% to enhance sexual pleasure

Of the female methamphetamine users, drinking alcohol and the use of other drugs was very rare; however, when either did occur, it was of very limited consumption. Analysts concluded from these results that there was a positive correlation between “women’s subjective sexual pleasure” and methamphetamine use but more frequently,
women used meth to increase energy, cope with significant mood swings, and lose weight.\textsuperscript{52} A majority of the women in the study admitted to using small doses of methamphetamine throughout the day in order to maintain energy, manage mood, and suppress appetite rather than binge on the drug. Additionally, it was found that many of the women who had been diagnosed with a psychiatric disorder used methamphetamine instead of prescription drugs to relieve symptoms.\textsuperscript{52}

Another study examined the literacy of newspaper articles from Midwestern states to analyze the gender differences in methamphetamine-related crimes. The popular notion was that “women use meth for the conventional notions of motherhood, sexuality, and subordination” where as “men use meth for dominant notions of male criminal virility and viability of the drug trade.”\textsuperscript{62} The media has significantly added to this gender profile of reasons for meth use and roles in drug-related crime.

Research found that 13\% of the articles suggested that the initial reason women began using meth was as a weight loss strategy, energy for household tasks, and to enhance sexual pleasure.\textsuperscript{62} Many women reported a societal pressure pertaining to their reasons and felt as though, at a subconscious level, this pressure instigated their drug use. Additionally, meth was used as an “accessory/tool” for women to attract meth by being more “effective mothers.”\textsuperscript{62} The study stated that there was evidence of a “very static and gendered portrayal that perpetuates and extends the connection of female criminality to monolithic social structures that shape human behavior.”\textsuperscript{62} In rural areas, methamphetamine use has a distinct pattern\textsuperscript{62}:

\begin{quote}
The women in the house will be compulsive cleaners and the place will be spick and span... the men... will have become... a tweaker, overcome with a manic urge to take things apart.\textsuperscript{62}
\end{quote}
Many articles have quoted users describing their reasons for using methamphetamine; one of the most common reasons: “it’s a drug that allows you to deal with your feelings of remorse.” Women felt a cultural mandate to be the “super women” by staying thin, maintaining a clean house, raising perfect children, and being a perfect wife. In order to keep up with the social pressures, women turned to unnatural sources; methamphetamine became one of the most popular sources.

Female meth use has been on a gradual increase since 1980 but has yet to significantly surpass male use. The reason behind this increase seemed to be underlying social pressures. Just as in the 1950s, women today are facing an overwhelming amount of stress from the social expectations to have a good job, be educated and intelligent, stay thin, be a great mother, wife, and daughter, maintain housework, and some how stay sane. As shown in the data, more and more women have turned to methamphetamine in order to have a chance at achieving these social pressures.

**Age Range of Methamphetamine Users**

A recent article in the *Seattle Times* (2005) described that in Salem, Oregon, schoolgirls as young as 12 years old have exchanged sex for methamphetamine. At the time of the report, one girl who attended Waldo Middle School admitted to the exchange. The article then went on to state “this is not a Waldo Middle School issue… this is a nationwide problem.” In contrast, methamphetamine use has recently become a middle school and high school problem.

Prescription amphetamines have significantly contributed to current methamphetamine use and the fluctuations within the past decade. Researchers have hypothesized that the increase of methamphetamine use among middle school and high
school students is because of the increased willingness of doctors to prescribe amphetamines for a variety of disorders including ADD, ADHD, and obesity. Diversion of the prescribed amphetamines has been reported in middle schools, high schools, and universities across the nation. The effects of amphetamines cause an instant intrigue, leading children to search for drugs with similar effects. Due to the media coverage and Internet influence, children have become familiar with methamphetamine. The cheap cost, easy accessibility, and intense effects attract unknowledgeable children, which has resulted in an increased nationwide use.

Over 30 million people worldwide abuse amphetamines. In 2002, a national survey concluded that 12 million Americans admitted to having tried methamphetamine at least once, that is 5.3% of the US population. Meth tends have a younger user profile with 30% of users reporting to be under 25 years old, compared 20% of cocaine users, 16% of heroin users, and 8% of crack users. Additionally, in 2003, reports concluded that 14.4% of 12th graders had admitted to using amphetamines at least once, no distinction of methamphetamine was made between amphetamine and methamphetamine in this survey. Two years later, the survey distinguished between amphetamines and methamphetamines along with medicinal purpose and illicit use. The data found reported that 6.2% of 12th graders and 3.8% of 8th graders reported to have tried meth.

Figure 15- Percent of Nation that Reported Methamphetamine Use in Lifetime, Annual, and Past 30 Days by Age in 2006.

<table>
<thead>
<tr>
<th>Age</th>
<th>Lifetime Percent</th>
<th>Annual Percent</th>
<th>Past 30 Days Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-17</td>
<td>1.5%</td>
<td>0.9%</td>
<td>0.3%</td>
</tr>
<tr>
<td>18-25</td>
<td>5.7%</td>
<td>1.7%</td>
<td>0.5%</td>
</tr>
<tr>
<td>26-34</td>
<td>6.7%</td>
<td>1.0%</td>
<td>0.5%</td>
</tr>
<tr>
<td>35 and older</td>
<td>5.5%</td>
<td>0.3%</td>
<td>0.1%</td>
</tr>
<tr>
<td>12 and older</td>
<td>5.3%</td>
<td>0.7%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>
The younger population has always been intrigued with altering their experiences by finding the next “cool drug.” In the case of methamphetamine, the easy accessibility of prescribed Ritalin and Adderall have directly influenced methamphetamine use among the US youth. However, it should be restated that teens have been users of methamphetamine since the 1930s when they removed the Benzedrine strip and place it in chewing gum. The recent focus of youth use is a government prevention tactic that hopes to reduce future increases in meth use.

**Characteristics of the Meth Market**

The methamphetamine retail market is much different when compared to other drug markets in the US. Some factors that contribute to a retail drug market include whether the product is manufactured domestically, the maturity of the market, and the law enforcement policies regarding the drug. Imported drugs tend to have a “deeper or more tiered distribution system” because it takes many more steps and many more people to distribute the drug. Individuals involved in the process of a drug market can include growers, extractors, producers, transporters, smugglers, distributors, assistants, and the middlemen. In the methamphetamine market, the number of individuals involved is very limited.

**Geographic Distribution of the Meth Market**

One of the most distinctive features of the methamphetamine market is its geographic distribution across the US. The meth market tends to urban centers even though use is known to be located in rural areas. The cities across the US with cocaine,
heroin, and marijuana problems have little meth use. Some of the major methamphetamine centers include Philadelphia, New York, Chicago, and Miami.\textsuperscript{10} Although methamphetamine is widely available in urban areas, methamphetamine users tend to use meth markets and labs found in distant locations.\textsuperscript{10} The Office of Community Oriented Policing Services has reported that a large percent of the labs seized by the police are found in remote locations such as vehicles, residences, storage lockers, and hotels/motels.\textsuperscript{10} One of the appeals of methamphetamine production, compared to other drug manufacturing, is the high mobility of the meth lab. The precursor chemicals, equipment, and other needed materials are very small hence, easy to transport. In addition, the current production method, the P2P method, produces a fowl odor that can be detected from miles away. This has caused a recent movement of methamphetamine labs into rural locations surrounded by miles of land and few individuals.

**Maturity of the Meth Market**

The maturity of a drug market refers the duration of the drug’s use, the number of people who know how to produce and sell it, and the level of demand.\textsuperscript{10} The maturity of the methamphetamine market varies per region because of the dispersed history of methamphetamine use. The meth market grew out of the West, specifically California, and has remained to have a stronghold there. However, the Midwest and some areas in the South have began to see an increase in the meth market.\textsuperscript{15}

**The Consumer-Producer Relation**

In cocaine and heroin retail markets, the consumer typically is only seen at the tail end of the distribution. In contrast, the producer and distributor in the methamphetamine
market are both costumers. Analysts hypothesize that this is because methamphetamine is synthesized from various precursor chemicals that are, for the most part, readily available. As discussed before, methamphetamine is produced in either a “Ma and Pop lab” or a Super-lab. The complexity and knowledge is less severe for methamphetamine production than for other drugs hence, making it easy for users to become producers and distributors. The users who wanted to sustain their addiction after the government restricted prescription meth were the same ones who ran the original street meth labs. This feature of the market remains today.

Reasons for the Close Relationships in the Meth Market

The local sale of methamphetamine is, again, different from other drugs by the aspects of the transactions. Heroin has proven to be a cash market in areas where it is widely available, such as Chicago and New York. Over 60% of the transactions in these cities are made in cash “rather than bartered, given away, or exchanged for services.” The crack market is very much similar to the heroin market in that transactions are most likely cash only. Methamphetamine transactions differ from cocaine and heroin by that “all but a handful of sites” are less likely to use cash than other forms of transactions.

Additionally, methamphetamine is an outdoor market. That is, the transactions of methamphetamine take place outdoors rather than inside, as in the cocaine and heroin market. These features, in combination with the low number of people needed for manufacturing and distributing meth, create a small, close community. Meth dealers are more involved with their customers and tend to have a personal relationship with them. This makes meth users stay with one meth dealer than obtaining the drug from numerous dealers. In a study of drug markets in Sacramento found that crack users averaged
buying from more than 4 dealers over a 30 day period where as meth users averaged 2 dealers.\textsuperscript{10} The study concluded that “users and even producers are selling to friends and acquaintances rather than to strangers.”\textsuperscript{10}

The methamphetamine market is the most relational drug markets in America today.\textsuperscript{10} Researchers have thought that this is because the non-cash transactions rely on personal interactions.\textsuperscript{10} Law enforcements find it difficult to interrupt the market because of this personal relation. Many researchers refer to the meth market as a “cottage industry” model of drug distribution. A cottage industry is “characterized by a large number of small groups with week or little organizational structure and fluid group membership.”\textsuperscript{10} The market is not significantly technical or sophisticated in distribution because most of the transactions involve small amounts of the drug.

Areas where methamphetamine has “gained and maintained” a large customer base are much more organized and have a higher group involvement in its distribution.\textsuperscript{10} The primary cities where the meth market is organized are San Diego, Phoenix, and Salt Lake City. These cities have reported an increase in local production of the methamphetamine that is used within the city. In 2003, a study reported that local labs produced half of the methamphetamine used in each city and 40% of the meth was produced in Mexico, then transported.\textsuperscript{10}

The methamphetamine market significantly differs from all other drug markets. Some analysts believe that the uniqueness of the drug’s effects and relational market is the reason behind the drug’s popularity while others believe that the drug’s effects are the popular factor and the relational market grew from the culture of the drug. Either way,
the retail market is unique and by analyzing the specific features, the government is more educated to make predictions of the spread of meth use.

**Summary of the Trends in the Prevalence of Meth Use**

Methamphetamine has found a way to appeal to all aspects of society. This drug has affected famous singers, writers, presidents, drug addicts, students, and even housewives. The addict is part of the meth user population but is not a significant percent. The media influence perception has lead to a stereotype of methamphetamine characteristics including effects, lifestyle, and user profile. The current perception of a typical methamphetamine user is a sunken in face, hopeless eyes, and a body that doesn’t seem supportive enough to stand when in reality, teenagers, students, soccer moms, businessmen, and Air Force pilots use meth. However, the media does not portray these typical users. Now the question is, why?
Review of Literature

Legislative Efforts Made to Control Meth Use

Nationwide acts have been enforced since the first methamphetamine surge in the late 1930s. All efforts had the intention of decreasing the availability of methamphetamine and its precursor chemicals to the members of society. However, impact of many of these laws only lasted for a few years before street chemists discovered new ways to produce their addiction. The five laws that have made a significant impression on methamphetamine use include: The Food, Drug, and Cosmetic Act of 1938, the Drug Abuse Control Amendment of 1965, the Comprehensive Drug Abuse Prevention and Control Act of 1970, the Anti-Drug Abuse Act of 1986, and the Comprehensive Methamphetamine Control Act of 1996. These five acts have changed the production methods and demographics of methamphetamine throughout the century and have formed the meth found in the streets today.

Food, Drug, and Cosmetic Act of 1938

The need for additional drug standards became known in 1938 through the then-new wonder drug sulfanilamide. Sulfanilamide was very common at this time, typically used as an antibiotic. One of the downfalls to the drug was that there was no liquid form because of the insolubility of sulfanilamide and many patients had difficulties administering the drug. A chemist in search of a liquid form discovered that sulfanilamide was easily dissolved in diethylene glycol. This form of liquid sulfanilamide began to be prepared and distributed as a medicine by pharmaceutical
companies across the nation. America was instantly intrigued and sales of this new drug immediately skyrocketed.

Within months, more than 100 people died of diethylene glycol poisoning from this new form of medication. The drug was removed from the shelf in 1937 as the necessity for “proper product formulation and thorough pharmacologic and toxicological testing of the therapeutic agent, pharmaceutical ingredients, and completed product was painfully recognized.” The chemist known for synthesizing this drug committed suicide and the company that produced the drug paid the largest fine every recorded in history of the existing 1906 law.

Congress quickly drafted and passed the Federal Food, Drug, and Cosmetic Act (FFDCA) of 1938. The laws replaced the earlier Pure Food and Drug Act of 1906. The Food and Drug Administration (FDA) was given authority under this act to administer the safety of food, drugs, and cosmetics and to enforce the laws and restrictions provided. The act directly prohibited the distribution and use of any new drug without prior filing a new drug application (NDA) and receiving approval from the FDA. The FDA obtained responsibility to either grant or deny permission to manufacture and distribute new drugs based on the product’s ingredients, methods of analysis and quality standards, production processes, and clinical trials on human subjects.

Even though drugs required the approval of the FDA after the act was passed, it was not necessary for the products that deemed safe actually be effective. Additionally, many drugs that were on the market prior to the act were allowed to remain so long as the formula went unchanged; these were known as “grandfathered” drugs enacted into the
FFDCA. Furthermore, it was required that adequate directions for use were precise and the statement “use by instruction from physician only” was easily seen in order to distinguish between prescription and non-prescription medications. The Food Drug and Cosmetic Act slightly decreased drug use but was enacted primarily to protect the health and safety of the public and give comfort to those buying prescription drugs.

Drug use in America began to increase in the late ‘50s; the FDA estimated that 819,060 pounds of barbiturates, worth $40 million, were produced in 1959. Despite this overwhelming number, production statistics were easily altered because the two largest manufacturers of barbiturates and amphetamines refused to release any information regarding sales of their products. Even so, there was no denying the spread of the poly-drug culture across America. The official report in 1960 of domestic barbiturate productions concluded to be 852,000 pounds, which translates into 6 billion one-gram capsules, or thirty-three for every man, woman, and child in the country.

Kefauver Harris Amendment of 1962

Drug use in America was at an all time high in the 1960s. The FDA needed to find a quick way to slow down the process before drug use and production skyrocketed to complete social destruction. The FDA appointed Senator Thomas Dodd to be the candid expert on US drug production and use. The Senator began his drug solution strategy by “hammering at the idea that so-called dangerous drugs, unlike opiates and marijuana, were not confined to slum use but were affecting young people in high schools, on college campuses, and in wealthy suburban neighborhoods.” Barbiturates and amphetamines were suddenly believed to be “hidden accomplices” to crimes of violence, accidents, and suicides. However, at the time, the drug-crazed society did not credit the
medias portrayal of drugs. Many members of society had personal experiences with drugs which made them close their ears and shut their eyes to the government’s opinion. In hope to diminish the availability of drugs, Senator Dodd sponsored a series of bills that brought barbiturates and amphetamines under a strict control in 1961. At the same time, Senator Estes Kefauver worked on reducing the price of prescription drugs and changing the marketing practices of the drug industry. It didn’t take long for Senator Kefauver to find that the FDA appeared to be involved with the interests they were supposed to be regulating. This realization caused the reputation of the FDA to take a turn for the worst. Senator Kefauver found Dr. Henry Welsh, director of the DEA’s Division of Antibiotics, to be a vulnerable target for exposing the truth about the FDA.

Dr. Welsh was discovered to have been paid nearly $300,000 for various articles and reports from drug companies who were affected by decisions that Dr. Walsh controlled. The media quickly spread the news resulting in outrage across the nation. In the midst the media coverage, the story of Dr. Kelsey and the thalidomide tragedy was exposed. The thalidomide tragedy was a misfortune that resulted in thousands of children who were born with birth defects as a consequence of their mothers taking thalidomide for morning sickness during their pregnancy.

This national tragedy and the exposure of the unreliable Senator Dodd led to the introduction of US Senator Estes Kefauver’s bill titled the Kefauver Harris Amendment of 1962. The bill required drug manufacturers to provide proof of effectiveness and safety of the drug before it could be approved for sales. Additionally, the bill required drug “advertising to disclose accurate information about side effects, and stopped cheap
generic drugs being marketed as expensive drugs under new trade names as new ‘breakthrough’ medications.”

President John F. Kennedy signed the law on October 10, 1962. The Act strengthened the FDA’s control of experimentation on humans and altered the regulation of drug approval. Additionally, participants in clinical trials were then required to provide informed consent along with a report to the FDA of the adverse effects and reactions to the drug. The Drug Efficacy Study Implementation began during that same year, which reclassified the drugs that were approved in the market before 1962 as effective, ineffective, or needing further study. Estes Kefauver, and many others, consider the Amendments his “finest achievement” in consumer protection.

The combination of laws along with the tragic death of Marilyn Monroe from an overdose of barbiturates gave the FDA a new push to repress abuse of all “dangerous drugs.” The Kefauver-Harris Amendment laid the foundation for modern drug approvals. While thousands of individuals were involved in the process of these amendments, “a rookie employee and two veteran lawmakers exemplified how dedicated professionals can make a difference.” The Kefauver-Harris Amendment significantly progressed the government’s course of eliminating illicit drug use.

**Drug Abuse Control Amendment of 1965**

After the Kefauver-Harris Amendment, the federal government began to dedicate all their efforts to the war on drugs. President Kennedy was in full support of protecting his country against drug use. In his message to Congress on consumer protection in 1962 President Kennedy said:

One problem meriting special attention deals with the growing abuse of non-narcotic drugs, including barbiturates and amphetamines. Society's gains will be illusory if we reduce the incidence of one kind of drug dependence, only to have new kinds of drugs substituted. The use of these drugs is increasing problems of abnormal and social behavior, highway accidents, juvenile delinquency, and broken homes.71

This statement set a new tone for the White House Conference, which resulted in the report by the President’s Advisory Commission that called for a new repressive legislation in November 1963.71 At this time, the media was portraying episodes of a “lunch-wagon cook rolling pills across a counter to some burly driver, whereupon the scene fades to a spectacular highway accident, the smoking wreckage of at least one monster truck, ambulances, flares, crowds, police, and trumpet flourishes.”71

Senator Dodd tried to recreate his imagine, so, with the recent emphasis on the new image of prescription drugs and dangers associated with them, the Senator revised and reintroduced his bill in 1964.71 The new provisions authorized the FDA inspectors to carry guns, make arrests, and seize contraband drugs. The measure was titled Psychotoxic Drug Control Act of 1964 and stated that “the illicit traffic was resulting in extensive sales of drugs to juveniles, who were thereupon led into delinquency and crime and to experiment with narcotic drugs, which experimentation may result in narcotic addiction.”71 A combination of the new act and the findings that concluded potential abuse prompted new drug categories to be added to the bill by the Secretary of Health, Education, and Welfare.71 Every executive branch approved the Dodd bill however, official support was lacking nonetheless, the Senate passed the bill.

The House stopped the bill because a “lobbying campaign on behalf of the Pharmaceutical Manufacturers Association and the American Medical Association.”71
Due to the lack of support, in order for the bill to pass through the Senate a miracle was needed. The miracle came in the form of a CBS newsman, McMullen, who posed as McMullen Services and succeeded in buying over a million barbiturate amphetamine tablets from over a dozen manufacturers. These retail drugs sold for $50,000 but on the black-market sold for as much as $500,000. After CBS released the information to the general public, members of the Congress instantly demanded a call for tighter drug controls and restrictions through a new federal law.

President Johnson urged the lawmakers to quickly and effectively control production and distribution of barbiturates, amphetamines, and other psychotoxic drugs and “to seize counterfeit drugs at their source.” However, a bill for such purposes had already been introduced, titled the Drug Abuse Control Amendments (DACA) of 1965. Senator Dodd tried to push the passage of his bill on the Senate but was not recognized since everyone was focused on the DACA, which clearly portrayed an effective method to controlling the US drug problem.

The Drug Abuse Control Amendment was passed on January 4, 1965 by Congress and signed by the President. This amendment allowed the Secretary of Health, Education, and Welfare to designate stimulant, depressant, or hallucinogenic drugs as controlled and hence, required a license for sales and distribution. The DACA differed from Senator Dodd’s proposed bill by a number of significant respects.

First, the FDA inspectors obtained more power in the Amendments than in Dobb’s bill. Secondly, the Amendments covered all “depressant and stimulant drugs” and any other substance that could be found to be abusive due to its effects. The DACA made the possession of any chemical on the list without a license or prescription a federal
crime.\textsuperscript{73} In addition, there were no minimum punishments or penalties for possession, distribution, or production and the maximum punishments were much lighter than those for opium, cocaine, and marijuana offenses.

The Amendments also softened the punishment on individuals for which the drug was being used solely for personal use rather than distribution or production. An individual possessing the drugs for personal consumption was allowed under these laws. One source describes the “penalty for possession was a maximum of $1,000 or one year's imprisonment, unless the offense was committed with intent to defraud or mislead or unless the offender had been convicted previously, in which event the maximums jumped to $10,000 and three years.”\textsuperscript{73} Although the Drug Abuse Control Amendment did not make a substantial difference in the number of drug users, it was the first law passed in the midst of the drug-crazed culture and made way for many effective amendments to come in the late ‘60s.

**Comprehensive Drug Abuse Prevention and Control Act of 1970**

By the end of the 1960s, drug abuse became the most important political topic. A popular concern regarding amphetamine abuse at this time was the diversity of users ranging from the “leafy suburbs to Vietnam to hippie enclaves like Haight-Ashbury.”\textsuperscript{41} A congressional hearing was held in 1969 that focused on the *Crime in America- Why 8 Billion Amphetamines*. The result of the hearing was the Comprehensive Drug Abuse Prevention and Control Act of 1970.\textsuperscript{41,43}

The Act combined a number of regulations regarding the manufacturing and distributing of narcotics, stimulants, depressants, hallucinogens, anabolic steroids, and precursor chemicals.\textsuperscript{43,74} It also established the modern international agreements,
production quotas on precursor chemicals, and, most importantly, classifications of controlled substances. Every substance is placed in one of five-schedule classes on the basis of the drug’s “medicinal value, harmfulness, and potential for abuse or addiction.” The Schedule I class contains the drugs with no recognized medical use, great deal of associated harm, and a high potential for addiction and abuse. 

Additionally, the law states the following:

Use of controlled substances for the purpose of research is, under federal law, subject to extensive licensing, registration, storage, security, use, and disposal requirements. Researchers are also subject to state registration and other regulatory requirements.

Only a handful of rarely prescribed injectable methamphetamine products were classified as Schedule II drugs under this law while over 6,000 amphetamine products were classified as a Schedule III drugs. This meant that there was no manufacturing quotas on these amphetamine products, the required recordkeeping was substantially more lenient, and the prescription could legally be refilled up to 5 times.

The impact of this Act on national amphetamine use was not as substantial as the government had hope; the reported legal production dropped 17% in the year between 1969 and 1970. Although the main focus of the Congress was on the “speed freak” population in 1970, law enforcement was reminded that 80-90% of the amphetamines seized on the streets were pills produced and distributed by pharmaceutical companies. The refocus of amphetamine manufacturing along with the continued use prompted the Bureau of Narcotics and Dangerous Drugs in mid-1971 to reclassify amphetamine products as Schedule II drugs. Some of these products included methylphenidate (Ritalin) and the diet drug phenmetrazine (Preludin), both proved to have a high potential for abuse and were particularly appealing to injection users.
The Bureau of Narcotics and Dangerous Drug gained administrative authority in the 1970 Act for which they took full advantage. Schedule II drugs were required to obtain a new prescription each time an individual needed a refill, and the recordkeeping of doctors and pharmacists dealing with these drugs had strict guidelines. Doctors and patients began to realize that the medical use of these drugs were difficult to justify and hence prescribe. The new restriction caused prescription sales of amphetamines and related injection drugs to drop 60% below the initial sale level. The Comprehensive Drug Abuse Prevention and Control Act was the first restriction that significantly reduced the drug abuse in the US. Additionally, the poly-drug culture of the ‘60s was beginning to fade.

**Combat Methamphetamine Epidemic Act of 2005**

Methamphetamine began to disappear in the ‘80s and into the ‘90s. By the beginning of the 2000s, amphetamine users, specifically street methamphetamine, became a major problem for the US. The street production of methamphetamine relied on the reduction of pseudoephedrine and ephedrine, which were well available.

Congress noticed the widespread production and the specific methods used and were impelled to enforce stricter control on these precursor chemicals. The Methamphetamine Precursor Control Act was signed into law on November 16, 2004 but did not take effect until January 15, 2005. The Act required identification upon the purchase of any cold medication containing pseudoephedrine. The positive effects of these restrictions prompted many states to focus on regulating the supply of pseudoephedrine and ephedrine resulting in a nationwide reduction of methamphetamine use.
Later that year, on March 9, 2005 President Bush signed the Combat Methamphetamine Epidemic Act (CMEA) as Title VII of the US Patriot Act that amended the Controlled Substance Act to “change the regulations for selling nonprescription product that contain ephedrine, pseudoephedrine, phenylpropanolamine, their salts, optical isomers, and salts of optical isomers.” The CMEA quickly superseded the Methamphetamine Precursor Control Act by including a more comprehensive and stricter restriction on the sale of products containing pseudoephedrine and ephedrine. Additionally, stores in which the products are sold are required to keep a detailed log about the purchasers for at least two years, customers are required to sign the logbook, and to present a valid identification upon the purchase of the product. The laws restricted an individual to purchase no more than three packages or 3.6 grams of the products in a single transaction and no more than 9 grams in one month. If this statute was broken, it constituted a misdemeanor. There were states in which over-the-counter medications that contain pseudoephedrine are not restricted. However, in these states, specific retailers developed their own restrictions of the products by requiring the drugs to be sold behind the pharmacy and/or placing an age restriction upon the purchase. Other such pharmacies require photo identification and logbook signatures for the sales to comply with federal law. The statute does not just enforce requirements upon individuals purchasing the product, but also for the merchants who sell them. These merchant requirements include the following:

- A retrievable record of all purchases identifying the name and address of each party to be kept for at least two years.
- Verification of proof of identity for all purchasers.
- Protection and disclosure methods in the collection of personal information.
• Repots to the Attorney General of any suspicious payments, patterns, or disappearances of regulated products.
• Training employees of the requirements of the act.
• Non-liquid dose form of regulated product may only be sold in unit dose blister packs.
• Must be sold behind the counter or in a locked cabinet in such a way as to restrict public access.
• Daily sales of products not to exceed 3.6 grams, without regard to the number of transactions.
• 30 day sales limit not to exceed 7.5 grams if sold by mail-order or “mobile retail vendor”, and not to exceed 9 grams pseudoephedrine base in products.
• Note that prescriptions are exempt from logbook requirements.

The US Department of Justice claimed that there was a substantial drop in small clandestine labs as a result of the restrictive sales and regulations of this Act. The drop in clandestine labs directly resulted in a decrease in national methamphetamine use. Much of society was worried about the slight increase in meth use during the ‘90s, hoping that it would not be a reenactment of the ‘60s. However, the Combat Methamphetamine Act halted this process before use reached hazardous numbers.

**Anti-Drug Abuse Act of 1986**

The American government was anything but forceful during the 1950s and 1960s however, they soon came to realize the diminishing social effects drug use had on society by the end of the ‘60s. President Nixon officially declared a “War on Drugs” in the 1970s, prompting the passage of numerous government regulations, restrictions, and punishments in an effort to reduce US drug use. As many sources describe, the Anti-Drug Abuse Act was passed in the midst of the crack epidemic and potential for amphetamine use increased. As US presidents after Nixon continued to contribute to the War on Drugs however, it wasn’t until 1986 when the most influential legislation was passed. The Anti-Drug Abuse Act was passed in the midst of the crack epidemic and potential for amphetamine use increased. As many sources describe, the Anti-Drug Abuse Act was the most important set of statutes influencing the reoccurring drug problem in the US.

President Reagan signed the Anti-Drug Abuse Act on October 27, 1986. This bill was the first major contribution to the War on Drugs. The Act was aimed at
decreasing the substantial drug use, related crime, and illegal trafficking into the US. It included mandatory minimum sentences for drug possession, prohibited controlled substance analogs, and altered the system of federal supervised release from a rehabilitative system into a corrective system.\textsuperscript{79,81} Specifically, $1.7 billion was dedicated to fight the US drug war, $97 million was for building new prisons, $200 million was allocated to drug education, and $241 million was for drug treatment centers and research.\textsuperscript{82} Under the Act, the president had the authority to increase tariffs on imports of specific products from countries that do not support the US in their effort to eliminate drug in the US. Additionally, the Act made it easier to seize the drug offender’s assets and “made it illegal to move illegally obtained money into or out of bank accounts (money laundering);” punishments for such acts have been increased since the passage in 1986.\textsuperscript{79}

The mandatory minimum punishment for possessing drugs was by far the most influential piece of the bill. Prior to 1951, the federal government had no minimum sentences for drug illegal production, possession, or distribution.\textsuperscript{79,81} The lack of punishment only enforced users to maintain their habit and continue to contribute to the destructive effects on society. During this year, Congress passed the first federal mandatory drug sentences, which implemented a “two-year minimum sentence for first-time possession and a five-year sentence for trafficking.”\textsuperscript{79,81}
Five grams of crack cocaine, the weight of five packets of artificial sweetener, is about 25 doses, depending on the purity, and is worth a few hundred dollars.\textsuperscript{81,83} This amount is considered low-level trafficking; high-level trafficking distributes drugs totaling tons, many millions of grams, in one shipment.\textsuperscript{79,81,84} The Act focused on low-level traffickers because the US Sentencing Commission reported that only 11\% of drug trafficking was medium to high-level but 70\% of were considered “low-level offenders.”\textsuperscript{80} Additionally, one-third of cocaine cases “involved an average of 52 grams, a candy bar-sized quantity of cocaine, resulting in an average sentence of almost nine years in prison without parole.”\textsuperscript{81} The cocaine epidemic needed to be stopped and hence, prompted strict penalties for even the smallest level of distribution.

The government considered that these mandatory penalties were ineffective so Congress passed an amendment to the Anti-Drug Abuse Act in 1988.\textsuperscript{80} This amendment imposed mandatory sentences for low-level traffickers and anyone who had been involved throughout the trafficking process, making everyone liable for “every act of the conspiracy.”\textsuperscript{80} For example, if a defendant was a doorman to a crack house that distributed massive amounts of drugs, he became liable for every gram of crack sold from that house and even for all crack sold by the organization running the house.

<table>
<thead>
<tr>
<th>Type of Drug</th>
<th>Five Year Sentence without Parole</th>
<th>Ten Year Sentence without Parole</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSD</td>
<td>1 gram</td>
<td>10 grams</td>
</tr>
<tr>
<td>Marijuana</td>
<td>100 plants or 100 kilos</td>
<td>1,000 plants or 1,000 kilos</td>
</tr>
<tr>
<td>Crack Cocaine</td>
<td>5 grams</td>
<td>50 grams</td>
</tr>
<tr>
<td>Powder cocaine</td>
<td>500 grams</td>
<td>5 kilos</td>
</tr>
<tr>
<td>Heroin</td>
<td>100 grams</td>
<td>1 kilo</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>10 grams</td>
<td>100 grams</td>
</tr>
<tr>
<td>PCP</td>
<td>10 grams</td>
<td>100 grams</td>
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</tbody>
</table>
Throughout the decade, the mandatory minimums were progressively critiqued, causing a social uproar. The negative response was stirred up from “promoting significant racial disparities in the prison population” due to the differences between crack cocaine vs. powder cocaine quantities and resulting penalties.\textsuperscript{79,80,84} Congress justified the “100-to-1 sentencing disparity” by explaining the serious destruction crack has on society whereas powder cocaine does not have as significant of an impact on society.\textsuperscript{79}

Although the drugs are chemically the same, powder cocaine is more expensive and has less intense effects resulting in less frequent use.\textsuperscript{79} However, society viewed the punishments as that “most offenders under the crack cocaine provisions are African-American, whereas white offenders make up a much higher portion of those convicted for powder cocaine offenses.”\textsuperscript{79,84} The racial issues that developed from this act continued until society began to see a substantial decrease in drug use and began to support the mandatory penalties.

After this amendment was passed, the prison population quickly flooded with individuals contributing to US drug use. One source reported that the prison population ranged from 20,000 to 24,000 between 1954 to 1976; by 1986 it had increased to 36,000; from 1986 to 1988 population increased by 450%; within the first 6 years of the act, prison population, specifically for drug abusers, increased by 300%; today it is up 527%, exceeding 190,000 prisoners with more than half for contribution to the drug trade.\textsuperscript{81} Despite the initial negative view of the amendments, the Anti-Drug Abuse Act is considered to be one of the most influential laws created to fight the US war on drugs.
Comprehensive Methamphetamine Control Act 1996

In contrast to the government’s efforts, methamphetamine use prevailed. The President’s National Methamphetamine Strategy on April 1996 stated that methamphetamine-related deaths increased by 176% in three years in four major US cities. In a vast majority of the labs seized, the method of production utilized ephedrine and/or pseudoephedrine reduction. In particular, when the US enforced tighter restrictions on ephedrine, manufactures began to rely on pseudoephedrine. Less than 1.5% of labs seized in the US in 1992 used pseudoephedrine compared to 28% of the seizures in 1995, then increased to 55% in 1996.

One of the major problems the government faced was that all of the pseudoephedrine discovered in these labs had been a legal form of the drug. An integral part of fighting the drug war was to control and restrict all precursor chemicals used in methamphetamine production, mainly pseudoephedrine. President Clinton signed the Comprehensive Methamphetamine Control Act on October 3, 1996. The Act remains to be regarded as one of the most influential drug laws in the US. The focus of the Act was on the penalties of methamphetamine trafficking, distributing, and producing. The bill implemented a number of requirements and restrictions to the production of methamphetamine.

First, registration from every individual distributing drugs in the Schedule I class of the DEA list of chemicals was required, with an initial registration fee of $595 but after a few years, the fee reduced to $116. Mandatory minimum sentences from the Anti-Drug Abuse Act remained within the Act, with a 5-year prison sentence for the
possession of 10 grams of pure methamphetamine and a 10-year sentence for possession of 100 grams.\textsuperscript{86,87}

Secondly, the regulatory exemptions of certain drug products that contained ephedrine, pseudoephedrine, and phenylpropanolamine were removed or restricted, which strengthened the DEA’s chemical system.\textsuperscript{86} However, the sale of a product containing these precursor chemicals may be excused from the regulatory requirements if either\textsuperscript{85,87,88}:

- Less than 24 grams are sold in a single transaction, or
- The product is sold in blister packs as a solid form, or small package sizes for liquid form.

Finally, the bill increased the maximum penalty for selling, trading, and distributing precursor chemicals and other materials used in methamphetamine production including\textsuperscript{86,87,88}:

- A 5-year sentence for the trafficking of 2-6 kilos of ephedrine/pseudoephedrine.
- About a 9-year sentence for trafficking 20 kilos, or more, of ephedrine/pseudoephedrine.

Note that no quantity may be given a 10-year punishment for a first offense, but can be 9 years and 364 days.\textsuperscript{88} Meth production was directly affected because it was more difficult to obtain precursor chemicals and the extensive materials needed for production purposes.

Government authority was strengthened in this Act from two provisions. The first is explained as:\textsuperscript{87}:

\textit{(The Act) permits the government to seek a civil penalty of up to $250,000, for sale of a ‘laboratory supply’ (defined as listed chemicals plus other supplies to be specified by the DEA) to a person who uses or attempts to use them to manufacture a controlled substance, where the sale is with ‘reckless disregard’ for the illicit use.}\textsuperscript{87}
The second, the government was authorized to seek additional prohibitive reliefs that would reduce meth trafficking.\textsuperscript{87}

The government was worried of the potential increase of methamphetamine use and production in the beginning of the 2000s. Street chemists refined their manufacturing methods resulting in an increased purity of the drug. Although use had not reached numbers from the 1960s, it was seen as a US problem. The passage of the Meth Act significantly advanced the efforts in preventing methamphetamine from becoming the next US drug crisis.

**Summary of the Legislative Efforts Made to Control Meth Use**

Methamphetamine use in the US has been substantially impacted by numerous laws and restrictions enforced by the government. The primary contributions, as discussed above, have included The Food, Drug, and Cosmetic Act of 1938, the Drug Abuse Control Amendment of 1965, the Comprehensive Drug Abuse Prevention and Control Act of 1970, the Anti-Drug Abuse Act of 1986, and the Comprehensive Methamphetamine Control Act of 1996. These Acts have prevented the potential methamphetamine epidemic of the 2010s. Use and production have decreased across the nation and remain low, mainly because of the efforts of the federal government on the continued War on Drugs.
Review of Literature

**Media Portrayal of Methamphetamine**

Whether we like to think so or not, the media has a substantial impact on our perception. Media sources such as *Frontline* (2006), *Newsweek* (2005), and the *National Association of Countries* (2006) have recently released coverage regarding methamphetamine use in America titled “The Methamphetamine Epidemic,” “The Meth Epidemic in America,” and “Meth: America’s Most Dangerous Drug.” In addition to news, this drug has been appearing in popular culture through books, music, movies, and television shows that typically portray inaccurate properties and exaggerated effects.

This kind of media coverage sends America into a panic; projecting the idea that methamphetamine use is overwhelmingly high, ready to tear our nation apart. Although the devastation of meth is real, it fails to live up to the status the drug has received. According to the *Sentencing Project* (2009), applying a term such as epidemic to methamphetamine is misleading, inflammatory, and ultimately counterproductive. The question lies in whether the exaggeration of the media is morally correct, even with good intentions.

**Characteristics that Define an Epidemic**

Factors that define an epidemic are integral parts to determining the status of drug use. Originally, epidemiology was denoted as “the study of the outbreak of life-threatening diseases.” An epidemic referred to the quick spread of an infectious disease that exceeded expectations. Throughout the 20th, the concept of epidemic “came to
include chronic disease as well.”\textsuperscript{92} However, the qualifications of an epidemic are difficult to characterize. This is the reason there is no current threshold that determines whether a disease or a drug has reached epidemic proportions or is merely considered an outbreak.

There has been recent research deciphering between an outbreak and an epidemic. In terms of disease, Brendan Koerner (2003) explains that the difference “between an outbreak and an epidemic is the percentage of overall deaths caused by the disease.”\textsuperscript{93} The threshold percentage that defines an epidemic varies with disease, though is not yet defined for every disease.\textsuperscript{92}

The current official definition of epidemic by the Center for Disease Control and Prevention (CDC) (2010) is “the occurrence of more cases of disease than expected in a given area or among a specific group of people over a particular period of time.”\textsuperscript{94} There are a variety of other current definitions for the word epidemic. The Merriam Webster Online Dictionary defines epidemic as “affecting or tending to affect a disproportionate large number of individuals within a population, community, or region at the same time” and “excessively prevalent.”\textsuperscript{95} The Free Online Dictionary states it to be “spreading rapidly and extensively by infection and affecting many individuals in an area or a population at the same time” and “a rapid spread, growth, or development.”\textsuperscript{96} The well-known Oxford Dictionary defines epidemic as “a sudden, widespread occurrence of a particular undesirable phenomenon.”\textsuperscript{97} As Dr. Dale D. Chitwood (2009), a professor of Medical Sociology at the University of Miami, described “from a strictly epidemiological perspective, a pattern of drug use becomes an epidemic occurrence when the incidence
and/or prevalence of use exceed normal expectations. The question now is, who determines these “normal expectations”?

Factors that contribute to determining the threshold include culture, circumstance, drug, disease, population, class, etc. Some say that because of the definition of epidemic, a society with strong prohibitionist perspectives considers any sort of use exceeding expectations hence, an epidemic and the concept behind the word loses meaning. There has been no mechanism that easily defines the expectation threshold, which is why deciding an epidemic has become such a controversial issue. Nonetheless, if a society could collectively define a threshold and apply the term “drug epidemic” to increased use, additional problems occur.

The word epidemic contains an immense amount of social stigma. It represents more than just an increase in drug use; the word carries fear and panic that “traditionally accompanied life-threatening infectious diseases.” The fear associated with an epidemic causes an instant judgment of the drug, the drug users, and the drug’s effects on society. Associated with fear is panic, which replaces reasoned actions. This unrealistic perception creates problems for researchers studying elevated drug use; its causes harm, heightened misuse, and reasons for continued use. Additionally, the fear of an epidemic urges the government to prevent further drug use by passing quickly reasoned laws and restrictions. Although many of these legal enforcements have decreased drug use, they have not and do not diminish the fear and social stigma associated to the drug and drug users.

In defining “epidemic” each contributing factor must be analyzed. From an epidemiologic perspective, Dr. Chitwood (2009) describes the three interrelated
components that have traditionally determined an epidemic: frequency, distribution, and determinants.\textsuperscript{92} The frequency is the quantification of the occurrence, giving a mathematical element to the term. The distribution answers the who, where, and when of the occurrence. Finally, the determinants is a direct result of frequency and distribution, “because knowledge of frequency and distribution of disease is essential to test an epidemiologic hypothesis about the risk factors for use, which in turn can inform us about strategies for the reduction of drug misuse.”\textsuperscript{92} Frequency and distribution can be compared to similar drugs in order to establish the drug status and hence, conclude whether or not use is of epidemic proportions.

The analysis of drug use includes interpreting the frequency and reasons for increased use. The sociological perspective on drugs and drug use in America can be significant when examining these factors because it accounts for an entirely different view than most consider. One major difference is the particular emphasis on social context and the realization of four central aspects that significantly influence the drug reality: drug definitions, drug effects, drug-related behavior, and the drug experience.\textsuperscript{13}

Traditionally, increased use of a drug was presumed to be a direct effect of the chemical and pharmacological effects, independent of daily experience and culture. This view is known as a chemicalistic fallacy, that is drug A causes behavior X.\textsuperscript{13} The chemicalistic fallacy makes it easy to predict the effects a drug will have on an individual because the behavioral effects are solely based on the biochemical properties of the drug. However, over the years, scientists have realized that a central dimension of the human experience is meaning.\textsuperscript{13} Examining meaning comprises understanding social definitions, interpretations, and image of the drug in society.\textsuperscript{13}
The media heavily influences all of these aspects which directly affects the drug reality and drug experience. When examining the increased drug use, one must also examine the social aspects of the drugs, including how it has been portrayed in the media. The media’s exposure of methamphetamine will be discussed in later sections. However, statics of meth use must first be examined in order to correctly analyze the media’s portrayal of methamphetamine.

**Media Coverage of Current Drug Use in America**

Investigators that focus on drug-related incidences could identify decades based on the “drug epidemic” and the unique results the term had on society. The media has portrayed epidemics such as: “heroin in the late 1960s and early 1970s, LSD in the 1960s, PCP in the late 1970s, marijuana at the close of the 1970s, crack in the 1980s, MDMA in the 1990s, and methamphetamine in the 1980s and again in this decade.” In some cases, as in the case of heroin, there has been data to support the epidemic claims boasted throughout society. There are other cases, such as LSD, where data indicated a significant decrease or minimal drug use. It is almost inevitable that when a new drug or a new formulation of an existing drug emergences into society, there will be proclamations of an epidemic. As with the current methamphetamine “epidemic,” data of frequency will indicate the truth behind these claims.

It has always been a difficult process for the government to analyze the number of drug users in America. However, the ability to estimate psychoactive substance use has significantly developed since the drug craze in the 1960s through different governmental agencies. Some of these include the Drug Abuse Warning Network (DAWN) and the Drug and Alcohol Services Information System (DASIS), which produce official data.
and statistics about the current drug use in America. These agencies annually produce routine estimates of incidence and prevalence of drugs, mainly through national surveys such as the National Survey on Drug Use and Health (NSDUH) and Monitoring the Future (MTF). Corresponding research endeavors, such as the Community Epidemiology Work Group (CEWG), have also added to the enhanced ability to analyze patterns of drug use, production, and distribution throughout America.92

Recently, methamphetamine has been the talk of the media, making many think that it is a new drug. Despite what much of America thinks, the drug has been around since 1893. Methamphetamine abuse began in the US as soon as the drug became freely available to the public however, the abuse was not identified until the 1960s. The use of the intense stimulant drug grew steadily throughout the late 1980s to today, slowly spreading across the country into unforeseen areas. The NSDUH reported that methamphetamine use increased from under 2% in 1994 to over 5% in 2003.92

Meth users were unlike other drugs; methamphetamine hit every corner of the country ranging from the businessmen of New York, to the truck drivers of California, and even to the employed mothers of Illinois. General Barr R. McCaffrey (2009), Director of the Office of National Drug Control Policy, described “methamphetamine has ‘exploded’ from a ‘west coast biker drug’ into America’s heartland and could replace cocaine as the nation’s primary drug threat.”92,98 Although the drug has caused many problems, use of other drugs are far more pervasive and cause the same social problems as methamphetamine.

The number of young people using drugs has shown to increase over the past decade. In 2007, 8.0% of the population used illicit drugs; in the 2010 survey, that
number had peaked to 8.9%; finally, in 2011 an estimated 8.7% of the US population was current illicit drug users.\textsuperscript{99,100} Illicit drugs include the following: marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, and prescription-type psychotherapeutics (pain relievers, tranquilizers, stimulants, and sedatives) used non-medically.\textsuperscript{100}

In 2011, marijuana was the most used illicit drug with 18.1 million reported users and an increased rate from 5.8% to 7.0% between 2007 and 2011.\textsuperscript{18} Cocaine had a substantially lower rate than marijuana, reporting that 1.0% of the population used cocaine in 2006, 0.6% in 2010, and 0.5% reported use in 2011.\textsuperscript{100} The number of heroin users in 2011 increased from 2007, elevating from 373,000 users to 620,000 users (remaining to be less than 0.1% of the population).\textsuperscript{54} In 2011, 972,000 persons, or 0.4% of the population, reported hallucinogen use. These estimates were slightly lowered than the reported 0.5% in 2009.\textsuperscript{54} There were 6.1 million persons reported in 2011 who used prescription-type psychotherapeutic drugs for non-medical purposes, that is 2.4% of the population. In 2010, prescription drug use concluded to be 7.0 million person, or 2.7% of the population. Specifically within this category, methamphetamine use has decreased between 2006 and 2011 from 0.3%, 731,000 persons, to 0.2%, 439,000 persons.\textsuperscript{54}

The four categories of the prescription-type drugs in this survey included pain relievers, tranquilizers, stimulants, and sedatives.\textsuperscript{54} These cover various medications that either are or have been available by prescriptions. The categories also included the street form of the drug. The street form is referred to as a drug that originally was accessed by prescriptions but spread to regular public use and may be manufactured and distributed illegally. The survey specifically asked respondents to only report the non-medical use of
these drugs, hence deciphering between medicinal drug use and recreational drug use. Non-medical use is defined to be “use without a prescription of the individual's own or simply for the experience or feeling the drugs caused.”  

The NSDUH combine the four prescription-type categories, psychotherapeutics, for ease of the respondents however, specific drugs within this category were analyzed separately.

Focusing on methamphetamine use, reports showed that methamphetamine use dropped from 731,000 users in 2006 to 439,000 in 2011, resulting in only a 10th of 1% of the population using methamphetamine. For comparison, cocaine use has also declined in these years, from 2.4 million to 1.4 million, 1% to .5% of the population. The number of new meth users among persons aged 12 or older was 133,000 in 2011. This number was similar to the 2010 estimate of 107,000, but lower than the 2002 to 2006 estimates, ranging from 192,000 to 318,000. Additionally, the survey concluded that the average age of new methamphetamine users aged 12 to 49 in 2011 was 17.8 years, which was not significantly different from the corresponding estimates for 2002 and 2003 and from 2005 to 2010, but was lower than the 2004 estimate (20.6 years). Despite the spread of methamphetamine use across the nation, the number of users has actually declined and remains relatively low in comparison.

**Analyzing the Data of Methamphetamine Use**

The data portrays that methamphetamine use is causing a moral panic. Moral panic is a “social condition that becomes defined as a threat to community values and whose nature is presented in stereotypical fashion by mass media.” According to Dr. Erich Goode and Dr. Nachman Ben-Yehuda (2007), two well-known American sociologists, a moral panic has several distinct features including concern (the awareness
of negative impact on society), hostility (towards group in question), consensus (widespread), disproportionality (action is disproportionate to actual threat), and volatility (fluctuate sharply).47

In the case of methamphetamine, the panic is based on a continued exaggeration of ongoing fallacies portrayed by the media. Good and Ben-Yehuda (2007) describe that the discussions involving methamphetamine use are obscure and have heightened the social panic that immediately promotes inaccurate conceptions of the nature of meth.47 In effect, the media portrays a harsh version of meth users that again, alter the social responses to the drug. Dr. Barry M. Lester (2005), a doctor at Brown University of Biology and Medicine, explained101:

If we overreact to meth, the effect will be, as with cocaine, flooding an already overburdened foster care system, breaking up families and having kids bouncing around from foster home to foster home during the first few years when they need to develop strong attachment relationships. These children may wind up with behavior problems, not because of the drugs, but because they were improperly socialized.101

Steve Suo (2005), the Oregonian’s “Faces of Meth” journalist, agreed in that102:

Media coverage of the issue too often has been laden with generalizations, hyperbole and sensational images. Reporters, with rare exception, have been slow to challenge the conventional wisdom handed to them by purported experts on the topic.102

Real problems are sometimes the subject to hype but once the exaggeration is realized in society, the seriousness of the problem is not understood which creates larger, more destructive problems. In order to realize the destructive effects of methamphetamine without giving into the social perception, the truth behind reported characteristics of methamphetamine must be addressed. In order to understand the truth in the media, one must read with drug-related news with skepticism. Mark Kleiman (2005), a Professor of
Public Policy at the UCLA School of Public Affairs, summarizes Jack Shafer of Slate’s writings that encourages skepticism of the media. The following facts are what Kleiman says to keep in mind when being influence by the portrayal of a newfound drug:

1. No drug is instantaneously addictive. There is a slight difference in buildup of abusing, leading to dependence. Stimulants tend to have a fast build up and thus causing a faster rate of abuse. However, no drug can produce an instantaneous addiction.

2. No drug is addictive for everyone. Addiction is thought to be based on a variety of factors including background, lifestyle, and genetics, which differs for every individual. There is no drug, except for nicotine, that has caused dependency in a majority of users.

3. How dangerous a drug is doesn’t depend just on its addictive potential but also its toxicity and on the social circumstances surrounding its use. For example: heroin is not very toxic; cocaine is slightly more toxic than heroin; and methamphetamine, when administered by snorting, smoking, or injecting, is horribly toxic because of the precursor chemicals used in production.

4. Another important aspect of harm is behavioral toxicity, specifically aggression. Drugs produce different forms of aggression. Heroin is mostly sedative; users tend to act aggressive only when more of the drug cannot be immediately obtained. Cocaine produces paranoia, which is thought to lead to aggressive behavior, especially when mixed with alcohol. Methamphetamine is very similar to cocaine in this aspect. However, it should be known that aggression also differs with characteristics of the individual. The drug itself does not cause a feeling of aggression, it can cause the user to be more vulnerable to situations and hence, become aggressive.

5. Any expensive drug used by poor people will cause more havoc than the same drug used by richer people. This is because poor people who become dependent wind up doing more damage to themselves and others in the course of getting money to buy the drug.

6. The same drug used in different ways has different harm profiles. As discussed in the Background section, any drug taken orally is much less destructive than any other route of administration.

7. No baby is born with an addiction to anything. Researchers have been focused on babies born to addictive mothers who used during pregnancy. The data shows that a baby can be born with a physical dependency to opiates: that is, the infant can suffer from withdrawal pains. However, the physical dependency is not fatal and is treatable. Stimulants, such as cocaine and methamphetamine, do not cause withdrawal pains and so do not cause the physical symptoms in infants.

8. Despite the lack of physical withdrawal stimulants generate, infants can be damaged from maternal stimulant use. Researchers have found it to be true in numerous animal studies, showing when taken early in pregnancy, cocaine and methamphetamine cause physical and mental damage to the infant.

9. Addiction is relatively rare. It looks common to treatment provides however, most victims of abuse recover within a few months or years without receiving any professional help. Additionally, many individuals who enter treatment relapse and enter again at a later time. When data is provided of users entering treatment, the number of previous times entered is not distinguished, which skews the research results.
Methamphetamine abuse, dependency, and addiction are just as other forms of substance abuse disorder. Fighting an addiction is very difficult no matter the drug an individual is addicted to but is always treatable. Although relapse rates are high for methamphetamine and the lasting consequences are bad, it is a treatable addiction.

The methamphetamine epidemic is a “media phenomenon, not a reflection of reality.”

The testimonies of police officers, politicians, and drug counselors create a foundation that society uses to build their own perception of methamphetamine users. Claims have been made that the drug has begun to quickly spread over states, citing data such as meth lab seizures, meth lab explosions, and drug-related incarceration. However, does this prove that methamphetamine use is growing or does it prove that use has spread to new locations, maintaining a relatively low number of users? Methamphetamine use in America remains very rare. It is a very toxic and a potentially addictive drug but “it may not be the sloughing beast portrayed in the media but it is dangerous.”

Data Myths in the Media Surrounding Methamphetamine

Recent media coverage has propagated some myths, just as they have during the crack epidemic of the 1980s. Some of these have included untreatable addiction, meth-related increase in foster care, user research results, and environmental damage. Facts that are frequently used by the media include: currently 1.4 million people in America have admitted to using methamphetamine at least once and each 1 pound of methamphetamine produced, 5-6 pounds of hazardous waste is generated. Society reads such facts and is shocked however, hidden behind the overwhelming data are media illusions used to exaggerate without lying. These media behaviors are briefly discussed.

The news media gave the impression that the methamphetamine epidemic in America has created numerous social problems and suggests that meth is an untreatable
addiction. However, as previously discussed, no addiction is untreatable and research is currently being conducted to assist methamphetamine addicts in treatment. Additionally, a large problem associated with methamphetamine has been foster care. One news source reported that 71% of responding counties in California claimed to have an increase in meth-related out of home placements however, the source only surveyed 7 of the 58 counties in California. This is one of many examples how the media has skewed surveys and research to exaggerate the drug use and drug problems.

Another example is the reports referring to the number of individuals who have reported trying meth at least once in their lifetime. The indicated numbers are outstanding. In 2001, John C Horton, the associated Deputy Director of the White House Office of National Drug Control Policy, reported that 9.6 million US residents have tried methamphetamine at least once and 650,000-700,000 residents were monthly users; in 2003, Horton reported 10 million residents have tried meth. The unknown characteristic of this survey was that it did not distinguish between prescribed methamphetamine and street methamphetamine nor was did it distinguish between small dose users and abusers. Another report distinguishing between these important factors of the user concludes that the term “abuser” applies to less than 1% of the reported amphetamine users and that a majority of methamphetamine users “use less than once a week and none reported daily use in scholarly study.”

Furthermore, news sources often declare the significant threat of methamphetamine production to the environment. According to Dr. Craig Reinarman (2007), a professor of Sociology at the University of California Santa Cruz, American moral entrepreneurs blame methamphetamine as the “new chemical boogeyman” for
One of the reasons for the portrayed environmental hazard is the fact that methamphetamine can be produced in a suitcase. Another is the common report that the Office of National Drug Control Policy explained that for each 1 pound of methamphetamine produced, 5-6 pounds of hazardous waste is generated. Mathematically speaking, a standard lab generally produces 5-6 ounces of hazardous waste. The DEA reported in 2004 that 16,800 meth-related seizures and 17,000 meth labs were found. If it is assumed that every lab produces at least 6 ounces of hazardous waste, the combination of lab seizures and findings equated to 12,675 pounds of toxic waste produced in 2004. In comparison, according to the US Environmental Protection Agency, the livestock industry produces 2.7 billion tons of waste each year.

Moral panics and drug crises often represent “salient yet sometimes unspoken social values.” As Travis Linnemann (2009) stated in his research Mad Men, Meth Moms, Moral Panic: Gendering Meth Crimes in the Midwest, “meth is not a new drug epidemic, but a particular face emerging from the monolithic backdrop of crisis, control, and crime--the hegemonic narrative of modern life.” Linnemann examined newspaper articles to analyze the language the press used to report the drug culture and determine the construction of meth-related crime. One of the main findings through his research was the data that the press tended to report seemed overwhelming however, there was no data to compare to way.

The important idea that needs to be emphasized more is that every piece of writing on drugs contains a bias, even medical researches contain biases. However, readers rarely question the hidden meaning or influence. Readers typically assume the published results to be true and self evident, as a reflection of the real-world.
source explained it as the “dense involvement of all of us in our culture is indicated by our almost blind and uncritical acceptance of these views.” Additionally, some sources have much more credibility than others hence, can substantially skew the view of society based on their bias.

**Media’s Literary Description of Methamphetamine**

The first moral panic of methamphetamine erupted in 1962 from the new use of amphetamines via injection. At this time, users would mix heroin and methamphetamine to form a “speed ball.” The change in the urban economy was a primary reason for the medias exaggeration of the drug use that led to the panic. There was a disappearance of industrial jobs that did not require a higher education hence, a jobless ghetto scene developed. The poverty and depression associated with unemployment prompted people to turn to drugs, specifically methamphetamine. Drug use blinded the individuals to social sources, social problems, and personal problems. However, the media did not take such a sociological view on the situation.

When the meth population changed to this lower class of speed freaks, the media immediately portrayed the drug as a horrible problem infecting the US, just as with the crack epidemic. The media coverage for methamphetamine is comparable to the crack epidemic of the 1980s. Coverage has been so similar that many researchers have described it as: “so striking that one could swap the word ‘meth’ for ‘cocaine.’”

In 1984, snorting crack was socially accepted within the professional class and the press supported drug use. However, as soon as the cheap prepackaged smoke-able version of cocaine, also known as crack, was introduced into the drug world, the press no longer supported the drug. The perception of crack users changed from the Caucasian
upper-class, “sophisticated” crowd to the African Americans and Latinos from the inner-city that fought in gang wars.\textsuperscript{102} The different social class and race associated to crack resulted in a different social status of the drug.\textsuperscript{102} The media did not expose these crack users out of latent racism but mostly out of stupidity, which helped the government quickly and efficiently demonize crack and its users.

*Newsweek* covered a story on March 17, 1986 that portrayed crack as “the most addictive drug known to man right now” and that “it is almost instantaneous addiction.”\textsuperscript{102} A *Newsweek* reporter, Larry Martz (1988), wrote the following “without acknowledging the magazine’s role in creating the crack panic”\textsuperscript{102}:

\begin{quote}
Don’t tell the kids, but there’s a dirty little secret about crack: as with most other drugs, a lot of people use it without getting addicted… Many drug educators have hyped the very real dangers of crack into a myth of instant and total addiction… at least 2.4 million American have tried crack, but contrary to the myth, less than half a million now use it once a month or more… That doesn’t mean it’s safe to play with crack.\textsuperscript{102}
\end{quote}

The media should have learned from the crack epidemic that the demonization of a drug is not an effective way of prevention. In 1997, Craig Reinarman and Harry G. Levine composed an “indispensable collection” titled the “Crack in America: Demon Drugs and Social Justices.”\textsuperscript{102} Reinarman and Levine (1997) presented persuasive evidence that “the press and politicians distorted and ignored the best medical and statistical evidence about the dangers of crack to induce an irrational ‘crack scare.’”\textsuperscript{102} The fact of the matter is that the truth of crack and methamphetamine are bad enough that there is nothing to gain from exaggerating and hyping the dangers of the drug. However, it seems that some media stories have used the comparison to their advantage when
stirring up the drug panic such as “methamphetamine sinks its teeth into Arkansas; like crack’s epidemic rise in the ‘80s, police say.”

*Newsweek* (2005) was the media source that began the current meth claims of “epidemic” and the “most dangerous drug” without any evidence supporting these assertions. After this, reports of methamphetamine practically formed a nationwide idea that meth use reached outrageous proportions. Images, wording, and the significant number of documentaries portraying the life of a meth addict fed into the growing social panic of this “new” drug that all of America was using. Methamphetamine use across the US has been compared to a prairie fire, spreading and destroying everything in site. Some of these dire reports have included headlines such as: “Spread of meth near epidemic, Czar says;” “Governor warns meth epidemic growing like kudzu;” “Attorney General calls meth an epidemic in Illinois;” and “Meth epidemic forcing grandparents to raise grandchildren.” On August 8, 2005, *Newsweek* proclaimed methamphetamine to be “America’s most dangerous drug” affecting all corners of mainstream America from “soccer moms in Illinois, computer geeks in Silicon Valley, factory workers in Georgia, and gay professionals in NY.” That same year, *New York Times Magazine* (2005) released an article on methamphetamine regarding it as “America’s new drug of choice”, which as data shows, is false.

Current news articles have stated, “methamphetamine is making a comeback,” that the new drug has dramatically increased purity “at the peak of its brain-altering, teeth-rotting, crime-riddled menace.” Furthermore, there has been an increase in the number of methamphetamine-related personal stories within the press. One well-known story released in 2004 by the *LA Times* titled “Women Loved Meth More than her Son”
described Christine Nicole Symmond’s personal experience with methamphetamine and the tragic death of her infant son, Jason.\textsuperscript{109} Jason passed away when his mother “rolled over during a deep, drug induced slumber and suffocated him.”\textsuperscript{109} Although the death of her child was not intended, Symmond’s addiction and “reckless disregard” to her infant’s well being resulted in a sentence of 15 years in prison.\textsuperscript{109}

Another influential article by \textit{The Daily Beast} (2005), an online version of \textit{Newsweek}, was the story of Ricky Dale Houchens titled “The Fallout: I Felt My Face Just Melting Off.”\textsuperscript{110} Houchens, 27, was going about his regular procedure of cooking a fresh batch of methamphetamine for his personal use. While the concoction was simmering, Houchens noticed the mixture’s temperature was rapidly increasing. When he picked up the pot to remove it from the heat, the bottom gave way and “the combustible mixture splashed onto the burner.”\textsuperscript{110} Houchens described how the chemicals exploded before he had a chance to flee the room: “I felt my face just melting. The skin was running down my arm…like lard.”\textsuperscript{110} He was immediately transported to the Vanderbilt University Burn Center in Nashville where he had severe burns covering 40% of his body. Houchens realized how lucky he was to be alive and hasn’t touched the drug since his incidence.\textsuperscript{110}

There is no doubt that methamphetamine use has spread across the country, however, on the contrary to what much of society believes, the percent of users has remained relatively constant. The media has deliberately skewed the perception of data, focused on methamphetamine use, and exaggerated the effects of the drug. Despite the abundance of examples, Captain David Young (2006), the Director of Drug Law Enforcement Division of the Pennsylvania State Police, thinks, “there’s an appropriate
level of coverage." However, the coverage of the drug has spread much faster than the epidemic itself.

**The Media’s Visual Portrayal of Methamphetamine Users**

**The Oregonian Faces of Meth**

Oregon was the first state to see the effects of the methamphetamine epidemic. The drug use in the state became overwhelmingly noticed in 2003 when the state medical examiner reported 78 methamphetamine-related deaths, which was a 20% increase from 2002 and a 56% increase from 2001. The rise of methamphetamine use caused Oregon to take force in the matter by restricting cold and allergy medicines containing pseudoephedrine. Oregon was one of the first states to pass this restriction and was one of the first to eliminate its methamphetamine problem. The decreased problem was shown through methamphetamine lab seizures, the best indicator of methamphetamine production and use. In Oregon, lab seizures dropped 96% (from 192 to 10) between 2005 and 2009. Additionally in 2009, methamphetamine-related arrests dropped 50% from 2006.

These results were not solely because of the precursor chemical restriction, but also the *Oregonian’s Faces of Meth* series that has become well-known across America. *Faces of Meth* is a drug prevention method run by the Multnomah County Sheriff’s Office. The prevention consisted of a series of articles displayed in the *Oregonian* that used a sequence of mug shots of repeated methamphetamine offenders to visually display the destructive physical effects the drug has on its users. Additionally, Bret King, one of the founders, extended his prevention efforts by presenting a PowerPoint at middle
school and high schools around the state to show the effects of the drug and directly answer any lingering questions. This prevention method has become an exemplification for other states to follow.\textsuperscript{113}

The *Faces of Meth* began when Steve Suo, a staff writer for the *Oregonian*, became intrigued with the drug that was sweeping the West Coast. According to Suo (2011), methamphetamine was unlike any other drug he had seen in the past decade and even though it has been around since the ‘20s, the detrimental effects were more noticeable than ever before. Suo began his investigation of the West Coast methamphetamine use in late 2002.\textsuperscript{16} It just so happened that at the time, Suo’s home state, Oregon, was leading the country in methamphetamine addicts per capita.\textsuperscript{112,114} The findings led Suo to publish the first article of a five part series titled the *Oregonian’s Unnecessary Epidemic* in October 2004.\textsuperscript{16,114}

The same time that Suo began his investigation, Bret King, a deputy of the Corrections Division Classification Unit, had witnessed this “devil drug” first hand. While King was working a shift at the Multnomah County Detention Center, he observed a 20-year-old woman undergo a horrific amphetamine psychosis.\textsuperscript{16} As King went through the mug shots of the woman, he found the woman’s photo from three years prior.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{Figure17.png}
\caption{Theresa Baxter’s Mug Shots (2001, 2004, 2009) Portraying the Physical Effects of Chronic Methamphetamine Use.\textsuperscript{112}}
\end{figure}
Theresa Baxter’s first mug shot was taken in 2001, her second in 2004, the last in 2009 at the age of 47, as shown in Figure 17.\textsuperscript{16} Between 1995 and 2009, Baxter was in custody 44 times, mainly because of meth-related arrests.\textsuperscript{112} When King saw the transformation of Baxter’s physical appearance over the course of 3 years, he became interested. King interviewed Baxter to figure out what had happened to the beautiful, middle-aged women he saw in the first photo\textsuperscript{112} He recalled the interview to be difficult and Baxter, uncooperative however, King acquired the history of her drug use.

To his surprise, methamphetamine was the primary cause for Baxter’s physical deterioration.\textsuperscript{16,112} King searched for mug shots of other individuals who were frequently arrested and found many more methamphetamine victims than he would have hoped. These photos sparked the idea to use mug shots as a prevention strategy to show society the extreme effects of methamphetamine use.\textsuperscript{112,114}

On December 28, 2004, Joseph Rose, a reporter for the Oregonian, published \textit{Faces of Meth} to expose society to the harsh before and after pictures King had gathered.\textsuperscript{16} The \textit{Faces of Meth} article explained King’s methamphetamine prevention strategy and the severe reality of the physiological effects of methamphetamine. In May 2005, King’s images were again published as a public service poster and his prevention project began to be known across the nation appearing on numerous news channels including \textit{NBC Nightly News} and \textit{Frontline}.\textsuperscript{111,112,114}

As part of furthering his prevention strategy, King went to middle schools and high schools around Oregon to present the physical damage of the drug and explain other effects methamphetamine can have on a user. King’s presentation originally contained 59 images and a PowerPoint CD that educated Oregon’s youth of the dangers of
methamphetamine in hopes to prevent drug use. Being interviewed after one of his presentations to a local high school, King (2006) stated:\textsuperscript{115,116}:

\textit{What I’ve observed when kids watch my program is they become pretty uncomfortable… People cover up their faces. They can’t look… They feel sick to their stomach. But I think the most visible thing is their facial expression or the verbal utterances they make and the gasps in the audience… I want that shock value to be there. I want to make an impact that lasts with these people. I want them to not forget what they’ve seen.}\textsuperscript{115,116}

The Multnomah County Sheriff’s Office continued methamphetamine prevention in Oregon by the release of \textit{From Drugs to Mugs} in 2009, a documentary that expanded King’s \textit{Faces of Meth} presentation to include interviews with inmates arrested for methamphetamine-related crimes and testimonies from people who work with meth users in the judicial system.\textsuperscript{116}

Oregon seemed to respond positively to Suo’s article, King’s images, and the \textit{From Drugs to Mugs} documentary. Many viewed the shocking and disturbing images as: “honest tactic that the damage to the body, the rapid degeneration-those are realities of the drug”.\textsuperscript{16,116} The influence that these efforts had on methamphetamine use in Oregon became widely recognized around the nation, prompting other states to take the same approach to decreasing meth use.

\textbf{The Montana Meth Project}

Methamphetamine was considered to be making a rebound after use had gradually declined beginning 2004. Production in Mexico was at a 5-year high, resulting in an increased accessibility of the drug in the US.\textsuperscript{117} Additionally, “Ma and Pop” labs began to increase prevalence across the US at this time, particularly in Oregon, Montana, Hawaii, and California. Due to the refined procedure and increased knowledge of street cooks,
methamphetamine was at its highest purity, lowest cost, and largest availability since early 2000s. Meth use in Montana became particularly detrimental to society at this time; the state consistently ranked second in the nation for teen and adult methamphetamine abuse. This shocking data led the state to increase prevention efforts and focus on decreasing meth use.

One of the most influential of these efforts was the *Montana Meth Project*, a non-profit organization founded by Thomas Siebel in February 2005. Since most users in Montana in 2005 reported to have tried meth for the first time between the ages of 12 and 17, the state decided to concentrate its efforts on teenagers. The purpose of the *Montana Meth Project* was to reduce meth use, alter social views of the drug, and increase meth-related knowledge, particularly among youth. Graphic depictions of the physical consequences of methamphetamine use were portrayed through TV, radio, print, and Internet advertising to infuse a shock factor among teens in hopes of persuading them to never try meth, hence the popular slogan “Not Even Once”.

At the time, the issue with methamphetamine was the misguided perception; teens saw some of the positive aspects of methamphetamine including weight loss, euphoria, low cost, easy access, and increased energy. Although these characteristics are typical, teens did not seem to understand the detrimental effects of methamphetamine use. The project sought to inform teenagers of the realities of the drug so that they could make more knowledgeable decisions. Some of the major goals of the project included:

- increase perceived risk
- decrease perceived benefit
- promote dialogue about drug between parents and teens
- stigmatize use as socially unacceptable
The first in-depth study of the methamphetamine perception and the anti-drug advertisements among teens occurred in 2005. The Montana survey found the following percentages:\(^1\):

- 67% reported that methamphetamine was readily available
- 44% saw a benefit in using methamphetamine
- 33% had been offered methamphetamine
- 25% saw little or no risk in using

Additional studies of focused groups led to four main insights about the teen methamphetamine perception\(^{1,120}\):

- The point at which kids decided whether/how to experiment with drugs occurred at 13.
- Teens did not like idea of addiction hence would avoid heroin because they perceived it as addictive.
- Teens believed meth was a party drug and did not have addictive qualities.
- Anti-drug campaigns would not be effective unless it “cut through the clutter” of images and messages that teens encountered everyday.

From this, the project created 15 television, 31 radio, 15 printed, and 9 Internet advertisements that conveyed the worst effects of methamphetamine use\(^{1,118,120}\). One source described the advertisements\(^1\):

(\textit{The ads were}) treated as ‘hard facts’ with intent to convey that methamphetamine is the most addictive illicit drug in world and one should fear using the drug because of its effect on them and those around them.

The advertisements are known to be graphic. One printed ad, shows a middle-aged woman sitting in her own pile of blood, beaten on the kitchen floor; the caption: “My mom knows I would never hurt her. Then she got in the way.”\(^{1,120}\)

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure18.png}
\caption{Printed Advertisement from the Montana Meth Project.\(^{140}\)}
\end{figure}
The project created different stages of the campaign so that when teens became desensitized to the advertisements, new images would be available to continue the fear of methamphetamine use. The earliest of the advertisements focused on the harmful physical effects meth use can have on an individual. The second stage shifted to highlight the impact use has on family members and friends. Later stages included physiological effects of meth use, meth users lifestyle, and the dangers associated with methamphetamine production, as shown in Figure 19.

Figure 19- Printed Advertisements from the Idaho Methamphetamine Project Portraying the Different Stages of the Campaign.

By September 2007, advertisements reached “70 to 90 percent of its target audience three to five times a week… and included 45,000 TV ads, 35,000 radio ads, 10,000 print impressions and 1,000 billboards statewide.” Additionally, over 80% of teens viewed a substantial danger in trying the drug even once; 88% of teens were familiar with the Montana Meth Project and recognized the
advertisements; and, in general, teens viewed methamphetamine as more
dangerous than heroin.\textsuperscript{1,118} The results of the advertisement from the project were
overwhelmingly positive.

The \textit{Montana Meth Project} extended its efforts with the release of a documentary
about teen meth users and their testimony to the lifestyle associated to meth use. Weasel,
a 22-year-old in the documentary, started using methamphetamine at age 11 and has
consistently used since. In Weasel’s eyes, it is an easy way to “get rich quick.” Despite
the money, Weasel has lived a difficult life down the road of destruction and has realized
the harsh reality of the addictive stimulant.\textsuperscript{117} While reflecting on his youth and realizing
the person he is today, Weasel admitted “If I remembered who gave it to me the first
time, I’d probably want to shoot them.”\textsuperscript{117} Diana, a 23-year-old, had only been using
meth for three years when she described her experience\textsuperscript{117}:

\textit{That first high is the only really good high you get, you never feel as
good as you did that first time... the rest of the time you use, you’re
just chasing that first high... you don’t think about how quickly
you’re going downhill... it makes you so unhappy that the only time
you’re happy is when you’re on it.}\textsuperscript{117}

Crystal, a 22-year-old user, described her 3-year methamphetamine binge\textsuperscript{117}:

\textit{The most consistent thing I’ve heard about meth is that meth is the
devil... I think about it, how I’d shoot myself in the head before I’d
ever touch that shit again in my life.}\textsuperscript{117}

Montana struggled with methamphetamine use since 2005, specifically
among the youth. However, as teen meth use continued to remain constant
throughout the country from 2005 to 2007, it declined by 45\% in Montana
because of the \textit{Montana Meth Project}. Additionally, in those two years, the
percent of Montana workers that tested positive for methamphetamine use
decreased by 72% and methamphetamine-related crime decline by 62%. The project’s overwhelming success has attracted the attention of enforcement agencies and drug policy officials across the nation. The Project is not solely in Montana, but has expanded to seven additional states by 2010 including Arizona, Colorado, Georgia, Hawaii, Idaho, Illinois, Montana and Wyoming.

A particular success of one of the expansion state is Hawaii. Hawaii has been significantly impacted by methamphetamine since the 1950s. According to the Bureau of Alcohol, Tobacco, Firearms, and Explosives, 71% of all drug cases in Hawaii are methamphetamine-related. Hawaii’s problem has prompted the state to follow Montana in efforts to educate youth of the dangers of meth in hopes to decrease further meth use.

The prevention campaign in Hawaii has been in affect since June 2009 and currently includes:

- 7,650 TV ads
- 17,050 Radio ads
- 4,850 outdoor advertisements
- 2,800,000 print impressions
- 110,309,655 online impressions

The impact the campaign has had on drug use in Hawaii has been more than positive. Teen and young adults have significantly altered their view of methamphetamine from a drug of mystery and energy to a drug of danger and severe destruction. The youth of Hawaii have recognized the “Hawaii Meth Project as a key source to information.” A 2011 Hawaii survey exposed just how much the project altered the perception of methamphetamine among Hawaii’s youth, results are shown in Figure 20.
In addition to the expansion of the Project to a number of other states, the *Montana Meth Project* has recently become the “model prevention program for the nation by the White House Office of National Drug Control Policy.”¹¹⁸,¹¹²⁰

The *Montana Meth Project* has resulted in nothing but success, officially decreasing the meth use throughout the state. The Project has continued its operations and remains to make a significant impact on methamphetamine use.

### Summary of the Media Portrayal of Methamphetamine

The media has been the most influential factor contributing to the current methamphetamine perspectives. The literary portrayal of US meth use has skewed the reality of prevalence through news article headings, proposed data, and personal stories of users. The visual portrayal has altered the profile of a typical methamphetamine user through prevention efforts such as *The Faces of Meth* and the *Montana Meth Project*. The truth about methamphetamine is devastating enough, there does not need to be a hyperbolic term such as...
“epidemic” applied to the drug. Methamphetamine use in the US is nothing but a misinformed reality that has lead to a moral panic.
Review of Literature

Summary of the Review of Literature

A drug referred to by over four hundred different names (including Ice, Crank, Crystal, Blizzard, and Meth) has recently swept the nation. Methamphetamine has a number of unique chemical characteristics that have caused an extensive appeal. The psychostimulant produces immediate effects including heightened mental activity, increased alertness, euphoria, and a lasting increase in energy. These effects are achieved through the drugs ability to cause a significant flow of dopamine, norepinephrine, and serotonin in the brain.

The methamphetamine high lasts substantially longer than other drugs because of the decreased metabolic rate and diminished reuptake of these three neurochemicals. The half-life of methamphetamine can range anywhere from nine to twelve hours, depending on the method of administration, whether it be oral ingestion, inhalation, insufflation, injection, or supposition. Past studies have shown that the euphoric sensation is proportional to the rate at which the drug concentration in the blood increases, making injection the most pleasurable form of administration.

Despite the positive effects of the drug, there is a significant burden on the Nervous, Circulatory, Renal, and Respiratory Systems during prolonged methamphetamine use that produces effects such as sleeplessness, anxiety, paranoia, aggressiveness, psychotic symptoms, and sudden mood changes. Additionally, methamphetamine is not solely a dangerous drug by use, but also by production. The vast spread of methamphetamine use is primarily due to the lack of skill
required to produce the drug through the three known cooking methods: the P2P method, the Nazi method, and the Red-P method. Currently, the chemical effects, production techniques, and social influence of methamphetamine are understood but addiction and treatment are not although, they continue to be a major focus of drug research.

Methamphetamine has made a lasting impact on our society, fading in and out of the drug culture, continuing the government’s worry about the degree of social destruction this drug can cause.

Methamphetamine was discovered in 1893 by a Japanese chemist named Nagai Nagayoshi and quickly became the spotlight of the American media. Although the “wonder drug” had no known medical purpose at the time, US pharmaceutical companies promoted its use. Nationwide use began in the early 1930s with the release of the Smith, Kline, and French Pharmaceutical Benzedrine Inhaler. Within three years, Benzedrine was suggested for the treatment of more than 30 different conditions.

American use continued through the early 1950s by a variety of users including soldiers, truck drivers, housewives, motorcycle gangs, and students. The peak of use occurred at the conclusion of World War II, when American consumption reached a rate of greater than 2 tablets per person per year. At this time, the media promoted methamphetamine as a “confidence drug” associated with sophistication and class thereby creating a new drug culture across the nation. Almost every segment of society was using amphetamines by 1952.

By the end of the ‘50s, the government began to notice the addictive culture emerging from methamphetamine use, specifically the “speed freak” culture extending along the West Coast. Efforts were made, and were somewhat successful, that decreased
the availability of prescription methamphetamine however, the decline was brief. The restriction of prescription methamphetamine prompted street chemists to discover a new production method that unintentionally increased the purity of the final product. As a result, methamphetamine use skyrocketed.

By 1971, President Nixon officially declared the US War on Drugs, which prompted the government to focus more on reducing drug use. Methamphetamine use fluctuated from 1970 to the early 2000s due to various restrictions of precursor chemicals. Some of the most influential pieces of legislation included the Drug Abuse Control Amendment of 1965, the Controlled Substance Act of 1970, the Anti-Drug Abuse Act of 1986, and the Comprehensive Methamphetamine Control Act of 1996. These acts dramatically altered the profile of methamphetamine users from the 1940s sophisticated user to the poor addict of the 1990s. The early 2000s saw a slight increase in methamphetamine use as it spread across America appealing to numerous segments of society, although the media portrayed otherwise.

Media efforts such as the Oregonian’s Faces of Meth and the Montana Meth Project have portrayed the typical methamphetamine user as a white, middle-aged female with teeth missing, scars covering her face, and sunken in eyes. Research has shown, however, that this addict profile is not as typical among meth users as the media has insisted.

There have been hidden users throughout the 1990s into the 2000s that stay out of the media’s spotlight by consuming only moderate doses for the energy, concentration, and weight loss effects. In addition to the exaggerated profile, the media has recently indicated that meth use has reached epidemic status. Analysts have hypothesized that the
increased use is because of the 2000s culture that is obsessed with caffeine and productivity. However, statistics from 2011 show that methamphetamine is one of the least used drugs in America. Methamphetamine began “being prescribed by the ton load” to being “the most dangerous drug in the world.” The dangerous effects of methamphetamine are undeniable nonetheless, the statistical analysis of meth use does not align with the epidemic proportions portrayed by the media.

The extensive research presented in the Review of Literature on methamphetamine has provided vital information that has led to some important questions. These questions need to be addressed in order to determine the current status of methamphetamine abuse. These questions include the following:

1. What are the initial factors that contributed to the growth of methamphetamine abuse in the US?
2. What factors promoted the growth of methamphetamine use in the US?
3. What segments of society became involved and why?
4. What efforts have been developed to address the methamphetamine problem?
5. Is the methamphetamine abuse phenomenon truly an epidemic in the US?
Analysis of Research Questions

Initial Factors that Contributed to the Growth of Methamphetamine Abuse in the US

Methamphetamine is a drug that has been a part of American history since the early 1920s. Although it took a few years, methamphetamine spread into all aspects of society and became one of the most used drugs in America by the mid-1930s. There have been many factors influencing this initial use of meth however, the main contributing factors include the effects of meth on the brain, the drug’s extended half-life, the easy accessibility, and the time period at which the drug was released to the public. These factors impelled society to develop an acceptance of amphetamine use, and even abuse, which led to a significant growth of use across the US.

Effects of Methamphetamine on the Brain

One of the primary factors that have influenced the initial use of methamphetamine in the US is the powerful effects the drug has on the brain. The two enantiomers of methamphetamine cause significantly different physical and mental effects however, both enantiomers have contributed to the popularity of meth. The dextrorotary enantiomer, d-methamphetamine, possesses the psychostimulant effects whereas the levorotary enantiomer, l-methamphetamine, is Central Nervous System inactive.⁶
Currently, illicit meth is typically sold as either d-methamphetamine or a racemic mixture because of the high potency of these two forms. However, l-methamphetamine still produces stimulating effects through specific routes of administration and large quantities of use. The drug was initially sold as l-methamphetamine but, in the 1930s, the dextrorotary enantiomer was synthesized and sold as the primary form of meth. Although the dextrorotary enantiomer is 2 to 4 times more stimulating than the levorotary enantiomer, both have contributed to the initial drug use due to the intense effects methamphetamine has on the brain.

**Extended Half-Life**

The half-life of methamphetamine is significantly longer than any other known drug today. This extended pleasure is produced by a combination of effects methamphetamine has on the brain; two of the primary effects being the overflow of neurotransmitters and the decrease of the chemical breakdown and reuptake. The release of dopamine, norepinephrine, and serotonin account for the instant pleasure felt when methamphetamine is administered. After which, the drug inhibits the ability of the brain to metabolize these neurotransmitters thus continuing activity in the brain for longer, extending the effects of the drug.

The extended half-life was significantly appealing specifically due to meth’s positive effects. The major effects discovered through the use of methamphetamine by society included increased energy, decreased appetite, increased metabolism, increased self-esteem, and an extended feeling of euphoria. The effect that attracted many users to methamphetamine initially was the increased euphoric sensation caused by the significant release of dopamine. As recent research has shown, methamphetamine releases 6 times
more dopamine than any natural experience and 3 times more dopamine than any other strong stimulant. The extended pleasurable sensation of this drug caused an instant popularity across the nation.

**Easy Accessibility**

The easy accessibility of methamphetamine in the 1920s contributed to the drug’s appeal and initial use. Amphetamines became the miracle drug in the 1920s, spreading throughout society without any known medical purpose. As the drug’s popularity grew, American chemists and pharmacologists became interested in the effects of these drugs. Specifically, an American chemist and pharmacologist, Gordon Alles, conducted various experiments with amphetamines.

By 1929, Alles discovered a number of effects including increased alertness, energy, concentration, and self-esteem. Additionally, Alles concluded that amphetamines could be used as a decongestant, a bronchodilator, and to treat or relieve symptoms of asthma, hay fever, narcolepsy, and depression. These findings prompted the American Medical Association to approve amphetamines for use and Smith, Kline, and French to release the Benzedrine Inhaler and tablets. Within three years, Benzedrine was recommended for the treatment of over 30 different conditions. Without a need for a written prescription and the lack of restrictions on the production, sales, and distribution made these drugs widely available. Additionally, there was no social stigma attached to amphetamine use so, society began to take advantage of the available drugs and positive effects.
The final contributing factor was the time period during which the drug was released to the public. At this time, America was in the beginning stages of the Great Depression. Society was looking for ways to ease the stress of life and economic misfortune. The typical solution was alcohol however, as the drugs became more available, society turned to amphetamines, specifically methamphetamine. It didn’t take long for users to discover that the nasal strip of the Benzedrine Inhaler could be removed and dunked in coffee to create a more pleasant, long lasting high. This discovery soon spread across the nation, which instantaneously increased popularity of recreational use. Medical uses of the drug began to be forgotten as society turned to these drugs for happiness.

Society maintained interest in the drug to the mid-1930s. The drug remained to be viewed as safe with a little to no rate of addiction. This national view was slightly tempered when an American psychiatrist, Dr. Charles Bradley, concluded from his experiments that there was a small rate of addiction with meth use. Dr. Bradley eased the public’s distress by proclaiming that the drug was only addictive to psychopaths. Despite these findings, methamphetamines social acceptance continued to increase.

By the time World War II began, methamphetamine was more popular than ever. Meth was used both in the war and in the states. In the war, the drug was used as an advantage for American soldiers and Allied forces. These “pep pill” were freely distributed in order to sustain energy, enhance performance, and maintain concentration on long flights. In the states, methamphetamine was used for weight control, depression,
and as an energy supplement. By the end of the war, methamphetamine use was prevalent throughout society.

**Summary of Initial Factors that Contributed to the Growth of Methamphetamine Abuse in the US**

Methamphetamine caused immediate intrigue throughout society. The drug culture at this time focused on substances that could help forget about the economic misfortune and later, celebrate the end of World War II. The easy accessibility of methamphetamine and the positive effects was the perfect combination to achieve the wants and needs of society. Methamphetamine was initially accepted by society however, the drug later became viewed as destructive. Although the social view was altered, meth use remained prevalent due to a number of contributing factors.
Analysis of Research Questions

Factors that Promoted the Continued Growth of Methamphetamine Use in the US

Methamphetamine has remained to have a strong influence on society even when drug cultures were altered. From the early 1930s culture of alcohol, to the 1960s culture centered on LSD and heroin, and even the 1980s cocaine focused drug culture, methamphetamine has been a significant part of each decade. This drug use has continued to grow because of methamphetamine’s easy production methods, the discovery of more intense routes of administration, the widespread appeal of its effects, the close relation of the market, and the availability of the Internet. These factors have promoted methamphetamine use throughout history and are reasons for why the drug is still prevalent in today’s drug culture.

Easy Production Methods

The easy production of methamphetamine has significantly promoted use throughout the US since the early 1960s. Methamphetamine production is unique to the illicit drug world. Unlike the complex procedure used to refine coca leaves into cocaine or opium into heroin, methamphetamine can be produced in the realm of one’s own home. The entire procedure can involve up to 32 different chemicals, most which are readily available at convenience stores, hardware stores, and grocery stores.
Individual production of meth did not begin until the early 1960s when the government enforced restrictions on the production of prescription amphetamines. Users throughout the US found a new method to maintain their habits. The first procedure utilized the chemical phenyl-2-propanone, along with a number of other toxic chemicals. This P2P method developed the methamphetamine drug culture. Although this is the most time consuming, complex, and demanding production method, it significantly increased meth use throughout the nation.\textsuperscript{10,23}

When P2P became a controlled substance in 1980, street chemists had to become more inventive. Within two years, the reduction methods were discovered that included the Red-P Method and the Nazi Method. These methods are based on the reduction of ephedrine and pseudoephedrine. The procedures are very simple, only relying on household ingredients, and yielding a product that is twice as potent as the P2P derived product.\textsuperscript{12} This discovery significant contributed to the increased meth use across the nation.

**Discovered Routes of Administration**

Methamphetamine can be administered via oral ingestion, inhalation, insufflation, or injection. Each route differs in the timing and intensity of the effects. These various routes of administration have directly contributed to the growth of methamphetamine use throughout the US. Initially, meth users relied on oral ingestion from the Benzedrine tablets and inhalers. Youth began injecting methamphetamine in the early 1950s as it was discovered that the medicated strips from the Benzedrine Inhalers could be soaked in water to create a liquid form of the drug and injected.\textsuperscript{5} The subjective pleasure is directly
proportional to the rate at which the drug concentration in the blood increases. \(^{30}\) Hence, injecting the drug produced significantly more intense effects.

The intensified pleasure became known throughout society causing an instant increase in meth use. At this time, youth also extracted the medicated strips and placed them in soda, gum, and hard candies to create a longer lasting high. Then, the drug culture in the 1960s shifted to smoking as the primary route of administration for any drug. This prompted users to begin smoking meth, which caused a rush similar to injection. The long lasting high yet again, caused an increase in the number of users across the nation.

By 1980, the popular route of administration turned to snorting. The crack epidemic prompted users to snort meth. Although this route of administration does not produce the rush like injecting or smoking meth, it does produce a longer, more intense euphoric high. The shift in the US drug cultures caused meth users to discover new routes of administration, which contributed to the continued use.

**Widespread Appeal**

Additionally, methamphetamine appealed to all aspects of society. After World War II, the prosperity of the nation caused an explosion in the sales of the Benzedrine Inhaler. The drug was portrayed as a “confidence drug”; the media advised society to “reach for a pill instead of a cocktail”. \(^{40,41}\) At this time, methamphetamine was free of any social stigma attached with its use; it was associated to upper class, sophistication, and independence.

Amphetamines were widely available; they could be purchased at places such as student unions, truck stops, and convenient markets. The effects of the drug appealed to
students, truck drivers, housewives, businessmen, and teens. By the 1960s, nearly everyone was taking some type of drug for various reasons. Methamphetamine binges began to be the new lifestyle developed for hardcore drug users. These chronic users would remain high for days, or even weeks, straight. The media began to portray methamphetamine as a horrible drug that only psychotic people used however; methamphetamine remained popular throughout subpopulations.

Close Relationships within Meth Market

As methamphetamine use remained, the market developed. The meth market is much different than any other drug market in the US. One of the most appealing features of the market is the close relationship of users and distributors. Meth labs are highly mobile and typically, users become producers and distributors because of the easy production methods.

Introduction of the Worldwide Web

Finally, the Internet has made a significant impact on methamphetamine use. The worldwide web has changed many aspects of society throughout the past two decades, but the meth culture has been one of the most influenced aspects. The Internet has allowed users to share recipes, effective methods of production, and tips of how and where to purchase chemicals. This has given users the ability to learn specific techniques of production and as a result, has increased potency of the final product. The free information and increased purity has contributed to the vast spread of use.
**Summary of the Factors that Promoted the Continued Growth of Methamphetamine Use in the US**

Methamphetamine use has fluctuated throughout history however, it has maintained a grip on many segments of society. This is primarily due to the different effects, production, and administrative routes of meth compared to other illicit drug used today. The easy production is unlike any other drug production and has significantly attracted new users. Segments of society that had never thought about using illicit substances have a specific weakness to methamphetamine and the effects it produces. This drug is unlike any other, which is why use has continued to remain prevalent.
Analysis of Research Questions

Segments of Society in the US that have Become Involved with Methamphetamine and Why

Methamphetamine is not a new drug. Since its initial presence in the US, meth has been used by a number of different segments of society. It is not a drug solely for chronic users chasing a high, nor is it solely used by Caucasian, blue-collar, males that have been portrayed by the media. Researchers have been surprised with the gender, age, and race that have a specific weakness to methamphetamine. Additionally, subpopulations of society that are not typical drug users have developed an interest to the drug. The spread across the nation to various segments of society has proven the widespread appeal and, as a result, the continued use of methamphetamine in the US.

Females

A variety of segments of society have become involved with methamphetamine throughout history. Prior to 2006, men 30 years and older were more than twice as likely to use meth than women.\(^4\) As the age dropped, the gender split became more even. A change in 2006 was reported when female use surpassed male use by a 55% female use and a 45% male use.\(^{10}\) This gender split is not substantial especially when compared to gender splits of other drug users. From this, it can be concluded that neither gendered seems to have a specific appeal to methamphetamine.
The increase of female users has sparked an intrigue in drug research. Studies have found that many women take methamphetamine in small doses throughout the day for reasons including weight loss, enhanced self-esteem, to cope with significant mood swings, and as an increase in energy.\textsuperscript{52} In order to maintain these effects of the drug, frequent, small doses are necessary. Hence, it does not seem that women users have a specific appeal to the intense euphoric feeling associated with methamphetamine use but to the other such effects of methamphetamine. Additionally, many women have reported having an underlying social pressures pertaining to their reasons for use.

**Teenagers and Young Adults**

With respect to age, there have been recent findings that methamphetamine is becoming a trend among young users. Researchers have concluded that almost half of users are under the age of 25 and a majority of them between the age of 18 and 25.\textsuperscript{10,68} Many analysts have hypothesized reasons for this increase among youth, one of them being that Ritalin and Adderall are used as a gateway drug leading users into small doses of methamphetamine, a much cheaper drug that produce the same effects. Although the media has recently portrayed an increase in young users, teens and college students have been using methamphetamine since the early 1930s. Young users found that removing Benzedrine strips could be chewed, swallowed, or dunked in their sodas to produce more intense effects. It is not surprising that methamphetamine has maintained a grip on young users.
American Indian and Alaska Natives

The public perception of a meth user is a Caucasian, middle-aged, blue-collar worker. In contrast to this popular view, the National Survey on Drug Use and Health (2005) reported that American Indian or Alaska Natives have the highest percentage users, followed by Hispanics, Caucasians, Asians, and African Americans. This finding of race among users has been consistent with various other reports. Thus, although Caucasians may have a specific weakness to methamphetamine, there are other races that have a significantly higher rate or use.

Users Not Portrayed by the Media

In addition to the typical gender, age, and race of methamphetamine users, there are subpopulations of society that use meth but are not known to much of society. These users are referred to as “hidden users.” As shown, methamphetamine is not a new drug and has been used in numerous historical situations. Air Force pilots used the drug during World War II; John F. Kennedy was injected with a small dose before debates against Nixon; and Pete Rose was taking small doses when he set a record of 4,256 hits in 1986.

Other hidden users include Adolph Hitler, Johnny Cash, students, businessmen, and, the most shocking segment, housewives. Housewives have always had a specific weakness to methamphetamine, specifically in the 1950s when there were unbearable social pressures on women. Women are faced with the same number of social pressures in today’s society, which is why meth use has maintained a grip on the housewives and soccer moms across the country.
The West Region of the US

Methamphetamine has slowly spread across the nation. Initially, use maintained in the Western region of the US, particularly in Hawaii, California, and Oregon. However, by the early 2000s, the government restricted ephedrine and pseudoephedrine sales in the US. Street cooks began to obtain these essential chemicals illegally from Mexico, which prompted methamphetamine use to move from the West Coast to the Deep South and the Midwest. Throughout the history of methamphetamine, use has not yet reached the Northeast region of the US in significant proportions but has affected every other region of the nation. Currently, the meth market holds a strong grip in the Western region but decreased as use began to spread across the country.

Summary of the Segments of Society in the US that have Become Involved with Methamphetamine and Why

The media deception of the typical meth user is significantly different than the national data. Much of the methamphetamine used in today’s society is not by the chronic users or blue-collar, white men. In contrast, methamphetamine is a drug used by the younger generation, with an almost equal gender split, and a spread across race. Hidden users account for a large portion of current methamphetamine as well. Soccer moms, businessmen, homosexuals, truck drivers, and students have developed a specific weakness to this drug. Various segments of society have and still use this drug for reasons other than getting high.
Analysis of Research Questions

Efforts that have been Developed to Address the Methamphetamine Problem in the US

Drug use has always been a problem in the US, which has prompted the government to maintain focus on prevention efforts. Throughout history, the government has passed various acts and amendments in hopes to reduce methamphetamine use and production in the US. The most significant efforts have included the Food, Drug, and Cosmetic Act, the Drug Abuse Control Amendments, the Comprehensive Drug Abuse Prevention and Control Act, the Anti-Drug Abuse Act, and the Comprehensive Methamphetamine Control Act. Additionally, the government has recently encouraged research in the treatment of methamphetamine, both physically and psychologically. A few of these prevention efforts have been successful and other have not made an impact however, it is important to understand these prevention strategies in order to develop efforts for future prevention of methamphetamine use.

Food, Drug, and Cosmetic Act of 1930

There have been many developed strategies the government has enforced in hopes to prevent methamphetamine produce, use, and spread across the nation. The earliest these is the Food, Drug, and Cosmetic Act of 1930. Congress passed this Act which gave authority to the FDA to administer the safety of food, drugs, and cosmetics, to enforce the laws and restrictions, and to either grant or deny permission to manufacture and distribute
different drugs. Although this Act required drugs to be approved safe before being released to the public, they did not require the drugs to be proven effective. The main goal of this Act was to protect the health and safety of the public, rather than actually decreasing methamphetamine use.

**Kefauver Harris Amendments of 1962**

When drug use was beginning to get out of hand in the 1960s, Congress passed an additional amendment to the Food, Drug, and Cosmetic Act. In 1962, the Kefauver Harris Amendment required manufacturers to provide proof of effectiveness and safety, advertisements to include accurate information about the side effects of the drug, and participants to provide informed consent to any human testing. This additional amendment slightly, and briefly, decreased methamphetamine abuse.

**Drug Abuse Control Amendments of 1965**

By the middle of the 1960s, the government began to dedicate all of its efforts to the War on Drugs. A CBS newsman, McMullen, showed the public the degree of drug availability in the US. When Congress found out about the easy availability, tighter controls and restrictions were immediately commanded. The Drug Abuse Control Amendments were quickly passed through congress in 1965. This amendment mainly required a license for the sales and distribution of any controlled substance. In contrast to what the government had hoped, controlled substances remained readily available and the number of drug users did not diminish.
Comprehensive Drug Abuse Prevention and Control Act of 1970

Drug abuse became to be the most important political topic by the end of the ‘60s. The government was not going to allow the decade of the 1970s to be a repeat of the 1960s drug culture. As a prevention method, Congress passed the Comprehensive Drug Abuse Prevention and Control Act in 1970. The main goal of the act was to cause a significant decline in the number of illicit drug users across the nation. The Act enforced regulations on manufacturing and distributing, established production quotas, and, most importantly, developed a classification of controlled substances.\textsuperscript{41,74} The classification of a controlled substance into one of the five-scheduled classes was determined by potential abuse and medicinal value.

The Act did not make as significant of an impact on drug use in the US as hoped because only a handful of rare injectable methamphetamine products were classified as Schedule II drugs, and the rest as Schedule III. This made a difference in results because the Schedule III drugs did not require manufacturing quotas or strict record keeping. Thus, these Schedule III drugs were just as easily available and legal as before the Act. This prompted the Bureau of Narcotics and Dangerous Drugs to reclassify all methamphetamine and amphetamine products as Schedule II drugs in mid-1971.\textsuperscript{41} This reclassification significantly decreased the number of users and popularity of production across the nation.

Combat Methamphetamine Epidemic Act of 2005

Congress passed an addition to this Act in 2005 when methamphetamine use was beginning to become a national problem. The Combat Methamphetamine Epidemic Act required a valid identification to purchase any medicine containing pseudoephedrine,
altered the regulations and production quotes of drugs containing ephedrine and pseudoephedrine, and restricted the amount of cold medicine an individual could purchase. The impact of this act was substantial. There was a significant drop in the number of clandestine labs from this addition, which directly caused a decrease in meth use.

**Anti-Drug Abuse Act of 1986**

In the midst of the crack epidemic and the start of another methamphetamine surge, Congress passed the Anti-Drug Abuse Act in 1986. The most influential piece of this bill was the mandatory minimum sentences for drug possession, production, and distribution. The Act distinguished between the types of drug, in some cases the form, and the amount in possession. There was not a significant enough impact of the mandatory minimum sentences on drug use for the government to consider it successful; hence, within two years, Congress passed an additional amendment that imposed mandatory sentences to anyone involved in any way with the production, distribution, or use of any illicit drug. This considerably increased the prison population and decreased methamphetamine use and production.

**Comprehensive Methamphetamine Control Act of 1996**

The final crucial act of prevention to meth use in the US was the Comprehensive Methamphetamine Control Act of 1996. President Clinton signed this act quickly in hope to halt the potential spread of methamphetamine. Specifically, the Act strengthened penalties for meth trafficking, distributing, and producing, and tightened controls on
precursor chemicals. It required that all cold medicines be sold in blister packs as a “safe harbor.” These requirements only provided a slight, brief decrease in use.

**Treatment Efforts**

Treatment has been a focused effort since the mid-1990s. The significant increase of meth use eventually led to an overflow of methamphetamine users entering treatment programs. The government focused on treatment to prevent relapse which could potentially increase use.

Current researchers have made considerable progress on aiding methamphetamine users in recovery. As described, methamphetamine alters the brain’s wiring from its natural state, which makes it extremely difficult to physically and psychologically overcome initial abstinence. Studies have shown that daily administration of two specific amino acids can help accelerate the brain’s recovery process and ease the withdrawal symptoms. Additionally, doctors are beginning to prescribe less harmful stimulants such as d-amphetamine, to break the psychological addiction.

**Summary of the Efforts that have been developed to Address the Methamphetamine Problem in the US**

There have been many efforts by the government that have specifically focused on eliminating meth use and production. Street chemists and users have found legal loopholes that have allowed them to maintain production, sales, and use. Recently, the government has enforced efforts that have significantly decreased use and production however, many researchers question whether use has decreased as a result of these efforts or as a result of the change in drug taste. Methamphetamine remains prevalent in today’s
society and the government has remained focus on eliminating use of methamphetamine, and various other illicit drugs.
Analysis of Research Questions

Epidemic Status of the Methamphetamine Abuse Phenomenon in the US

The history of the US can be defined by decades of drug panics. In the 1960s, social issues surrounded around heroin use; in the late 1970s, the biggest worry was PCP; the crack epidemic occurred throughout the 1980s; MDMA in the 1990s; and finally methamphetamine beginning in the early 2000s. National data aligned with the media claims of some of these drug decades, while others did not.

Moral panics have defined US history partially because determining the status of drug use across the nation is very complicated. It takes into account numerous factors including the definition of an epidemic, the literal portrayal of the drug, the true statistics of use, and the visual portrayal of the drug. All of these factors influence the social view of the drug and drug use as well as help determine whether drug use is of epidemic proportions or is just a moral panic caused by the media.

Definition of Epidemic

In order to conclude the epidemic status of methamphetamine in the US, the term of epidemic must be defined exactly. Originally, an epidemic referred to the quick spread of an infectious disease that exceeded expectations.\textsuperscript{92} However, the qualifications of an epidemic have become more complicated when the term began to be used for drug use as well as diseases. Many researchers have recently had trouble deciphering between an
epidemic and an outbreak. The epidemic proportion of methamphetamine use will be
determined by comparing national use of other illicit and abused drugs such as heroin,
cocaine, prescription drugs, etc.

National data does not align with the media portrayal of methamphetamine use
across the nation. This makes researchers believe that meth use has not reached
significant proportions but instead, is solely a moral panic that is based on the continued
exaggeration of fallacies. Mark Kleiman (2005) was one of many researchers that have
encouraged skepticism of the media, specifically when being informed of
methamphetamine use.\textsuperscript{102,103} Some facts regarding meth such as its instantaneous
addiction, significant tolerance, and deteriorating effects are significantly exaggerated.
What society needs to keep in mind when being exposed to the media’s description of
meth are that no drug is instantaneously addictive and no drug is addictive for everyone.

\textbf{Methamphetamine Myths}

There are other data myths surrounding methamphetamine that have created a
negative opinion of users. One of these myths is the ongoing statistic of the
environmental damage caused by meth production. News reports that for each pound of
meth produced, 5-6 pounds of hazardous waste is generated. Based on these numbers and
the number of labs seized in 2004, there was 12,675 pounds of toxic waste in that
year.\textsuperscript{10,24} Although this may be true, the livestock industry produces 2.7 billion tons of
toxic waste each year.\textsuperscript{10,24} Hence, the media has influenced the social view of
methamphetamine by stating this fact without any realm of comparison.

Additionally, many sources report that currently 1.5 million people have admitted
to using methamphetamine at least once within the past year.\textsuperscript{15,48} The problem with this
fact is that the surveys that have concluded this number did not distinguish between prescribed methamphetamine and illicit methamphetamine, or between small dose users and chronic users. The survey’s that did decipher between medicinal and illicit use reported much smaller numbers of illegal methamphetamine use in America.

**Media Deception**

The media can portray methamphetamine as “the most dangerous drug in the world” that is “sweeping across the US like a prairie fire, spreading and destroying everything in sight” but the reality of drug use is quite different. In 2011, methamphetamine was one of the least used drugs in America, with less than 0.2% of the population reported using meth. In comparison, that same year, 0.6% reported using hallucinogens, 0.5% cocaine, and 7.0% marijuana.\(^{100}\) Meth is a very toxic and can be an extremely dangerous drug however, it may not be the horrific epidemic that the media has depicted.

In addition to the literal deception of methamphetamine, the media has profiled a meth user through prevention programs such as the *Oregonian’s Faces of Meth* and the *Montana Meth Project*. These projects have been used as prevention methods focused on displaying the negative physical and psychological effects of meth use. Some of the pictures include extreme cases of formication, meth mouth, weight loss, and deterioration of the face. Although these projects have succeed in declining methamphetamine use, they have stereotyped meth users and associated a social stigma to the drug.
Summary of the Epidemic Status of the Methamphetamine Abuse Phenomenon in the US

By the comparison of methamphetamine use with other illicit drug use, it does not seem that methamphetamine is the savaging beast the media has portrayed throughout the past two decades. Literal and visual deceptions of meth users have caused a stigmatized view of the drug that has associated meth use with destruction. As a result, society has found itself in a moral panic of a drug that is rarely used throughout the nation. The media has, yet again, exaggerated methamphetamine use in hopes to diminish and prevent use. Although methamphetamine is not a good drug and can cause significant harm, it has shown not to be as popular and destructive as much of society believes it to be.
Conclusion

The Ignorant Perspective of the Methamphetamine Abuse Phenomena in the US

Methamphetamine has been a major subject to news station for the past two decades. The amount of media coverage this drug use has received has stirred society into a panic; one that has amounted to quick reactions by the government and media influenced perspectives. In contrast to the recent portrayal, methamphetamine remains to be one of the least used drugs in America. Today’s society has been misinformed of methamphetamine and the history it has made for itself in the US. Methamphetamine is used today however, research has found a significant difference between the reality of use and the social perspective of methamphetamine.

Despite popular belief, methamphetamine has been used in the US since the 1920s. The initial use of this drug is not widely known however, it has made a significant impact on the prevention methods by the government. Methamphetamine was very popular throughout the 1930s into the 1950s. The drug’s positive effects attracted all aspects of society, it remained socially acceptable, and there was relatively no stigma attached to use. Due to the lack of negative view, the media promoted the use of methamphetamine for various purposes such as a weight loss supplement, a self-esteem enhancer, a treatment for a number of conditions, an advantage in war, and an energy supplement.
In the late 1940s, methamphetamine began to have a significant attraction to the younger population who, at this time, were obsessed with being real, independent, and authentic. Youth began to experiment with methamphetamine by placing strips from the freely available Benzedrine Inhalers into soda, gum, candy, and coffee. As the youth became more attached to the drug, the government became more aware of the methamphetamine problem that was arising. History shows that a drug panic typically follows the cultural alarm caused from an increase in use by a vulnerable population. In many cases, it is the youth. The history of methamphetamine is not any different. In 1954, the government began its first crackdown on methamphetamine by requiring a physician prescription for access to any amphetamine or methamphetamine.

Even though the government began efforts to reduce amphetamine use, society was still without any negative connotations towards the drug. This attitude continued into the ‘60s, when drugs became the social outlet. At this time, doctors would willingly prescribe methamphetamine for any condition or even make up conditions to prescribe the drug. Methamphetamine was as available as before the government’s prevention efforts. However, as a new drug culture developed, the social perspective of methamphetamine use began to shift.

In California during the mid-‘60s, physicians were prescribing injectable ampoules of methamphetamine to treat heroin addicts from earlier in the decade. This new route of administration flooded the illegal market and caused a violent change in the drug culture. Addicts began to use methamphetamine for a long lasting, intense high rather than a daily energy boost or weight loss supplement. As the high lasted longer, the user became angry, irritated, and violent.
Methamphetamine began to be viewed as a destructive drug under this new “speed freak” culture that was portrayed throughout the media. Newspapers around the nation were filled with stories of violent crimes and psychotic episodes of individuals who had maintained a speed run for six days. The social acceptance of methamphetamine use was immediately altered and the reality of the effects of methamphetamine was put into perspective for the nation.

From then on, the social view of methamphetamine remained negative. The national lexicon “speed kill” was known around the nation and meth use became associated with crazed addicts who stayed high for days straight. As time progressed, there was a constant cycle of meth use: the government would pass an act in hopes to prevent use; a brief and slight national decrease in methamphetamine use would follow; street chemists would discover a new technique that worked around the new laws; and, yet again, national meth use would increase.

As like any other drug, this cycle caused a constant fluctuation in the number of methamphetamine users nationwide. Society began to see a significant increase in the number of users at the beginning of the 2000s. This was due to a number of different factors including the new production techniques, the appeal of effects to the new culture, the accessibility of precursor chemicals, and the access to new production techniques on the Internet.

Street chemists consistently had to alter their production methods in order to apply to the government restrictions on precursor chemicals. Since the first clandestine lab in the 1970s, methamphetamine production methods have become significantly simpler. An unskilled individual who has no chemistry background can easily follow the
current method of production. This has caused methamphetamine to be readily available to any individual who has a desire to try the drug.

Additionally, the culture of the 2000s became obsessed with productivity, appearance, and social status. Individuals have become addicted to guzzling coffee, crash diets, and climbing their way up the social ladder. Although these ideals are not new to our nation, they have become extreme. This has caused college students, housewives, and businessmen to become attracted to methamphetamine as they had in the ‘50s. College students “need” to have a 4.0 GPA in order to compete in the real world, which entails all-nighters at the library and weekend filled extra-curricular activities; housewives are pressured to stay thin, raise perfect children, maintain a clean house, be the perfect wife, and have a successful career; and businessmen have substantially extended the hours spent at the office in order to complete their day-to-day tasks. The daily social pressures an individual faces have caused many to turn to drug use in order to maintain the life they long to have.

After 2006, however, nationwide methamphetamine use significantly decreased. Less than 2% of the population used methamphetamine and less than 1% of the reported amphetamine users could be considered “abusers”. In contrast to these statistics and the varying characteristics of users, the media has portrayed methamphetamine in the opposite manner.

The media has referred to methamphetamine use as an “epidemic”; a drug that is spreading across the nation destroying everything it comes into contact with; even the most dangerous drug in the world. Visually, the media has caused a nationwide perception that a meth user has divots in their skin, no teeth, poor hygiene, and is
constantly high. These users have been profiled through prevention strategies such as the *Oregonian’s Faces of Meth* and the *Montana Meth Project*. Although there are stories of these individuals that are unfortunately true, the majority of methamphetamine users are not the faces portrayed in the media.

Methamphetamine remains to be one of the least used drugs in America however, it is being depicted as an epidemic. Solely defining drug use as an epidemic associates an immense amount of stigma due to the originally meaning of the word. From applying epidemic to methamphetamine use, a sense of fear has been formed within society, which has resulted in a nationwide moral panic. As with past drug panics, the government tends to use the media influence and epidemic stigma as a prevention method. Some studies have found this method to be successful in decreasing the number of users while others have concluded that use decreased solely because the drug taste changed. Either way, this type of prevention method misinforms the nation.

The exaggeration, misguidance, and false portrayal by the media have not influenced nationwide methamphetamine use. Instead, it has deceived the nation and thereby has caused an ignorant perspective of meth and its users. The media has deliberately skewed the nationwide view of methamphetamine use in order for the good of society. From the above research and thorough findings, the final question is whether or not it is moral for the media to exaggerate drug use, alter the profile of drug users, and amplify the harmful effects of a drug for the good of society?

There is no doubt that methamphetamine use has spread across the nation within the past two decades, but, the number of users has remained significantly low, especially in comparison to other drugs. Methamphetamine is a dangerous drug and should not be
reckoned with, however, it is not the drug that has been recently portrayed by the media. The ignorant perspective that the media has created needs to be addressed and the reality of methamphetamine needs to be explained so that society can know the truth behind this drug “epidemic”.

Further Questions

The above research has prompt questions recommended for further studies:

1- How does the methamphetamine abuse phenomenon differ from the crack epidemic?
2- How does one define epidemic with respect to drug use?
3- What prevention efforts will the media and government use to diminish prescription drug use?
4- How successful has the government’s efforts been at diminishing specific drug use in the US?


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