

The history of needle exchange programs in the United States

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The History of Needle Exchange Programs in the United States

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Dedication

I would like to thank my husband Lenn for all of the support and encouragement that he has given me throughout my educational career.

Also thanks to my mother Patty, without her hard work and determination, I would have never been able to afford college or have had the drive to excel.

To my son Drew, I want to say I love you and thank you for sleeping through the night at only two months old. When I look into your eyes, I realize how important it is to be a better person and that everyone we treat is someone's child.

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Introduction

The United States of America has one of the largest populations living with AIDS worldwide with over 1.2 million people (UNAIDS, 2006). In 2005, the US had more than one million people living with HIV and more than 25% of these people did not know that they were infected. In the United States in 2005, there were 17,011 deaths from HIV/AIDS (“The World Factbook: United States,” 2007). Due to severity of HIV/AIDS in our nation, lack of cost effective treatment, and no cure on the horizon; prevention of HIV infection is of the utmost importance for the government and also its people. With such alarming rates of HIV in the United States, it is remarkable that a proven prevention technique, such as needle exchange programs, is still not widely accepted nor used.

Needle exchange programs (NEPs) made their first appearance in 1983 in Amsterdam, the Netherlands after a local pharmacy stopped selling sterile needles and syringes to injection drug users (IDUs) (Des Jarlais, 2006). The local Health Department needed a solution to this problem, and NEPs were born. Since their inception, NEPs have been routinely studied, with results demonstrating effectiveness in lowering the incidence rates of Human Immunodeficiency Virus (HIV) (Des Jarlais). Within two years after the initial studies were released, most other industrialized countries began to adopt their own versions of NEPs. The United States and Sweden were the exceptions (Des Jarlais et al., 2006). The prevalence of HIV in the United States continues to rise, due to a steady number of new cases diagnosed each year, as well as symptom modifying medications that prolong life but do not eradicate disease. At the same time, NEPs continue to struggle to find both acceptance and funding (UNAIDS, 2006).

The purpose of this review is to study NEPs and take a closer look at the evidence that demonstrates that NEPs are effective in decreasing the rate of new infection of HIV. This review

will include a brief history of HIV in the United States along with its current prevalence and incidence rates. The inception of NEPs and the studies of their effectiveness will also be examined. HIV infection rates will be studied along with the rates that occurred after a NEP had begun in that area. Controversies in the United States regarding NEPs will be discussed, along with funding for these programs.

Background: HIV and AIDS

Human Immunodeficiency Virus (HIV) has been traced back in history to 1959 in the Belgian Congo (“Researchers Trace First HIV Case to 1959 in the Belgian Congo,” 1998). The blood sample was taken from a man who was part of the Bantu tribe and presented to an African Clinic complaining of symptoms similar to sickle cell anemia (“Researchers Trace”). While the exact origin of HIV has yet to be discovered, it has been compared to Simian Immunodeficiency Syndrome (SIV), a virus that is similar in genetic make-up to that of HIV, but affects only monkeys and chimpanzees. SIV is transmitted sexually as with HIV, but SIV does not cause an AIDS-equivalent disease in monkeys, even when transmitted by a monkey with a large viral load (Spira et al., 1996). When and how HIV entered into our population is still unknown, but it has been hypothesized by multiple scientists that HIV could not have been introduced into the human population much before the finding in 1959 (“Researchers Trace”).

The first five diagnosed cases of HIV in the United States occurred in 1981 in Los Angeles, California. All of these cases involved young, active, homosexual men who were diagnosed with Pneumocystis Pneumonia, laboratory-confirmed Cytomegalovirus (CMV) infection, and candidal mucosal infection (“Pneumocystis Pneumonia-Los Angeles”, 1981). This was quite unusual because previously, Pneumocystis pneumonia was considered a very rare condition, only diagnosed in individuals who were severely immunocompromised. At the time, the United States did not realize that these were the first diagnosed cases of HIV on US soil (“Pneumocystis”).

HIV was originally neglected by the medical and political community worldwide, thought to be only a disease that would affect injection drug users (IDUs) and homosexuals. Epidemiological studies confirmed that the main route of transmission of HIV in IDUs occurs

through the sharing of injection needles (Heimer, 1998). Sharing of injection needles leads to repetitive unclean use of a potentially contaminated needle. Any type of needle sharing puts the IDU at higher risk for HIV transmission. One study found that 42% of the nonpediatric AIDS cases were associated with known exposure to injection drug use, with 75% of these cases attributable to sharing needles (DeSimone, 2005). The other 25% are due to HIV exposure from unprotected sex with an IDU. Within the pediatric AIDS population, 81% of all HIV cases are attributed to HIV exposure of the mother through injection drug use or sex with an IDU (DeSimone). Studies also show that HIV can survive in a syringe up to 30 days (Heimer) (see Table 1). Without access to clean injection needles within a given 30 day period, it is obvious that the number of potential exposures increases exponentially.

As of 2003, HIV has infected more than 60 million people worldwide, over a third of whom have died from the ensuing AIDS (Fauci, 2003). In 2003, an estimated 1-1.2 million people were infected with HIV in the United States alone, with about 25% of these individuals being unaware of their HIV positive status (Centers for Disease Control and Prevention, 2005). Due to increased transmission of HIV/AIDS through needle sharing among the approximately 1.5 million IDUs in the United States, 1.5 out of every 100 IDUs will contract HIV each year (Swan, 1997).

Once the epidemic of HIV grew to pandemic-like proportions without a vaccine or curative treatment, the main strategy against this deadly disease became prevention. Once the main contributing factor to the spread of HIV was recognized (i.e. spread through the blood and direct contact with an infected individual's blood), prevention strategies were formulated to reduce these exposures. Since 1985, the American Red Cross has instituted a prevention

program that tests all donated blood with HIV antibody testing to ensure that the donation will not result in future transmission (American Red Cross, Penn-Jersey Region, 2003).

Another prevention strategy used in the United States is education. Due in large part to prevention strategies for HIV/AIDS, health care professionals now discuss at-risk sexual behaviors with their patients (Gottlieb, 2001). Prevention techniques, such as abstinence, condoms, and universal precautions are taught in elementary, junior high and high school systems to spread awareness of HIV and AIDS at an early age. Many colleges also routinely have HIV/AIDS speakers, promote AIDS awareness days, and also hand out free condoms to decrease the transmission of HIV/AIDS.

The development of a vaccine to combat the spread of HIV is being intensely investigated. Numerous vaccines are currently in various stages of development, yet none has been proven to be effective (Fauci, 2003). Research in animals has shown that these vaccines are not effective against the transmission of HIV, but may help in protection against disease progression.

An additional prevention strategy that has been implemented in the United States is the provision of free, anonymous screening and diagnostic testing for HIV. These programs are supported by local and state governments and can be found in health departments, community-based organizations, and through other HIV prevention partners (“Update: Syringe Exchange Programs-United States, 2002,” 2005). These tests allow an individual to have free, anonymous access to rapid screening tests for HIV. Many of these tests are conducted by swabbing the oral mucosa and assigning the patient an ID number, which the patient uses upon their return in one week for results. Along with receiving the free diagnostic HIV test, the patient is given pre- and post-test counseling regarding high-risk behavior and ways to decrease the risk of transmission.

Once research done in 1985 showed that many HIV positive individuals were contracting the disease through injection drug use, a variety of programs were established to lower transmission through this route (Des Jarlais, 2006). Community outreach programs were started to give support and counseling to users who had no other resources. These programs focused on educating IDUs about HIV transmission and also prevention strategies. At the time, one topic discussed with IDUs regarded the use of bleach to cleanse dirty needles. Bleach kills blood-borne pathogens, but application technique and amount of bleach applied to the syringes varies, as does the level of efficacy. Most studies have determined that the use of bleach to clean syringes has not reduced the rate of HIV transmission (Heimer, 1998).

Background: Needle Exchange Programs (NEPs)

The initial goal of NEPs was to reduce the transmission of Hepatitis B in the community (Des Jarlais, 2006). Shortly thereafter, when HIV diagnosis and testing began, the correlation between injection drug use and HIV was made. Then, NEPs rapidly expanded and multiplied in efforts to reduce the incidence rates of HIV. The concept of NEPs spread, and many other countries quickly adopted the idea of these programs. In 1986, a one-year evaluation of the NEPs in the United Kingdom demonstrated effectiveness in reducing transmission of communicable diseases (like HIV and hepatitis). After this, a national system of NEPs in the UK was implemented, and by the mid-1990's, almost all industrialized nations (except the US and Sweden) had universally adopted NEPs (Des Jarlais et al., 2006). NEPs were met with government and social resistance in the U.S. and did not benefit from funding sources, so these programs were established at a much slower rate. In 1984, while the New York City Department of Health was developing plans for a pilot study of NEPs, the United States government shifted its focus to "the war on drugs." Many believed that by allowing NEPs and by using government aid to support them, the United States government would thus be encouraging rather than condemning drug use (Des Jarlais et al.). For this reason, NEPs were opposed by various groups, ranging from law enforcement to high-ranking government officials and to leaders of minority groups (Des Jarlais).

The opposition to NEPs was so great that an amendment that dealt with funding NEPs was made to the Department of Health and Human Services Budget in 1998. This amendment prohibited the use of federal funds for NEPs until there was a formal evaluation in the US that demonstrated that syringe exchange reduced HIV transmission, while not increasing drug use (Des Jarlais, 2006). This amendment led to the prolongation in the development of NEPs in the

United States due to lack of funding available for the inception of NEPs. It is also believed that due to the US government's resistance to including NEPs in national HIV prevention programs, 4,400-9,700 avoidable HIV infections occurred during this time period (Heimer, 1998).

When NEPs first appeared in the United States, they were divided into three main categories - legal, illegal but tolerated, or illegal/underground programs. According to the Centers for Disease Control, these program terms were actually defined in the Morbidity and Mortality Weekly Report. Legal programs were operated in a state that had no law requiring a prescription to purchase a hypodermic syringe (or the NEP had an exemption from the state prescription law). Illegal but tolerated programs were run in a state with a law requiring a prescription to purchase a hypodermic syringe, but these programs had received a formal vote of support or approval from a local elected body. The third classification, illegal/underground programs were operated in a state with a prescription law and no support from local officials. In 1995, 55% of NEPs were legal programs, 32% were classified as illegal but tolerated, and 13% illegal/ underground ("Syringe Exchange Programs-United States, 1994-1995", 1995).

The first illegal/underground NEPs began operating in the United States in 1986 due to the US government opposition to local and national funding for NEPs (Heimer, 1998). The first effort to establish a legal NEP in the United States was in Portland, Oregon by amFAR. This organization, which funds prevention strategies and researches HIV/AIDS, and another local program attempted to start a NEP, but were unable to find an insurance carrier that would assume the liabilities (Des Jarlais, 2006). While the NEP in Portland was working through the logistics, the first NEP in the United States opened in Washington State in 1988 (Des Jarlais; Des Jarlais et al., 2006). The program was supported by the Pierce County Health Department and amFAR. From 1989-1991, the program underwent a research study, finding that IDUs who

exchanged needles and syringes through the NEP reduced their risk of acquiring HIV, Hepatitis B and Hepatitis C compared to those who did not (Des Jarlais) (see Figure 2). These findings finally persuaded the U.S. National Commission on AIDS to endorse NEPs in 1991 (Des Jarlais).

Even though NEPs were starting to be endorsed and the country was slowly beginning to accept the ideas of NEPs, restrictions on the first programs were significant. Two of the first legal programs in the United States were so highly restrictive that the programs were hardly able to operate, let alone make any significant progress in decreasing the overall prevalence of HIV in their respective areas. The NEPs were restricted in the location of where they could operate and exchange syringes, and also were restricted to only working with IDUs awaiting acceptance into substance abuse treatment programs. There were also restrictions on the number of syringes that each user was allowed to exchange in a single visit (one at the New York site and three in Washington) (Des Jarlais, Paone, Friedman, Peyser, & Newman, 1995). The New York site was located near a police station and the Tacoma, Washington program was based out of the trunk of an automobile (Vlahov et al., 2001). The initial NEPs were also required to have extensive entrance programs which lasted several hours and consisted of detailed questioning regarding drug use, drug use counseling, social and demographical history, physical examination, and more (Des Jarlais et al.).

Description of NEPs

Although the main function of NEPs is to prevent the transmission of disease, they also provide other healthful services to IDUs. Most NEPs provide counseling on the proper medical technique and safest methods of injecting medications (“Syringe Exchange Programs,” 1995). Other services offered by many NEPs include basic primary health care services, HIV and safe sex counseling and education, sexually transmitted infection awareness, distribution of condoms, vaccinations, substance abuse referrals and treatment. Some programs distribute not only the clean syringe, but also bleach, alcohol swabs, and sterile water to facilitate safer injections.

NEPs have slowly become more accepted in the United States and accordingly the number of programs and funding has also steadily increased almost every year (“Update: Syringe Exchange Programs,” 2005). 2002 marked the first year since NEPs’ general acceptance in the United States that the number of programs and public funding decreased. In more recent years, funding has begun to increase again, however the total number of programs appears to have remained steady. Between 1995 and 2002, the number of NEPs more than doubled (68 -148 programs) (see Table 2). In 2002, even with a decrease in number of NEPs (154 to 148 programs), the actual number of syringes exchanged in the United States, along with the budgets themselves, did not decrease. In 1994, eight million syringes were reported to have been exchanged (“Syringe Exchange Programs,” 1995); in 1995, 14 million syringes were exchanged (Heimer, 1998); and in 2002, approximately 25 million syringes were distributed in the United States (“Syringe Exchange Programs”) (see Table 3). The documented numbers of syringes and needles exchanged are actually low estimates, because the illegal/underground programs were not included. According to guidelines set by the United States Public Health Service, health care workers (like PAs) need to counsel IDUs to use a clean, unused needle for each injection

(Heimer, 1998). In order to meet the need for clean needles for all IDUs in the United States, NEPs would need to distribute over one billion needles each year (see Table 4).

In order to operate legally, NEPs must be limited to participants at least 18 years old with a valid state-issued identification card (Delgado, 2004). All NEPs are different and are set up according to the geographical area, IDU population, local IDU habits, and other factors. Due to the discreet nature of IDUs, many NEPs operate at several different areas of the city and at different times. Some programs are operated using non-traditional means, such as: health van stops, sidewalk tables, health clinics, and private cars (DeSimone, 2005). NEPs are not allowed to operate near schools, churches or playgrounds and must keep identifiable hours and sites for exchange. Local neighborhoods must be considered when choosing an exchange site due to the possibility that drug trafficking may increase in the areas surrounding them. However, no studies to date have found any increases in crime rates in the areas with an NEP (Delgado). A study performed by Lurie and DeCarlo (1998) that examined areas with active NEPs actually found that crime rates decreased. The authors felt that this was likely because the IDUs had decreased need for money, as their syringes were free or at little cost due to the NEP (see Figure 3).

By assessing the return rate of syringes within a community, a NEP is able to determine its effectiveness. An increase in the return rate of syringes indicates fewer contaminated syringes circulating in the community and a lower probability that needle sharing is occurring (Ksobiech, 2004). Ksobiech performed a review of 26 NEP studies worldwide and found that the overall return rate of needles and syringes was 90%, with 11,971,584 needles out and 10,793,270 needles returned. These data indicate that NEPs do not lead to an increase in the

number of contaminated needles in the communities near an NEP when compared to the number of contaminated needles found in areas without an NEP.

Needle Exchange Program Controversy and Funding

The United States public, government, and health care communities initially perceived that by allowing NEPs to operate legally, they would present the impression that injection drug use was an acceptable behavior, and that the number of IDUs in the US would increase. One NEP supporter, Leonard Glantz, believes that this concept was absurd and made an analogy to a previous U.S. Supreme Court case regarding the sale of condoms to minors under the age of 16. To help make his point he used a quote from the 1977 decision, stating “it seems to me that an attempt to persuade by inflicting harm on the listener is an unacceptable means of conveying a message that is otherwise legitimate.” Furthermore, Glantz felt that not allowing NEPs to be funded by the state was comparable to a state making the determination that motorcycle helmets would become illegal just to show the state’s disapproval of motorcyclists (1996).

In addition, some critics believe that because NEPs provide IDUs with clean syringes, the overall number of contaminated needles in the community will actually increase (Ksobiech, 2004). There are additional concerns that the general public’s risk of HIV transmission would also increase due to improper disposal of these needles. In a study by Doherty et al (1997), the researchers found that there was not a significant increase in the number of needles found in Baltimore, Maryland in the two months following the opening of an NEP. In the same article, Doherty et al. reported that in a follow-up study at the same location, two years later, there was still no increase in the number of discarded needles.

Increasing controversy in the NEP debate is the social stigma associated with them in the public’s perception. Nowhere is the attempt to placate the public perception more apparent than when the issue is abruptly asked of politicians. Once the issue of NEPs gained national attention, politicians were forced to take a quick, firm stance on the issue. Many chose to stand against

NEPs (Moss, 2000). While NEPs were deemed important programs that would help to combat the rise of HIV incidence in the United States, politicians stood strong in opposition against them, and Moss states that only the Chicken Little Model would enable the politicians to change. Moss' Chicken Little Model states that the policy process in the United States acts only if the sky is falling on an issue. If the sky is not falling, or Congress does not view an issue with that type of importance, then things are not changed (Moss, 2000).

In 1988, a federal ban on funding NEPs was enacted in the United States, stating “unless the Surgeon General determines a demonstration needle exchange program would be effective in reducing drug abuse and the risk of the public being infected with AIDS that federal funds would not be used to support these programs” (Normand, Vlahov, & Moses, 1995). In 1998 and 2000, the Secretary of the United States Department of Health and Human Services (HHS) and the US Surgeon General reported that there was scientific research demonstrating that NEPs led to a reduction of HIV and also did not cause an increase in drug abuse (Vlahov et al., 2001). However, the federal funding ban on NEPs was not lifted.

At the same time that the 1988 NEP funding ban was enacted by Congress, a memo was circulated at the National Institute on Drug Abuse stating that any existing National Institute of Health (NIH) projects were not permitted to study NEPs. The memo also stated that any new proposals submitted regarding NEP research would not be reviewed (Vlahov et al., 2001). Not until 1991 did this policy change to allow NIH funding to research NEPs. Shortly thereafter, multiple studies were conducted, with all finding that NEPs were effective in reducing the rate of HIV incidence among IDUs (Des Jarlais & Braine, 2004). Still the ban on federal funding of NEPs remained, but Congress did request that the National Academy of Sciences conduct a study not only on existing NEPs but also to review published research on NEPs (Vlahov et al.).

In 1995, the report by the National Academy was published stating that NEPs can reduce HIV infection and do not increase drug use, while also asking that the ban on federal funding for NEPs be lifted (Vlahov et al.).

In April 1998, the federal ban on funding was set to be lifted during a press conference, but President Clinton changed his mind the night before. The Secretary of the United States Department of HHS stated that while NEPs were found to decrease the incidence of HIV without increasing drug usage, federal funds would still be unavailable for use. The federal ban was finally brought back to a vote in Congress in June, 2007 with the House voting to lift the current ban. The potential law change to allow federal funding of NEPs still awaits Senate approval (as of September, 2007).

While NEPs can operate under legal status, the uncertainties surrounding NEPs are still many, inhibiting many programs' productivity (Burris, Finucane, Gallagher, & Grace, 1996). The issues of state prescription laws, tight government regulations and social stigmas deter private organizations and local government agencies from starting NEPs while also deterring public agencies and foundations from funding existing NEPs (Des Jarlais, McKnight, & Milliken, 2004). Due to the lack of federal funding, NEPs tend to be funded through private funds, state budgets that allow but closely regulate the programs, and/or foundation grants or organizations to establish and run NEPs. Most current NEPs require more than one funding source to effectively run their programs. A majority of the funding for NEPs comes from foundation grants, such as amFAR or the Robert Wood Johnson Foundation (Delgado, 2004). Foundation grants tend to be used more for the purpose of the initial program setup, while the operating budget is composed of funds acquired through private donations and local government funding.

In a research study done by NASEN (North American Syringe Exchange Network) in 2000 approximately half of NEPs (63 out of 120) reported receiving state or local government funds (Des Jarlais et al., 2004). Local and state government funding comprised approximately 87% of a NEP's average operating budget (Des Jarlais et al.). The NEPs that received government funding were associated with a larger number of needles exchanged, more counseling and a greater number of total services offered to IDUs. The research suggests that without government assistance, it is unlikely that an NEP would be large enough to significantly impact an area's HIV incidence (Des Jarlais et al.).

Decline of IDU Usage

Multiple studies performed throughout the United States in the past 20 years have demonstrated the efficacy of NEPs. These studies show a reduction of the HIV incidence rates in IDUs without an increase in the number of IDUs in the community (Delgado, 2004; Des Jarlais, 2006; Des Jarlais & Braine, 2004; Des Jarlais et al., 1995; Des Jarlais et al., 2006; DeSimone, 2005; Glantz, 1996; Heimer, 1998; Ksobiech, 2004; “Syringe Exchange Programs,” 1995; “Update: Syringe Exchange Programs,” 2005; Vlahov et al., 2001; Vlahov & Junge, 1998). There have also been studies done to determine if injection rates have decreased in the areas with NEPs, the amount of needle sharing with and without a program and numerous other factors in regards to a NEPs existence. The bottom line of all of the studies is that it is more beneficial to a large community to have an NEP than not.

In 2005, DeSimone examined data on arrestees’ injection drug use in 24 large US cities by using the Drug Use Forecasting (DUF) program, along with the data of NEPs in those areas. By using the arrestees as a data group, the author used a sample of individuals whose injection drug use rates were much higher than the general public to establish whether or not NEPs make a significant impact on the community. In a survey completed by the National Household Survey on Drug Abuse in 1997, the average lifetime injection drug use prevalence was 1.7 percent in males above the age of 18, compared with 14.1 percent in the DUF group (DeSimone). DeSimone found that injection drug use in the arrestees declined by 7 percent within the first six months of an NEP opening within their area, and by 13 percent overall (see Figure 3). The decreases in injection rates were surprising, because while a NEP’s main goal is to decrease the rate of transmission of communicable diseases, the actual rate of injection drug use was a collateral benefit. It has been surmised that this decrease in injection rates can be attributed to

NEPs not only exchanging used syringes but also deterring further drug use by providing education and referral programs.

In a study performed after the closure of an NEP in Connecticut in 1999, markedly elevated HIV risk behavior was found in comparison to before the closure (Broadhead, Hulst, & Heckathorn, 1999). The NEP had been shut down after public controversy occurred in the area, blaming NEPs for the city's drug problem and discarded syringes found throughout the community. Following the closure of the NEP in Connecticut, IDUs' access to clean syringes was reduced, and an increase in needle sharing was reported. Before the closure of the NEP, IDUs disclosed in interviews that they reused a syringe on average 3.5 times before discarding. After the NEP closure, the IDUs who participated in the original interview reported that syringe reuse had increased dramatically, to 7.7 times prior to discarding. This same study reported that only 16% of IDUs reported sharing a syringe within the past 30 days prior to closure and 34% reported sharing after the closure (Broadhead et al.).

According to a study by Hurley, Jolley, and Kaldor in 1995, an HIV seroprevalence increase of 5.9% occurred per year in 52 cities without NEPs and a decrease of 5.8% occurred in 29 cities with NEPs (see Figure 4). The authors stated, "NEPs have the direct potential to decrease HIV transmission by lowering the rate of needle sharing and the prevalence of HIV in needles available for reuse, as well as indirectly through activities such as bleach distribution, referrals to drug treatment centers, provision of condoms and education about risk behavior." After their review of 3,500 previously published papers on the effectiveness of NEPs, the authors stated that the hypothesis of NEPs not being effective was no longer tenable (Hurley et al.).

Recommendations

Although there has been significant research involving NEPs, there are still aspects that have been inadequately investigated. While multiple articles are readily available discussing the theories behind NEPs and their proven effectiveness, the controversy surrounding NEPs has yet to be fully examined. Recent studies on the public's opinion of NEPs and the role that NEPs play are not available, nor is a current list of NEPs operating in the US. While NASEN lists a select number of current NEPs on its website, there is also a disclosure stating that not all programs are listed. While NASEN may have understandable difficulty listing every program, it is a very cumbersome and arduous task for a researcher, let alone an IDU, to find a NEP in a specific community.

While repeated research data have shown that NEPs as a whole are effective in reducing HIV rates, there are few self-assessment studies examining a single NEP. There are data on the positive outcome measures of NEPs, but none that includes IDU demographic data such as gender, race, or sexual preference. Research is needed to examine the relationship between IDUs, HIV infection prevalence, and the characteristics of the NEP in a given sample community. One of the largest areas of improvement needed regarding NEPs is the use of a standard variable to be measured. While there is significant evidence that NEPs are practical in the prevention of HIV in the United States, only future research investigating multiple other factors of NEPs will aid in the improvement of the current programs.

While NEPs are becoming more popular in the United States, there is still a need for many more programs to help combat the risk transmission of HIV. Once the federal funding ban has been abolished by Congress, more money will likely become available, and this may lead to the opening and maintenance of NEPs in many more cities. State and federal money also should

needs to be allocated to IDU education, not only regarding high risk behaviors, but also to educate the general public about NEPs and the true role that they play in the community in decreasing HIV incidence. It is imperative that the public understands the role of NEPs, rather than the current misconceptions, in order for NEPs to truly function and significantly reduce HIV incidence.

Throughout the review of data, it appears that many more men than women regularly attend NEPs. So, there is a need for outreach programs to help women feel comfortable enough to access the resources available at NEPs. This is especially important, because women (especially those under age 30 and with high levels of depression symptoms) are more likely than men to engage in risky drug use behavior (like sharing dirty needles) (Braine, Des Jarlaris, Goldblatt, Zadoretzky, & Turner, 2005). In reviewing the research studies and articles about NEPs, nowhere was there any mention of programs aimed at women or extra attempts made to welcome or increase more women into existing programs.

Conclusion

In 1998, the Secretary of the Department of HHS said, “a meticulous scientific review has now proven that needle exchange programs can reduce the transmission of HIV and save lives without losing ground in the battle against illegal drugs” (Shalala, 1998). Since then, more data have supported the benefits of NEPs while not finding any significant drawbacks of NEPs for the general public. However, without proper funding and strong public support, the US will continue to be one of only two industrialized countries not to embrace NEPs. The US government ban on the use of federal funding to support NEPs is still in place. On June 28, 2007, the US House of Representative voted to abolish this ban; however, a similar vote is still need by the Senate (as of September, 2007).

While the vast majority of published research demonstrates that NEPs can reduce the rate of HIV in the United States, some still question if these programs should be in effect. More years of research and program evaluation are needed before NEPs will be considered a vital prevention strategy in this country. Physician Assistants and other health care providers need to be aware of and support to NEPs, as well as educationing patients about how NEPs can markedly decrease the transmission of HIV among IDUs in the United States.

Definitions

AIDS	Acquired Immune Deficiency Syndrome
amFAR	American Foundation for AIDS Research, a nonprofit organization that supports HIV/AIDS research and prevention in the world.
CDC	Center for Disease Control and Prevention
CMV	Cytomegalovirus infection
DUF	Drug Use Forecasting program of the National Institute of Justice
HHS	Health and Human Services
HIV	Human Immunodeficiency Virus
IDU	Injection Drug User
incidence	The ratio of new infections detected over the number of person year exposure
MMWR	Morbidity and Mortality Weekly Report
NASEN	North American Syringe Exchange Network
NEP	Needle Exchange Program
prevalence	The fraction of the population currently infected
SIV	Simian Immunodeficiency Virus

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Table 1

HIV Survival Duration

	Prevalence of active Infection	Infectivity	Survival Duration
HIV	<5%-60%	0.3%-0.7%	15-30 days

Information complied from Heimer, 2002.

Table 2

Number of Known NEPs Operating in the United States

	1995	1996	1997	1998	1999	2000	2001	2002
Number of known NEPs operating in the United States	68	101	113	131	154	154	Unknown	148

Information complied from MMWR, 2005 and Braine, et al, 2005

Table 3

Number of Known Syringes Distributed Each Year by NEPs in the United States

	1994	1995	2002
Number of known syringes distributed each year by NEPs in the United States	8 million	14 million	25 million

Information compiled from Heimler, 2002 and MMWR, 1995 and 2005.

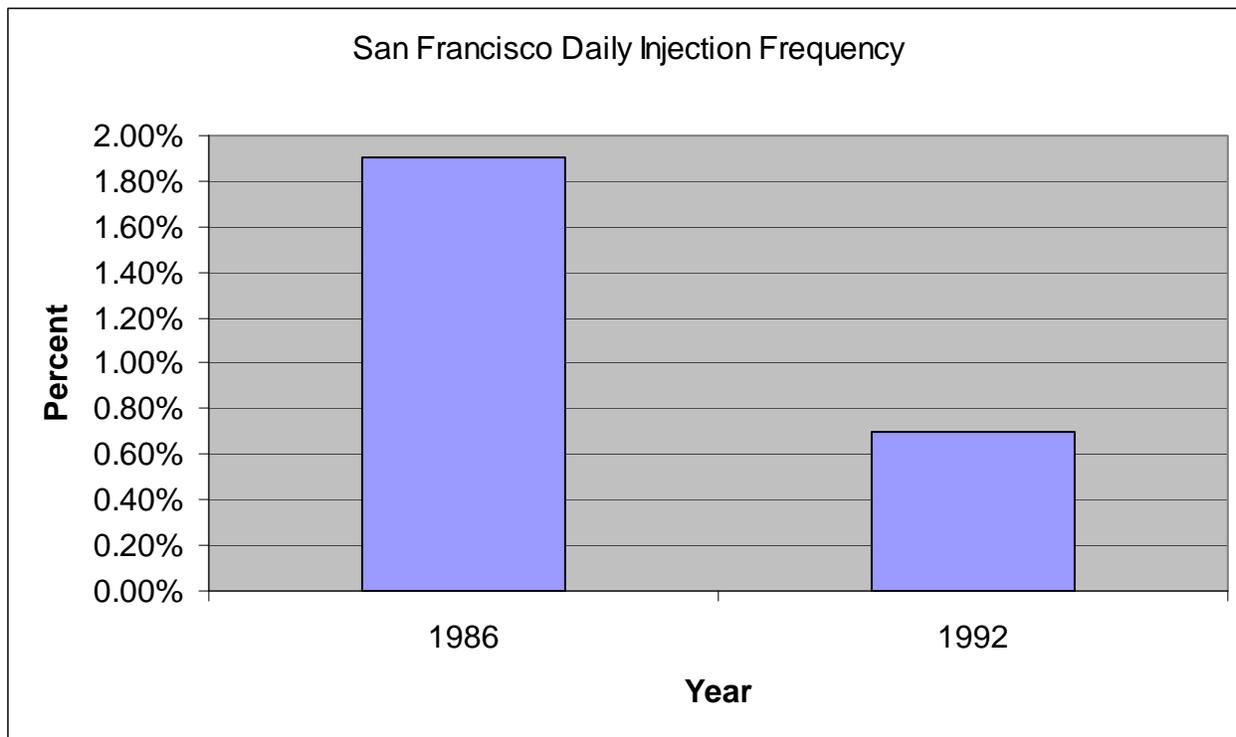
Table 4

Number of Syringes needed to be Distributed Each Year to Fill Demand

	Estimation of known number of IDUs in the US	Estimated number of injections per day per IDU	Number of Syringes needed to be distributed each year to fill demand
1997	900,000	3	985 million
1998	1.1-1.5 million	2.9	1.6 billion

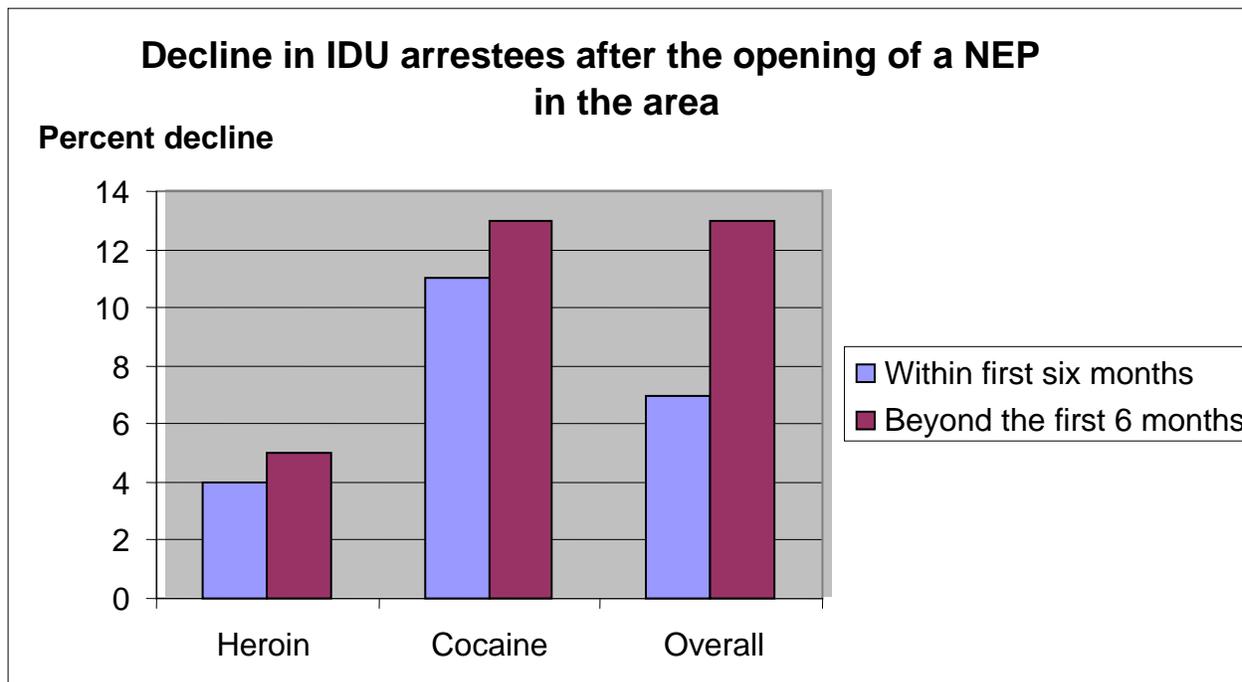
Information compiled from Heimer, 2002 and DeSimone, 2005.

Figure 1



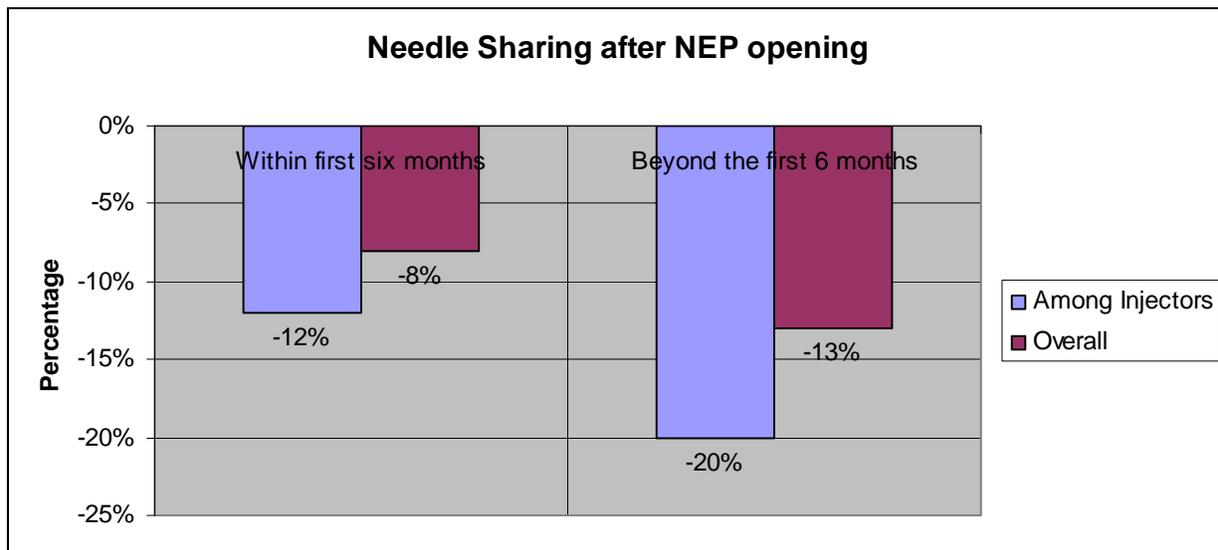
Data compiled from DeSimone, 2005

Figure 2



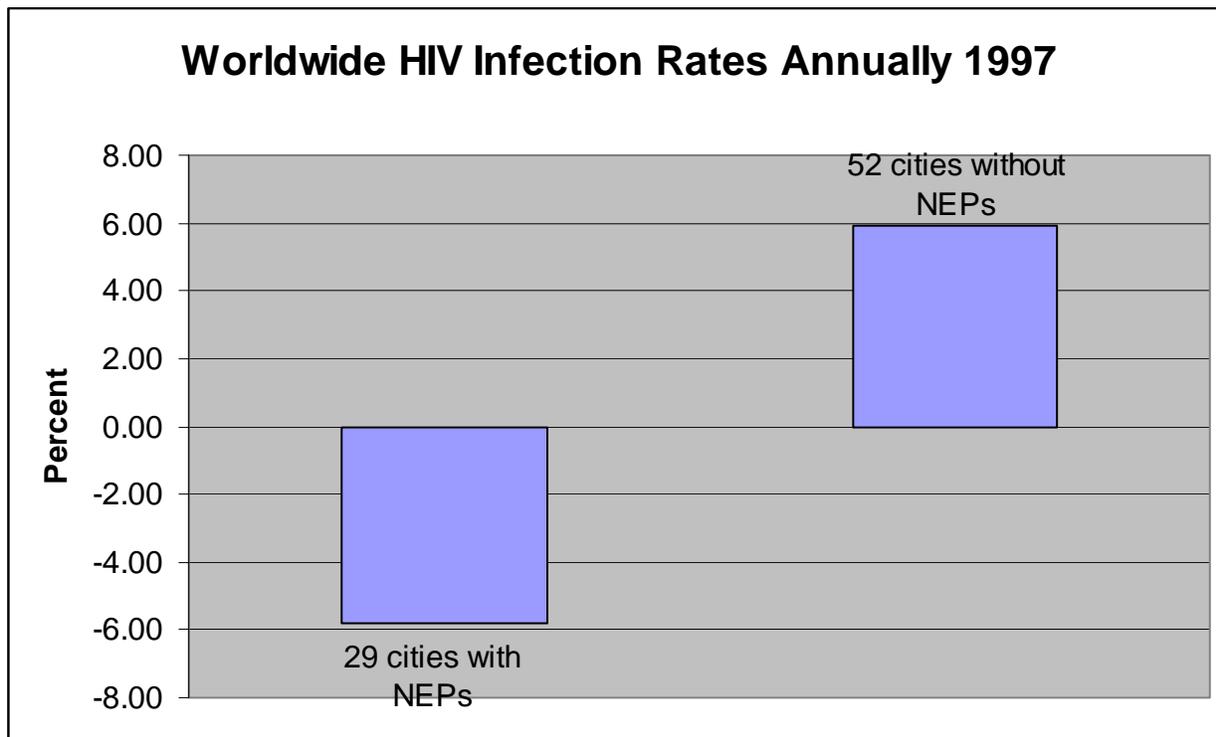
Data compiled from DeSimone, 2005

Figure 3



Data compiled from DeSimone, 2005

Figure 4



Data compiled from DeSimone, 2005

Abstract

Objective

Over the past 20 years, Needle Exchange Programs (NEPs) have been embraced by virtually every country, except the United States. The history of NEPs and their role in the US needs to be examined.

Methods

A review of the literature was conducted using PubMed and MEDLINE. Terms searched: Needle Exchange Programs and History, Effectiveness, Controversy, HIV, Funding, Policy; HIV and History, Prevention; United States and AIDS, Focused History.

Discussion

Over 1/3 of AIDS cases in the US are associated with injection drug use. Research has demonstrated that NEPs are efficacious in reducing HIV incidence rates without increasing the number of IDUs or discarded syringes in a community. In the US, controversies and negative social stigmas regarding NEPs remain.

Conclusion

Federal funding and more research are necessary for NEPs to flourish. Health care professionals, like PAs, need to be aware of and educate others about the benefits of NEPs.