**DRUG OVERDOSE**

**PREVENTION VS. TREATMENT**

by

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The purpose of this research is to identify the effectiveness of drug overdose prevention in comparison to drug addiction treatment programs. Drug addiction is a brain disease, and treating it requires the incorporation of several components. Addiction is a condition of public health significance due to its effects on society. The first phase involves a qualitative research project carried out by the Allegheny County Overdose Prevention Coalition (ACOPC). This project attempted to involve police as stakeholders in a drug prevention effort. The second phase involves research on drug addiction treatment and the theories behind the various approaches. The findings will show how drug overdose prevention can help to alleviate some of the financial burden of treatment programs, and help people to have a better quality of life. School-based substance abuse prevention programming that effectively addresses substance abuse appears to be an excellent investment and is likely to pay for itself in resource cost savings alone. Taken as a whole, the benefits of substance abuse prevention well outweigh the costs of providing the service of treatment.

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 preface

I would like to thank the Allegheny County Overdose Prevention Coalition for allowing me to work with their agency. I have developed valuable skills from working on this project that I will carry with me throughout my career in the public health field.

# Introduction

This essay aims to discuss the positive and negative aspects to the prevention and treatment of drug overdosing. The plan is to use qualitative data that has been collected, in conjunction with other studies, to show the effectiveness of overdose prevention in comparison to treatment programs. Drug overdose prevention can help to alleviate some of this financial burden of treatment programs, and help people to have a better quality of life.

**1.1 BACKGROUND ON DRUG OVERDOSING**

The United States is experiencing an epidemic of drug overdoses. Over 27,000 people died from overdoses in 2007, a number that has risen five-fold since 1990 and has never been higher (Paulozzi 2011). The numbers of unintentional deaths due to drug overdose has been on the rise since the 1990s and is the second-leading cause of accidental deaths (Okie 2010). In the past, most overdoses were due to illegal narcotics, such as heroin, with most deaths in big cities. Prescription painkillers have now surpassed heroin and cocaine, however, as the leading cause of fatal overdoses (Szabo 2009). [The CDC reports in Science Daily](http://www.sciencedaily.com/releases/2011/04/110425173904.htm) one in five high school students in the U.S. have abused prescription drugs, which are most commonly "opioid painkillers OxyContin, Percocet and Vicodin. Opioids are synthetic versions of opium that are used to treat

moderate and severe pain." There were 27,658 deaths from drug overdose in the US in 2007, and almost half were due to opioid overdose.

Experts say it's easy to see why so many Americans are abusing painkillers. As Americans age and carry extra pounds, more are asking for pain relief to cope with joint problems, back pain and other ailments. There has been a huge increase in the number of patients seeking care for chronic pain. Many doctors say that preventing abuse requires a national effort.

Although 39 states have electronic databases to track narcotics prescriptions, none share that information fully with other states. So patients who get narcotics in one state may be able to cross the state line to get more. A nationwide system of electronic medical records also would help, because doctors in different hospitals and clinics would easily be able to measure how many narcotics doses a patient has had. Experts say there are many reasons why the public, and even doctors, don't realize the seriousness of the problem. Unlike crack, prescription painkillers generally aren't associated with increased street crime or violence. Also, many people underestimate how lethal painkillers can be, assuming that anything prescribed by a doctor must be safe.

## INtroducing ACOPC

The Allegheny County Overdose Prevention Coalition (ACOPC) is an independent collaboration between concerned organizations and individuals to reduce overdose deaths in Allegheny County. ACOPC implements prevention, intervention, and treatment strategies that target individuals at varying levels of overdose risk in a variety of locations and settings. The broad category of “drug overdose” encompasses both prescription and illegal drugs. ACOPC has initiated many projects to address the issue of drug overdose within Allegheny County.

An identified ACOPC goal is to involve Allegheny County police departments as stakeholders in addressing the overdose epidemic. In 2010, ACOPC interviewed police departments on their views about overdose. The aim of this study was to address various questions regarding overdose with the participating departments. The goal was to see how police officers feel about the topic in order to develop strategies to involve them as stakeholders.

**2.0 OVERDOSE PREVENTION**

Prescription drug abuse is a growing concern among the public and state legislators alike. With the increasing number of painkillers and other medically necessary products on the market, the likelihood of a person, particularly the youth or seniors, to accidentally overdose or abuse products have been rising. According to research from the [Centers for Disease Control and Prevention](http://www.cdc.gov/vitalsigns/MethadoneOverdoses/index.html), more than 30 percent of prescription painkiller deaths involve methadone, even though only two percent of painkiller prescriptions are for this drug. Many states are looking to reduce prescription drug abuse, overdose and misuse, and have enacted different types of legislation to address this increasingly important public health issue.

## 2.1 ACOPC research project

The aim of this study was to address various questions regarding overdose with the participating departments. The goal was to see how police officers feel about the topic in order to develop strategies to involve them as stakeholders.

The following questions were addressed during the interviews:

* What is the role of a police officer in an overdose situation?
* Is overdose a public health or public safety issue?
* What is the profile of a user?
* Does an arrest take place at the scene of an overdose?
* What is the role of police in overdose prevention?
* What are some ideas for overdose prevention?
* Do you know of any overdose prevention programs in Allegheny County?
* What are your thoughts on rehabilitation or drug treatment centers?
* What are your thoughts concerning police training on overdose issues?
* What types of drugs are people overdosing on?

**Sample**

A sample of eight police departments was invited to take part in this study. From those departments there were then a number of officers that volunteered to participate in the interview process. It was felt that these departments should be able to supply varied and detailed accounts for the purpose of this study. Also, the eight departments should be a good representation of various police forces within Allegheny County.

**Data collection method**

The original ACOPC research project occurred through interviews with police officers in various departments. The departments were interviewed separately. Each participating police department was asked a standard set of questions in a face-to-face communication format. Through these conversations, qualitative data was collected as specific questions were answered. The researcher assured the respondents that they would remain anonymous in any subsequent report. The interviews were then transcribed.

While evaluating the interviews, grounded theory emerged as a basis for addressing police involvement in the overdose issue. Grounded Theory is most accurately described as a research method in which the theory is developed from the data, rather than the other way around. That makes this is an inductive approach, meaning that it moves from the specific to the more general (Patton 1990). The grounded theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon. The primary objective of grounded theory, then, is to expand upon an explanation of a phenomenon by identifying the key elements of that phenomenon, and then categorizing the relationships of those elements to the context and process of the experiment (Bogdan 1982). In other words, the goal is to go from the general to the specific without losing sight of what makes the subject of a study unique.

**Data analysis methods**

The author then read the transcribed interviews and identified certain patterns in police officer answers. All of the interview transcripts were coded in the style of a grounded theory approach to data analysis. To code the written interviews, the author then used various colors to correspond with the identified topics, which made it easier to compile information.

Nine category headings were generated from the data and under these all of the data were accounted for. After consultation and discussion with an agency preceptor from ACOPC, some modifications were made to it. Four broader category headings were developed to encompass the previous nine. Theoretical sampling took place as theories were developed in regards to the questions.

**2.2 FINDINGS FROM ACOPC RESEARCH PROJECT**

Officers shared similar views concerning overdose, but, of course, there were also outlying responses. After reading the common and outlying responses, the graduate student researcher developed a theory of how police perceived drug users and treatment options. It was found that police believe users cannot be helped until they want to help themselves. Also, a widespread thought is that treatment centers are ineffective and the focus should be on prevention, rather than treatment. In addition, police are unaware of any drug prevention programs within Allegheny County, besides DARE; demonstrating that there is a gap in information and communication concerning prevention and treatment programs. So, even if overdose victims want help, the police do not know where to send them. The following are the four broad categories that were developed from the interviews:

***1. What do police perceive as the current situation/problem?***

When considering if an overdose is a public safety or public health concern, the overall consensus seemed to be that it was both. PB Officer stated, “drug addiction is a disease in addition to a crime.” R officer then stated, “ definitely a public safety issue if they wreck because they are stoned.” PB officer said that it is a public health issue because “drug addiction is something that is a disease.”

The departments were asked to describe the profile of a drug user, and many answers emerged. P Officer stated “I don’t think you could box up one prototype for one person that is going to overdose.” C Officer stated, “drugs are equal opportunity, they will destroy your life. Some addicts are the nicest people I know.” Some said that they were uneducated and often times repeat offenders. Others mentioned the fact that they are great liars.

At this time in Allegheny County it seems that more whites are overdosing than blacks. R Officer says, “Most of then are white.” Many drug users hang in a certain circle of friends; therefore they share needles and spread disease. Also, there may be physical signs that a person is using. C Officer states that “they’re young and think nothing’s gonna happen, they think they’re invincible.” This statement leads us to believe that young users have no reason to look toward the future, they may need some motivation to have a better lifestyle.

The officers were then asked what specific drugs overdose victims were using. Prescription drug use is becoming a huge problem is Allegheny County. PH Officer said it is common for kids to get a “sports related injury and get hooked on pain killers. Then they take them and sell them to their friends.” Prescription drug use often leads to heroin use. For example, if someone’s health insurance is cut and they can’t get prescription medication anymore, they will turn to heroin. P Officer stated, “heroin is a cheap high, that’s why it’s so popular.” R Officer says, “overdosing is 95 percent heroin.”

***2. What happens to people who use?***

When asked about the perceived police role in an overdose situation, almost all officers stated that in this situation they are always concerned for the safety of fellow officers. MO Officer stated that he “is concerned about his safety and that of his partner.” C Officer also states, “concern with his own safety and the safety of others around.” They also provide first responder care to the overdose victim and assist the Emergency Medical Service when they arrive on the scene. Many officers also mentioned that they conduct an investigation, and PB Officer stated that they’re “called in as investigators to determine if it’s criminal or homicide.” MO officer also said they have to “conduct an investigation to determine if the overdose was the result of the criminal actions of another person.” Another thing that was mentioned was that officers usually end up calming down family and friends of the victim while at the scene. These people are usually very shaken up and need assistance. While on the other hand a PH Officer said “my give a damn got busted when a guy my age was overdosing and dying on his mother’s couch.”

Concerning various procedural issues the police departments voiced that you cannot arrest a victim unless the drugs are in plain sight. You also cannot arrest someone for something that is in his or her system. One officer said that parents are unhappy because laws are preventing treatment centers to share information with them concerning their children’s status. Then another officer stated that the judges should receive more information about treatment options because they ultimately make the final decision for the victims. This leads us to believe that eventually policy changes will need to be made in order to combat this issue.

Overall the police throughout the departments seem to think that rehab centers have become “moneymakers” and are now a “revolving door.” They are a joke because we need to focus on prevention. H Officer says that “ the biggest time for an overdose is when they have been clean for a short period of time and they go back and try to use that amount that they used before.” One officer talked about users gaining more connections while in rehab, which actually enables them. P Officer stated “they are enabling people, it’s like showing a thief how to do something without getting caught.” R Officer also stated, “if you have a problem going in, you just get more connections. They have a new way to go and a new person to see so they don’t have to go through our town.” Another thought that emerges was that a longer detox is needed prior to treatment, and rehab programs are too short.

***3. Prevention***

One idea that came up was that police need to catch the users before they actually buy the drugs. Also, perhaps arresting the dealers would cut down on drug sales and use. PH Officer suggested, “arresting the suppliers.” To go along with that PB officer said that they “are interested in those that sell drugs. My frustration is with that person who is selling and they are the root of the cancer.” MR Officer feels that “there is no room in jail for users, we’re just hoping to get the people who sell drugs.”

Education seemed to be a common theme here. One officer suggested educating children at a young age, before they are exposed to drugs. Another voiced that educating parents is a huge part of this, because they play a huge role in the lives of their children. H Officer knows that “parents are afraid to call police, they don’t want to get their kids in trouble. However, family members have to be on board.” Yet another officer stated that early intervention is the best method. Finally, an officer suggested telling true stories and showing pictures to kids of what can actually happen when you use drugs. This is to combat the fact that kids believe they are invincible.

The DARE program is being taught in schools, but the officers are not aware of any other programs within Allegheny County. C Officer says, “prevention is great if you can get to them. Most programs stop before 5th grade.” MR Officer says, “I don’t know of anything that works. Addicted that’s it, they’re done, they’re lost.” This leads us to believe that more prevention programs are needed so that addiction can be prevented rather than treated.

***4. The Need for Training***

Most of the departments feel that a formal training would help them. Funding is an issue for the departments; there just is not enough money to pay for it. There are issues with manpower that may prevent everyone attending a training together. Also, they feel that there are many duties on their plate and adding this may be too much. C Officer said, “they have a lot to learn, now you want us to do all of this. We’re busy and there is not much we can do anyway.” PH Officer says, “ to bring success stories so that they can see how it works.”

The outlying responses in the interviews also shed light on some existing concerns. Many officers are frustrated and fed up with overdosing. PH Officer is “sick and tired of the bullshit.” It has been said that users must want to help themselves before any intervention will work. C Officer stated, “every life is worth saving, it’s up to that person to save themselves.” They must also surround themselves with positive people and have ongoing support in order to recover. It seems that the probation systems in Pennsylvania are failing, and there are many users slipping through the cracks. The general public is unaware that overdosing is a problem because it is not often reported on the news. H Officer says, “KDKA is not going to broadcast about an overdose.” Overdoses are either accidental or suicidal attempts, and they are seeing more non-lethal overdoses than they are lethal. Doctors are also contributing to overdoses by prescribing more prescription medications. The officers feel that they are being prescribed way too easily. R Officer says “my thing would be to get doctors to stop prescribing oxycodone for headaches, that seems to be a big problem. There are a lot of doctors who will write you a script over the phone-my doctor does it.” There is also a disconnect among agencies. R Officer says “ I am seeing a huge disconnect between the work police are doing on one end, and the human services and drug courts on the other hand.”

## 2.3 conclusions based on findings

The actions that need to be taken are based off of what was learned in the police department interviews and the grounded theories developed from these responses.

**Training**

The police departments should be individually trained on overdose issues. Each year in Allegheny County, more people die of drug overdose than die in traffic accidents and homicides, combined. Some related departmental concerns include funding and manpower, but ACOPC services or grant funding may address these issues. Those in charge of training would state the goals and purpose of ACOPC and their police training, describe the prevalence of overdose in Allegheny County, and identify the rational for including the training in their daily job activities. The purpose of the training would be to implement prevention, intervention and treatment strategies, which target individuals at varying levels of overdose risk in a variety of locations and settings.

**Resource Connections**

Various community resources are available in Allegheny County relating to drug overdose prevention and treatment. These resources need to be utilized by police departments. A list has been complied as a reference for police departments. Included in this list are resources such as the Safe Landing project, Resolve Crisis Network, the Center for Spirituality and 12-step, Gateway Rehab and Prevention Point Pittsburgh to name a few.

**ACOPC Membership and Participation**

Involving police in ACOPC is essential. There will be a joint action to address drug overdose, but each stakeholder will bring their own beliefs and values to the table. The ACOPC will team with the police departments and the programs within the community that are already in place. While there will be overlapping interests, each group will have its own self-interest to contribute. People within the community look to police for guidance, so connecting with ACOPC members and resources are positive.

In addition, education of the police departments goes hand in hand with the training. They need to have the knowledge necessary to provide options for users and their families. ACOPC materials will be distributed to the departments to familiarize themselves with overdose issues. Brochures and pamphlets will also be given to the police so that they can give them to users and their families. When police are then asked at the scene of an overdose for information, it will be readily available from the work and material provided by ACOPC.

**Engaging the Community**

The police need to be engaging the communities in which they work. People within these areas need to be a part of the countywide effort to combat drug overdose. Having the police enter schools to teach students, parents and teachers about drug overdose prevention is a key aspect. The police departments stated that kids are more likely to listen when they are younger because this is prior to peer influence on substance use. Also, prevention is less costly than treatment. Going into schools and educating will possibly cost less than treatment programs. The police also need to work on engaging the general public in reporting overdoses or possible drug activity. Community members need to be the eyes in the community for the police. Some residents may feel that getting involved will put them at risk, but they can report incidences to the police and their name will never be reported or documented. The police have to make residents feel that they are open and will listen to report issues of concern. There must be a sense of trust between the community and the officers.

All of these actions are crucial to the issue of drug overdose. If these tasks are completed and the various trainings are implemented, drug overdose may decline in Allegheny County. Police officers have an enormous sense of self-efficacy. They want to succeed in their daily duties and do their best to serve the communities of Allegheny County. If the officers are striving to be competent, then they will do their absolute best to approach new goals, tasks, and challenges. In turn, the effect that this will have on the ACOPC will be outstanding.

## 3.0 OVERDOSE TREATMENT

Years of research have shown that addiction to any drug (illicit or prescribed) is a brain disease that can be treated effectively (Okie, 2010). Treatment must take into account the type of drug used and the needs of the individual. According to the National Institute on Drug Abuse, successful treatment may need to incorporate several components, including detoxification, counseling, and sometimes the use of addiction medications. Multiple courses of treatment may be needed for the patient to make a full recovery. The two main categories of drug addiction treatment are behavioral and pharmacological. Behavioral treatments help patients stop drug use by teaching them strategies to function without drugs, deal with cravings, avoid drugs and situations that could lead to drug use, and handle a relapse should it occur. When delivered effectively, behavioral treatments, such as individual counseling, group or family counseling, contingency management, and cognitive behavioral therapies, also can help patients improve their personal relationships and their ability to function at work and in the community. Some addictions, such as opioid addiction, can be treated with medications. These pharmacological treatments counter the effects of the drug on the brain and behavior, and can be used to relieve withdrawal symptoms, help overcome drug cravings, or treat an overdose. Although a behavioral or pharmacological approach alone may be sufficient for treating some patients, research shows that a combined approach may be best (SAMHSA, 2010).

**3.1 TREATMENT PROGRAMS**

Many options are currently available for those seeking treatment. Research has shown that treatment programs work with patients who are future oriented, have a positive motivation to change, and are at a stage in their addiction when preparation for change is achieved (DeLeon, 1986). The following information is based on actual treatment programs that have been previously implemented and studies that transpired from them.

**SNAP Program**

The SNAP program was based on the theory that the heroin addict (once detoxification is completed) will be assisted in ending his or her heroin addiction if medication was provided that blocked the effects of the heroin. The heroin-blocking medication provided was naltrexone. Naltrexone is an orally administered medication, which prevents the uptake and effects of opioid compounds. Thus, when taking this medication, any person who uses heroin by any route will not experience any effects whatsoever. The naltrexone protocol was used in conjunction with intensive outpatient therapy and therapeutic case management services. The general focus of the SNAP treatment was on client stabilization, maintenance of a drug-free and crime-free lifestyle, a recovery-oriented support net- work, and relapse prevention education. The SNAP program

was designed to provide a four-phase treatment strategy for heroin addicts over a 12-to-18-month period.

Between October 7, 1993, and July 22, 1998, the SNAP pro- gram provided 73 participants naltrexone as part of their treatment for heroin addiction. Data was collected from the case files of all 73 participants, which included basic demographic information (age, gender, race), employment status, history of drug abuse, and drug use after the first ingestion of naltrexone. The majority of SNAP participants were single-male African- Americans. The median age of SNAP participants was 31 years old. Almost all of the participants had prior drug histories. Themajority, 81%, began drug use before the age of 18. The main two introduction drugs were alcohol and marijuana. More than 70% of SNAP participants used at least one of these drugs as the first drug in their drug use histories. The median age for first drug use was 15, and 14 years old was the mode.

 **BOP Substance Abuse Treatment Program**

 Treatment approach, structure, content were the targets of the federal Bureau of Prison’s (BOP's) efforts to standardize its substance abuse treatment programs. The BOP's first three residential substance abuse treatment programs used the relapse prevention approach as a core element of its cognitive- behavioral treatment model (Marlatt & Gordon, 1985). These programs implemented a 1,000- hour, 12-month duration protocol. The treatment programs subsequently implemented the same treatment approach, but with a 500-hour, 9-month protocol.

 The total sample included 1,343 individuals – 1,065 men and 278 women – who were included in the multi-site substance abuse treatment evaluation. Men and women were modeled separately because not only were the original outcome analyses conducted separately because of the lower recidivism and post-release drug use rates of women (Rhodes et al., 2001), but also because previous research suggests that the process of recovery may differ between men and women (Messina, Wish, & Nemes, 2000; Pelissier et al., 2003). The separate models ensure that gender differences would not be confounded with other program differences. These individuals were from 2 programs and were substance abuse treatment participants between 1990 and 1995. Most of these individuals were within one year of release from BOP custody when they completed the program. The follow-up period was 36 months after release from prison.

**3.2 FINDINGS FROM TREATMENT RESEARCH**

A considerable amount of factors can play into drug treatment success or failure. In looking at the above treatment programs, certain factors became obvious. First, previous drug treatment histories did not provide an increased chance of successful completion. Of the 71 SNAP participants who had prior drug treatment histories, 84.5% failed to successfully complete treatment. As would be expected, the longer participants remained in the program the higher the rate of program success. Out of the ten participants who succeeded in treatment, nine remained in the program longer than six months. Also, being employed was associated with program success. Approximately 68 percent of the men in the BOP program had a prior commitment, 57 percent were employed full- or part-time in the month prior to imprisonment, and the mean education level was 12 years. A higher percentage of those who were employed successfully completed treatment than those who were unemployed, and a higher percentage of those who failed treatment were unemployed than those who failed and were employed. Next, being married did not prove to be a positive factor in successful treatment. Participants who were married and successfully completed treatment accounted for only 6.7% of the married BOP population. Those participants who were single and successfully completed treatment accounted for 15.8% of the single SNAP population. Those who were married and failed to complete treatment accounted for 93.3% of the married BOP population. Approximately 70 percent of the women completed treatment. After release and during supervision, 11 percent of the women lived with a spouse and 8 percent lived in a common law arrangement. Those participants who were single and failed to complete treatment accounted for 80.7% of the single SNAP population. Thus, a higher percentage of those who were single successfully completed treatment than those who were married, and a higher percentage of those who failed treatment were married than those who failed and were single. Lastly, the majority of SNAP patients did not test positive for drugs while in the program. More than 75% of the participants remained drug free. But there was not a corresponding result in successful treatment by the participants. The majority of SNAP participants did not successfully complete the program. While the majority of participants did not use drugs, only 13% successfully completed the treatment. These results may suggest that drug treatment success may not be related to remaining drug free during treatment.

**3.3 CONCLUSIONS BASED ON FINDINGS**

Drug use of most participants began in their teen years. A majority of the SNAP patients were between 13 and 18 when they first began using drugs. These results support the general belief that drug use begins in the early years of the addict’s life, and if a person can remain drug free through these early years the chances of becoming an addict decrease. Other observations about drug addiction in the literature were confirmed, specifically that “softer” drugs serve as an introduction to “harder” drugs and that drug use starts in the early years of adolescence. Alcohol and marijuana proved to be the two introduction drugs. Furthermore, approximately 54 percent of the women in the BOP sample reported using illicit drugs other than marijuana (such as heroin or cocaine) on a daily basis in the year before arrest, while 11 percent said the only illegal drug they had used was marijuana, and 10 percent said they had used alcohol only on a daily basis. In addition, the data may suggest that there may be an inverse relationship between successful completion and being married. An alternative theory could be that these married addicts had unstable marriages or were married to addicts. Another essential idea is to understand the necessity of treatment, particularly during the transition back to community. Just because a person has been kept from using drugs does not mean they have gained the necessary skills to build a successful drug-free life in the community. Drug addiction may re-emerge following release from a treatment program, at which time continued care is not only a necessity for the individual's recovery, it becomes a public health and safety issue for us all.

**4.0 COMPARING THE ASPECTS OF PREVENTION AND TREATMENT**

Substance abuse prevention, also known as drug abuse prevention, is a process that attempts to prevent the onset of [substance use](http://en.wikipedia.org/wiki/Substance_abuse) or limit the development of problems associated with using [psychoactive substances](http://en.wikipedia.org/wiki/Psychoactive_drug). Substance abuse prevention efforts typically focus on minors – children and teens. Research has shown that there are various possible factors that could influence and increase the probability of drug use in youth. Environmental factors in the child's youth are: child abuse, exposure to drugs, lack of supervision, media influence, and peer pressure. Internal factors that are within the child or part of their personalities are self-esteem, poor social skills, attitudes about drugs, and many others. Prevention efforts may focus on the [individual](http://en.wikipedia.org/wiki/Drug_user) or their surroundings.

Drug addiction is a brain disease that affects multiple brain circuits, including those involved in reward and motivation, learning and memory, and inhibitory control over behavior (Schildhaus, 1998). Because drug abuse and addiction have so many dimensions and disrupt so many aspects of an individual's life, treatment is not simple. Effective treatment programs typically incorporate many components, each directed to a particular aspect of the illness and its consequences. Addiction treatment must help the individual stop using drugs, maintain a drug-free lifestyle, and achieve productive functioning in the family, at work, and in society. Because addiction is typically a chronic disease, people cannot simply stop using drugs for a few days and be cured. Most patients require long-term or repeated episodes of care to achieve the ultimate goal of sustained abstinence and recovery of their lives.

**4.1 YEARLY COSTS**

The average effective school-based program in 2002 cost $220 per pupil including materials and teacher training, and these programs saved an estimated $18 per $1 invested when implemented nationwide. If effective prevention programs were implemented nationwide, substance abuse initiation would decline for 1.5 million youth and be delayed for 2 years on average. It has been well established that a delay in onset reduces subsequent problems later in life **(**Grant & Dawson, 1997; Lynskey et al., 2003). Although 80 percent of American youth reported participation in school-based prevention in 2005 (SAMHSA, 2004), only 20 percent were exposed to effective prevention programs (Flewelling et al., 2005). The return on investment in school-based prevention services would range between $7.40 and $36 per dollar invested, with a medium estimate of $18. The best estimate equates to a net saving of $3,740 per youth served, including a $74 net savings in medical and other resource costs ($294–$220). Among 10 effective school-based life skills programs, the average return on investment

exceeded $15 to 1. That is, every dollar spent on these programs returned an average of $15 dollars per student.

The National Center on Addiction and Substance Abuse (NCASA, 2001) reported the cost of substance abuse to States. The total cost in 1998 was an estimated $81.3 billion. The greatest expenses were justice (adult corrections, juvenile justice, judiciary), education (elementary, secondary), health (primarily Medicaid), child/family assistance (child welfare, income assistance), and mental health/developmentally disabled. However, the total cost does not account for actual savings in Medicaid spending. On average, because people who abuse substances die earlier, they use public health services less (Manning et al., 1991).

**5.0 CONCLUSIONS**

Since expected medical and other resource cost savings exceed program costs, the implementation of prevention programs would yield net cost savings to society. School-based substance abuse prevention programming that effectively addresses substance abuse appears to be an excellent investment and is likely to pay for itself in resource cost savings alone. Taken as a whole, the benefits of substance abuse prevention well outweigh the costs of providing the service of treatment. Cost-benefit ratios can guide the selection of an optimal intervention package within the available resources.

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