Needle Exchange for HIV/ AIDS:

An Effective Public Health Strategy

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ABSTRACT

Injection drug use has been a known risk for acquisition of HIV infection for more than 25 years. Consequently, needle exchange programs have been developed worldwide in an effort to decrease transmission rates. Research has demonstrated their success. Despite policy makers' previous refusal to provide federal funding for these programs largely secondary to moral and ethical concerns, needle exchange programs like that in Lancaster have existed to serve their communities, funded through the generosity of individuals and larger organizations. The current national political climate places the issue of federal funding back on the agenda, concurrent with the recent development that Lancaster's needle exchange program requires further funding to remain afloat. Due to demonstrated effectiveness, Congress recently lifted the ban on federal funding creating a future for needle exchange programs like the one in Lancaster. Given the success of such programs, and the likelihood of renewed financial stability, needle exchange programs should be part of a patient-centered preventive initiative to combat AIDS.

INTRODUCTION

In a recent Letter to the Editor in the *Intelligencer Journal/Lancaster New Era*, a local reader complained:

Regarding the needle-exchange program . . . How dare they promote addicts continuing to pump those drugs through their vein? Do they know how many children suffer from one or the other parent spending hundreds of dollars on drugs instead of household bills? Just what we need! Let's support the druggies! What? We don't want them sick? We don't want them to die? Why not? . . . They're stealing from hardworking taxpayers! Give them dirty needles–do the world a favor!

Interestingly, needle exchange programs have been operating for almost two decades in communities like Lancaster across this nation and around the world. What may be even more surprising is the amount of research that has been published demonstrating the effectiveness of these programs in preventing the spread of infection, guiding those suffering with addiction to sobriety, and saving taxpayers' money without increasing crime rates.

Needle exchange programs represent an effective public health preventive measure that has stood the test of time. Despite this experience, opponents still fail to recognize the inherent value of these programs to both the individuals that depend on them and to their larger communities. A review of the background of needle exchange programs, their historic political battles, and research attesting to their benefits, demonstrates that these programs are a vital part of a comprehensive patient-centered preventive initiative for combating HIV.

BACKGROUND

Since 1981, the human immunodeficiency virus (HIV) has killed more than half a million people in the United States. Despite advancements in the management of HIV/AIDS from a social and medical perspective, a comprehensive public health strategy for dealing with HIV prevention and treatment continues to be inadequate.

Injection drug use was first identified as a risk factor for development of acquired immunodeficiency syndrome (AIDS) in 1982, with many individuals continuing to contract HIV infection due to drug addiction.[1] The Substance Abuse and Mental Health Services Administration reports that approximately 424,000 people inject drugs in the US annually.[2] The Center for Disease Control reports that through 2007, the number of cases of AIDS attributed to injection drug use represented 25% of the total. From 2004 through 2007, 13% of new HIV infections were due to injection drug use.

Needle exchange is a preventive measure that has been questioned from a moral and policy perspective since its inception. The concept dates back to the early to mid-1980's when HIV was discovered by the scientific community and ultimately acknowledged by politicians and public health officials. The basis of needle exchange is a combination of biologic plausibility

and pragmatism: by supplying access to sterile needles and syringes, we can thereby reduce transmission of blood-borne pathogens including HIV and Hepatitis B and C. The short-term goal of needle exchange programs is to protect individuals from becoming infected. However, the long-term goal is to also guide individuals through a recovery program and ultimately to life-long abstinence.

Since the inception of needle exchange programs, there has been a great deal of research as well as debate among the scientific, public health, ethical, and political communities. There are currently over 100 needle exchange programs across the US. After extensive research, which has been systematically reviewed, the benefits of these programs are quite evident.[4,5] Most significantly, these programs have lowered infection rates by blood-borne viruses including HIV and hepatitis C. In contrast to public misperception, providing addicts with clean syringes does not increase drug abuse or crime rates, and can guide individuals into recovery that may not have been led there otherwise. Despite these scientific data, concerns such as those expressed above by the Lancaster County letter-writer have provided an unsteady political environment for needle exchange programs.

HISTORICAL PERSPECTIVE

Originally developed to address the spread of hepatitis B from contaminated needles, the first needle exchange program was developed in Amsterdam in 1983. Incidentally, this was only one year before HIV was identified as the virus that caused AIDS.6 The effectiveness of this program was studied several years later, and in 1988, a published report from the Amsterdam Municipal Health Service described a decline in the frequency of drug injecting and needle exchange among its participants.[7]

With demonstrated efficacy and growing popularity, needle exchange programs cropped up throughout Europe. The U.S. followed suit with the development of publicly supported programs in New York City and Los Angeles. Concurrently, in November of 1988, conservative moral and political winds created legislation leading to a ban on federal funding of needle exchange program services. The legislation did retain a stipulation that the Surgeon General could overturn the ban if studies proved that the programs were effective in reducing drug abuse and infection risk.

Shortly thereafter, restrictive clauses were placed in further legislation, including the Ryan White Comprehensive AIDS Resources Emergency Act of 1990.[8] This legislation specifically dealt with funding for care of patients diagnosed with HIV and AIDS, and is the Act that funds the HIV program at LGH. The political climate went so far as to ban federal funding for research that would address the effectiveness of needle exchange programs until 1991, undermining the initial legislation that authorized the Surgeon General to overturn the ban.

After continued political and administrative struggles, as well as increased pressure from the international scientific community, the U.S. General Accounting Office (GAO) and the University of California conducted a federally funded review of the programs in 1993. The review concluded that needle exchange programs reduced the likelihood of HIV infection and did not increase drug abuse among the participants.[9] These results prompted recommendations to lift the ban on federal funding for needle exchange programs. Unfortunately, the report was not published in a peer reviewed medical journal nor revealed to the public until the information was leaked to the *Washington Post*.[10] Despite publicity of the results and the recommendations based on effectiveness data, no change was made in the funding ban.

Worse, studies published in 1997 from the Montreal and Vancouver needle exchange programs created an unfortunate setback. Their data unexpectedly found increased rates of HIV infection in their needle exchange population.[11] Policymakers cited these data as an additional reason to prohibit federal funding. Julie Bruneau at the University of Montreal and Martin Schechter at the University of British Columbia, the authors of these studies, were concerned about misrepresentation of their data stating, "True, we found that addicts who took part in the needle exchange programs in Vancouver and Montreal had higher HIV infection rates than addicts who did not. That's not surprising. Because these programs are in inner-city neighborhoods, they serve users who are at the greatest risk of infection. Those who did not accept free needles often didn't need them since they could afford to buy syringes in drugstores. They also were less likely to engage in the riskiest activities."[12] Additionally, these studies were in regions where cocaine was the predominant drug that was injected several dozen times, making the risk of needle reuse higher.

As time progressed, both the National Academy of Sciences and the National Institutes of Health conducted evaluations and made recommendations that

the ban on federal funding for the programs be lifted. With continued research and investigation, numerous reports and organizations supported rescinding the ban on federal funding for needle exchange. By this time, programs were functioning in most of Western Europe and had even spread to developing countries. This placed increasing pressure on the Clinton administration to lift the ban. It appeared in 1998 that this would occur. However, on a seemingly last-minute decision swayed by Barry McCaffrey, the director of national drug control policy during the Clinton administration, Secretary Donna Shalala of the U.S. Department of Health and Human Services, speaking at a press conference where she was expected to announce that the ban would be lifted, declared that federal funding for needle exchange programs would remain unavailable despite evidence of their effectiveness.[13]

Nonetheless, despite continued setbacks from a national perspective, local needle exchange programs continued to grow, such as the one in Lancaster which has existed for 11 years. The Lancaster program was proposed by businessman Robert E. Fields in a Letter to the Editor in the *Intelligencer Journal* in 1997, and this suggestion prompted support from several community members. Since that time, the program has grown to where it now provides more than 7000 needles on a monthly basis, but it has not received a great deal of publicity even though state drug laws criminalize possession of needles for illicit drug use. The program's low visibility is largely due to an agreement between law enforcement agencies and the program that investigation would not take place unless members of the community complained.

In a recent article in the *Intelligencer Journal*, Field reported that he would no longer be providing the financial support, which amounted to $50,000 annually, in hopes that other organizations and the community would step up and embrace the program.[14] Needle exchange has therefore hit the local political and public health agenda through this development, with the associated likelihood that lack of funding will remove a service that has significant benefit for the community.

The current national political climate has placed needle exchange programs at another crossroads in the debate over federal funding. President Obama had initially supported lifting the ban during his run for presidency; however, his budget in May of 2009 failed to do so. Obama's director of national drug control policy, Gil Kerlikowske, unlike McCaffrey during the Clinton administration, embraced harm reduction approaches during his time spent as Seattle police chief and is a supporter of needle exchange programs. After two decades, in December of 2009, Congress voted to lift the ban on federal funding—symbolizing a transition toward patient-centered preventive health care and creating a source of funding for community-based programs such as that in Lancaster.

THE NEEDLE EXCHANGE ARGUMENT

Although somewhat dated, polls from 1997 demonstrated that 71% of Americans supported the idea of needle exchange programs.[15] Over time, the argument has largely focused on concerns similar to those of the letter writer quoted above. Opponents argue that these programs endorse continued use of IV drugs and send mixed messages to the American public; although drugs are illegal, we provide avenues for their continued use. But research demonstrates that needle exchange programs do not lead to increased addiction or crime, and they provide individuals with treatment for their addiction they may not have sought elsewhere.[16,17] State policies are recognizing these facts and recent laws have softened. Until September of 2009, Pennsylvania remained one of the last few states in the U.S. that did not allow over-the-counter sales of needles, but the Pennsylvania State Board of Pharmacy recently amended the law to allow sales (49 PA. Code Ch 27).

Policymakers divide the argument into two different schools of thought: the abstinence-based approach versus the harm-reduction approach. Although the abstinence-based approaches are clearly the ideal for risk reduction, they are not practical or realistic for many people with addiction. Abstinence-based approaches fail to recognize that the harmful behaviors result from a real disease—addiction. Abstinence-based approaches use law enforcement as a method to reduce addiction and drug use by incarcerating those who use illegal substances, using punishment in the attempt to lead to sobriety. This model represents a disease-oriented model of care that the medical community is all too familiar with. The high recidivism rate of addicts after release from jail is evidence that this model of "treatment" does not work. Moreover, the cost of incarcerating those suffering from addiction is putting a major strain on many state budgets.

Those who favor abstinence-based approaches are critical of harm-reduction approaches due to the message they send as well as their perceived ineffectiveness. This argument is outdated, however. Recent research

and the literature suggest that this discussion is far past being a simple divide between two disparate schools of thought.[18,19] Harm reduction strategies have been proven to work and therefore should be instituted into public health preventive measures. This view is validated by the fact that public health experts as well as medical organizations including the American Medical Association, the American Public Health Association, the American Bar Association, and the American Civil Liberties Union, have all endorsed needle exchange.

EFFECTIVENESS OF NEEDLE EXCHANGE PROGRAMS

Along with the research that demonstrates the effectiveness of needle exchange programs, several studies have estimated their cost effectiveness. A retrospective analysis suggested that if these programs had been in place in the early stages of the HIV epidemic, the number of infections prevented would have been between 4,394 and 9,666 (15-33% reduction), with the savings from not having to treat these individuals ranging between $244 million and $538 million.[20] Needle exchange programs continue to be cost effective.[21,22] Studies from the late 1990s found that the cost of a needle exchange program to prevent one HIV infection ranges from $4,000-12,000. This sum is considerably less than the estimated $190,000 lifetime medical costs of treating a person with HIV at that time.[23] The preventive nature continues to be demonstrated.

In California, Pacific Pride Foundation's needle exchange program (working with the Santa Barbara County Public Health Department) recently demonstrated that the percentage of new HIV infections attributable to IV drug use decreased from 18% of the total in 2006, to 15% in 2007, and then plummeted to only 3.7% in 2008.[24] A decreased rate of new infections translates into reduced overall costs of treating patients with HIV. With rates of new HIV infections maintained at greater than 50,000 per year and public health strategies available that could significantly reduce this number, newly approved funding from the government demonstrates a willingness to work with public health agencies, physicians, and communities to ensure these prevention strategies are implemented.

FINAL COMMENTS

The lifting of the ban on federal funding for needle exchange programs represents an historic achievement. It represents rejection of the outdated thinking that those suffering from addiction do not deserve our time, our efforts, or our money. Science rather than politics finally dictated a public health decision that recognizes addiction as a chronic illness and accepts a well-established preventive strategy that works. After a long political struggle, federal funding will provide much needed capital for struggling programs like that in Lancaster as well as provide opportunities for additional programs to be developed in cities across the US.

The benefit of federal funding for needle exchange does not end with increased numbers of programs and immediate prevention. Needle exchange programs have both immediate and long-term goals, with the latter represented by sobriety and recovery from addiction. Federal funds also provide an opportunity for more research to investigate particular components of the programs, and to select the elements that aid individuals to recover from addiction.

Any public health measure abides by the rule: an ounce of prevention is worth a pound of cure. Needle exchange programs have demonstrated both clinical effectiveness and ethical fortification, making them a crucial part of a comprehensive public health strategy to prevent new HIV infections. With the historic approval of federal funding for needle exchange programs, we stand at the brink of a transition in health care to a patient-centered preventive measure that will provide promise for the future.

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